European Commission

JRC TECHNICAL REPORTS

Global Energy and Climate Outlook 2018: Greenhouse gas emissions and energy balances

Supplementary material to "Global Energy and Climate Outlook 2018: Sectoral mitigation options towards a low-emissions economy"

Tchung-Ming, S., Diaz-Vazquez, A. R., Keramidas, K.

2018

Joint Research Centre

EUR 29573 EN

This publication is a Technical report by the Joint Research Centre (JRC), the European Commission's science and knowledge service. It aims to provide evidence-based scientific support to the European policymaking process. The scientific output expressed does not imply a policy position of the European Commission. Neither the European Commission nor any person acting on behalf of the Commission is responsible for the use that might be made of this publication.

Contact information
Address: European Commission, Joint Research Center, Edificio Expo; C/ Inca Garcilaso, 3, E-41092 Sevilla, SPAIN
Email: JRC-GECOutlook@ec.europa.eu

EU Science Hub
https://ec.europa.eu/jrc/geco

JRC114840

EUR 29573 EN

PDF ISBN 978-92-79-98399-3 ISSN 1831-9424 doi:10.2760/438139

Luxembourg: Publications Office of the European Union, 2018

© European Union, 2018

The reuse policy of the European Commission is implemented by Commission Decision 2011/833/EU of 12 December 2011 on the reuse of Commission documents (OJ L 330, 14.12.2011, p. 39). Reuse is authorised, provided the source of the document is acknowledged and its original meaning or message is not distorted. The European Commission shall not be liable for any consequence stemming from the reuse. For any use or reproduction of photos or other material that is not owned by the EU, permission must be sought directly from the copyright holders.

All content © European Union, 2018, except: cover image, Willian Justen de Vasconcellos, Unsplash.com

How to cite this report: Tchung-Ming, S., Diaz-Vazquez, A. R., Keramidas, K., *Global Energy and Climate Outlook 2018:GHG and energy balances 2018 GHG and energy balances – Supplementary material to "Global Energy and Climate Outlook 2018: Sectoral mitigation options towards a low-emissions economy"*. EUR 29573 EN, Publications Office of the European Union, Luxembourg, 2018, ISBN 978-92-79-98399-3, doi: 10.2760/438139, JRC114840

Contents

Acknowledgements 1
Abstract 2
1 Introduction 3
2 Energy and GHG balances 4
3 Scenarios 5
4 Geographical coverage 6
5 Sectors definitions 7
6 Data 8
7 GECO 2018 Reference scenario 9
8 GECO 2018 Central 2°C scenario 86
9 GECO 2018 1.5°C scenario 163
References 240
List of abbreviations and definitions 242
List of tables 244

Acknowledgements

This report was prepared by the Economics of Climate Change, Energy and Transport unit of the Directorate Climate, Energy and Transport of the Joint Research Centre (JRC C6) of the European Commission.

Authors

Stéphane Tchung-Ming, Ana Diaz Vazquez, Kimon Keramidas

The energy and greenhouse gases emissions modelling benefited from the contributions of Kimon Keramidas, Stéphane Tchung-Ming, Jacques Després, Andreas Schmitz, Burkhard Schade (JRC C6).

Abstract

This document complements the Global Energy and Climate Outlook 2018 report. It provides the detailed GHG and energy balances for the Reference, the central 2°C and 1.5°C scenarios described in the main report. The results displayed in this report have been produced with the global energy & GHG model POLES-JRC.

1 Introduction

This document complements the main Global Energy and Climate Outlook (GECO) 2018 report (Keramidas et al, 2018). It provides the detailed GHG and energy balances for the following three scenarios described in the main report:

- the Reference scenario,
- the Central 2°C scenario,
- the 1.5°C scenario.

The results displayed in the main report and in the supplementary material have been produced with the global energy and GHG model POLES-JRC (Després et al, 2018).

2 Energy and GHG balances

The tables provide for each country or region:

- the main economic indicators: population, income per capita, share of sectoral value added;
- the international energy prices;
- emissions per greenhouse gas (GHG) and per sector;
- a reduced energy balance: primary energy production, net trade of energy, primary energy demand by fuel;
- power generation: inputs[1] , production, capacities;
- final energy consumption per sector and per fuel.

[1] Nuclear electricity is accounted as primary electricity. Primary energy from geothermal is calculated considering the primary heat equivalent of the electricity produced, considering an average efficiency of 10% for geothermal.

3 Scenarios

The following scenarios are presented in this document (more details of policies considered can be found in the main GECO 2018 report):

- **Reference scenario**: It corresponds to a world where no additional policies are implemented compared to what was legislated as of the end of 2017; energy and emissions projections are driven by market forces and technological learning. In particular, it does not pursue the policies put forward in countries' NDCs nor does it attempt the deep decarbonisation of the 2°C or 1.5°C scenarios.
    - Although the GECO 2018 Reference scenario integrates national climate and energy policies, it is not a replication of official national scenarios. This also applies to the particular case of the EU28[2].
- **Central 2°C scenario**: This scenario assumes a global GHG mitigation pathway over 2010-2100 compatible with a likely chance (>67%) of meeting the long-term goal of a temperature increase over pre-industrial levels to 2°C compared to pre-industrial levels, with a 2011–2100 carbon budget of 1150 $GtCO_2$. It assumes in particular further intensification of energy and climate policies already from 2018, captured in the modelling through certain sectoral measures and an increasing carbon value. Carbon values were differentiated across countries depending on their per capita income; they progressively convergence after 2030 and by 2050 all but the poorest countries are subject to the same carbon price. An appropriate climate simulation tool is being used in order to evaluate the impact of radiative forcing changes (MAGICC 6.0, (Meinshausen, Raper, & Wigley, 2011)).
- **1.5°C scenario:** It is defined with the same parameters as the central 2°C scenario but aims at more aggressively reducing GHG emissions reductions in order to achieve a lower temperature change at the end of the century, with a 2011–2100 carbon budget compatible with a 50% chance of achieving that objective of 500 $GtCO_2$ [3]. In this scenario, the temperature peaks at about 1.7°C around the middle of the century and decreases to 1.5°C by 2100 (with 50% probability).

[2] Although it follows certain energy and emissions trends from the "Trends to 2050 – Reference scenario 2016" (EC, 2016) of the EU, the GECO 2018 Reference scenario results for EU28 should not be considered or used as an official European Commission projection of energy and GHG emissions for the European Union.

[3] The scientific literature for scenarios with a high probability of keeping global warming below 1.5°C by 2100 refers to cumulated CO_2 emissions over 2011–2100 ranging from 90 to 415 $GtCO_2$ (see (Rogelj, et al., 2015), (IPCC, Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change, 2014): TS.3.1.2). More recent estimates of the remaining budget for limiting warming to 1.5°C point to cumulated CO_2 emissions over 2018–2100 ranging from 450 (two-thirds chance) to 650 $GtCO_2$ (even chance) (see IPCC 2018; this report's 1.5°C scenario uses a target budget of 240 $GtCO_2$ for 2018-2100. The 2011–2017 CO_2 emissions are estimated at 260 $GtCO_2$.

4 Geographical coverage

In addition to the world aggregate, 37 countries and regions are reported:

Table 1: Energy and GHG balances provided

Europe	CIS	America	Africa	Middle East	Asia	Pacific
EU28	Russia	Argentina	Egypt	Iran	China	Australia
EFTA	Ukraine	Brazil	Algeria & Libya	Saudi Arabia	India	Japan
	Rest CIS	Canada		Turkey	Indonesia	Korea (Rep.)
		Chile	Morocco & Tunisia	Mediterranean Middle-East	Malaysia	New Zealand
Rest Balkans		Mexico			Thailand	
		USA	South Africa	Rest Persian Gulf	Vietnam	Rest Pacific
		Rest Central America	Rest Sub-Saharan Africa		Rest South Asia	
					Rest South-East Asia	
		Rest South America				

Source: POLES-JRC model 2018.

A country mapping of regions is provided further in the section Country and regional codes.

Energy consumption and related GHG emissions of international maritime and aviation bunkers are reported in the world aggregate, but not in the individual country and region balances.

5 Sectors definitions

Energy demand sectors

Primary Energy Demand: total energy demand, sum of Energy for Power Generation, Other Energy Transformation & Losses and Total Final Consumption.

Energy for Power Generation: covers energy for electricity and heat production.

Other Energy Transformation & Losses: energy own use and losses of the energy transformation industry, excluding power and heat generation. Covers fossil fuel and uranium extraction, refining, transport and distribution (including gasworks); coal-, gas- and biomass-to-liquids production; hydrogen and other synthetic fuels production; coke ovens. Also includes transfers and statistical differences.

Total Final Consumption: sum of energy consumption in Industry, Buildings, Agriculture, Transport.

Industry: manufacturing industry, construction, mining; does not include energy transformation activities, includes non-energy uses of energy fuels. Consists of energy-intensive industries – Steel (iron and steel production; includes blast furnaces and coke final consumption), Non-Metallic Minerals and Chemicals (consumption for energy uses of chemicals and petrochemicals industry); Other Industry (energy uses in other manufacturing industry, construction, mining); and Non-Energy Use (non-energy uses of energy fuels in rubber and plastics and chemical feedstocks production).

Buildings: Residential and Services.

Agriculture: energy consumed in agriculture, forestry and fishing activities.

Transport: passenger and freight transport (including public transport and transport services); does not include transport of energy goods and related losses. Country and regional balances refer to domestic consumption, international air and maritime bunkers are included only in the global balance.

Other Transport: waterways, domestic maritime.

Emissions

Total GHG: all anthropogenic greenhouse gases emissions; cover the energy sector, industry, agriculture, land use, land use change and forestry (including sinks)

Total GHG (energy, industry, agriculture): all emissions excluding LULUCF

- CO_2: emissions from energy and industrial processes
- CH_4: emissions from energy, industry and agriculture
- N_2O: emissions from energy, industry and agriculture
- F gases: SF_6, HFCs, PFCs from energy and industry

Total GHG from Energy and Industry: all emissions excluding agriculture and LULUCF

CO_2 Emissions from Fuel Comb.: CO_2 only related to energy combustion (excluding process emissions); sectoral emissions refer to the sectors definition of energy demand (see above).

CO_2 captured (CCS): CO_2 captured and stored coming from power generation (coal, gas or biomass combustion), liquids production (coal, gas or solid biomass conversion), hydrogen production (coal, gas or biomass combustion), industry (coal or biomass combustion) and direct air capture.

Emissions from the different gases are converted into CO_2-equivalent values, using the 100-year global warming potentials of the IPCC Fourth Assessment Report (IPCC (2007)).

6 Data

Table 2 below lists the data used in the modelling: historical data; and exogenous inputs used in the projections

Modelled outputs are signalled as "POLES-JRC model".

Table 2: POLES-JRC model historical data and projections

Series		Historical data	GECO Projections
Population		UN, Eurostat	JRC, EC
GDP, growth		World Bank	EC, IMF, OECD
Other activity drivers	Value added	World Bank	POLES-JRC model
	Mobility, vehicles, households, tons of steel..	Sectoral databases	
Energy resources	Oil, gas, coal	BGR, USGS, WEC, sectoral information	
	Uranium	NEA	
	Biomass	GLOBIOM model	
	Hydro	Enerdata	
	Wind, solar	NREL, DLR	
Energy balances	Reserves, production	BP, Enerdata	
	Demand by sector and fuel, transformation (including. power), losses	Enerdata, IEA	
	Power plants	Platts	
Energy prices	International prices, prices to consumer	Enerdata, IEA	POLES-JRC model
GHG emissions	Energy CO_2	Derived from POLES-JRC energy balances	POLES-JRC model
	Other GHG Annex 1	UNFCCC	POLES-JRC model, GLOBIOM model
	Other GHG Non-Annex 1 (excl. LULUCF)	EDGAR (EC JRC 2017)	POLES-JRC model, GLOBIOM model
	LULUCF Non-Annex 1	National inventories, FAO	POLES-JRC model, GLOBIOM model
Air pollutants emissions		GAINS model (IIASA 2017), EDGAR (EC JRC 2017), IPCC, national sources	GAINS model, national sources
Technology costs		POLES-JRC learning curves based on literature, including but not limited to: ETRI (EC JRC 2014), WEC, IEA, TECHPOL database*	

* developed in several European research projects: SAPIENT, SAPIENTIA, CASCADE MINTS

Source: POLES-JRC model 2018.

7 GECO 2018 Reference scenario

World	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	5 329	6 142	6 954	7 788	8 489	9 047	9 461	1.4%	1.2%	1.1%	0.9%	0.6%	0.4%
GDP per capita (ppp, k$'15)	8	9	12	15	19	24	30	1.5%	2.2%	2.4%	2.6%	2.5%	2.3%
Prices													
International ($'15/boe)													
Coal	21	11	24	25	27	31	34	-5.9%	7.9%	0.2%	1.1%	1.3%	0.7%
Oil	39	38	86	91	89	96	107	-0.2%	8.4%	0.5%	-0.2%	0.8%	1.0%
Gas	25	32	37	52	61	72	78	2.4%	1.5%	3.3%	1.7%	1.6%	0.8%
GHG emissions ($MtCO_2$ eq.)													
Total GHG	**36 247**	**38 006**	**47 509**	**54 880**	**60 768**	**63 788**	**64 871**	**0.5%**	**2.3%**	**1.5%**	**1.0%**	**0.5%**	**0.2%**
Total GHG (energy, industry, agriculture)	**33 343**	**36 023**	**46 183**	**53 609**	**58 553**	**62 133**	**63 628**	**0.8%**	**2.5%**	**1.5%**	**0.9%**	**0.6%**	**0.2%**
CO_2	22 553	25 453	33 769	39 934	43 736	46 239	47 041	1.2%	2.9%	1.7%	0.9%	0.6%	0.2%
CH_4	8 101	7 610	8 804	9 555	10 171	10 724	10 985	-0.6%	1.5%	0.8%	0.6%	0.5%	0.2%
N_2O	2 345	2 439	2 744	2 969	3 270	3 476	3 608	0.4%	1.2%	0.8%	1.0%	0.6%	0.4%
F gases	345	521	865	1 151	1 375	1 694	1 994	4.2%	5.2%	2.9%	1.8%	2.1%	1.6%
Total GHG from Energy and Industry	**27 969**	**30 702**	**40 199**	**47 223**	**51 481**	**54 691**	**55 885**	**0.9%**	**2.7%**	**1.6%**	**0.9%**	**0.6%**	**0.2%**
CO_2 Emissions from Fuel Comb.	**20 841**	**23 412**	**30 692**	**35 883**	**38 740**	**40 530**	**40 750**	**1.2%**	**2.7%**	**1.6%**	**0.8%**	**0.5%**	**0.1%**
Power generation/District heating	6 783	8 474	11 614	13 942	15 349	15 042	14 468	2.3%	3.2%	1.8%	1.0%	-0.2%	-0.4%
Industry	4 092	3 999	6 050	6 427	7 051	7 673	7 565	-0.2%	4.2%	0.6%	0.9%	0.8%	-0.1%
Buildings	2 920	2 728	2 947	2 929	2 684	2 590	2 526	-0.7%	0.8%	-0.1%	-0.9%	-0.4%	-0.3%
Agriculture	409	351	416	461	492	516	535	-1.5%	1.7%	1.0%	0.7%	0.5%	0.3%
Transport	4 640	5 799	7 070	8 526	8 696	8 889	8 813	2.3%	2.0%	1.9%	0.2%	0.2%	-0.1%
Other	1 997	2 061	2 596	3 598	4 467	5 819	6 842	0.3%	2.3%	3.3%	2.2%	2.7%	1.6%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**5**	**44**	**0.0%**	**n.s.**	**n.s.**	**5.7%**	**57.8%**	**23.8%**
Coal	0	0	0	0	0	4	34	n.s.	n.s.	n.s.	-0.9%	n.s.	23.8%
Gas	0	0	0	0	0	1	9	n.s.	n.s.	n.s.	n.s.	n.s.	24.1%
Biomass	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	10.2%	10.4%	11.7%
Energy Balance, by fuel (Mtoe)													
Primary Production	**8 401**	**9 543**	**12 352**	**14 502**	**16 391**	**17 748**	**18 398**	**1.3%**	**2.6%**	**1.6%**	**1.2%**	**0.8%**	**0.4%**
Coal	2 129	2 271	3 588	4 178	4 744	4 752	4 747	0.6%	4.7%	1.5%	1.3%	0.0%	0.0%
Oil	3 271	3 682	4 180	4 851	4 898	5 118	4 968	1.2%	1.3%	1.5%	0.1%	0.4%	-0.3%
Natural gas	1 685	2 075	2 734	3 065	3 368	3 894	4 206	2.1%	2.8%	1.1%	0.9%	1.5%	0.8%
Biomass	924	1 015	1 211	1 462	1 971	1 815	1 424	0.9%	1.8%	1.9%	3.0%	-0.8%	-2.4%
Nuclear[1]	173	223	237	247	254	264	271	2.6%	0.6%	0.4%	0.3%	0.4%	0.3%
Hydro	184	225	296	397	455	492	523	2.0%	2.8%	3.0%	1.4%	0.8%	0.6%
Other renewables	34	53	107	302	700	1 413	2 259	4.3%	7.4%	10.9%	8.8%	7.3%	4.8%
International Bunkers	**237**	**323**	**425**	**565**	**721**	**853**	**950**	**3.2%**	**2.8%**	**2.9%**	**2.5%**	**1.7%**	**1.1%**
Maritime Bunkers	151	206	273	367	451	522	560	3.1%	2.9%	3.0%	2.1%	1.5%	0.7%
Oil	151	202	266	331	330	327	314	2.9%	2.8%	2.2%	0.0%	-0.1%	-0.4%
Gas	0	4	7	36	116	182	223	n.s.	5.5%	17.5%	12.5%	4.6%	2.1%
Aviation Bunkers	86	117	152	198	270	332	390	3.2%	2.6%	2.7%	3.1%	2.1%	1.6%
Oil	86	117	152	196	254	305	355	3.2%	2.6%	2.6%	2.6%	1.8%	1.5%
Regional Energy Demand (excl. bunkers)	**8 164**	**9 220**	**11 927**	**13 939**	**15 690**	**16 934**	**17 506**	**1.2%**	**2.6%**	**1.6%**	**1.2%**	**0.8%**	**0.3%**
Coal	2 129	2 271	3 588	4 178	4 744	4 752	4 747	0.6%	4.7%	1.5%	1.3%	0.0%	0.0%
Oil	3 034	3 363	3 762	4 324	4 314	4 486	4 299	1.0%	1.1%	1.4%	0.0%	0.4%	-0.4%
Natural gas	1 685	2 070	2 727	3 029	3 252	3 712	3 982	2.1%	2.8%	1.1%	0.7%	1.3%	0.7%
Biomass	924	1 015	1 211	1 462	1 971	1 815	1 424	0.9%	1.8%	1.9%	3.0%	-0.8%	-2.4%
Nuclear[1]	173	223	237	247	254	264	271	2.6%	0.6%	0.4%	0.3%	0.4%	0.3%
Hydro	184	225	296	397	455	492	523	2.0%	2.8%	3.0%	1.4%	0.8%	0.6%
Other renewables	34	53	107	302	700	1 413	2 259	4.3%	7.4%	10.9%	8.8%	7.3%	4.8%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**8 401**	**9 543**	**12 352**	**14 502**	**16 391**	**17 748**	**18 398**	**1.3%**	**2.6%**	**1.6%**	**1.2%**	**0.8%**	**0.4%**
Energy for Power Generation	**2 416**	**3 009**	**4 144**	**5 125**	**5 950**	**6 644**	**7 352**	**2.2%**	**3.3%**	**2.1%**	**1.5%**	**1.1%**	**1.0%**
Other Energy Transformation & Losses	**791**	**741**	**1 132**	**1 493**	**2 238**	**2 643**	**2 698**	**-0.7%**	**4.3%**	**2.8%**	**4.1%**	**1.7%**	**0.2%**
Final consumption (incl. bunkers)	**6 372**	**7 148**	**8 962**	**10 377**	**11 209**	**12 077**	**12 631**	**1.2%**	**2.3%**	**1.5%**	**0.8%**	**0.7%**	**0.4%**
Steel, Non-Met. Minerals and Chem.	838	916	1 412	1 576	1 795	1 864	1 744	0.9%	4.4%	1.1%	1.3%	0.4%	-0.7%
Other Industry	1 105	1 078	1 361	1 638	1 909	2 241	2 512	-0.3%	2.4%	1.9%	1.5%	1.6%	1.1%
Non-Energy Use	495	633	787	890	987	1 077	1 116	2.5%	2.2%	1.2%	1.0%	0.9%	0.4%
Residential	1 630	1 795	1 979	2 149	2 147	2 142	2 099	1.0%	1.0%	0.8%	0.0%	0.0%	-0.2%
Services	579	621	816	941	998	1 111	1 309	0.7%	2.8%	1.4%	0.6%	1.1%	1.7%
Agriculture	163	144	177	207	230	251	269	-1.2%	2.1%	1.6%	1.1%	0.9%	0.7%
Road	1 130	1 439	1 806	2 157	2 105	2 174	2 234	2.4%	2.3%	1.8%	-0.2%	0.3%	0.3%
Rail	59	47	51	60	69	77	86	-2.2%	0.8%	1.6%	1.3%	1.2%	1.1%
Aviation	182	227	252	324	428	510	579	2.2%	1.1%	2.5%	2.8%	1.8%	1.3%
Other Transport	190	248	320	435	541	630	683	2.7%	2.6%	3.1%	2.2%	1.5%	0.8%

[1] Nuclear energy is accounted as primary electricity

World	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**2 027**	**2 513**	**3 510**	**4 186**	**4 556**	**4 506**	**4 346**	**2.2%**	**3.4%**	**1.8%**	**0.9%**	**-0.1%**	**-0.4%**
Coal	1 150	1 509	2 114	2 561	2 896	2 690	2 592	2.7%	3.4%	1.9%	1.2%	-0.7%	-0.4%
Oil	342	300	249	394	441	585	569	-1.3%	-1.8%	4.7%	1.1%	2.9%	-0.3%
Gas	479	650	1 031	1 069	1 037	1 062	1 019	3.1%	4.7%	0.4%	-0.3%	0.2%	-0.4%
Biomass & Waste	53	51	110	155	167	138	119	-0.4%	8.0%	3.5%	0.7%	-1.9%	-1.5%
Other	3	4	6	7	15	30	47	3.6%	2.8%	1.5%	8.3%	7.2%	4.4%
Gross Elec. Generation (TWh_e)	**11 947**	**15 587**	**21 641**	**28 462**	**35 101**	**42 564**	**51 396**	**2.7%**	**3.3%**	**2.8%**	**2.1%**	**1.9%**	**1.9%**
Coal	4 424	6 002	8 659	11 023	12 795	12 179	12 167	3.1%	3.7%	2.4%	1.5%	-0.5%	0.0%
of which CCS	0	0	0	0	0	5	38	n.s.	n.s.	n.s.	-0.4%	n.s.	23.1%
Oil	1 339	1 225	945	1 630	1 886	2 607	2 613	-0.9%	-2.6%	5.6%	1.5%	3.3%	0.0%
Gas	1 754	2 753	4 835	5 258	5 332	5 614	5 544	4.6%	5.8%	0.8%	0.1%	0.5%	-0.1%
of which CCS	0	0	0	0	0	2	23	n.s.	n.s.	n.s.	n.s.	n.s.	25.5%
Biomass & Waste	130	164	366	506	591	526	506	2.4%	8.4%	3.3%	1.6%	-1.2%	-0.4%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	2 013	2 591	2 756	2 871	2 954	3 065	3 148	2.6%	0.6%	0.4%	0.3%	0.4%	0.3%
Hydro	2 191	2 699	3 529	4 865	5 550	5 974	6 353	2.1%	2.7%	3.3%	1.3%	0.7%	0.6%
Wind	4	31	341	1 616	3 830	6 503	9 248	23.2%	27.0%	16.8%	9.0%	5.4%	3.6%
Solar	1	1	37	576	1 826	5 284	10 059	7.0%	39.3%	31.6%	12.2%	11.2%	6.6%
Other	91	120	171	117	338	812	1 757	2.8%	3.6%	-3.7%	11.2%	9.2%	8.0%
Generation Capacity (GW_e)	**2 814**	**3 585**	**5 286**	**7 215**	**9 987**	**14 033**	**19 028**	**2.5%**	**4.0%**	**3.2%**	**3.3%**	**3.5%**	**3.1%**
Coal	937	1 149	1 718	2 012	2 427	2 558	2 847	2.1%	4.1%	1.6%	1.9%	0.5%	1.1%
of which CCS	0	0	0	0	0	1	6	n.s.	n.s.	n.s.	0.0%	n.s.	23.5%
Oil	415	417	403	451	631	981	1 458	0.1%	-0.3%	1.1%	3.4%	4.5%	4.0%
Gas	507	784	1 397	1 481	1 597	1 684	1 675	4.5%	6.0%	0.6%	0.8%	0.5%	-0.1%
of which CCS	0	0	0	0	0	0	4	n.s.	n.s.	n.s.	n.s.	n.s.	26.5%
Biomass & Waste	48	36	82	101	115	98	78	-3.0%	8.7%	2.0%	1.3%	-1.6%	-2.2%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	36.7%
Nuclear	293	363	382	400	409	425	437	2.1%	0.5%	0.5%	0.2%	0.4%	0.3%
Hydro	605	810	1 070	1 458	1 640	1 757	1 867	3.0%	2.8%	3.1%	1.2%	0.7%	0.6%
Wind	2	17	184	731	1 632	2 639	3 514	24.4%	27.0%	14.8%	8.4%	4.9%	2.9%
Solar	0	1	38	561	1 489	3 804	7 018	9.4%	42.7%	31.0%	10.3%	9.8%	6.3%
Other	6	9	11	19	47	88	135	3.8%	2.8%	5.4%	9.6%	6.4%	4.3%
Total Final Consumption (Mtoe)	**6 372**	**7 148**	**8 962**	**10 377**	**11 209**	**12 077**	**12 631**	**1.2%**	**2.3%**	**1.5%**	**0.8%**	**0.7%**	**0.4%**
Coal	849	659	1 204	1 227	1 344	1 427	1 341	-2.5%	6.2%	0.2%	0.9%	0.6%	-0.6%
Oil	2 654	3 182	3 653	4 206	4 234	4 255	4 091	1.8%	1.4%	1.4%	0.1%	0.0%	-0.4%
Gas	893	1 071	1 281	1 441	1 571	1 815	2 103	1.8%	1.8%	1.2%	0.9%	1.5%	1.5%
Electricity	832	1 087	1 533	1 996	2 458	2 965	3 535	2.7%	3.5%	2.7%	2.1%	1.9%	1.8%
Heat	339	257	295	355	394	436	457	-2.7%	1.4%	1.9%	1.1%	1.0%	0.5%
Biomass & Other	804	892	995	1 153	1 208	1 179	1 104	1.0%	1.1%	1.5%	0.5%	-0.2%	-0.7%
Industry (incl. non-energy use)	**2 438**	**2 627**	**3 559**	**4 105**	**4 691**	**5 182**	**5 372**	**0.7%**	**3.1%**	**1.4%**	**1.3%**	**1.0%**	**0.4%**
Coal	589	540	1 047	1 088	1 227	1 327	1 260	-0.9%	6.9%	0.4%	1.2%	0.8%	-0.5%
Oil	715	825	914	1 004	1 084	1 176	1 197	1.4%	1.0%	0.9%	0.8%	0.8%	0.2%
Gas	452	532	643	784	831	901	964	1.6%	1.9%	2.0%	0.6%	0.8%	0.7%
Electricity	388	462	639	862	1 147	1 411	1 638	1.8%	3.3%	3.0%	2.9%	2.1%	1.5%
Heat	163	106	127	130	140	149	152	-4.2%	1.8%	0.2%	0.8%	0.6%	0.2%
Biomass & Other	132	163	189	236	261	218	161	2.1%	1.5%	2.3%	1.0%	-1.8%	-3.0%
Buildings	**2 209**	**2 416**	**2 795**	**3 090**	**3 145**	**3 252**	**3 409**	**0.9%**	**1.5%**	**1.0%**	**0.2%**	**0.3%**	**0.5%**
Coal	233	107	141	122	102	86	69	-7.4%	2.7%	-1.4%	-1.8%	-1.6%	-2.2%
Oil	310	337	307	329	304	302	306	0.9%	-0.9%	0.7%	-0.8%	-0.1%	0.1%
Gas	434	527	605	600	563	552	549	2.0%	1.4%	-0.1%	-0.6%	-0.2%	-0.1%
Electricity	397	580	834	1 049	1 140	1 290	1 539	3.9%	3.7%	2.3%	0.8%	1.2%	1.8%
Heat	176	150	168	225	254	287	305	-1.6%	1.1%	3.0%	1.2%	1.3%	0.6%
Biomass & Other	659	714	740	765	783	734	641	0.8%	0.4%	0.3%	0.2%	-0.6%	-1.4%
Agriculture	**163**	**144**	**177**	**207**	**230**	**251**	**269**	**-1.2%**	**2.1%**	**1.6%**	**1.1%**	**0.9%**	**0.7%**
Coal	14	8	13	14	12	11	10	-6.1%	5.5%	0.5%	-1.1%	-1.0%	-1.0%
Oil	106	97	109	121	132	141	148	-0.9%	1.2%	1.1%	0.9%	0.7%	0.5%
Gas	7	6	8	10	10	11	11	-2.1%	3.1%	1.8%	0.5%	0.5%	0.4%
Electricity	30	29	39	54	65	76	87	-0.3%	3.1%	3.2%	1.9%	1.6%	1.4%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	6	5	8	9	10	12	13	-1.7%	5.3%	0.9%	1.6%	1.3%	1.0%
Transport (incl. bunkers)	**1 561**	**1 960**	**2 430**	**2 975**	**3 142**	**3 392**	**3 581**	**2.3%**	**2.2%**	**2.0%**	**0.5%**	**0.8%**	**0.5%**
Coal	13	4	3	2	2	2	1	-10.1%	-2.7%	-2.9%	-2.0%	-2.0%	-1.9%
Oil	1 524	1 923	2 323	2 752	2 714	2 636	2 440	2.4%	1.9%	1.7%	-0.1%	-0.3%	-0.8%
Gas	0	6	25	47	166	351	579	31.5%	15.0%	6.5%	13.4%	7.8%	5.1%
Electricity	17	16	20	31	105	189	271	-0.7%	2.5%	4.2%	13.1%	6.0%	3.7%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	8	11	58	143	155	214	290	3.9%	18.1%	9.5%	0.8%	3.3%	3.1%
Other Energy Transformation & Losses [2]	**791**	**741**	**1 132**	**1 493**	**2 238**	**2 643**	**2 698**	**-0.7%**	**4.3%**	**2.8%**	**4.1%**	**1.7%**	**0.2%**

[2] includes statistical differences

EU28	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	478	487	503	516	524	528	528	0.2%	0.3%	0.3%	0.2%	0.1%	0.0%
GDP per capita (ppp, k$'15)	24	30	33	37	42	47	55	2.0%	1.2%	1.1%	1.2%	1.2%	1.5%
Prices													
International/Regional ($'15/boe)													
Coal	4	2	3	3	3	4	4	-5.3%	3.6%	-1.6%	1.0%	2.0%	0.8%
Oil	39	38	86	91	89	96	107	-0.2%	8.4%	0.5%	-0.2%	0.8%	1.0%
Gas	24	28	33	47	55	62	64	1.5%	1.6%	3.6%	1.4%	1.3%	0.4%
GHG emissions ($MtCO_2$ eq.)													
Total GHG	**5 205**	**4 771**	**4 449**	**4 022**	**3 316**	**2 894**	**2 664**	**-0.9%**	**-0.7%**	**-1.0%**	**-1.9%**	**-1.4%**	**-0.8%**
Total GHG (energy, industry, agriculture)	**5 457**	**5 034**	**4 670**	**4 224**	**3 526**	**3 101**	**2 856**	**-0.8%**	**-0.7%**	**-1.0%**	**-1.8%**	**-1.3%**	**-0.8%**
CO_2	4 259	4 028	3 808	3 480	2 908	2 489	2 265	-0.6%	-0.6%	-0.9%	-1.8%	-1.5%	-0.9%
CH_4	736	614	498	398	343	333	310	-1.8%	-2.1%	-2.2%	-1.5%	-0.3%	-0.7%
N_2O	398	319	253	251	250	253	253	-2.2%	-2.3%	-0.1%	0.0%	0.1%	0.0%
F gases	63	73	111	95	25	27	28	1.5%	4.2%	-1.5%	-12.4%	0.5%	0.4%
Total GHG from Energy and Industry	**4 903**	**4 559**	**4 234**	**3 768**	**3 056**	**2 620**	**2 365**	**-0.7%**	**-0.7%**	**-1.2%**	**-2.1%**	**-1.5%**	**-1.0%**
CO_2 Emissions from Fuel Comb.	**3 974**	**3 752**	**3 568**	**3 254**	**2 693**	**2 284**	**2 079**	**-0.6%**	**-0.5%**	**-0.9%**	**-1.9%**	**-1.6%**	**-0.9%**
Power generation/District heating	1 415	1 284	1 234	1 096	811	570	511	-1.0%	-0.4%	-1.2%	-3.0%	-3.5%	-1.1%
Industry	748	604	456	430	409	385	362	-2.1%	-2.8%	-0.6%	-0.5%	-0.6%	-0.6%
Buildings	724	651	662	537	454	399	339	-1.1%	0.2%	-2.1%	-1.7%	-1.3%	-1.6%
Agriculture	84	74	62	57	59	61	64	-1.3%	-1.7%	-0.7%	0.4%	0.4%	0.4%
Transport	764	900	920	873	686	559	471	1.7%	0.2%	-0.5%	-2.4%	-2.0%	-1.7%
Other	240	239	234	262	273	308	332	-0.1%	-0.2%	1.1%	0.4%	1.2%	0.7%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**4**	**36**	**n.s.**	**n.s.**	**n.s.**	**-0.9%**	**n.s.**	**25.2%**
Coal	0	0	0	0	0	3	28	n.s.	n.s.	n.s.	-0.9%	n.s.	24.5%
Gas	0	0	0	0	0	1	7	n.s.	n.s.	n.s.	n.s.	n.s.	27.2%
Biomass	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Energy Balance, by fuel (Mtoe)													
Primary Production	**735**	**752**	**661**	**568**	**580**	**590**	**600**	**0.2%**	**-1.3%**	**-1.5%**	**0.2%**	**0.2%**	**0.2%**
Coal	312	213	163	140	113	101	93	-3.7%	-2.6%	-1.5%	-2.2%	-1.1%	-0.7%
Oil	127	160	92	57	37	25	18	2.3%	-5.4%	-4.6%	-4.2%	-3.7%	-3.5%
Natural gas	152	195	149	90	98	100	94	2.5%	-2.7%	-4.9%	0.8%	0.2%	-0.6%
Biomass	47	66	125	118	120	97	79	3.5%	6.6%	-0.6%	0.2%	-2.1%	-2.1%
Nuclear[1]	68	81	79	69	67	65	43	1.7%	-0.3%	-1.4%	-0.3%	-0.3%	-3.9%
Hydro	25	31	32	32	34	35	35	1.9%	0.5%	0.0%	0.6%	0.2%	0.0%
Other renewables	3	6	21	62	112	168	238	7.9%	12.7%	11.2%	6.1%	4.2%	3.6%
Net Imports	**803**	**790**	**901**	**905**	**767**	**659**	**612**						
Coal	133	100	112	129	97	60	60						
Oil	481	465	478	460	398	343	288						
Natural gas	143	201	298	285	240	234	245						
Biomass	0	0	3	23	28	11	9						
Biofuels	0	0	2	3	2	1	1						
Electricity	46	24	8	5	2	10	10						
Primary Energy Demand[2]	**1 537**	**1 542**	**1 563**	**1 473**	**1 347**	**1 248**	**1 212**	0.0%	**0.1%**	**-0.6%**	**-0.9%**	**-0.8%**	**-0.3%**
Coal	444	313	275	269	210	161	153	-3.4%	-1.3%	-0.2%	-2.5%	-2.6%	-0.5%
Oil	608	624	569	518	435	369	306	0.3%	-0.9%	-0.9%	-1.7%	-1.6%	-1.8%
Natural gas	295	396	446	375	338	334	339	3.0%	1.2%	-1.7%	-1.0%	-0.1%	0.2%
Biomass	47	67	128	141	148	107	87	3.5%	6.7%	1.0%	0.5%	-3.2%	-2.1%
Nuclear[1]	68	81	79	69	67	65	43	1.7%	-0.3%	-1.4%	-0.3%	-0.3%	-3.9%
Hydro	25	31	32	32	34	35	35	1.9%	0.5%	0.0%	0.6%	0.2%	0.0%
Other renewables	3	6	21	62	112	168	238	7.9%	12.7%	11.2%	6.1%	4.2%	3.6%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**1 537**	**1 542**	**1 563**	**1 473**	**1 347**	**1 248**	**1 212**	**0.0%**	**0.1%**	**-0.6%**	**-0.9%**	**-0.8%**	**-0.3%**
Energy for Power Generation	**490**	**503**	**547**	**524**	**489**	**467**	**509**	**0.3%**	**0.8%**	**-0.4%**	**-0.7%**	**-0.4%**	**0.9%**
Other Energy Transformation & Losses	**136**	**102**	**105**	**116**	**111**	**120**	**121**	**-2.8%**	**0.3%**	**1.0%**	**-0.4%**	**0.8%**	**0.0%**
Final consumption	**1 152**	**1 201**	**1 224**	**1 154**	**1 089**	**1 026**	**975**	**0.4%**	**0.2%**	**-0.6%**	**-0.6%**	**-0.6%**	**-0.5%**
Steel, Non-Met. Minerals and Chem.	190	167	141	145	153	146	140	-1.3%	-1.7%	0.3%	0.5%	-0.5%	-0.4%
Other Industry	175	163	145	145	149	148	154	-0.8%	-1.1%	-0.1%	0.3%	0.0%	0.4%
Non-Energy Use	100	115	108	98	93	93	84	1.4%	-0.6%	-1.0%	-0.5%	0.0%	-1.1%
Residential	276	290	319	282	263	241	215	0.5%	1.0%	-1.2%	-0.7%	-0.9%	-1.1%
Services	118	133	164	149	145	139	136	1.2%	2.1%	-0.9%	-0.2%	-0.4%	-0.2%
Agriculture	33	29	27	26	27	28	29	-1.1%	-1.0%	-0.4%	0.5%	0.5%	0.5%
Road	237	281	299	292	240	212	196	1.7%	0.6%	-0.2%	-1.9%	-1.2%	-0.8%
Rail	10	10	8	8	8	8	9	0.1%	-1.7%	-0.6%	0.5%	0.5%	0.7%
Aviation	6	7	7	7	6	6	6	2.5%	-0.4%	-0.4%	-0.8%	-0.6%	-0.1%
Other Transport	7	6	6	4	4	4	5	-1.1%	-0.3%	-3.2%	0.2%	0.1%	0.3%

[1] Nuclear energy is accounted as primary electricity

Note: the GECO 2018 Reference scenario results for EU28 should not be considered or used as an official European Commission projection of energy and GHG emissions for the European Union.

EU28	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**393**	**385**	**415**	**362**	**277**	**202**	**196**	**-0.2%**	**0.7%**	**-1.4%**	**-2.7%**	**-3.1%**	**-0.3%**
Coal	282	234	208	200	134	80	69	-1.8%	-1.2%	-0.4%	-3.9%	-5.0%	-1.4%
Oil	55	41	24	19	16	15	15	-2.9%	-5.5%	-2.2%	-1.4%	-1.0%	0.2%
Gas	50	95	142	103	97	89	94	6.7%	4.1%	-3.2%	-0.6%	-0.8%	0.5%
Biomass & Waste	6	15	41	40	29	16	15	9.8%	10.9%	-0.3%	-3.1%	-5.8%	-0.9%
Other	0	0	0	1	1	2	3	4.0%	1.6%	1.0%	0.9%	10.8%	7.4%
Gross Elec. Generation (TWh_e)	**2 610**	**3 047**	**3 379**	**3 459**	**3 678**	**3 870**	**4 162**	**1.6%**	**1.0%**	**0.2%**	**0.6%**	**0.5%**	**0.7%**
Coal	1 050	966	861	847	580	361	322	-0.8%	-1.1%	-0.2%	-3.7%	-4.6%	-1.1%
of which CCS	0	0	0	0	0	4	35	n.s.	n.s.	n.s.	-0.4%	n.s.	23.2%
Oil	224	181	87	81	73	67	70	-2.1%	-7.1%	-0.7%	-1.1%	-0.7%	0.4%
Gas	193	480	765	555	514	489	533	9.5%	4.8%	-3.2%	-0.8%	-0.5%	0.9%
of which CCS	0	0	0	0	0	2	21	n.s.	n.s.	n.s.	n.s.	n.s.	26.9%
Biomass & Waste	20	46	143	139	110	63	63	8.9%	12.0%	-0.3%	-2.3%	-5.4%	-0.1%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	795	945	917	798	775	750	502	1.7%	-0.3%	-1.4%	-0.3%	-0.3%	-3.9%
Hydro	309	387	408	418	440	447	441	2.3%	0.5%	0.2%	0.5%	0.2%	-0.1%
Wind	1	22	149	429	758	942	1 175	39.8%	21.0%	11.1%	5.8%	2.2%	2.2%
Solar	0	0	26	174	384	663	912	24.1%	n.s.	21.1%	8.2%	5.6%	3.2%
Other	19	19	23	18	43	88	144	0.3%	1.7%	-2.5%	9.1%	7.3%	5.1%
Generation Capacity (GW_e)	**654**	**717**	**905**	**1 106**	**1 437**	**1 761**	**1 979**	**0.9%**	**2.4%**	**2.0%**	**2.7%**	**2.1%**	**1.2%**
Coal	223	201	192	157	123	85	82	-1.0%	-0.4%	-2.0%	-2.4%	-3.6%	-0.3%
of which CCS	0	0	0	0	0	1	5	n.s.	n.s.	n.s.	0.0%	n.s.	23.6%
Oil	94	81	65	51	63	76	94	-1.4%	-2.2%	-2.5%	2.2%	1.9%	2.2%
Gas	65	129	219	222	241	256	242	7.1%	5.4%	0.1%	0.8%	0.6%	-0.6%
of which CCS	0	0	0	0	0	0	3	n.s.	n.s.	n.s.	n.s.	n.s.	27.7%
Biomass & Waste	7	10	28	33	36	27	15	3.0%	10.9%	1.7%	0.9%	-2.9%	-5.6%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	36.3%
Nuclear	126	137	131	114	110	105	68	0.9%	-0.4%	-1.4%	-0.4%	-0.5%	-4.2%
Hydro	138	146	153	166	165	159	152	0.5%	0.5%	0.8%	0.0%	-0.3%	-0.5%
Wind	1	12	85	207	354	435	480	36.9%	21.3%	9.3%	5.5%	2.1%	1.0%
Solar	0	0	31	152	333	599	820	36.9%	n.s.	17.4%	8.2%	6.1%	3.2%
Other	0	1	1	5	12	19	24	2.0%	2.3%	19.8%	10.5%	4.2%	2.6%
Total Final Consumption[2] (Mtoe)	**1 152**	**1 201**	**1 224**	**1 154**	**1 089**	**1 026**	**975**	**0.4%**	**0.2%**	**-0.6%**	**-0.6%**	**-0.6%**	**-0.5%**
Coal	141	74	59	57	56	53	53	-6.3%	-2.2%	-0.2%	-0.2%	-0.5%	0.0%
Oil	503	543	505	460	385	325	264	0.8%	-0.7%	-0.9%	-1.8%	-1.7%	-2.0%
Gas	229	272	277	240	212	210	209	1.8%	0.2%	-1.4%	-1.2%	-0.1%	-0.1%
Electricity	186	217	244	247	263	277	295	1.6%	1.2%	0.1%	0.6%	0.5%	0.7%
Heat	55	46	55	54	60	68	74	-1.7%	1.9%	-0.3%	1.1%	1.2%	0.9%
Biomass & Other	39	49	83	95	112	93	78	2.3%	5.3%	1.4%	1.7%	-1.9%	-1.7%
Industry (incl. non-energy use)	**466**	**444**	**395**	**387**	**395**	**388**	**379**	**-0.5%**	**-1.2%**	**-0.2%**	**0.2%**	**-0.2%**	**-0.2%**
Coal	93	61	44	48	49	49	50	-4.2%	-3.1%	0.7%	0.4%	-0.1%	0.3%
Oil	140	147	127	108	101	96	85	0.5%	-1.4%	-1.7%	-0.7%	-0.5%	-1.2%
Gas	113	117	96	95	88	85	79	0.3%	-1.9%	-0.1%	-0.8%	-0.2%	-0.8%
Electricity	85	91	88	95	111	125	137	0.7%	-0.3%	0.7%	1.6%	1.1%	1.0%
Heat	21	12	16	16	15	15	15	-5.6%	3.3%	-0.3%	-0.2%	-0.3%	-0.2%
Biomass & Other	14	17	22	26	31	19	13	1.9%	2.6%	1.8%	1.7%	-4.9%	-3.8%
Buildings	**394**	**423**	**483**	**431**	**409**	**380**	**351**	**0.7%**	**1.3%**	**-1.1%**	**-0.5%**	**-0.7%**	**-0.8%**
Coal	46	12	13	9	6	4	2	-12.8%	1.1%	-3.9%	-3.8%	-4.0%	-4.5%
Oil	89	80	63	54	52	51	45	-1.1%	-2.4%	-1.4%	-0.4%	-0.3%	-1.2%
Gas	110	150	176	141	113	96	80	3.2%	1.6%	-2.2%	-2.2%	-1.7%	-1.8%
Electricity	90	116	146	141	132	125	123	2.5%	2.3%	-0.3%	-0.7%	-0.6%	-0.1%
Heat	34	34	39	38	45	53	60	0.1%	1.4%	-0.4%	1.6%	1.7%	1.2%
Biomass & Other	24	30	46	47	61	52	41	2.3%	4.2%	0.3%	2.6%	-1.5%	-2.3%
Agriculture	**33**	**29**	**27**	**26**	**27**	**28**	**29**	**-1.1%**	**-1.0%**	**-0.4%**	**0.5%**	**0.5%**	**0.5%**
Coal	2	1	1	1	1	1	1	-4.9%	2.0%	-3.5%	-2.0%	-2.0%	-2.0%
Oil	21	19	15	14	15	16	16	-1.0%	-2.4%	-0.4%	0.5%	0.5%	0.5%
Gas	5	4	4	4	4	4	4	-0.9%	-0.3%	-1.2%	0.3%	0.3%	0.4%
Electricity	5	4	5	5	5	6	6	-1.6%	1.2%	0.6%	0.9%	0.9%	0.9%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	1	1	2	2	2	2	2	2.4%	4.4%	0.2%	0.0%	0.0%	0.0%
Transport	**259**	**304**	**320**	**310**	**258**	**230**	**215**	**1.6%**	**0.5%**	**-0.3%**	**-1.8%**	**-1.1%**	**-0.7%**
Coal	0	0	0	0	0	0	0	-26.4%	1.7%	-2.9%	0.0%	0.0%	0.0%
Oil	253	297	300	284	217	163	118	1.6%	0.1%	-0.6%	-2.6%	-2.9%	-3.1%
Gas	0	0	0	0	8	25	46	5.0%	3.9%	-2.0%	36.9%	12.9%	6.1%
Electricity	5	6	5	6	14	22	29	1.3%	-1.4%	1.4%	8.8%	4.4%	2.8%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	1	13	20	19	21	23	n.s.	34.2%	4.2%	-0.5%	0.7%	0.9%
Other Energy Transformation & Losses[3]	**136**	**102**	**105**	**116**	**111**	**120**	**121**	**-2.8%**	**0.3%**	**1.0%**	**-0.4%**	**0.8%**	**0.0%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Note: the GECO 2018 Reference scenario results for EU28 should not be considered or used as an official European Commission projection of energy and GHG emissions for the European Union.

EFTA	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	11	12	13	14	15	16	17	0.7%	0.9%	1.0%	0.7%	0.5%	0.5%
GDP per capita (ppp, k$'15)	40	46	50	54	61	69	77	1.5%	0.7%	0.8%	1.1%	1.3%	1.2%
Prices													
International/Regional ($'15/boe)													
Coal	3	2	3	2	2	3	3	-3.4%	3.6%	-2.8%	1.1%	2.3%	1.0%
Oil	39	38	86	91	89	96	107	-0.2%	8.4%	0.5%	-0.2%	0.8%	1.0%
Gas	24	28	33	47	55	62	64	1.5%	1.6%	3.6%	1.4%	1.3%	0.4%
GHG emissions ($MtCO_2$ eq.)													
Total GHG	**106**	**96**	**89**	**91**	**89**	**110**	**108**	**-0.9%**	**-0.8%**	**0.2%**	**-0.1%**	**2.1%**	**-0.1%**
Total GHG (energy, industry, agriculture)	**109**	**110**	**113**	**112**	**108**	**126**	**121**	**0.1%**	**0.3%**	**-0.1%**	**-0.4%**	**1.6%**	**-0.4%**
CO_2	80	85	90	91	88	106	102	0.6%	0.6%	0.1%	-0.3%	1.8%	-0.4%
CH_4	15	14	14	12	12	13	13	-0.6%	-0.3%	-1.2%	0.1%	0.4%	0.0%
N_2O	8	7	6	6	6	6	6	-0.7%	-2.1%	-0.5%	0.5%	0.4%	-0.9%
F gases	7	4	3	3	1	1	1	-5.6%	-1.8%	-0.7%	-10.6%	0.8%	0.1%
Total GHG from Energy and Industry	**94**	**96**	**99**	**97**	**91**	**109**	**104**	**0.2%**	**0.3%**	**-0.1%**	**-0.6%**	**1.7%**	**-0.4%**
CO_2 Emissions from Fuel Comb.	**67**	**70**	**77**	**78**	**74**	**89**	**85**	**0.5%**	**0.9%**	**0.1%**	**-0.5%**	**2.0%**	**-0.5%**
Power generation/District heating	1	1	3	4	4	7	9	-2.5%	13.3%	4.7%	1.3%	4.5%	2.4%
Industry	10	10	10	9	9	10	10	-0.4%	0.1%	-0.7%	0.2%	0.6%	0.5%
Buildings	20	18	18	13	11	9	7	-1.1%	0.2%	-3.0%	-1.9%	-2.2%	-2.5%
Agriculture	2	3	3	2	2	2	1	2.1%	-0.7%	-1.5%	-1.0%	-2.2%	-3.7%
Transport	25	28	31	28	22	18	15	1.1%	1.0%	-0.9%	-2.4%	-2.1%	-1.8%
Other	8	11	13	21	25	44	43	3.0%	1.3%	4.9%	1.8%	6.1%	-0.4%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**21.0%**
Coal	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	25.0%
Gas	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	18.4%
Biomass	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	18.7%	16.2%
Energy Balance, by fuel (Mtoe)													
Primary Production	**119**	**222**	**207**	**190**	**144**	**92**	**59**	**6.4%**	**-0.7%**	**-0.9%**	**-2.7%**	**-4.4%**	**-4.3%**
Coal	0	0	1	1	1	2	2	8.7%	12.1%	1.1%	-0.6%	1.0%	1.9%
Oil	79	157	91	70	41	25	16	7.1%	-5.3%	-2.7%	-5.0%	-4.9%	-4.6%
Natural gas	22	42	90	92	74	38	15	6.8%	8.0%	0.1%	-2.1%	-6.6%	-8.5%
Biomass	3	3	4	3	3	3	3	2.4%	2.0%	-1.4%	-1.5%	0.0%	-0.6%
Nuclear[1]	2	2	2	2	1	0	0	1.1%	0.0%	-2.4%	-8.7%	-30.4%	0.9%
Hydro	13	16	14	16	17	17	17	1.8%	-1.1%	1.3%	0.2%	0.1%	0.2%
Other renewables	0	1	4	6	7	8	7	16.0%	13.1%	3.9%	1.9%	1.1%	-1.7%
Net Imports	**- 94**	**- 197**	**- 139**	**- 146**	**- 101**	**- 42**	**- 13**						
Coal	1	1	0	0	1	2	2						
Oil	- 59	- 136	- 67	- 53	- 28	- 12	- 4						
Natural gas	- 18	- 35	- 80	- 75	- 57	- 14	6						
Biomass	0	0	0	1	2	2	2						
Biofuels	0	0	0	0	0	0	0						
Electricity	- 18	- 26	8	- 20	- 19	- 18	- 18						
Primary Energy Demand[2]	**26**	**25**	**68**	**43**	**43**	**50**	**46**	-0.3%	**10.7%**	**-4.4%**	**0.0%**	**1.4%**	**-0.7%**
Coal	1	1	1	1	2	3	4	-0.9%	-2.2%	4.7%	4.8%	3.0%	2.0%
Oil	21	21	24	17	14	13	12	0.0%	1.5%	-3.3%	-2.1%	-0.5%	-0.8%
Natural gas	4	7	11	17	17	23	21	6.2%	5.0%	4.4%	0.4%	2.9%	-0.9%
Biomass	3	3	4	4	5	4	4	2.4%	2.1%	0.4%	1.9%	-1.0%	-0.2%
Nuclear[1]	2	2	2	2	1	0	0	1.1%	0.0%	-2.4%	-8.7%	-30.4%	0.9%
Hydro	13	16	14	16	17	17	17	1.8%	-1.1%	1.3%	0.2%	0.1%	0.2%
Other renewables	0	1	4	6	7	8	7	16.0%	13.1%	3.9%	1.9%	1.1%	-1.7%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**26**	**25**	**68**	**43**	**43**	**50**	**46**	**-0.3%**	**10.7%**	**-4.4%**	**0.0%**	**1.4%**	**-0.7%**
Energy for Power Generation	**17**	**21**	**23**	**27**	**27**	**28**	**28**	**2.1%**	**1.0%**	**1.6%**	**0.1%**	**0.2%**	**0.2%**
Other Energy Transformation & Losses	**- 15**	**- 21**	**19**	**- 7**	**- 5**	**4**	**2**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**-4.2%**
Final consumption	**37**	**41**	**45**	**43**	**40**	**39**	**37**	**1.0%**	**0.9%**	**-0.5%**	**-0.5%**	**-0.4%**	**-0.3%**
Steel, Non-Met. Minerals and Chem.	4	4	4	4	5	5	5	1.6%	-0.5%	0.9%	0.7%	0.1%	-0.5%
Other Industry	6	7	7	8	9	10	11	1.2%	0.2%	0.4%	1.3%	1.4%	1.3%
Non-Energy Use	2	3	3	3	3	2	2	1.3%	0.2%	0.9%	-0.9%	-1.4%	-2.3%
Residential	10	10	11	10	8	7	6	-0.1%	1.4%	-1.5%	-1.3%	-1.4%	-1.4%
Services	5	6	7	6	6	5	4	0.9%	1.9%	-1.2%	-1.0%	-1.3%	-1.2%
Agriculture	1	1	1	1	1	1	1	3.4%	-0.6%	-0.7%	0.8%	0.7%	0.6%
Road	8	9	10	9	7	7	6	1.4%	0.9%	-0.4%	-2.0%	-1.3%	-0.7%
Rail	0	0	0	0	0	0	0	-0.3%	1.4%	0.0%	1.1%	1.1%	1.0%
Aviation	0	0	0	0	0	0	0	5.3%	1.4%	-0.1%	-1.4%	-0.8%	-0.9%
Other Transport	1	1	1	1	1	1	1	0.9%	1.3%	-3.4%	0.5%	0.0%	-0.6%

[1] Nuclear energy is accounted as primary electricity

EFTA	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**1**	**1**	**3**	**3**	**3**	**4**	**5**	**2.8%**	**7.6%**	**2.1%**	**0.0%**	**0.7%**	**3.1%**
Coal	0	0	0	0	1	1	1	-5.0%	1.6%	26.4%	8.4%	4.7%	3.8%
Oil	0	0	0	0	0	0	0	-9.4%	-7.2%	30.8%	-7.5%	7.2%	2.6%
Gas	0	0	1	1	1	1	2	2.2%	16.9%	-2.0%	-0.9%	4.0%	4.0%
Biomass & Waste	1	1	1	1	1	1	1	3.8%	3.4%	1.4%	-0.9%	-5.8%	4.9%
Other	0	0	0	0	1	1	0	16.0%	12.9%	1.5%	1.4%	-0.2%	-5.4%
Gross Elec. Generation (TWh_e)	**181**	**217**	**206**	**240**	**239**	**245**	**258**	**1.8%**	**-0.5%**	**1.5%**	**0.0%**	**0.2%**	**0.5%**
Coal	0	0	0	1	3	5	7	-5.1%	3.8%	28.0%	8.8%	5.0%	3.8%
of which CCS	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	n.s.	24.9%
Oil	0	0	0	1	1	1	2	-4.9%	-8.3%	29.6%	-5.7%	7.0%	2.6%
Gas	0	1	6	5	5	7	10	12.5%	18.6%	-1.7%	-0.8%	4.4%	4.0%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	40.9%
Biomass & Waste	1	2	3	3	5	3	5	6.9%	3.5%	-0.4%	5.0%	-4.8%	5.0%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	24	26	26	21	8	0	0	1.1%	0.0%	-2.4%	-8.7%	-30.8%	0.0%
Hydro	157	187	168	189	192	195	198	1.8%	-1.1%	1.2%	0.2%	0.1%	0.1%
Wind	0	0	1	12	17	25	30	n.s.	39.0%	29.9%	3.4%	3.6%	1.7%
Solar	0	0	0	2	3	3	4	n.s.	23.9%	35.5%	2.6%	1.3%	2.8%
Other	- 1	1	2	5	6	6	4	n.s.	16.0%	8.5%	1.4%	-0.1%	-4.8%
Generation Capacity (GW_e)	**46**	**51**	**56**	**73**	**78**	**83**	**81**	**1.0%**	**1.1%**	**2.6%**	**0.7%**	**0.5%**	**-0.1%**
Coal	0	0	0	0	1	1	1	5.5%	-4.3%	7.1%	11.6%	3.7%	2.3%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	23.8%
Oil	1	0	0	1	1	2	2	-4.8%	-3.7%	9.7%	4.3%	4.5%	0.6%
Gas	0	0	2	4	5	6	6	7.7%	19.8%	9.0%	2.3%	2.2%	-0.7%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	38.5%
Biomass & Waste	0	0	1	0	1	1	1	6.5%	4.3%	-1.2%	7.1%	-0.6%	-1.2%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	3	3	3	3	1	0	0	0.8%	0.2%	-0.1%	-8.9%	-30.9%	-0.2%
Hydro	42	46	49	56	56	56	55	0.9%	0.7%	1.2%	0.0%	0.0%	0.0%
Wind	0	0	0	5	10	13	11	n.s.	40.6%	27.0%	6.3%	3.1%	-1.4%
Solar	0	0	0	2	3	3	4	25.9%	19.9%	33.1%	1.7%	0.5%	2.2%
Other	0	0	1	1	1	1	1	14.4%	12.8%	3.4%	2.3%	1.9%	-0.1%
Total Final Consumption[2] (Mtoe)	**37**	**41**	**45**	**43**	**40**	**39**	**37**	**1.0%**	**0.9%**	**-0.5%**	**-0.5%**	**-0.4%**	**-0.3%**
Coal	1	1	1	1	1	2	2	0.2%	-3.1%	1.9%	1.8%	1.4%	0.5%
Oil	19	19	20	17	14	11	8	0.0%	0.3%	-1.5%	-2.2%	-2.5%	-2.8%
Gas	1	3	3	4	4	4	4	6.9%	2.2%	0.8%	0.1%	0.9%	0.5%
Electricity	13	15	16	16	16	17	18	1.4%	1.1%	-0.1%	0.0%	0.3%	0.6%
Heat	1	1	2	2	2	3	3	2.3%	4.5%	1.5%	1.5%	1.3%	1.0%
Biomass & Other	2	2	3	2	3	3	3	1.9%	1.7%	-0.5%	2.4%	0.3%	-0.8%
Industry (incl. non-energy use)	**12**	**14**	**14**	**15**	**16**	**17**	**18**	**1.3%**	**0.0%**	**0.6%**	**0.7%**	**0.6%**	**0.3%**
Coal	1	1	1	1	1	2	2	0.2%	-3.1%	2.0%	1.8%	1.4%	0.5%
Oil	4	4	4	4	3	3	2	-1.2%	0.0%	-0.5%	-0.9%	-1.4%	-2.2%
Gas	0	1	2	2	2	2	2	11.9%	1.7%	1.2%	-0.6%	-0.2%	-0.5%
Electricity	6	6	7	7	9	10	11	1.3%	0.3%	1.2%	1.4%	1.5%	1.3%
Heat	0	0	0	0	0	0	0	7.7%	1.9%	0.9%	-0.2%	-0.3%	-0.2%
Biomass & Other	1	1	1	1	1	1	1	5.7%	-1.7%	-1.8%	2.8%	-1.2%	-2.8%
Buildings	**15**	**15**	**18**	**16**	**14**	**12**	**11**	**0.2%**	**1.6%**	**-1.4%**	**-1.2%**	**-1.4%**	**-1.3%**
Coal	0	0	0	0	0	0	0	-5.5%	-1.2%	-2.6%	-8.8%	n.s.	n.s.
Oil	6	5	4	3	2	2	1	-1.8%	-0.5%	-4.3%	-2.7%	-2.9%	-3.1%
Gas	1	1	2	2	2	2	1	3.6%	3.1%	0.5%	-0.5%	-1.0%	-1.7%
Electricity	7	8	9	8	6	5	4	1.3%	1.8%	-1.1%	-2.1%	-2.2%	-1.7%
Heat	1	1	1	2	2	2	3	1.4%	5.1%	1.7%	1.7%	1.5%	1.1%
Biomass & Other	1	1	2	1	2	1	1	-0.9%	3.3%	-1.2%	1.5%	-0.8%	-2.1%
Agriculture	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**3.4%**	**-0.6%**	**-0.7%**	**0.8%**	**0.7%**	**0.6%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	1	1	1	1	1	1	0	1.9%	-0.3%	-1.4%	-1.0%	-2.2%	-3.8%
Gas	0	0	0	0	0	0	0	7.3%	-9.2%	-3.6%	-0.7%	-1.6%	-2.6%
Electricity	0	0	0	0	0	0	1	6.5%	0.4%	0.3%	2.1%	2.5%	2.6%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	41.3%	-3.4%	7.3%	11.0%	6.2%	3.7%
Transport	**9**	**10**	**11**	**11**	**9**	**8**	**7**	**1.4%**	**1.0%**	**-0.6%**	**-1.7%**	**-1.1%**	**-0.6%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	8	10	11	10	8	6	4	1.5%	0.8%	-0.8%	-2.7%	-3.0%	-3.0%
Gas	0	0	0	0	0	1	1	n.s.	n.s.	-2.1%	38.8%	12.6%	5.6%
Electricity	0	0	0	0	1	1	1	0.1%	1.7%	0.8%	7.1%	3.7%	2.5%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	1	1	n.s.	n.s.	9.2%	3.3%	4.2%	2.1%
Other Energy Transformation & Losses[3]	**- 15**	**- 21**	**19**	**- 7**	**- 5**	**4**	**2**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**-4.2%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Other Balkans	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	24	23	22	22	20	19	17	-0.4%	-0.3%	-0.4%	-0.6%	-0.8%	-0.9%
GDP per capita (ppp, k$'15)	6	5	8	10	15	23	30	-1.0%	4.2%	2.7%	4.1%	3.8%	3.0%
Prices													
International/Regional ($'15/boe)													
Coal	3	2	3	2	2	3	3	-3.4%	3.6%	-2.8%	1.1%	2.3%	1.0%
Oil	39	38	86	91	89	96	107	-0.2%	8.4%	0.5%	-0.2%	0.8%	1.0%
Gas	24	28	33	47	55	62	64	1.5%	1.6%	3.6%	1.4%	1.3%	0.4%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**133**	**90**	**124**	**134**	**154**	**138**	**125**	**-3.8%**	**3.2%**	**0.8%**	**1.4%**	**-1.1%**	**-1.0%**
Total GHG (energy, industry, agriculture)	**133**	**99**	**122**	**131**	**152**	**141**	**129**	**-2.9%**	**2.1%**	**0.7%**	**1.5%**	**-0.7%**	**-0.9%**
CO_2	103	73	88	93	108	93	77	-3.5%	1.9%	0.5%	1.6%	-1.5%	-1.9%
CH_4	21	17	18	18	19	18	17	-2.1%	0.4%	0.2%	0.3%	-0.4%	-0.5%
N_2O	7	6	6	6	7	7	6	-2.2%	0.0%	0.4%	1.4%	-0.3%	-0.5%
F gases	2	4	11	14	18	23	29	8.1%	11.4%	3.2%	2.2%	2.7%	2.0%
Total GHG from Energy and Industry	**117**	**86**	**110**	**119**	**138**	**128**	**116**	**-3.1%**	**2.5%**	**0.8%**	**1.5%**	**-0.8%**	**-1.0%**
CO_2 Emissions from Fuel Comb.	**96**	**69**	**82**	**86**	**101**	**85**	**69**	**-3.2%**	**1.8%**	**0.5%**	**1.6%**	**-1.7%**	**-2.1%**
Power generation/District heating	52	47	52	54	67	51	34	-1.0%	1.0%	0.4%	2.3%	-2.8%	-3.9%
Industry	16	7	7	7	8	9	9	-7.5%	-1.0%	0.8%	1.5%	0.3%	0.1%
Buildings	14	5	6	5	4	4	4	-10.3%	1.4%	-1.7%	-0.5%	-0.7%	-1.4%
Agriculture	0	1	1	1	1	1	1	9.7%	-4.7%	3.4%	1.1%	0.9%	0.6%
Transport	8	7	14	15	14	12	11	-0.9%	6.7%	0.6%	-1.0%	-1.0%	-1.0%
Other	5	2	4	5	6	9	10	-11.5%	9.0%	2.4%	3.0%	3.1%	1.9%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Energy Balance, by fuel (Mtoe)													
Primary Production	**20**	**18**	**21**	**12**	**15**	**18**	**18**	**-1.2%**	**1.5%**	**-5.3%**	**2.5%**	**1.4%**	**0.0%**
Coal	14	12	14	5	6	6	5	-1.5%	1.2%	-10.5%	2.7%	-0.3%	-1.5%
Oil	2	1	2	2	2	1	1	-5.0%	2.0%	2.4%	-0.6%	-2.3%	-1.1%
Natural gas	1	1	0	1	1	1	1	-1.5%	-6.4%	5.8%	0.6%	0.2%	0.1%
Biomass	2	2	2	2	3	3	3	-0.1%	2.2%	1.6%	3.7%	-0.1%	-1.5%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	1	2	3	2	2	3	3	3.5%	3.9%	-2.0%	0.6%	0.6%	0.5%
Other renewables	0	0	0	0	1	4	5	n.s.	19.0%	30.4%	25.2%	14.3%	3.1%
Net Imports	**10**	**9**	**7**	**26**	**29**	**26**	**22**						
Coal	2	1	1	12	14	10	7						
Oil	7	3	7	6	6	5	5						
Natural gas	3	1	2	1	3	4	4						
Biomass	0	0	0	0	- 1	0	0						
Biofuels	0	0	0	0	0	0	0						
Electricity	- 2	3	- 3	7	7	7	7						
Primary Energy Demand[2]	**30**	**26**	**27**	**38**	**45**	**43**	**39**	-1.4%	**0.3%**	**3.3%**	**1.7%**	**-0.4%**	**-0.9%**
Coal	16	13	15	17	20	16	12	-2.2%	1.5%	1.0%	1.9%	-2.4%	-3.0%
Oil	9	5	8	8	8	7	6	-6.8%	6.0%	-0.8%	0.1%	-1.2%	-1.6%
Natural gas	3	2	2	2	4	4	5	-6.0%	1.8%	-0.6%	6.4%	1.8%	0.7%
Biomass	2	2	2	2	3	3	3	-0.2%	2.3%	1.0%	2.5%	0.4%	-1.1%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	1	2	3	2	2	3	3	3.5%	3.9%	-2.0%	0.6%	0.6%	0.5%
Other renewables	0	0	0	0	1	4	5	n.s.	19.0%	30.4%	25.2%	14.3%	3.1%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**30**	**26**	**27**	**38**	**45**	**43**	**39**	**-1.4%**	**0.3%**	**3.3%**	**1.7%**	**-0.4%**	**-0.9%**
Energy for Power Generation	**15**	**14**	**16**	**16**	**21**	**20**	**17**	**-0.6%**	**1.5%**	**0.0%**	**2.8%**	**-0.6%**	**-1.6%**
Other Energy Transformation & Losses	**0**	**4**	**- 2**	**9**	**10**	**10**	**10**	**n.s.**	**n.s.**	**n.s.**	**0.9%**	**0.4%**	**0.2%**
Final consumption	**21**	**13**	**19**	**20**	**23**	**24**	**23**	**-4.3%**	**3.6%**	**0.5%**	**1.7%**	**0.3%**	**-0.4%**
Steel, Non-Met. Minerals and Chem.	0	1	3	4	6	6	5	4.9%	14.3%	3.6%	5.8%	-0.6%	-2.4%
Other Industry	7	3	2	2	3	3	3	-8.2%	-3.5%	0.5%	1.4%	1.9%	1.4%
Non-Energy Use	2	0	1	1	1	1	1	-13.4%	10.4%	-3.4%	1.5%	1.1%	0.6%
Residential	4	5	6	6	6	6	6	1.1%	1.8%	0.1%	0.1%	0.0%	-0.5%
Services	4	2	2	2	2	3	3	-9.8%	2.5%	-0.2%	1.4%	1.5%	1.1%
Agriculture	0	0	0	0	0	0	0	11.2%	-3.1%	2.3%	1.2%	1.0%	0.7%
Road	3	2	5	5	5	5	5	-1.1%	7.5%	-0.1%	0.0%	0.0%	-0.2%
Rail	0	0	0	0	0	0	0	2.1%	-0.9%	1.0%	1.9%	1.6%	1.0%
Aviation	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	2.2%	0.8%	-1.0%
Other Transport	0	0	0	0	0	0	0	n.s.	2.3%	5.4%	2.6%	2.0%	1.0%

[1] Nuclear energy is accounted as primary electricity

Other Balkans	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**13**	**12**	**13**	**14**	**18**	**14**	**9**	**-1.1%**	**1.0%**	**0.4%**	**2.7%**	**-2.6%**	**-3.7%**
Coal	12	11	13	13	16	11	7	-0.4%	1.0%	0.6%	1.5%	-3.1%	-4.3%
Oil	1	0	0	0	1	1	1	-11.9%	-3.5%	-16.8%	34.7%	-1.3%	-1.7%
Gas	0	0	0	0	1	2	1	-7.4%	7.7%	-11.9%	35.9%	1.3%	-0.8%
Biomass & Waste	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	5.7%	1.0%	-1.2%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**66**	**59**	**79**	**81**	**113**	**130**	**131**	**-1.0%**	**2.9%**	**0.2%**	**3.4%**	**1.4%**	**0.0%**
Coal	44	35	45	52	66	48	32	-2.3%	2.6%	1.4%	2.5%	-3.1%	-3.9%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	4	1	0	0	2	2	2	-11.8%	-13.2%	-8.1%	37.1%	-0.8%	-1.4%
Gas	1	0	0	0	6	7	7	-11.4%	0.3%	-2.7%	33.7%	2.6%	-0.2%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	0	0	0	1	1	1	n.s.	n.s.	n.s.	6.1%	1.3%	-0.9%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	16	23	34	27	29	31	32	3.7%	3.9%	-2.1%	0.5%	0.9%	0.4%
Wind	0	0	0	0	5	13	17	n.s.	n.s.	n.s.	25.5%	10.6%	2.9%
Solar	0	0	0	0	5	27	36	n.s.	n.s.	n.s.	32.4%	18.1%	3.1%
Other	1	0	0	0	0	1	3	-22.1%	n.s.	n.s.	-17.1%	n.s.	11.2%
Generation Capacity (GW_e)	**28**	**16**	**18**	**20**	**28**	**50**	**58**	**-5.1%**	**0.8%**	**1.1%**	**3.6%**	**5.8%**	**1.5%**
Coal	25	8	8	8	11	12	11	-10.5%	0.3%	0.0%	2.5%	1.4%	-1.2%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	1	1	1	1	1	1	1	-0.6%	1.7%	2.8%	1.1%	2.0%	2.2%
Gas	0	0	0	1	1	2	2	-1.1%	2.2%	14.0%	4.2%	3.1%	1.5%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	6.1%	1.9%	-0.4%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	2	7	8	9	10	10	10	13.6%	1.3%	0.9%	0.5%	0.4%	0.4%
Wind	0	0	0	0	2	5	6	n.s.	n.s.	n.s.	24.2%	9.9%	2.5%
Solar	0	0	0	0	4	20	27	n.s.	n.s.	n.s.	32.4%	18.2%	3.3%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	12.6%
Total Final Consumption[2] (Mtoe)	**21**	**13**	**19**	**20**	**23**	**24**	**23**	**-4.3%**	**3.6%**	**0.5%**	**1.7%**	**0.3%**	**-0.4%**
Coal	4	2	2	3	3	3	2	-6.9%	1.0%	2.9%	3.2%	-1.9%	-2.0%
Oil	8	4	8	7	7	6	5	-6.1%	6.3%	-0.6%	-0.9%	-1.2%	-1.6%
Gas	3	1	1	1	2	2	3	-7.6%	0.0%	-0.9%	3.1%	2.9%	1.8%
Electricity	4	4	5	6	8	9	9	-0.8%	2.5%	1.6%	3.3%	1.1%	0.0%
Heat	1	1	1	1	1	1	2	-1.1%	5.2%	-0.2%	2.1%	1.7%	0.9%
Biomass & Other	2	2	2	2	3	3	3	-0.2%	2.2%	0.1%	2.0%	1.1%	0.0%
Industry (incl. non-energy use)	**9**	**4**	**6**	**7**	**10**	**10**	**9**	**-7.8%**	**3.7%**	**1.4%**	**4.0%**	**0.2%**	**-0.8%**
Coal	1	1	1	2	3	3	2	-2.3%	1.1%	5.3%	4.2%	-1.7%	-1.9%
Oil	4	1	2	1	2	1	1	-15.1%	7.8%	-1.6%	0.2%	-0.3%	-1.1%
Gas	1	1	1	1	1	1	1	-2.4%	-0.6%	-3.1%	1.0%	1.3%	1.0%
Electricity	2	1	1	2	4	5	5	-7.8%	5.3%	3.0%	7.3%	1.7%	-0.5%
Heat	0	0	0	0	0	0	0	-6.1%	9.0%	-3.7%	-0.2%	-0.3%	-0.2%
Biomass & Other	0	0	0	0	0	0	0	n.s.	-3.4%	11.1%	2.1%	-1.6%	-2.5%
Buildings	**9**	**6**	**8**	**8**	**8**	**8**	**8**	**-3.0%**	**1.9%**	**0.0%**	**0.4%**	**0.4%**	**0.0%**
Coal	2	1	1	0	0	0	0	-12.7%	2.1%	-3.8%	-3.4%	-3.5%	-3.9%
Oil	1	1	1	1	0	0	0	-1.0%	0.8%	-1.9%	-1.7%	-1.2%	-1.5%
Gas	2	0	0	1	1	1	1	-14.8%	1.1%	3.1%	3.8%	1.4%	-0.3%
Electricity	2	3	3	4	4	4	4	3.1%	1.5%	0.9%	-0.2%	0.0%	0.2%
Heat	0	0	1	1	1	1	1	1.4%	3.7%	1.3%	2.8%	2.1%	1.1%
Biomass & Other	2	2	2	2	2	2	2	-1.2%	2.8%	-1.0%	0.9%	0.6%	-0.3%
Agriculture	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**11.2%**	**-3.1%**	**2.3%**	**1.2%**	**1.0%**	**0.7%**
Coal	0	0	0	0	0	0	0	2.3%	-29.6%	-4.9%	-2.0%	n.s.	n.s.
Oil	0	0	0	0	0	0	0	16.2%	-2.0%	3.6%	1.2%	0.9%	0.6%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	1.5%	1.0%	0.7%	0.4%
Electricity	0	0	0	0	0	0	0	5.0%	6.0%	-1.6%	2.0%	1.7%	1.4%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	n.s.	-13.8%	4.8%	0.0%	0.0%	0.0%
Transport	**3**	**2**	**5**	**5**	**5**	**5**	**5**	**-1.0%**	**7.3%**	**0.0%**	**0.1%**	**0.1%**	**-0.1%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	3	2	5	5	4	4	3	-0.9%	7.3%	-0.2%	-1.2%	-1.7%	-2.0%
Gas	0	0	0	0	0	0	1	n.s.	n.s.	4.9%	53.0%	13.4%	6.2%
Electricity	0	0	0	0	0	0	1	-5.5%	3.9%	5.0%	17.6%	5.4%	2.3%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	15.8%	5.2%	1.8%
Other Energy Transformation & Losses[3]	**0**	**4**	**- 2**	**9**	**10**	**10**	**10**	**n.s.**	**n.s.**	**n.s.**	**0.9%**	**0.4%**	**0.2%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Russia	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	148	146	143	144	141	138	136	-0.1%	-0.2%	0.1%	-0.2%	-0.2%	-0.1%
GDP per capita (ppp, k$'15)	15	10	17	19	24	29	31	-3.8%	5.1%	1.4%	2.1%	1.9%	0.6%
Prices													
International/Regional ($'15/boe)													
Coal	3	2	3	2	3	3	3	-3.4%	3.6%	-2.3%	1.8%	1.5%	-1.3%
Oil	39	38	86	91	89	96	107	-0.2%	8.4%	0.5%	-0.2%	0.8%	1.0%
Gas	24	28	33	47	55	62	64	1.5%	1.6%	3.6%	1.4%	1.3%	0.4%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**3 787**	**1 693**	**1 501**	**1 809**	**1 842**	**1 858**	**1 854**	**-7.7%**	**-1.2%**	**1.9%**	**0.2%**	**0.1%**	**0.0%**
Total GHG (energy, industry, agriculture)	**3 656**	**2 352**	**2 658**	**2 808**	**2 706**	**2 638**	**2 553**	**-4.3%**	**1.2%**	**0.6%**	**-0.4%**	**-0.3%**	**-0.3%**
CO_2	2 447	1 547	1 685	1 753	1 619	1 564	1 546	-4.5%	0.9%	0.4%	-0.8%	-0.3%	-0.1%
CH_4	963	653	848	918	930	908	836	-3.8%	2.6%	0.8%	0.1%	-0.2%	-0.8%
N_2O	194	114	107	110	124	130	132	-5.2%	-0.7%	0.3%	1.2%	0.4%	0.2%
F gases	52	37	18	27	32	37	39	-3.3%	-7.1%	4.3%	1.7%	1.4%	0.6%
Total GHG from Energy and Industry	**3 320**	**2 165**	**2 488**	**2 634**	**2 511**	**2 435**	**2 344**	**-4.2%**	**1.4%**	**0.6%**	**-0.5%**	**-0.3%**	**-0.4%**
CO_2 Emissions from Fuel Comb.	**2 229**	**1 413**	**1 499**	**1 576**	**1 453**	**1 404**	**1 396**	**-4.5%**	**0.6%**	**0.5%**	**-0.8%**	**-0.3%**	**-0.1%**
Power generation/District heating	795	586	624	643	504	390	353	-3.0%	0.6%	0.3%	-2.4%	-2.5%	-1.0%
Industry	257	184	203	227	203	194	177	-3.3%	1.0%	1.1%	-1.1%	-0.5%	-0.9%
Buildings	336	170	137	131	99	77	64	-6.6%	-2.1%	-0.4%	-2.8%	-2.5%	-1.8%
Agriculture	49	21	14	17	18	19	20	-8.3%	-4.1%	2.5%	0.6%	0.5%	0.3%
Transport	220	115	159	212	208	203	183	-6.3%	3.3%	2.9%	-0.2%	-0.3%	-1.0%
Other	571	338	363	345	421	521	599	-5.1%	0.7%	-0.5%	2.0%	2.2%	1.4%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Energy Balance, by fuel (Mtoe)													
Primary Production	**1 212**	**913**	**1 181**	**1 294**	**1 369**	**1 542**	**1 805**	**-2.8%**	**2.6%**	**0.9%**	**0.6%**	**1.2%**	**1.6%**
Coal	163	127	166	184	231	403	768	-2.4%	2.7%	1.0%	2.3%	5.7%	6.7%
Oil	511	310	483	554	607	571	443	-4.9%	4.5%	1.4%	0.9%	-0.6%	-2.5%
Natural gas	500	444	496	484	435	459	487	-1.2%	1.1%	-0.3%	-1.1%	0.5%	0.6%
Biomass	12	7	7	38	45	38	25	-5.5%	0.1%	18.5%	1.7%	-1.8%	-3.9%
Nuclear[1]	10	11	15	17	18	19	15	1.0%	2.7%	1.4%	0.5%	0.6%	-2.4%
Hydro	14	14	14	16	19	21	23	-0.1%	0.1%	1.0%	1.8%	1.1%	0.7%
Other renewables	0	0	0	2	13	31	45	7.6%	24.1%	18.5%	18.8%	9.0%	3.6%
Net Imports	**- 377**	**- 348**	**- 559**	**- 645**	**- 751**	**- 921**	**-1 194**						
Coal	12	- 14	- 78	- 57	- 78	- 238	- 576						
Oil	- 267	- 196	- 351	- 382	- 451	- 411	- 303						
Natural gas	- 114	- 125	- 113	- 166	- 181	- 237	- 286						
Biomass	0	0	0	- 22	- 24	- 18	- 12						
Biofuels	0	0	0	0	0	0	0						
Electricity	- 8	- 14	- 17	- 18	- 18	- 17	- 17						
Primary Energy Demand[2]	**835**	**565**	**622**	**649**	**617**	**621**	**611**	-3.8%	**1.0%**	**0.4%**	**-0.5%**	**0.1%**	**-0.2%**
Coal	175	113	88	127	154	165	193	-4.3%	-2.5%	3.7%	1.9%	0.7%	1.6%
Oil	244	114	131	172	157	160	140	-7.3%	1.4%	2.7%	-0.9%	0.2%	-1.3%
Natural gas	386	319	384	317	254	222	201	-1.9%	1.9%	-1.9%	-2.2%	-1.3%	-1.0%
Biomass	12	7	7	16	21	20	13	-5.5%	0.1%	8.6%	2.7%	-0.3%	-4.3%
Nuclear[1]	10	11	15	17	18	19	15	1.0%	2.7%	1.4%	0.5%	0.6%	-2.4%
Hydro	14	14	14	16	19	21	23	-0.1%	0.1%	1.0%	1.8%	1.1%	0.7%
Other renewables	0	0	0	2	13	31	45	7.6%	24.1%	18.5%	18.8%	9.0%	3.6%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**835**	**565**	**622**	**649**	**617**	**621**	**611**	**-3.8%**	**1.0%**	**0.4%**	**-0.5%**	**0.1%**	**-0.2%**
Energy for Power Generation	**304**	**229**	**255**	**258**	**212**	**191**	**182**	**-2.8%**	**1.1%**	**0.1%**	**-1.9%**	**-1.0%**	**-0.5%**
Other Energy Transformation & Losses	**200**	**123**	**116**	**101**	**125**	**152**	**164**	**-4.7%**	**-0.6%**	**-1.3%**	**2.2%**	**1.9%**	**0.7%**
Final consumption	**602**	**400**	**426**	**469**	**457**	**458**	**440**	**-4.0%**	**0.6%**	**1.0%**	**-0.3%**	**0.0%**	**-0.4%**
Steel, Non-Met. Minerals and Chem.	103	78	92	109	102	98	89	-2.7%	1.6%	1.8%	-0.7%	-0.4%	-0.9%
Other Industry	128	65	52	53	49	49	49	-6.5%	-2.2%	0.1%	-0.7%	0.0%	0.0%
Non-Energy Use	40	36	66	75	88	99	105	-1.0%	6.2%	1.2%	1.6%	1.2%	0.5%
Residential	168	140	111	117	104	95	84	-1.8%	-2.3%	0.5%	-1.2%	-0.9%	-1.2%
Services	62	25	37	38	33	32	29	-8.7%	3.9%	0.3%	-1.2%	-0.4%	-1.0%
Agriculture	22	9	6	7	8	9	9	-8.3%	-4.4%	2.1%	0.8%	0.7%	0.5%
Road	51	34	48	55	56	58	58	-3.9%	3.4%	1.3%	0.2%	0.4%	0.0%
Rail	12	5	7	7	8	8	7	-7.6%	2.1%	1.1%	0.2%	0.1%	-0.4%
Aviation	9	5	5	6	8	10	10	-6.9%	1.5%	1.0%	3.9%	1.9%	-0.5%
Other Transport	7	1	1	1	1	2	1	-14.7%	-1.4%	1.1%	1.0%	0.5%	-0.7%

[1] Nuclear energy is accounted as primary electricity

Russia	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**279**	**204**	**226**	**223**	**162**	**120**	**100**	**-3.1%**	**1.0%**	**-0.1%**	**-3.1%**	**-3.0%**	**-1.8%**
Coal	63	63	59	71	76	67	70	0.0%	-0.6%	1.9%	0.6%	-1.2%	0.4%
Oil	46	12	4	19	11	10	8	-12.6%	-10.2%	16.4%	-5.1%	-0.9%	-2.8%
Gas	170	127	160	128	71	38	21	-2.9%	2.4%	-2.2%	-5.7%	-6.0%	-5.9%
Biomass & Waste	0	2	2	4	3	3	0	29.4%	1.7%	8.4%	-2.8%	-0.1%	-28.1%
Other	0	0	0	0	0	1	1	7.6%	24.2%	4.4%	17.8%	4.0%	2.6%
Gross Elec. Generation (TWh_e)	**1 082**	**877**	**1 040**	**1 178**	**1 151**	**1 249**	**1 289**	**-2.1%**	**1.7%**	**1.3%**	**-0.2%**	**0.8%**	**0.3%**
Coal	157	176	166	264	290	259	271	1.1%	-0.6%	4.7%	0.9%	-1.1%	0.4%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	129	33	9	58	36	38	32	-12.7%	-11.9%	20.1%	-4.8%	0.7%	-1.7%
Gas	512	370	521	440	273	168	101	-3.2%	3.5%	-1.7%	-4.7%	-4.7%	-5.0%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	3	3	14	11	11	1	52.6%	0.9%	17.7%	-2.6%	0.2%	-25.0%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	118	131	170	197	207	219	172	1.0%	2.7%	1.4%	0.5%	0.6%	-2.4%
Hydro	166	165	168	184	219	250	272	0.0%	0.2%	0.9%	1.8%	1.3%	0.9%
Wind	0	0	0	17	35	76	96	n.s.	7.2%	n.s.	7.8%	8.1%	2.3%
Solar	0	0	0	3	76	213	317	n.s.	n.s.	n.s.	37.2%	10.8%	4.1%
Other	0	- 1	2	1	4	15	28	n.s.	n.s.	-9.7%	16.8%	13.6%	6.6%
Generation Capacity (GW_e)	**144**	**211**	**233**	**223**	**259**	**383**	**456**	**3.9%**	**1.0%**	**-0.4%**	**1.5%**	**4.0%**	**1.8%**
Coal	42	42	42	37	39	38	47	0.0%	0.0%	-1.2%	0.3%	-0.2%	2.2%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	16	16	16	13	6	9	15	0.0%	0.0%	-2.4%	-7.1%	4.5%	5.2%
Gas	86	88	104	83	56	57	34	0.3%	1.7%	-2.2%	-4.0%	0.3%	-5.2%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	1	1	2	1	1	0	26.7%	0.0%	11.0%	-2.6%	0.5%	-24.4%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	20	23	26	27	28	22	n.s.	1.3%	1.5%	0.3%	0.4%	-2.6%
Hydro	0	44	47	53	63	70	77	n.s.	0.6%	1.2%	1.7%	1.1%	1.0%
Wind	0	0	0	6	13	27	32	n.s.	19.6%	n.s.	7.7%	7.6%	1.8%
Solar	0	0	0	2	53	150	227	n.s.	n.s.	n.s.	37.1%	10.9%	4.2%
Other	0	0	0	0	1	2	2	n.s.	14.6%	8.2%	17.9%	4.1%	3.2%
Total Final Consumption[2] (Mtoe)	**602**	**400**	**426**	**469**	**457**	**458**	**440**	**-4.0%**	**0.6%**	**1.0%**	**-0.3%**	**0.0%**	**-0.4%**
Coal	69	29	28	42	42	43	41	-8.3%	-0.2%	4.0%	0.0%	0.2%	-0.4%
Oil	145	91	109	136	137	136	124	-4.6%	1.9%	2.2%	0.1%	-0.1%	-0.9%
Gas	109	90	110	108	97	95	97	-1.9%	2.0%	-0.2%	-1.1%	-0.2%	0.2%
Electricity	68	50	60	67	66	72	73	-2.9%	1.8%	1.1%	-0.1%	0.7%	0.2%
Heat	203	137	115	112	108	104	95	-3.9%	-1.8%	-0.3%	-0.3%	-0.4%	-0.9%
Biomass & Other	8	3	2	4	6	9	10	-9.3%	-2.5%	4.6%	5.7%	3.0%	1.7%
Industry (incl. non-energy use)	**271**	**179**	**210**	**237**	**239**	**246**	**243**	**-4.0%**	**1.6%**	**1.2%**	**0.1%**	**0.3%**	**-0.1%**
Coal	28	19	25	39	40	42	41	-3.9%	2.6%	4.9%	0.1%	0.4%	-0.2%
Oil	44	36	43	58	62	67	66	-2.0%	1.9%	2.9%	0.8%	0.7%	-0.1%
Gas	52	43	66	70	67	67	65	-1.9%	4.5%	0.6%	-0.5%	0.0%	-0.2%
Electricity	41	27	28	30	31	33	34	-4.2%	0.5%	0.7%	0.2%	0.7%	0.4%
Heat	105	55	48	39	38	36	35	-6.4%	-1.4%	-2.0%	-0.3%	-0.4%	-0.3%
Biomass & Other	0	1	0	1	1	1	1	n.s.	-2.9%	8.7%	-1.1%	1.2%	1.8%
Buildings	**231**	**166**	**148**	**155**	**137**	**127**	**113**	**-3.3%**	**-1.1%**	**0.5%**	**-1.2%**	**-0.8%**	**-1.2%**
Coal	40	10	4	2	2	1	1	-13.1%	-8.8%	-4.8%	-3.0%	-4.9%	-7.2%
Oil	14	7	6	11	8	7	6	-7.0%	-0.6%	5.7%	-2.7%	-1.8%	-1.3%
Gas	57	47	43	37	28	21	18	-1.9%	-0.8%	-1.6%	-2.9%	-2.5%	-1.7%
Electricity	15	18	26	30	26	27	25	1.7%	3.8%	1.5%	-1.4%	0.3%	-0.5%
Heat	98	82	67	73	71	67	60	-1.7%	-2.0%	0.8%	-0.3%	-0.5%	-1.2%
Biomass & Other	7	2	2	2	3	3	3	-10.8%	-2.6%	2.1%	3.0%	0.5%	-1.7%
Agriculture	**22**	**9**	**6**	**7**	**8**	**9**	**9**	**-8.3%**	**-4.4%**	**2.1%**	**0.8%**	**0.7%**	**0.5%**
Coal	1	0	0	0	0	0	0	-7.1%	-11.5%	1.3%	0.0%	0.0%	0.0%
Oil	14	6	4	5	5	5	6	-8.7%	-4.2%	2.3%	0.7%	0.6%	0.3%
Gas	1	1	1	1	1	1	1	-0.8%	0.9%	4.4%	0.5%	0.4%	0.1%
Electricity	6	3	1	1	2	2	2	-7.7%	-6.2%	0.8%	1.5%	1.4%	1.1%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	1	0	0	0	0	0	0	-15.8%	1.1%	0.7%	0.0%	0.0%	0.0%
Transport	**79**	**46**	**61**	**69**	**73**	**77**	**76**	**-5.3%**	**3.0%**	**1.2%**	**0.6%**	**0.5%**	**-0.1%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	73	42	56	63	61	56	46	-5.3%	2.8%	1.1%	-0.3%	-0.8%	-2.0%
Gas	0	0	0	0	2	6	12	n.s.	n.s.	-5.9%	40.1%	14.8%	7.2%
Electricity	6	3	5	6	8	10	11	-5.5%	4.5%	1.7%	2.9%	2.1%	1.3%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	2	4	6	n.s.	n.s.	n.s.	21.8%	6.1%	3.5%
Other Energy Transformation & Losses[3]	**200**	**123**	**116**	**101**	**125**	**152**	**164**	**-4.7%**	**-0.6%**	**-1.3%**	**2.2%**	**1.9%**	**0.7%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Ukraine	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	51	49	46	44	42	40	38	-0.5%	-0.6%	-0.4%	-0.5%	-0.5%	-0.4%
GDP per capita (ppp, k$'15)	10	4	7	8	12	17	23	-7.5%	5.0%	0.8%	4.1%	3.6%	3.1%
Prices													
International/Regional ($'15/boe)													
Coal	3	2	3	2	3	3	3	-3.4%	3.6%	-2.3%	1.8%	1.5%	-1.3%
Oil	39	38	86	91	89	96	107	-0.2%	8.4%	0.5%	-0.2%	0.8%	1.0%
Gas	24	28	33	47	55	62	64	1.5%	1.6%	3.6%	1.4%	1.3%	0.4%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**905**	**425**	**394**	**370**	**283**	**284**	**295**	**-7.3%**	**-0.8%**	**-0.6%**	**-2.6%**	**0.0%**	**0.4%**
Total GHG (energy, industry, agriculture)	**957**	**455**	**407**	**381**	**293**	**293**	**303**	**-7.2%**	**-1.1%**	**-0.7%**	**-2.6%**	**0.0%**	**0.3%**
CO_2	701	307	287	277	181	178	190	-7.9%	-0.7%	-0.3%	-4.2%	-0.2%	0.7%
CH_4	191	119	88	64	66	67	63	-4.6%	-3.0%	-3.0%	0.3%	0.1%	-0.6%
N_2O	65	29	32	39	44	47	48	-7.8%	1.0%	2.0%	1.3%	0.5%	0.3%
F gases	0	0	1	1	1	2	2	-5.3%	19.1%	1.4%	3.8%	3.1%	2.5%
Total GHG from Energy and Industry	**853**	**411**	**367**	**333**	**238**	**235**	**244**	**-7.0%**	**-1.1%**	**-0.9%**	**-3.3%**	**-0.1%**	**0.3%**
CO_2 Emissions from Fuel Comb.	**659**	**286**	**265**	**261**	**163**	**159**	**171**	**-8.0%**	**-0.8%**	**-0.2%**	**-4.6%**	**-0.3%**	**0.7%**
Power generation/District heating	209	77	93	123	25	24	44	-9.5%	1.9%	2.8%	-14.6%	-0.4%	6.0%
Industry	186	77	64	61	63	58	50	-8.4%	-1.9%	-0.4%	0.3%	-0.8%	-1.6%
Buildings	56	44	37	23	20	17	15	-2.5%	-1.8%	-4.8%	-1.4%	-1.2%	-1.4%
Agriculture	23	3	4	4	5	5	6	-17.2%	2.4%	0.0%	1.3%	1.0%	0.8%
Transport	67	17	29	22	21	19	19	-12.6%	5.3%	-2.9%	-0.2%	-0.9%	-0.5%
Other	118	67	38	28	29	34	38	-5.5%	-5.6%	-2.9%	0.1%	1.7%	1.2%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Energy Balance, by fuel (Mtoe)													
Primary Production	**90**	**56**	**62**	**77**	**92**	**101**	**92**	**-4.7%**	**1.1%**	**2.1%**	**1.8%**	**0.9%**	**-0.9%**
Coal	57	32	34	33	27	23	9	-5.6%	0.6%	0.0%	-2.2%	-1.4%	-8.8%
Oil	4	3	3	2	3	6	8	-4.3%	0.0%	-1.6%	3.0%	7.6%	2.9%
Natural gas	22	14	16	30	47	53	57	-4.5%	1.4%	6.8%	4.5%	1.4%	0.7%
Biomass	0	0	2	3	5	5	4	-3.1%	20.0%	5.5%	6.5%	0.2%	-2.9%
Nuclear[1]	7	7	8	7	7	7	5	0.2%	1.4%	-0.9%	0.4%	-0.2%	-2.7%
Hydro	1	1	1	1	1	1	1	0.8%	1.5%	-2.6%	1.7%	0.2%	0.1%
Other renewables	0	0	0	0	2	5	7	n.s.	n.s.	55.2%	20.1%	7.4%	4.3%
Net Imports	**114**	**52**	**47**	**14**	**- 24**	**- 32**	**- 22**						
Coal	18	- 1	1	9	- 2	1	18						
Oil	54	9	11	9	8	6	4						
Natural gas	70	49	40	- 1	- 30	- 38	- 42						
Biomass	0	0	0	1	3	2	1						
Biofuels	0	0	0	0	0	0	0						
Electricity	- 28	- 4	- 4	- 4	- 4	- 3	- 3						
Primary Energy Demand[2]	**204**	**108**	**109**	**91**	**69**	**69**	**70**	-6.2%	**0.1%**	**-1.8%**	**-2.8%**	**0.0%**	**0.2%**
Coal	75	30	35	42	25	24	27	-8.6%	1.3%	2.0%	-5.1%	-0.3%	1.0%
Oil	58	11	13	11	11	12	12	-15.2%	1.5%	-1.5%	0.1%	0.5%	0.2%
Natural gas	92	62	55	29	16	15	15	-3.8%	-1.2%	-6.2%	-5.5%	-0.9%	0.0%
Biomass	0	0	2	4	9	8	5	-3.1%	19.8%	9.0%	8.5%	-1.0%	-3.5%
Nuclear[1]	7	7	8	7	7	7	5	0.2%	1.4%	-0.9%	0.4%	-0.2%	-2.7%
Hydro	1	1	1	1	1	1	1	0.8%	1.5%	-2.6%	1.7%	0.2%	0.1%
Other renewables	0	0	0	0	2	5	7	n.s.	n.s.	55.2%	20.1%	7.4%	4.3%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**204**	**108**	**109**	**91**	**69**	**69**	**70**	**-6.2%**	**0.1%**	**-1.8%**	**-2.8%**	**0.0%**	**0.2%**
Energy for Power Generation	**68**	**30**	**35**	**44**	**23**	**25**	**29**	**-7.7%**	**1.5%**	**2.2%**	**-6.3%**	**0.7%**	**1.7%**
Other Energy Transformation & Losses	**25**	**26**	**23**	**8**	**7**	**7**	**7**	**0.5%**	**-1.5%**	**-9.6%**	**-2.1%**	**0.5%**	**-0.1%**
Final consumption	**160**	**74**	**75**	**62**	**59**	**58**	**57**	**-7.4%**	**0.2%**	**-1.9%**	**-0.5%**	**0.0%**	**-0.3%**
Steel, Non-Met. Minerals and Chem.	27	13	22	19	19	17	14	-7.0%	5.5%	-1.6%	0.1%	-1.0%	-2.0%
Other Industry	61	24	8	5	6	7	8	-8.8%	-10.9%	-3.8%	0.9%	1.5%	1.7%
Non-Energy Use	6	1	6	4	4	5	5	-15.4%	16.4%	-4.2%	1.2%	1.1%	0.8%
Residential	32	24	24	19	15	14	13	-2.8%	-0.1%	-2.3%	-2.1%	-0.6%	-0.8%
Services	3	2	5	6	5	5	6	-0.7%	6.6%	2.6%	-2.3%	0.9%	0.8%
Agriculture	9	2	2	2	2	2	2	-16.6%	1.2%	-0.1%	1.4%	1.1%	1.0%
Road	18	6	9	7	7	7	8	-9.6%	2.8%	-2.4%	0.2%	0.5%	0.6%
Rail	2	1	1	1	1	1	1	-6.9%	-0.5%	-1.8%	1.8%	1.4%	1.2%
Aviation	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Other Transport	1	0	0	0	0	0	0	n.s.	n.s.	-7.2%	2.4%	1.9%	1.5%

[1] Nuclear energy is accounted as primary electricity

Ukraine	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**60**	**23**	**26**	**35**	**12**	**12**	**16**	**-9.3%**	**1.5%**	**3.0%**	**-10.1%**	**-0.4%**	**2.8%**
Coal	35	14	19	25	6	5	9	-8.5%	3.0%	2.7%	-13.8%	-1.5%	6.2%
Oil	13	0	0	1	0	1	1	-30.9%	0.3%	10.3%	-11.1%	10.4%	4.2%
Gas	12	8	6	8	1	1	2	-4.2%	-2.5%	2.6%	-22.1%	4.4%	5.9%
Biomass & Waste	0	0	0	1	6	5	4	n.s.	n.s.	11.9%	17.3%	-0.9%	-3.3%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**305**	**175**	**193**	**224**	**173**	**194**	**219**	**-5.4%**	**1.0%**	**1.5%**	**-2.5%**	**1.1%**	**1.2%**
Coal	114	52	70	92	22	20	39	-7.6%	3.0%	2.8%	-13.3%	-1.0%	7.0%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	48	1	1	3	1	3	5	-30.9%	-3.6%	12.8%	-9.5%	10.7%	5.4%
Gas	50	30	16	24	4	6	10	-5.0%	-6.3%	4.3%	-16.9%	4.0%	5.6%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	0	0	4	22	21	15	n.s.	n.s.	36.2%	18.5%	-0.8%	-3.3%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	76	77	89	82	85	83	63	0.2%	1.4%	-0.9%	0.4%	-0.2%	-2.7%
Hydro	11	11	13	15	15	15	15	0.7%	1.4%	1.5%	0.0%	0.2%	-0.5%
Wind	0	0	0	3	11	25	43	n.s.	23.6%	51.0%	13.1%	9.0%	5.7%
Solar	0	0	0	1	13	20	26	n.s.	n.s.	n.s.	28.7%	4.2%	2.7%
Other	6	4	4	0	1	1	3	-4.3%	0.7%	-28.5%	14.3%	9.1%	10.1%
Generation Capacity (GW_e)	**45**	**56**	**56**	**48**	**64**	**75**	**85**	**2.1%**	**0.1%**	**-1.6%**	**3.0%**	**1.6%**	**1.2%**
Coal	23	22	22	14	14	15	19	-0.2%	0.0%	-4.5%	0.3%	0.2%	2.4%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	7	1	1	1	1	2	4	-18.2%	0.0%	-4.1%	8.5%	2.5%	8.8%
Gas	12	14	12	8	9	9	7	0.8%	-1.0%	-3.7%	0.1%	1.1%	-3.3%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	0	0	1	3	3	2	n.s.	n.s.	25.3%	18.8%	-0.6%	-3.2%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	11	13	13	13	13	10	n.s.	1.6%	0.0%	0.2%	-0.4%	-2.9%
Hydro	3	8	8	9	9	9	8	9.5%	-0.2%	1.2%	0.5%	-0.4%	-0.4%
Wind	0	0	0	1	4	9	15	n.s.	17.3%	29.6%	12.2%	8.2%	5.0%
Solar	0	0	0	1	10	16	21	n.s.	n.s.	n.s.	23.3%	4.3%	2.7%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	16.5%	13.8%
Total Final Consumption[2] (Mtoe)	**160**	**74**	**75**	**62**	**59**	**58**	**57**	**-7.4%**	**0.2%**	**-1.9%**	**-0.5%**	**0.0%**	**-0.3%**
Coal	35	15	13	14	15	14	12	-8.4%	-1.3%	1.0%	0.4%	-0.8%	-1.6%
Oil	43	11	13	10	11	11	11	-13.0%	1.7%	-1.9%	0.7%	0.0%	-0.2%
Gas	33	26	25	13	12	11	10	-2.6%	-0.2%	-6.1%	-1.4%	-0.9%	-0.6%
Electricity	18	10	11	13	10	11	13	-5.8%	1.7%	1.3%	-2.6%	1.2%	1.3%
Heat	31	13	12	9	9	9	9	-8.0%	-0.6%	-2.9%	0.0%	0.1%	-0.1%
Biomass & Other	0	0	1	2	2	2	2	-2.2%	14.7%	5.6%	1.4%	2.3%	-0.2%
Industry (incl. non-energy use)	**95**	**39**	**36**	**28**	**29**	**28**	**27**	**-8.6%**	**-0.8%**	**-2.4%**	**0.4%**	**-0.2%**	**-0.6%**
Coal	27	12	12	14	15	13	11	-7.9%	0.2%	1.3%	0.5%	-0.8%	-1.6%
Oil	15	2	2	2	3	3	3	-16.8%	-0.4%	0.5%	0.8%	1.1%	0.9%
Gas	23	12	11	5	5	4	4	-6.5%	-1.2%	-8.1%	0.0%	-0.2%	-0.9%
Electricity	13	5	6	5	5	6	6	-8.4%	0.9%	-1.4%	0.3%	0.8%	1.0%
Heat	16	7	5	2	2	2	2	-8.0%	-3.6%	-8.7%	-0.2%	-0.3%	-0.2%
Biomass & Other	0	0	0	0	0	0	0	n.s.	n.s.	7.3%	5.9%	0.7%	-0.2%
Buildings	**35**	**27**	**28**	**25**	**20**	**20**	**19**	**-2.6%**	**0.7%**	**-1.3%**	**-2.1%**	**-0.2%**	**-0.4%**
Coal	7	3	1	0	0	0	0	-9.0%	-13.4%	-6.3%	-1.9%	-2.7%	-2.5%
Oil	2	0	0	0	1	1	1	-13.8%	-7.5%	4.4%	12.8%	4.8%	1.2%
Gas	10	14	14	9	7	5	4	3.2%	0.5%	-4.9%	-2.4%	-2.4%	-2.3%
Electricity	1	3	5	7	4	4	5	8.5%	3.7%	4.0%	-6.8%	1.0%	1.5%
Heat	14	6	8	7	7	8	7	-8.1%	2.1%	-0.3%	0.0%	0.3%	-0.1%
Biomass & Other	0	0	1	1	1	1	1	-2.2%	14.0%	2.3%	1.5%	-0.1%	-2.2%
Agriculture	**9**	**2**	**2**	**2**	**2**	**2**	**2**	**-16.6%**	**1.2%**	**-0.1%**	**1.4%**	**1.1%**	**1.0%**
Coal	1	0	0	0	0	0	0	n.s.	n.s.	-7.0%	0.0%	0.0%	0.0%
Oil	6	1	1	1	1	2	2	-15.7%	1.5%	0.2%	1.3%	1.0%	0.9%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	-2.3%	1.1%	0.8%	0.6%
Electricity	2	0	0	0	0	0	0	-15.9%	-4.2%	-0.4%	2.1%	1.8%	1.7%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	n.s.	n.s.	-0.3%	0.0%	0.0%	0.0%
Transport	**21**	**7**	**10**	**7**	**8**	**8**	**9**	**-9.9%**	**2.6%**	**-2.4%**	**0.4%**	**0.6%**	**0.6%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	-13.4%	0.0%	0.0%	0.0%
Oil	20	7	9	6	6	5	4	-10.3%	2.7%	-3.1%	-0.4%	-1.6%	-1.7%
Gas	0	0	0	0	0	1	2	n.s.	n.s.	-11.9%	30.2%	14.9%	7.6%
Electricity	1	1	1	1	1	1	2	-4.7%	0.1%	-0.8%	4.7%	3.1%	2.2%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	0.0%	8.1%	2.2%
Other Energy Transformation & Losses[3]	**25**	**26**	**23**	**8**	**7**	**7**	**7**	**0.5%**	**-1.5%**	**-9.6%**	**-2.1%**	**0.5%**	**-0.1%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Other CIS	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	77	81	89	99	106	110	113	0.6%	0.9%	1.1%	0.6%	0.4%	0.3%
GDP per capita (ppp, k$'15)	6	4	8	12	19	27	34	-4.1%	7.4%	4.6%	4.8%	3.5%	2.4%
Prices													
International/Regional ($'15/boe)													
Coal	3	2	3	2	3	3	3	-3.4%	3.6%	-2.3%	1.8%	1.5%	-1.3%
Oil	39	38	86	91	89	96	107	-0.2%	8.4%	0.5%	-0.2%	0.8%	1.0%
Gas	24	28	33	47	55	62	64	1.5%	1.6%	3.6%	1.4%	1.3%	0.4%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**1 101**	**629**	**826**	**1 054**	**1 125**	**1 239**	**1 213**	**-5.4%**	**2.8%**	**2.5%**	**0.7%**	**1.0%**	**-0.2%**
Total GHG (energy, industry, agriculture)	**1 101**	**654**	**861**	**1 085**	**1 152**	**1 263**	**1 235**	**-5.1%**	**2.8%**	**2.3%**	**0.6%**	**0.9%**	**-0.2%**
CO_2	715	412	544	705	797	880	859	-5.4%	2.8%	2.6%	1.2%	1.0%	-0.2%
CH_4	310	186	251	304	270	292	281	-5.0%	3.0%	1.9%	-1.2%	0.8%	-0.4%
N_2O	73	54	63	71	80	84	85	-3.0%	1.6%	1.2%	1.2%	0.5%	0.2%
F gases	4	1	3	5	6	7	9	-9.1%	9.9%	4.4%	0.9%	2.2%	2.0%
Total GHG from Energy and Industry	**927**	**541**	**715**	**926**	**977**	**1 081**	**1 049**	**-5.2%**	**2.8%**	**2.6%**	**0.5%**	**1.0%**	**-0.3%**
CO_2 Emissions from Fuel Comb.	**660**	**375**	**497**	**637**	**721**	**796**	**773**	**-5.5%**	**2.9%**	**2.5%**	**1.2%**	**1.0%**	**-0.3%**
Power generation/District heating	248	152	165	257	290	308	276	-4.8%	0.8%	4.5%	1.2%	0.6%	-1.1%
Industry	128	49	78	84	99	107	106	-9.1%	4.7%	0.7%	1.6%	0.8%	-0.1%
Buildings	156	83	103	111	99	87	77	-6.2%	2.2%	0.7%	-1.1%	-1.3%	-1.3%
Agriculture	13	8	8	9	9	10	10	-4.2%	-0.3%	0.8%	0.9%	0.4%	0.1%
Transport	66	34	53	68	69	72	69	-6.5%	4.8%	2.4%	0.2%	0.4%	-0.4%
Other	51	49	90	110	154	213	236	-0.2%	6.2%	2.0%	3.4%	3.3%	1.0%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**n.s.**	**n.s.**	**n.s.**	**10.4%**	**34.8%**	**18.8%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	20.5%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	18.4%
Biomass	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	10.4%	11.1%	10.7%
Energy Balance, by fuel (Mtoe)													
Primary Production	**215**	**196**	**310**	**411**	**527**	**639**	**626**	**-0.9%**	**4.7%**	**2.9%**	**2.5%**	**1.9%**	**-0.2%**
Coal	52	35	51	106	145	204	222	-3.7%	3.6%	7.7%	3.1%	3.5%	0.8%
Oil	46	65	142	164	217	231	163	3.5%	8.1%	1.4%	2.9%	0.6%	-3.4%
Natural gas	112	90	109	131	149	178	201	-2.1%	2.0%	1.9%	1.3%	1.8%	1.3%
Biomass	1	2	2	4	7	8	7	6.7%	2.9%	5.9%	6.3%	0.7%	-1.0%
Nuclear[1]	0	0	0	0	1	1	2	n.s.	2.2%	0.7%	10.3%	7.6%	4.0%
Hydro	4	4	5	5	6	7	7	-0.6%	2.3%	-0.1%	1.5%	1.0%	0.8%
Other renewables	0	0	0	0	2	10	23	n.s.	n.s.	n.s.	43.7%	16.9%	9.1%
Net Imports	**41**	**- 39**	**- 124**	**- 167**	**- 239**	**- 307**	**- 285**						
Coal	0	- 13	- 14	- 50	- 90	- 153	- 174						
Oil	41	- 30	- 107	- 116	- 169	- 179	- 118						
Natural gas	- 15	- 6	- 1	- 1	21	28	8						
Biomass	0	0	0	2	1	0	1						
Biofuels	0	0	0	0	0	0	- 1						
Electricity	16	11	- 1	- 2	- 2	- 2	- 2						
Primary Energy Demand[2]	**256**	**158**	**186**	**244**	**288**	**332**	**341**	-4.7%	**1.7%**	**2.7%**	**1.7%**	**1.4%**	**0.3%**
Coal	52	22	37	57	55	51	48	-8.2%	5.2%	4.4%	-0.3%	-0.7%	-0.6%
Oil	87	35	35	48	49	52	46	-8.8%	-0.1%	3.3%	0.1%	0.6%	-1.2%
Natural gas	96	84	108	130	170	206	209	-1.4%	2.6%	1.9%	2.7%	1.9%	0.2%
Biomass	1	2	2	6	8	8	8	6.6%	2.8%	9.7%	3.6%	0.4%	-0.5%
Nuclear[1]	0	0	0	0	1	1	2	n.s.	2.2%	0.7%	10.3%	7.6%	4.0%
Hydro	4	4	5	5	6	7	7	-0.6%	2.3%	-0.1%	1.5%	1.0%	0.8%
Other renewables	0	0	0	0	2	10	23	n.s.	n.s.	n.s.	43.7%	16.9%	9.1%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**256**	**158**	**186**	**244**	**288**	**332**	**341**	**-4.7%**	**1.7%**	**2.7%**	**1.7%**	**1.4%**	**0.3%**
Energy for Power Generation	**84**	**56**	**62**	**93**	**113**	**131**	**135**	**-4.0%**	**1.1%**	**4.0%**	**2.0%**	**1.5%**	**0.3%**
Other Energy Transformation & Losses	**35**	**30**	**34**	**47**	**66**	**89**	**96**	**-1.4%**	**1.3%**	**3.1%**	**3.5%**	**3.1%**	**0.8%**
Final consumption	**189**	**100**	**121**	**146**	**164**	**180**	**188**	**-6.2%**	**1.9%**	**1.9%**	**1.2%**	**0.9%**	**0.5%**
Steel, Non-Met. Minerals and Chem.	8	5	13	23	30	32	31	-3.6%	8.9%	6.0%	2.7%	0.6%	-0.3%
Other Industry	51	22	25	23	28	34	39	-8.0%	1.1%	-0.8%	1.9%	2.2%	1.4%
Non-Energy Use	15	7	6	7	8	10	11	-7.6%	-1.8%	2.1%	1.7%	1.7%	0.9%
Residential	14	27	31	36	38	39	39	7.0%	1.1%	1.6%	0.7%	0.2%	-0.1%
Services	71	22	25	30	29	29	30	-11.0%	1.3%	2.0%	-0.5%	0.1%	0.2%
Agriculture	8	5	5	6	7	8	9	-5.1%	-0.3%	1.6%	2.1%	1.6%	1.3%
Road	19	10	16	19	21	24	26	-6.5%	4.7%	2.2%	0.7%	1.3%	0.8%
Rail	2	1	1	1	1	2	2	-7.4%	1.2%	0.1%	2.2%	1.4%	0.8%
Aviation	1	0	0	1	1	2	2	-1.0%	-1.0%	3.5%	7.7%	3.2%	1.2%
Other Transport	0	0	0	0	0	0	0	-7.8%	4.9%	-2.1%	4.2%	2.7%	1.4%

[1] Nuclear energy is accounted as primary electricity

Other CIS	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**80**	**51**	**57**	**87**	**104**	**113**	**103**	**-4.3%**	**1.0%**	**4.4%**	**1.8%**	**0.8%**	**-1.0%**
Coal	28	16	19	33	29	25	22	-5.5%	2.0%	5.4%	-1.2%	-1.4%	-1.5%
Oil	19	7	1	6	6	7	3	-9.8%	-19.6%	22.5%	-0.5%	1.5%	-6.8%
Gas	32	29	37	46	67	80	77	-1.2%	2.5%	2.4%	3.8%	1.8%	-0.4%
Biomass & Waste	0	0	0	2	2	1	1	n.s.	n.s.	36.7%	0.8%	-6.5%	-3.9%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**295**	**201**	**256**	**388**	**560**	**741**	**892**	**-3.8%**	**2.4%**	**4.3%**	**3.7%**	**2.9%**	**1.9%**
Coal	73	38	69	115	117	109	98	-6.3%	6.1%	5.2%	0.2%	-0.8%	-1.0%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	19.5%
Oil	53	23	2	26	25	29	15	-8.1%	-19.9%	26.5%	-0.4%	1.5%	-6.8%
Gas	116	88	119	177	309	396	398	-2.7%	3.0%	4.0%	5.7%	2.5%	0.1%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	18.6%
Biomass & Waste	0	0	0	4	6	3	2	n.s.	n.s.	47.3%	3.0%	-5.6%	-3.3%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	2	2	3	7	15	22	n.s.	2.2%	0.7%	10.3%	7.6%	4.0%
Hydro	52	49	62	62	71	79	85	-0.6%	2.3%	-0.1%	1.5%	1.0%	0.8%
Wind	0	0	0	0	10	51	131	n.s.	n.s.	43.0%	41.1%	17.7%	9.9%
Solar	0	0	0	0	12	56	127	n.s.	n.s.	n.s.	50.9%	16.8%	8.5%
Other	0	0	0	1	1	3	13	n.s.	n.s.	n.s.	8.0%	8.5%	16.0%
Generation Capacity (GW_e)	**50**	**66**	**72**	**67**	**102**	**169**	**258**	**2.8%**	**0.9%**	**-0.7%**	**4.3%**	**5.1%**	**4.3%**
Coal	15	15	15	15	17	18	19	-0.2%	0.3%	0.1%	1.0%	0.6%	0.8%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	19.6%
Oil	14	7	7	8	8	8	10	-6.2%	-0.4%	1.5%	0.1%	0.4%	1.2%
Gas	22	29	32	24	42	61	70	2.9%	1.2%	-2.9%	5.7%	3.6%	1.5%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	18.8%
Biomass & Waste	0	0	1	1	1	0	0	n.s.	n.s.	2.2%	2.7%	-5.6%	-3.3%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	1	2	3	n.s.	0.0%	0.5%	10.1%	7.4%	3.7%
Hydro	0	15	17	19	22	24	26	n.s.	1.1%	1.0%	1.5%	1.0%	0.8%
Wind	0	0	0	0	4	18	43	n.s.	n.s.	36.2%	39.8%	16.9%	9.2%
Solar	0	0	0	0	8	38	87	n.s.	n.s.	n.s.	50.9%	16.9%	8.6%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	16.5%	12.5%
Total Final Consumption[2] (Mtoe)	**189**	**100**	**121**	**146**	**164**	**180**	**188**	**-6.2%**	**1.9%**	**1.9%**	**1.2%**	**0.9%**	**0.5%**
Coal	23	7	17	17	18	15	13	-11.6%	9.6%	0.1%	0.3%	-1.5%	-1.8%
Oil	60	24	30	36	37	37	33	-8.8%	2.2%	2.0%	0.2%	-0.1%	-0.9%
Gas	53	39	41	49	52	57	60	-2.9%	0.4%	1.9%	0.6%	0.9%	0.6%
Electricity	23	13	16	26	37	50	59	-5.0%	2.0%	4.7%	3.7%	2.8%	1.8%
Heat	29	15	15	15	15	15	16	-6.4%	0.0%	-0.1%	0.0%	0.1%	0.3%
Biomass & Other	1	1	2	2	4	6	7	5.2%	0.7%	3.7%	6.6%	3.2%	2.0%
Industry (incl. non-energy use)	**74**	**34**	**43**	**53**	**66**	**76**	**81**	**-7.4%**	**2.3%**	**2.0%**	**2.2%**	**1.4%**	**0.7%**
Coal	19	6	12	13	15	13	11	-10.9%	7.3%	0.9%	1.1%	-1.1%	-1.5%
Oil	22	6	6	8	10	11	12	-11.8%	-1.3%	3.5%	2.0%	1.3%	0.6%
Gas	12	11	13	17	21	25	28	-0.9%	1.3%	2.9%	2.0%	2.1%	0.8%
Electricity	13	6	8	11	17	23	27	-8.1%	3.4%	3.8%	4.2%	2.8%	1.7%
Heat	8	5	5	4	4	4	3	-3.8%	-0.2%	-3.6%	-0.2%	-0.3%	-0.2%
Biomass & Other	0	0	0	0	0	1	1	n.s.	-2.0%	11.6%	8.5%	4.7%	2.5%
Buildings	**85**	**49**	**55**	**66**	**67**	**68**	**69**	**-5.2%**	**1.2%**	**1.8%**	**0.2%**	**0.1%**	**0.0%**
Coal	5	1	5	4	3	2	1	-15.0%	18.3%	-1.8%	-3.1%	-3.8%	-3.9%
Oil	15	4	6	6	5	4	3	-11.5%	3.2%	0.8%	-2.2%	-2.0%	-1.7%
Gas	39	28	28	32	31	28	26	-3.3%	-0.1%	1.4%	-0.4%	-0.8%	-0.9%
Electricity	4	5	6	11	15	20	24	1.8%	1.0%	6.7%	3.1%	2.8%	1.7%
Heat	21	10	10	11	11	12	12	-7.6%	0.2%	1.4%	0.1%	0.3%	0.5%
Biomass & Other	1	1	1	2	2	2	2	4.7%	0.3%	0.9%	3.5%	-0.1%	-1.4%
Agriculture	**8**	**5**	**5**	**6**	**7**	**8**	**9**	**-5.1%**	**-0.3%**	**1.6%**	**2.1%**	**1.6%**	**1.3%**
Coal	0	0	0	0	0	0	0	-26.7%	43.6%	-3.2%	-1.0%	-1.1%	-1.1%
Oil	3	2	2	2	3	3	3	-1.8%	-1.7%	1.1%	1.1%	0.5%	0.1%
Gas	1	0	0	0	0	0	0	-17.0%	3.6%	1.1%	1.1%	0.5%	0.2%
Electricity	4	2	2	3	4	5	6	-5.6%	-0.4%	2.3%	2.8%	2.3%	2.0%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	8.3%	18.2%	1.5%	10.4%	4.5%	2.4%
Transport	**22**	**11**	**17**	**21**	**23**	**27**	**29**	**-6.4%**	**4.2%**	**2.1%**	**1.1%**	**1.4%**	**0.8%**
Coal	0	0	0	0	0	0	0	-9.9%	3.8%	-2.6%	0.0%	0.0%	0.0%
Oil	21	11	16	20	20	19	16	-6.2%	4.0%	1.9%	0.1%	-0.4%	-1.9%
Gas	0	0	0	0	1	3	7	-7.0%	29.6%	1.5%	8.9%	14.9%	8.4%
Electricity	1	0	1	1	1	2	3	-10.7%	6.5%	0.8%	7.7%	4.8%	2.8%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	1	3	4	n.s.	n.s.	44.3%	12.6%	6.4%	4.0%
Other Energy Transformation & Losses[3]	**35**	**30**	**34**	**47**	**66**	**89**	**96**	**-1.4%**	**1.3%**	**3.1%**	**3.5%**	**3.1%**	**0.8%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Argentina	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	33	37	41	45	49	52	55	1.2%	1.1%	1.0%	0.8%	0.6%	0.5%
GDP per capita (ppp, k$'15)	9	12	16	17	22	26	31	3.3%	2.7%	0.7%	2.3%	1.9%	1.7%
Prices													
International/Regional ($'15/boe)													
Coal	2	1	2	2	2	3	4	-4.2%	5.6%	0.7%	0.7%	3.0%	1.1%
Oil	39	38	86	91	89	96	107	-0.2%	8.4%	0.5%	-0.2%	0.8%	1.0%
Gas	26	40	34	34	41	51	59	4.6%	-1.6%	-0.1%	1.8%	2.3%	1.6%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**352**	**354**	**416**	**467**	**509**	**555**	**547**	**0.1%**	**1.6%**	**1.2%**	**0.9%**	**0.9%**	**-0.1%**
Total GHG (energy, industry, agriculture)	**287**	**307**	**357**	**405**	**442**	**496**	**496**	**0.7%**	**1.5%**	**1.3%**	**0.9%**	**1.2%**	**0.0%**
CO_2	114	152	190	234	255	299	296	2.9%	2.3%	2.1%	0.8%	1.6%	-0.1%
CH_4	137	118	116	118	127	132	132	-1.5%	-0.2%	0.2%	0.8%	0.4%	0.0%
N_2O	33	37	51	52	59	63	66	1.3%	3.1%	0.2%	1.3%	0.7%	0.4%
F gases	3	0	1	1	1	2	2	-16.7%	9.9%	1.0%	1.6%	1.7%	1.4%
Total GHG from Energy and Industry	**163**	**188**	**227**	**273**	**296**	**342**	**336**	**1.4%**	**1.9%**	**1.9%**	**0.8%**	**1.5%**	**-0.2%**
CO_2 Emissions from Fuel Comb.	**102**	**144**	**178**	**220**	**238**	**281**	**276**	**3.6%**	**2.1%**	**2.1%**	**0.8%**	**1.7%**	**-0.2%**
Power generation/District heating	19	30	45	61	65	66	70	4.6%	4.2%	3.1%	0.6%	0.2%	0.6%
Industry	16	27	31	40	46	51	55	5.4%	1.5%	2.5%	1.3%	1.0%	0.7%
Buildings	18	20	27	30	30	30	28	1.0%	3.0%	1.0%	0.2%	-0.1%	-0.6%
Agriculture	5	8	11	13	15	17	18	5.1%	3.3%	2.4%	1.1%	0.9%	0.8%
Transport	29	41	43	50	49	41	35	3.7%	0.4%	1.4%	-0.1%	-1.8%	-1.6%
Other	15	18	21	27	33	77	71	1.9%	1.6%	2.2%	2.2%	8.8%	-0.8%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Energy Balance, by fuel (Mtoe)													
Primary Production	**44**	**76**	**72**	**90**	**192**	**144**	**126**	**5.7%**	**-0.6%**	**2.3%**	**7.9%**	**-2.9%**	**-1.3%**
Coal	0	0	0	0	0	0	0	0.3%	-12.3%	9.5%	3.5%	3.5%	2.3%
Oil	24	38	30	30	31	35	30	4.8%	-2.2%	-0.2%	0.5%	1.2%	-1.6%
Natural gas	16	32	34	30	101	56	53	7.2%	0.5%	-1.3%	13.1%	-5.8%	-0.5%
Biomass	2	3	4	24	50	38	24	5.5%	3.1%	19.7%	7.4%	-2.7%	-4.4%
Nuclear[1]	1	1	1	1	1	2	3	-1.6%	1.5%	5.2%	3.1%	5.5%	2.6%
Hydro	2	2	3	4	4	4	4	4.9%	1.5%	2.1%	0.5%	0.1%	0.1%
Other renewables	0	0	0	2	4	8	11	n.s.	-3.3%	n.s.	9.1%	7.0%	3.7%
Net Imports	**0**	**- 15**	**11**	**21**	**- 69**	**4**	**24**						
Coal	1	0	1	3	5	7	10						
Oil	- 5	- 15	1	3	1	- 6	- 4						
Natural gas	3	- 2	2	17	- 48	18	20						
Biomass	0	0	0	- 18	- 44	- 33	- 20						
Biofuels	0	0	- 1	- 1	- 1	0	0						
Electricity	1	1	9	18	18	18	18						
Primary Energy Demand[2]	**44**	**61**	**83**	**111**	**123**	**148**	**150**	3.5%	**3.0%**	**3.0%**	**1.0%**	**1.8%**	**0.1%**
Coal	1	0	1	3	5	8	10	-10.3%	8.6%	14.9%	4.9%	4.3%	3.0%
Oil	19	23	31	33	32	29	27	2.0%	3.0%	0.4%	-0.1%	-1.0%	-0.9%
Natural gas	19	30	36	47	54	74	73	4.9%	1.6%	2.7%	1.4%	3.3%	-0.2%
Biomass	2	3	4	6	6	5	5	5.5%	3.1%	4.3%	0.0%	-1.4%	-1.6%
Nuclear[1]	1	1	1	1	1	2	3	-1.6%	1.5%	5.2%	3.1%	5.5%	2.6%
Hydro	2	2	3	4	4	4	4	4.9%	1.5%	2.1%	0.5%	0.1%	0.1%
Other renewables	0	0	0	2	4	8	11	n.s.	-3.3%	n.s.	9.1%	7.0%	3.7%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**44**	**61**	**83**	**111**	**123**	**148**	**150**	**3.5%**	**3.0%**	**3.0%**	**1.0%**	**1.8%**	**0.1%**
Energy for Power Generation	**10**	**15**	**21**	**31**	**35**	**39**	**44**	**4.8%**	**3.5%**	**3.8%**	**1.1%**	**1.1%**	**1.1%**
Other Energy Transformation & Losses	**7**	**6**	**18**	**28**	**31**	**50**	**47**	**-1.4%**	**11.4%**	**4.4%**	**1.2%**	**4.8%**	**-0.6%**
Final consumption	**31**	**47**	**54**	**67**	**76**	**82**	**86**	**4.3%**	**1.4%**	**2.3%**	**1.1%**	**0.8%**	**0.5%**
Steel, Non-Met. Minerals and Chem.	1	3	3	5	5	5	4	13.4%	1.7%	5.3%	0.4%	-0.4%	-1.7%
Other Industry	8	12	14	15	18	22	25	4.2%	0.8%	1.3%	1.7%	1.9%	1.6%
Non-Energy Use	2	4	5	5	7	9	10	9.2%	0.8%	0.9%	3.0%	2.4%	1.4%
Residential	6	9	13	16	17	17	16	3.9%	3.0%	2.4%	0.6%	0.2%	-0.4%
Services	3	3	4	5	6	7	8	0.2%	4.2%	2.9%	1.6%	1.8%	1.3%
Agriculture	2	3	4	4	5	5	6	5.3%	3.5%	2.0%	1.1%	0.9%	0.8%
Road	9	12	12	16	17	15	15	3.4%	-0.4%	2.9%	0.5%	-0.7%	-0.5%
Rail	0	0	0	0	0	0	0	5.2%	2.5%	-0.2%	2.1%	1.7%	1.4%
Aviation	1	0	0	1	1	1	1	-3.3%	-3.0%	3.5%	0.8%	0.3%	0.6%
Other Transport	0	0	0	0	0	1	1	24.0%	14.7%	1.1%	2.8%	2.0%	1.6%

[1] Nuclear energy is accounted as primary electricity

Argentina	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**7**	**12**	**18**	**25**	**26**	**25**	**26**	**5.2%**	**3.9%**	**3.4%**	**0.3%**	**-0.3%**	**0.2%**
Coal	0	0	1	2	3	4	6	3.2%	5.4%	10.9%	3.8%	3.9%	2.4%
Oil	2	1	4	3	2	1	1	-6.1%	15.7%	-3.8%	-4.3%	-4.2%	2.9%
Gas	5	11	13	19	20	19	18	7.4%	1.7%	4.1%	0.7%	-0.5%	-0.5%
Biomass & Waste	0	0	1	2	1	1	0	6.6%	13.5%	7.7%	-3.8%	-6.1%	-2.7%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**51**	**89**	**126**	**179**	**219**	**283**	**338**	**5.8%**	**3.5%**	**3.6%**	**2.0%**	**2.6%**	**1.8%**
Coal	1	2	3	9	14	22	29	10.4%	5.4%	11.4%	4.7%	4.7%	2.8%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	5	3	17	12	8	5	7	-5.3%	19.2%	-3.4%	-4.0%	-4.0%	2.9%
Gas	20	49	63	82	88	92	92	9.4%	2.6%	2.7%	0.8%	0.4%	0.0%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	1	2	4	3	1	1	20.2%	12.5%	6.0%	-3.7%	-6.1%	-2.7%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	7	6	7	12	16	28	36	-1.6%	1.5%	5.2%	3.1%	5.5%	2.6%
Hydro	18	29	34	42	44	44	45	4.7%	1.6%	2.1%	0.5%	0.1%	0.1%
Wind	0	0	0	18	38	65	78	n.s.	-3.3%	n.s.	7.4%	5.7%	1.8%
Solar	0	0	0	1	8	24	48	n.s.	n.s.	n.s.	30.2%	11.9%	7.2%
Other	0	0	0	0	0	0	2	n.s.	-36.5%	34.5%	11.9%	16.0%	12.6%
Generation Capacity (GW_e)	**18**	**24**	**33**	**43**	**57**	**86**	**111**	**2.8%**	**3.5%**	**2.6%**	**2.7%**	**4.3%**	**2.6%**
Coal	1	1	1	1	2	3	4	-1.9%	0.0%	5.1%	4.6%	5.3%	3.1%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	2	1	2	2	2	3	4	-3.8%	4.9%	0.7%	0.4%	3.5%	1.9%
Gas	7	11	17	18	17	20	19	4.8%	4.7%	0.6%	-0.7%	1.7%	-0.6%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	0	1	1	0	0	0	19.6%	14.3%	-0.9%	-3.8%	-4.2%	-4.2%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	1	1	1	2	2	4	5	0.0%	0.0%	5.8%	2.9%	5.3%	2.4%
Hydro	8	10	12	12	13	13	13	2.7%	2.0%	0.1%	0.4%	0.0%	0.0%
Wind	0	0	0	7	14	24	26	n.s.	13.6%	n.s.	7.2%	5.3%	1.2%
Solar	0	0	0	0	6	20	40	n.s.	n.s.	n.s.	30.1%	11.9%	7.5%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	14.9%	11.9%
Total Final Consumption[2] (Mtoe)	**31**	**47**	**54**	**67**	**76**	**82**	**86**	**4.3%**	**1.4%**	**2.3%**	**1.1%**	**0.8%**	**0.5%**
Coal	1	1	1	1	2	3	4	0.1%	1.0%	3.8%	6.4%	4.5%	3.4%
Oil	16	22	25	29	29	27	24	3.6%	1.1%	1.5%	0.2%	-0.9%	-1.1%
Gas	10	15	17	21	24	28	30	4.4%	1.3%	2.4%	1.4%	1.2%	0.7%
Electricity	4	6	10	13	16	21	24	6.4%	4.1%	3.3%	1.9%	2.4%	1.7%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	19.8%
Biomass & Other	1	3	2	3	4	4	4	6.4%	-3.2%	4.9%	2.5%	0.6%	-0.5%
Industry (incl. non-energy use)	**11**	**19**	**21**	**25**	**30**	**36**	**40**	**6.0%**	**1.0%**	**1.9%**	**1.7%**	**1.6%**	**1.1%**
Coal	1	1	1	1	2	3	4	0.1%	1.0%	3.8%	6.4%	4.5%	3.4%
Oil	3	7	7	8	9	9	8	9.3%	0.6%	0.7%	1.1%	0.2%	-0.5%
Gas	4	7	8	11	13	15	17	4.3%	2.1%	3.2%	1.5%	1.6%	1.0%
Electricity	2	3	4	5	6	8	10	4.8%	3.3%	0.8%	2.1%	3.1%	2.3%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	1	2	1	1	1	1	1	7.0%	-8.1%	0.8%	0.4%	-1.9%	-3.1%
Buildings	**9**	**12**	**16**	**21**	**23**	**24**	**25**	**2.9%**	**3.3%**	**2.5%**	**0.8%**	**0.6%**	**0.2%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	2	1	2	2	1	1	1	-3.5%	4.1%	-0.9%	-2.8%	-2.2%	-1.5%
Gas	5	7	9	10	11	11	11	2.8%	2.7%	1.6%	0.9%	0.2%	-0.4%
Electricity	2	3	5	9	10	11	12	8.1%	4.7%	4.9%	1.1%	1.3%	0.9%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	19.8%
Biomass & Other	0	0	0	0	1	1	1	2.8%	-3.7%	-0.5%	9.3%	2.9%	-0.6%
Agriculture	**2**	**3**	**4**	**4**	**5**	**5**	**6**	**5.3%**	**3.5%**	**2.0%**	**1.1%**	**0.9%**	**0.8%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	1	2	3	4	5	5	6	5.1%	3.3%	2.4%	1.1%	0.9%	0.8%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Electricity	0	0	0	0	0	0	0	2.5%	5.2%	2.9%	1.9%	1.7%	1.6%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	n.s.	10.4%	n.s.	n.s.	n.s.	n.s.
Transport	**10**	**13**	**13**	**17**	**18**	**17**	**16**	**3.1%**	**-0.3%**	**2.9%**	**0.6%**	**-0.6%**	**-0.4%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	9	11	12	15	14	11	9	2.1%	0.4%	2.1%	-0.3%	-2.2%	-2.5%
Gas	0	1	0	0	0	1	2	22.7%	n.s.	n.s.	35.4%	8.9%	6.6%
Electricity	0	0	0	0	1	2	2	5.2%	2.5%	4.9%	22.4%	9.2%	3.9%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	1	2	2	2	2	n.s.	n.s.	12.4%	2.2%	0.8%	0.4%
Other Energy Transformation & Losses[3]	**7**	**6**	**18**	**28**	**31**	**50**	**47**	**-1.4%**	**11.4%**	**4.4%**	**1.2%**	**4.8%**	**-0.6%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Brazil	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	149	175	197	214	227	234	236	1.6%	1.2%	0.9%	0.6%	0.3%	0.1%
GDP per capita (ppp, k$'15)	9	9	12	12	15	18	22	0.9%	2.4%	0.2%	1.8%	2.2%	2.1%
Prices													
International/Regional ($'15/boe)													
Coal	2	1	2	2	2	3	4	-4.2%	5.6%	0.7%	0.7%	3.0%	1.1%
Oil	39	38	86	91	89	96	107	-0.2%	8.4%	0.5%	-0.2%	0.8%	1.0%
Gas	26	40	34	34	41	51	59	4.6%	-1.6%	-0.1%	1.8%	2.3%	1.6%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**1 509**	**2 264**	**2 545**	**1 751**	**1 571**	**1 426**	**1 443**	**4.1%**	**1.2%**	**-3.7%**	**-1.1%**	**-1.0%**	**0.1%**
Total GHG (energy, industry, agriculture)	**630**	**919**	**1 164**	**1 231**	**1 316**	**1 423**	**1 532**	**3.8%**	**2.4%**	**0.6%**	**0.7%**	**0.8%**	**0.7%**
CO_2	198	312	398	437	474	555	647	4.6%	2.5%	0.9%	0.8%	1.6%	1.5%
CH_4	312	380	431	431	460	475	486	2.0%	1.3%	0.0%	0.7%	0.3%	0.2%
N_2O	115	148	173	196	209	220	226	2.6%	1.6%	1.3%	0.6%	0.5%	0.3%
F gases	5	79	161	166	174	174	174	32.9%	7.4%	0.3%	0.4%	0.0%	0.0%
Total GHG from Energy and Industry	**271**	**478**	**670**	**714**	**765**	**849**	**939**	**5.8%**	**3.4%**	**0.6%**	**0.7%**	**1.0%**	**1.0%**
CO_2 Emissions from Fuel Comb.	**187**	**296**	**376**	**428**	**464**	**543**	**635**	**4.7%**	**2.4%**	**1.3%**	**0.8%**	**1.6%**	**1.6%**
Power generation/District heating	10	27	40	25	27	26	33	10.5%	4.0%	-4.4%	0.8%	-0.4%	2.3%
Industry	52	85	100	100	122	156	197	5.0%	1.6%	0.0%	2.0%	2.5%	2.4%
Buildings	20	25	23	28	34	38	41	2.2%	-0.6%	1.7%	2.0%	1.2%	0.7%
Agriculture	10	14	19	19	20	21	22	3.5%	2.5%	0.4%	0.4%	0.4%	0.3%
Transport	81	125	168	228	223	239	241	4.5%	3.0%	3.1%	-0.3%	0.7%	0.1%
Other	14	19	26	27	38	62	101	3.3%	3.4%	0.4%	3.3%	5.1%	4.9%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**18.0%**	**22.4%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	10.4%
Biomass	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	11.2%	10.4%
Energy Balance, by fuel (Mtoe)													
Primary Production	**101**	**144**	**236**	**274**	**382**	**361**	**313**	**3.6%**	**5.1%**	**1.5%**	**3.4%**	**-0.6%**	**-1.4%**
Coal	1	3	2	2	3	3	4	6.5%	-2.1%	0.8%	1.3%	1.6%	3.5%
Oil	31	61	102	97	89	84	77	7.0%	5.2%	-0.5%	-0.8%	-0.6%	-0.8%
Natural gas	3	6	12	29	23	26	27	9.3%	6.9%	9.0%	-2.3%	1.1%	0.5%
Biomass	48	47	83	100	210	174	116	-0.1%	5.9%	1.8%	7.7%	-1.9%	-4.0%
Nuclear[1]	0	1	1	1	1	2	3	10.5%	9.2%	0.6%	0.3%	5.5%	2.7%
Hydro	18	26	35	38	43	45	45	3.9%	2.9%	0.8%	1.4%	0.4%	0.1%
Other renewables	0	0	1	7	13	28	39	n.s.	33.7%	29.5%	5.8%	7.8%	3.6%
Net Imports	**62**	**81**	**56**	**36**	**- 33**	**3**	**79**						
Coal	7	8	11	11	14	16	22						
Oil	27	27	3	27	34	47	53						
Natural gas	1	2	9	- 9	11	30	57						
Biomass	0	0	0	- 17	- 116	- 100	- 61						
Biofuels	1	0	- 1	- 3	- 2	- 2	- 3						
Electricity	27	44	35	27	27	12	12						
Primary Energy Demand[2]	**162**	**225**	**292**	**310**	**350**	**364**	**392**	3.3%	**2.6%**	**0.6%**	**1.2%**	**0.4%**	**0.7%**
Coal	8	11	13	13	17	19	27	3.2%	1.5%	0.4%	2.5%	1.3%	3.3%
Oil	58	88	105	124	123	130	130	4.2%	1.7%	1.7%	-0.1%	0.6%	0.0%
Natural gas	3	8	21	20	34	56	84	9.2%	10.4%	-0.6%	5.2%	5.2%	4.1%
Biomass	48	47	83	82	94	74	54	-0.1%	5.9%	-0.1%	1.3%	-2.3%	-3.1%
Nuclear[1]	0	1	1	1	1	2	3	10.5%	9.2%	0.6%	0.3%	5.5%	2.7%
Hydro	18	26	35	38	43	45	45	3.9%	2.9%	0.8%	1.4%	0.4%	0.1%
Other renewables	0	0	1	7	13	28	39	n.s.	33.7%	29.5%	5.8%	7.8%	3.6%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**162**	**225**	**292**	**310**	**350**	**364**	**392**	**3.3%**	**2.6%**	**0.6%**	**1.2%**	**0.4%**	**0.7%**
Energy for Power Generation	**21**	**36**	**56**	**59**	**72**	**84**	**99**	**5.3%**	**4.4%**	**0.6%**	**1.9%**	**1.6%**	**1.7%**
Other Energy Transformation & Losses	**52**	**66**	**76**	**69**	**85**	**72**	**74**	**2.5%**	**1.4%**	**-0.9%**	**2.1%**	**-1.7%**	**0.3%**
Final consumption	**114**	**156**	**213**	**236**	**265**	**292**	**312**	**3.3%**	**3.1%**	**1.0%**	**1.2%**	**1.0%**	**0.7%**
Steel, Non-Met. Minerals and Chem.	21	28	32	32	33	32	30	2.9%	1.6%	0.0%	0.4%	-0.5%	-0.5%
Other Industry	21	32	51	54	65	76	86	4.0%	4.9%	0.5%	1.9%	1.6%	1.2%
Non-Energy Use	9	14	17	15	18	21	23	3.7%	2.2%	-0.9%	1.7%	1.3%	1.0%
Residential	18	21	24	26	28	29	28	1.4%	1.4%	0.8%	0.9%	0.3%	-0.1%
Services	5	8	11	13	17	22	27	5.2%	2.7%	2.1%	2.4%	2.6%	2.1%
Agriculture	6	7	10	12	12	13	14	2.0%	3.1%	1.5%	0.6%	0.6%	0.6%
Road	29	43	63	78	84	92	96	3.9%	3.9%	2.2%	0.8%	0.8%	0.4%
Rail	1	1	1	1	1	1	1	-2.0%	7.6%	0.4%	0.7%	0.9%	0.9%
Aviation	2	3	3	4	5	5	6	5.1%	0.2%	1.4%	2.3%	1.2%	0.4%
Other Transport	1	1	1	1	1	2	2	-1.6%	4.1%	-0.8%	1.5%	1.9%	1.5%

[1] Nuclear energy is accounted as primary electricity

Brazil	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**4**	**9**	**19**	**13**	**14**	**9**	**11**	**10.4%**	**7.4%**	**-4.0%**	**0.8%**	**-4.4%**	**2.6%**
Coal	1	3	3	3	5	5	5	8.3%	-0.2%	0.1%	4.6%	-0.5%	0.7%
Oil	1	4	4	3	1	0	0	11.7%	-0.4%	-3.2%	-12.4%	-26.8%	16.7%
Gas	0	1	7	2	2	3	5	28.1%	22.8%	-12.1%	2.7%	3.2%	5.2%
Biomass & Waste	1	2	6	5	6	1	1	7.7%	14.0%	-1.1%	1.4%	-17.5%	-0.2%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**223**	**349**	**515**	**595**	**734**	**907**	**1 080**	**4.6%**	**4.0%**	**1.4%**	**2.1%**	**2.1%**	**1.8%**
Coal	5	11	11	13	21	22	25	8.8%	0.3%	1.2%	5.0%	0.6%	1.3%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	5	15	16	14	4	0	1	11.9%	0.6%	-1.2%	-12.6%	-26.8%	16.4%
Gas	0	4	36	11	14	19	32	28.7%	24.5%	-11.7%	2.6%	3.3%	5.5%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	10.7%
Biomass & Waste	4	8	31	28	32	5	4	7.4%	14.9%	-1.0%	1.3%	-17.5%	-0.5%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	2	6	15	15	16	27	35	10.5%	9.2%	0.6%	0.3%	5.5%	2.7%
Hydro	207	304	403	437	503	521	526	3.9%	2.9%	0.8%	1.4%	0.4%	0.1%
Wind	0	0	2	74	115	178	234	n.s.	n.s.	42.2%	4.6%	4.4%	2.8%
Solar	0	0	0	2	29	135	213	n.s.	n.s.	n.s.	27.8%	16.6%	4.7%
Other	0	0	0	0	0	1	8	n.s.	n.s.	n.s.	-7.2%	14.2%	25.5%
Generation Capacity (GW_e)	**54**	**75**	**114**	**172**	**216**	**307**	**383**	**3.3%**	**4.3%**	**4.2%**	**2.4%**	**3.6%**	**2.2%**
Coal	2	3	4	5	4	7	10	4.3%	0.7%	3.4%	-1.7%	5.0%	4.0%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	20.4%
Oil	4	5	7	5	5	5	7	2.9%	3.3%	-3.6%	0.4%	0.0%	2.4%
Gas	0	1	11	12	13	19	18	12.0%	23.2%	0.7%	0.9%	3.7%	-0.8%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	14.8%
Biomass & Waste	1	2	8	13	12	2	1	5.1%	16.0%	5.6%	-1.5%	-15.1%	-7.0%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	1	2	2	2	2	3	4	11.8%	0.0%	-0.2%	0.1%	5.3%	2.7%
Hydro	46	61	81	108	124	128	130	3.0%	2.8%	2.9%	1.4%	0.4%	0.1%
Wind	0	0	1	25	38	55	70	n.s.	46.8%	38.7%	4.3%	4.0%	2.4%
Solar	0	0	0	2	19	86	143	n.s.	n.s.	n.s.	28.3%	16.6%	5.2%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	23.1%	13.7%	10.2%
Total Final Consumption[2] (Mtoe)	**114**	**156**	**213**	**236**	**265**	**292**	**312**	**3.3%**	**3.1%**	**1.0%**	**1.2%**	**1.0%**	**0.7%**
Coal	6	9	11	11	13	15	18	3.9%	2.4%	-0.2%	1.5%	1.5%	2.4%
Oil	53	80	94	113	114	120	119	4.2%	1.6%	1.9%	0.1%	0.5%	-0.2%
Gas	2	5	11	12	21	36	54	7.2%	8.2%	1.1%	5.9%	5.5%	4.1%
Electricity	18	28	38	43	53	64	76	4.3%	3.1%	1.2%	2.1%	2.0%	1.7%
Heat	0	0	0	1	1	1	1	n.s.	28.4%	12.7%	-2.0%	1.5%	0.9%
Biomass & Other	34	35	60	56	64	56	44	0.4%	5.4%	-0.7%	1.4%	-1.3%	-2.3%
Industry (incl. non-energy use)	**52**	**73**	**100**	**102**	**117**	**129**	**139**	**3.5%**	**3.3%**	**0.1%**	**1.4%**	**1.0%**	**0.7%**
Coal	6	9	11	11	13	15	18	3.9%	2.4%	-0.2%	1.5%	1.5%	2.4%
Oil	17	27	27	26	31	35	38	4.6%	0.3%	-0.3%	1.5%	1.2%	0.9%
Gas	2	4	10	10	14	23	31	7.0%	8.8%	-0.1%	3.6%	4.8%	3.2%
Electricity	10	13	17	18	23	28	31	2.7%	3.3%	0.3%	2.4%	1.9%	1.3%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	17	20	34	36	36	29	20	2.0%	5.3%	0.5%	0.0%	-2.1%	-3.8%
Buildings	**23**	**29**	**34**	**39**	**45**	**50**	**55**	**2.3%**	**1.8%**	**1.2%**	**1.4%**	**1.2%**	**0.9%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	6	8	7	8	7	6	6	2.2%	-0.9%	0.6%	-1.4%	-1.0%	-0.4%
Gas	0	0	0	2	6	8	10	1.9%	7.3%	13.6%	12.5%	4.0%	1.6%
Electricity	8	14	19	22	25	29	33	5.9%	3.0%	1.6%	1.6%	1.4%	1.2%
Heat	0	0	0	1	1	1	1	n.s.	28.4%	12.7%	-2.0%	1.5%	0.9%
Biomass & Other	9	7	8	7	6	5	5	-2.1%	1.1%	-1.9%	-1.0%	-0.9%	-0.9%
Agriculture	**6**	**7**	**10**	**12**	**12**	**13**	**14**	**2.0%**	**3.1%**	**1.5%**	**0.6%**	**0.6%**	**0.6%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	3	5	6	6	6	7	7	3.5%	2.5%	0.4%	0.4%	0.4%	0.3%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Electricity	1	1	2	3	3	3	4	6.8%	3.2%	5.7%	1.3%	1.4%	1.3%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	2	2	3	3	3	3	3	-2.8%	4.4%	1.1%	0.4%	0.4%	0.3%
Transport	**33**	**47**	**68**	**84**	**92**	**100**	**105**	**3.7%**	**3.7%**	**2.0%**	**0.9%**	**0.8%**	**0.5%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	27	41	54	73	71	73	68	4.5%	2.7%	3.2%	-0.4%	0.4%	-0.7%
Gas	0	0	0	0	1	5	12	n.s.	n.s.	n.s.	33.0%	15.8%	10.2%
Electricity	0	0	0	0	1	4	8	0.5%	2.9%	5.5%	17.5%	11.7%	7.6%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	6	6	15	10	19	18	16	-0.3%	9.3%	-3.6%	6.4%	-0.3%	-1.1%
Other Energy Transformation & Losses[3]	**52**	**66**	**76**	**69**	**85**	**72**	**74**	**2.5%**	**1.4%**	**-0.9%**	**2.1%**	**-1.7%**	**0.3%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Canada	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	28	31	34	37	40	42	44	1.0%	1.1%	0.9%	0.7%	0.5%	0.5%
GDP per capita (ppp, k$'15)	32	39	42	48	53	61	70	1.9%	0.8%	1.3%	1.1%	1.4%	1.4%
Prices													
International/Regional ($'15/boe)													
Coal	2	1	2	2	2	2	3	-4.2%	5.6%	0.6%	-0.2%	0.7%	1.3%
Oil	39	38	86	91	89	96	107	-0.2%	8.4%	0.5%	-0.2%	0.8%	1.0%
Gas	26	40	34	34	41	51	59	4.6%	-1.6%	-0.1%	1.8%	2.3%	1.6%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**496**	**647**	**656**	**689**	**677**	**756**	**791**	**2.7%**	**0.1%**	**0.5%**	**-0.2%**	**1.1%**	**0.5%**
Total GHG (energy, industry, agriculture)	**597**	**732**	**727**	**733**	**694**	**753**	**774**	**2.1%**	**-0.1%**	**0.1%**	**-0.6%**	**0.8%**	**0.3%**
CO_2	448	562	579	591	574	622	649	2.3%	0.3%	0.2%	-0.3%	0.8%	0.4%
CH_4	95	119	101	91	75	86	78	2.3%	-1.7%	-0.9%	-1.9%	1.3%	-0.9%
N_2O	43	40	38	39	39	39	39	-0.6%	-0.6%	0.5%	-0.2%	0.0%	0.1%
F gases	12	11	10	11	6	7	8	-1.0%	-0.5%	1.3%	-6.5%	1.5%	1.2%
Total GHG from Energy and Industry	**548**	**674**	**671**	**674**	**634**	**689**	**711**	**2.1%**	**0.0%**	**0.0%**	**-0.6%**	**0.8%**	**0.3%**
CO_2 Emissions from Fuel Comb.	**412**	**516**	**536**	**547**	**529**	**575**	**600**	**2.3%**	**0.4%**	**0.2%**	**-0.3%**	**0.8%**	**0.4%**
Power generation/District heating	96	135	108	61	22	12	27	3.5%	-2.1%	-5.6%	-9.6%	-5.7%	8.2%
Industry	75	82	58	69	66	72	80	0.9%	-3.4%	1.9%	-0.5%	0.9%	1.0%
Buildings	74	85	72	69	58	54	48	1.5%	-1.7%	-0.4%	-1.6%	-0.8%	-1.2%
Agriculture	8	10	15	18	18	18	17	3.1%	3.6%	2.3%	-0.1%	-0.2%	-0.2%
Transport	110	135	163	168	143	124	109	2.1%	1.9%	0.4%	-1.6%	-1.4%	-1.3%
Other	50	69	121	162	223	294	318	3.2%	5.8%	3.0%	3.2%	2.8%	0.8%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**n.s.**	**n.s.**	**n.s.**	**8.3%**	**18.9%**	**22.9%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	32.4%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	18.7%
Biomass	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	8.3%	10.9%	11.4%
Energy Balance, by fuel (Mtoe)													
Primary Production	**241**	**332**	**352**	**476**	**577**	**827**	**700**	**3.2%**	**0.6%**	**3.1%**	**1.9%**	**3.7%**	**-1.7%**
Coal	36	36	34	15	42	128	83	0.0%	-0.8%	-7.9%	11.1%	11.7%	-4.2%
Oil	78	103	145	221	274	353	266	2.8%	3.4%	4.3%	2.2%	2.6%	-2.8%
Natural gas	84	141	122	158	169	257	263	5.3%	-1.4%	2.7%	0.7%	4.3%	0.2%
Biomass	11	14	13	33	36	28	21	2.5%	-0.8%	10.1%	0.6%	-2.5%	-2.6%
Nuclear[1]	6	6	8	9	8	7	6	0.0%	2.2%	1.2%	-1.4%	-0.9%	-1.9%
Hydro	26	31	30	35	37	37	37	1.9%	-0.2%	1.4%	0.6%	0.1%	0.0%
Other renewables	0	0	1	5	11	17	22	n.s.	41.9%	19.0%	9.6%	4.4%	2.6%
Net Imports	**- 40**	**- 124**	**- 127**	**- 260**	**- 353**	**- 573**	**- 433**						
Coal	- 12	- 5	- 11	0	- 35	- 120	- 70						
Oil	2	- 16	- 47	- 127	- 193	- 281	- 204						
Natural gas	- 29	- 67	- 43	- 62	- 51	- 106	- 97						
Biomass	0	0	0	- 15	- 20	- 14	- 9						
Biofuels	0	0	0	0	0	1	0						
Electricity	0	- 36	- 26	- 57	- 56	- 53	- 53						
Primary Energy Demand[2]	**201**	**208**	**225**	**216**	**224**	**254**	**266**	0.3%	**0.8%**	**-0.4%**	**0.4%**	**1.3%**	**0.5%**
Coal	24	31	22	15	8	8	13	2.5%	-3.2%	-3.9%	-6.3%	-0.2%	5.8%
Oil	80	87	98	94	81	72	62	0.8%	1.2%	-0.4%	-1.5%	-1.2%	-1.5%
Natural gas	55	74	79	96	118	151	166	3.1%	0.6%	2.0%	2.1%	2.5%	0.9%
Biomass	11	14	12	19	16	14	12	2.4%	-1.1%	4.3%	-1.6%	-1.1%	-1.6%
Nuclear[1]	6	6	8	9	8	7	6	0.0%	2.2%	1.2%	-1.4%	-0.9%	-1.9%
Hydro	26	31	30	35	37	37	37	1.9%	-0.2%	1.4%	0.6%	0.1%	0.0%
Other renewables	0	0	1	5	11	17	22	n.s.	41.9%	19.0%	9.6%	4.4%	2.6%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**201**	**208**	**225**	**216**	**224**	**254**	**266**	**0.3%**	**0.8%**	**-0.4%**	**0.4%**	**1.3%**	**0.5%**
Energy for Power Generation	**58**	**77**	**73**	**68**	**63**	**66**	**74**	**2.8%**	**-0.5%**	**-0.6%**	**-0.8%**	**0.4%**	**1.2%**
Other Energy Transformation & Losses	**20**	**- 14**	**9**	**- 8**	**19**	**52**	**61**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**10.6%**	**1.6%**
Final consumption	**160**	**187**	**186**	**199**	**189**	**190**	**191**	**1.6%**	**-0.1%**	**0.7%**	**-0.5%**	**0.1%**	**0.1%**
Steel, Non-Met. Minerals and Chem.	11	12	12	16	15	14	13	0.8%	-0.1%	2.6%	-0.6%	-0.5%	-0.6%
Other Industry	37	44	31	36	37	41	46	1.7%	-3.5%	1.8%	0.1%	1.1%	1.1%
Non-Energy Use	15	20	23	24	25	27	28	2.9%	1.4%	0.3%	0.5%	0.8%	0.6%
Residential	31	33	32	31	29	29	27	0.4%	-0.2%	-0.2%	-0.7%	0.0%	-0.7%
Services	22	27	25	24	22	19	17	2.2%	-0.7%	-0.3%	-1.0%	-1.3%	-1.1%
Agriculture	3	4	6	7	7	8	9	2.6%	2.8%	2.3%	0.7%	0.7%	0.7%
Road	33	39	49	52	45	44	43	1.7%	2.2%	0.6%	-1.2%	-0.4%	-0.2%
Rail	2	2	2	2	2	2	2	-0.7%	0.2%	1.6%	-0.1%	0.0%	0.0%
Aviation	3	4	4	5	4	4	4	2.4%	-0.7%	1.7%	-1.3%	-0.8%	-0.5%
Other Transport	1	1	2	1	2	2	2	0.1%	3.5%	-3.8%	0.6%	0.7%	0.5%

[1] Nuclear energy is accounted as primary electricity

Canada	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**27**	**39**	**34**	**21**	**7**	**4**	**9**	**4.0%**	**-1.6%**	**-4.8%**	**-9.6%**	**-5.5%**	**7.7%**
Coal	20	27	19	10	3	1	4	3.1%	-3.4%	-5.9%	-11.2%	-7.5%	10.7%
Oil	4	3	2	2	0	0	0	-1.8%	-5.1%	-0.7%	-15.3%	-25.4%	27.8%
Gas	2	7	11	6	4	3	4	14.7%	4.4%	-6.4%	-4.8%	-2.7%	4.9%
Biomass & Waste	1	2	1	3	0	0	0	7.8%	-3.1%	6.0%	-16.6%	-24.4%	26.3%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**482**	**606**	**596**	**643**	**678**	**724**	**782**	**2.3%**	**-0.2%**	**0.8%**	**0.5%**	**0.7%**	**0.8%**
Coal	82	118	80	41	13	7	18	3.6%	-3.8%	-6.5%	-10.7%	-6.7%	10.6%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	26.3%
Oil	16	15	8	7	2	0	1	-1.1%	-6.1%	-0.6%	-14.5%	-25.4%	27.9%
Gas	10	33	52	30	21	16	27	13.2%	4.4%	-5.3%	-3.4%	-2.7%	5.2%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	19.0%
Biomass & Waste	4	8	6	11	2	0	1	7.6%	-3.2%	6.0%	-16.6%	-22.6%	24.7%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	73	73	91	102	89	82	67	0.0%	2.2%	1.2%	-1.4%	-0.9%	-1.9%
Hydro	297	359	351	402	426	431	430	1.9%	-0.2%	1.4%	0.6%	0.1%	0.0%
Wind	0	0	9	48	122	184	229	n.s.	41.9%	18.5%	9.8%	4.2%	2.2%
Solar	0	0	0	2	3	4	8	n.s.	22.0%	35.7%	2.1%	3.5%	5.9%
Other	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	24.3%	16.0%	11.4%
Generation Capacity (GW_e)	**103**	**111**	**131**	**143**	**164**	**181**	**200**	**0.7%**	**1.7%**	**0.9%**	**1.4%**	**1.0%**	**1.0%**
Coal	19	18	14	7	2	2	4	-0.8%	-2.3%	-6.6%	-11.9%	1.7%	4.9%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	22.6%
Oil	7	8	5	2	2	3	4	0.5%	-3.7%	-9.5%	1.5%	1.7%	4.6%
Gas	4	7	15	14	12	10	16	5.9%	8.4%	-0.7%	-1.3%	-1.6%	4.6%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	20.3%
Biomass & Waste	1	1	5	3	2	1	0	2.2%	15.1%	-5.6%	-2.6%	-7.8%	-8.5%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	13	10	13	13	11	10	8	-2.2%	2.3%	0.5%	-1.6%	-1.1%	-2.1%
Hydro	59	67	75	83	88	89	88	1.3%	1.1%	1.0%	0.6%	0.1%	0.0%
Wind	0	0	4	18	43	62	73	n.s.	39.9%	16.2%	9.1%	3.6%	1.7%
Solar	0	0	0	3	3	4	6	n.s.	40.9%	29.9%	0.5%	2.1%	4.7%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	15.5%	10.9%
Total Final Consumption[2] (Mtoe)	**160**	**187**	**186**	**199**	**189**	**190**	**191**	**1.6%**	**-0.1%**	**0.7%**	**-0.5%**	**0.1%**	**0.1%**
Coal	4	5	4	5	4	5	7	0.8%	-1.1%	1.1%	-0.4%	2.0%	3.0%
Oil	69	80	89	91	81	71	60	1.6%	1.0%	0.2%	-1.2%	-1.3%	-1.6%
Gas	40	49	40	45	43	48	54	1.9%	-2.0%	1.3%	-0.6%	1.2%	1.2%
Electricity	36	41	41	40	43	46	50	1.4%	0.0%	-0.2%	0.6%	0.8%	0.8%
Heat	1	1	1	1	1	2	3	2.5%	-4.7%	6.1%	3.8%	3.8%	3.6%
Biomass & Other	10	12	11	17	17	17	16	1.8%	-0.6%	4.0%	0.1%	0.2%	-0.4%
Industry (incl. non-energy use)	**63**	**76**	**66**	**76**	**77**	**82**	**88**	**1.9%**	**-1.4%**	**1.4%**	**0.1%**	**0.7%**	**0.7%**
Coal	4	5	4	5	4	5	7	0.9%	-1.1%	1.1%	-0.4%	2.1%	3.0%
Oil	18	22	24	24	24	24	23	2.0%	0.9%	0.1%	-0.1%	0.0%	-0.4%
Gas	20	23	16	21	21	24	27	1.5%	-3.9%	2.9%	0.0%	1.4%	1.3%
Electricity	14	17	15	16	18	22	25	1.9%	-1.5%	0.3%	1.7%	1.6%	1.5%
Heat	1	1	0	1	1	1	1	2.5%	-5.3%	2.7%	-0.2%	-0.3%	-0.2%
Biomass & Other	6	8	6	10	8	6	4	3.3%	-2.0%	4.6%	-2.2%	-2.9%	-3.8%
Buildings	**53**	**60**	**57**	**56**	**51**	**49**	**45**	**1.2%**	**-0.5%**	**-0.3%**	**-0.8%**	**-0.5%**	**-0.8%**
Coal	0	0	0	0	0	0	0	-3.0%	-1.3%	-16.0%	-3.8%	-3.8%	-4.6%
Oil	9	9	5	4	4	4	4	0.0%	-5.0%	-1.6%	-1.0%	-0.2%	-0.9%
Gas	20	25	24	23	19	18	15	2.3%	-0.5%	-0.1%	-1.8%	-1.0%	-1.3%
Electricity	20	23	25	24	22	20	19	1.0%	0.9%	-0.5%	-0.8%	-0.7%	-0.7%
Heat	0	0	0	0	1	1	2	4.4%	17.5%	23.4%	9.0%	6.3%	4.9%
Biomass & Other	4	4	4	4	5	5	5	-1.0%	-0.8%	1.3%	2.5%	0.5%	-1.7%
Agriculture	**3**	**4**	**6**	**7**	**7**	**8**	**9**	**2.6%**	**2.8%**	**2.3%**	**0.7%**	**0.7%**	**0.7%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	2	3	4	5	5	5	5	3.3%	4.1%	1.4%	-0.1%	-0.2%	-0.2%
Gas	0	1	1	1	1	1	1	1.6%	-0.3%	8.8%	-0.1%	-0.1%	-0.1%
Electricity	1	1	1	1	1	1	2	1.1%	-0.2%	0.1%	3.1%	3.0%	2.8%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	23.0%	6.1%	3.0%
Transport	**40**	**47**	**57**	**60**	**54**	**51**	**50**	**1.6%**	**1.9%**	**0.5%**	**-1.1%**	**-0.4%**	**-0.2%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	40	47	56	57	48	38	29	1.6%	1.7%	0.3%	-1.9%	-2.2%	-2.8%
Gas	0	0	0	0	1	5	10	3.6%	22.8%	-0.5%	44.5%	14.6%	7.0%
Electricity	0	0	0	0	1	3	4	n.s.	n.s.	n.s.	26.5%	7.4%	4.2%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	1	2	3	5	7	n.s.	24.2%	7.2%	3.0%	4.7%	3.3%
Other Energy Transformation & Losses[3]	**20**	**- 14**	**9**	**- 8**	**19**	**52**	**61**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**10.6%**	**1.6%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Chile	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	13	15	17	18	19	20	20	1.4%	1.1%	0.8%	0.5%	0.2%	0.0%
GDP per capita (ppp, k$'15)	8	13	17	22	28	36	45	4.9%	2.7%	2.4%	2.6%	2.5%	2.2%
Prices													
International/Regional ($'15/boe)													
Coal	2	1	2	2	2	3	4	-4.2%	5.6%	0.7%	0.7%	3.0%	1.1%
Oil	39	38	86	91	89	96	107	-0.2%	8.4%	0.5%	-0.2%	0.8%	1.0%
Gas	26	40	34	34	41	51	59	4.6%	-1.6%	-0.1%	1.8%	2.3%	1.6%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**43**	**90**	**141**	**161**	**189**	**190**	**184**	**7.7%**	**4.6%**	**1.3%**	**1.6%**	**0.0%**	**-0.3%**
Total GHG (energy, industry, agriculture)	**55**	**82**	**108**	**132**	**163**	**171**	**174**	**4.0%**	**2.7%**	**2.0%**	**2.2%**	**0.4%**	**0.2%**
CO_2	33	55	79	99	132	138	141	5.1%	3.7%	2.3%	2.9%	0.5%	0.2%
CH_4	17	21	21	24	23	24	24	1.8%	0.3%	1.3%	-0.5%	0.2%	0.0%
N_2O	5	7	8	8	8	9	9	3.6%	1.4%	0.4%	0.3%	0.4%	0.0%
F gases	0	0	0	0	0	0	0	-8.4%	1.9%	-3.2%	n.s.	n.s.	n.s.
Total GHG from Energy and Industry	**45**	**69**	**95**	**118**	**150**	**157**	**159**	**4.5%**	**3.2%**	**2.3%**	**2.4%**	**0.5%**	**0.2%**
CO_2 Emissions from Fuel Comb.	**30**	**50**	**73**	**92**	**120**	**125**	**128**	**5.2%**	**3.9%**	**2.3%**	**2.7%**	**0.4%**	**0.2%**
Power generation/District heating	8	14	25	31	32	32	38	5.2%	6.4%	2.1%	0.3%	0.0%	1.8%
Industry	7	11	14	18	41	46	45	4.9%	2.3%	2.6%	8.7%	1.2%	-0.3%
Buildings	3	5	6	5	4	4	3	3.7%	1.7%	-1.3%	-1.1%	-1.4%	-1.3%
Agriculture	0	1	1	1	1	1	1	3.7%	4.6%	-2.5%	0.3%	0.1%	0.0%
Transport	9	17	21	27	30	29	27	6.4%	2.3%	2.3%	0.9%	-0.2%	-0.9%
Other	2	3	6	10	12	13	14	2.7%	8.4%	5.1%	1.4%	1.1%	0.7%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**24.5%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	30.0%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	13.3%
Biomass	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	12.9%
Energy Balance, by fuel (Mtoe)													
Primary Production	**7**	**8**	**9**	**13**	**18**	**21**	**22**	**1.2%**	**0.5%**	**3.7%**	**3.4%**	**1.6%**	**0.7%**
Coal	1	0	0	2	3	3	4	-15.7%	0.5%	23.5%	3.0%	1.4%	1.5%
Oil	1	0	0	1	1	1	1	-11.2%	-2.1%	11.0%	0.3%	2.5%	-0.7%
Natural gas	1	2	2	1	1	1	1	1.1%	-0.2%	-7.4%	3.4%	0.8%	0.3%
Biomass	3	5	5	6	8	7	5	4.2%	0.4%	2.4%	2.4%	-1.3%	-3.7%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	1	2	2	2	3	4	5	7.6%	1.6%	2.2%	2.8%	2.4%	2.1%
Other renewables	0	0	0	1	3	5	7	n.s.	n.s.	39.9%	11.9%	7.1%	3.7%
Net Imports	**7**	**18**	**23**	**26**	**31**	**33**	**34**						
Coal	1	3	4	5	11	11	12						
Oil	6	10	15	18	19	18	16						
Natural gas	0	4	3	3	4	6	7						
Biomass	0	0	0	0	- 3	- 2	- 2						
Biofuels	0	0	0	0	0	0	0						
Electricity	0	1	1	0	0	0	0						
Primary Energy Demand[2]	**14**	**26**	**32**	**39**	**49**	**54**	**56**	6.4%	**1.9%**	**2.0%**	**2.4%**	**0.9%**	**0.4%**
Coal	2	3	4	7	14	15	16	1.9%	4.1%	5.0%	7.0%	0.3%	1.0%
Oil	6	10	15	19	19	19	17	4.9%	3.7%	2.3%	0.1%	-0.1%	-1.3%
Natural gas	1	5	4	3	5	7	8	15.9%	-1.5%	-2.4%	3.8%	2.8%	1.7%
Biomass	3	5	5	6	5	4	3	4.2%	0.4%	2.0%	-1.7%	-1.2%	-3.2%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	1	2	2	2	3	4	5	7.6%	1.6%	2.2%	2.8%	2.4%	2.1%
Other renewables	0	0	0	1	3	5	7	n.s.	n.s.	39.9%	11.9%	7.1%	3.7%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**14**	**26**	**32**	**39**	**49**	**54**	**56**	**6.4%**	**1.9%**	**2.0%**	**2.4%**	**0.9%**	**0.4%**
Energy for Power Generation	**3**	**6**	**10**	**14**	**16**	**19**	**23**	**7.2%**	**4.7%**	**3.9%**	**1.2%**	**2.0%**	**1.9%**
Other Energy Transformation & Losses	**1**	**3**	**3**	**4**	**5**	**5**	**5**	**9.6%**	**0.7%**	**2.6%**	**3.9%**	**0.4%**	**-0.2%**
Final consumption	**11**	**21**	**24**	**28**	**37**	**42**	**43**	**6.2%**	**1.5%**	**1.5%**	**3.0%**	**1.1%**	**0.3%**
Steel, Non-Met. Minerals and Chem.	0	1	1	1	9	10	8	4.1%	-0.3%	4.4%	24.3%	0.7%	-1.6%
Other Industry	3	6	8	11	10	13	15	7.1%	2.8%	3.1%	-1.0%	2.4%	1.9%
Non-Energy Use	1	2	1	1	1	1	1	10.1%	-8.2%	-4.1%	-1.0%	2.3%	0.4%
Residential	3	5	5	4	4	4	4	4.5%	0.9%	-3.3%	0.4%	-0.3%	-0.6%
Services	0	1	1	2	2	3	3	2.7%	8.2%	2.9%	3.1%	1.9%	1.7%
Agriculture	0	0	0	0	0	0	0	4.3%	4.2%	-2.1%	1.0%	0.9%	0.7%
Road	3	5	6	8	9	10	10	6.8%	2.2%	2.7%	1.4%	0.3%	-0.2%
Rail	0	0	0	0	0	0	0	0.2%	8.1%	10.4%	1.5%	1.4%	1.1%
Aviation	0	0	0	0	1	1	1	7.4%	4.8%	1.7%	3.0%	0.8%	-0.4%
Other Transport	0	0	0	0	1	1	1	2.0%	2.2%	-0.3%	3.0%	2.1%	1.4%

[1] Nuclear energy is accounted as primary electricity

Chile	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**2**	**5**	**8**	**11**	**10**	**11**	**12**	**7.1%**	**5.6%**	**3.5%**	**-0.6%**	**0.2%**	**0.9%**
Coal	2	2	4	6	5	5	7	2.4%	6.5%	3.9%	-0.5%	-1.4%	3.2%
Oil	0	0	2	2	2	2	2	-0.4%	14.4%	-1.5%	0.6%	2.5%	-0.9%
Gas	0	2	2	2	2	3	3	38.7%	0.6%	-1.4%	4.0%	2.5%	-0.4%
Biomass & Waste	0	0	0	2	1	1	0	13.5%	1.0%	19.8%	-6.9%	-2.2%	-9.9%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**18**	**40**	**60**	**85**	**115**	**159**	**203**	**8.5%**	**4.2%**	**3.5%**	**3.1%**	**3.2%**	**2.5%**
Coal	7	8	17	26	25	23	33	2.6%	7.1%	4.3%	-0.5%	-0.7%	3.8%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	25.9%
Oil	2	2	8	8	9	11	9	-0.4%	17.4%	-0.3%	0.5%	2.1%	-1.2%
Gas	0	10	11	10	15	19	18	49.4%	0.2%	-0.4%	4.1%	2.2%	-0.8%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	13.6%
Biomass & Waste	0	1	2	6	3	3	1	13.4%	9.1%	10.1%	-6.4%	-0.8%	-9.6%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	9	19	22	27	36	45	57	7.6%	1.6%	2.3%	2.8%	2.4%	2.3%
Wind	0	0	0	4	10	17	22	n.s.	n.s.	26.6%	11.3%	5.1%	2.8%
Solar	0	0	0	5	17	38	57	n.s.	n.s.	n.s.	14.0%	8.3%	4.1%
Other	0	0	0	0	1	3	5	2.8%	4.0%	2.9%	18.8%	17.8%	6.5%
Generation Capacity (GW_e)	**5**	**10**	**16**	**25**	**38**	**59**	**80**	**8.0%**	**4.9%**	**4.1%**	**4.4%**	**4.6%**	**3.1%**
Coal	1	2	2	5	4	4	6	6.5%	0.9%	6.5%	-0.8%	-1.4%	5.0%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	22.0%
Oil	1	1	3	3	3	4	4	-0.9%	13.9%	0.5%	-0.8%	2.0%	1.3%
Gas	0	3	4	3	4	5	4	43.0%	4.8%	-2.1%	1.2%	2.3%	-2.5%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	14.9%
Biomass & Waste	0	0	1	1	0	1	0	4.3%	12.3%	-1.0%	-7.6%	3.3%	-12.2%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	2	4	5	8	10	13	16	5.7%	2.8%	3.5%	2.8%	2.4%	2.4%
Wind	0	0	0	2	4	7	8	n.s.	n.s.	25.8%	10.3%	4.4%	2.1%
Solar	0	0	0	3	12	27	41	n.s.	n.s.	n.s.	14.7%	8.6%	4.5%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	13.8%	11.1%
Total Final Consumption[2] (Mtoe)	**11**	**21**	**24**	**28**	**37**	**42**	**43**	**6.2%**	**1.5%**	**1.5%**	**3.0%**	**1.1%**	**0.3%**
Coal	1	1	0	1	7	8	8	1.0%	-5.6%	5.3%	24.6%	1.5%	-0.6%
Oil	5	9	12	15	15	14	12	5.3%	2.8%	2.1%	0.1%	-0.4%	-1.4%
Gas	1	3	2	2	2	3	4	13.4%	-3.4%	-3.1%	3.5%	3.0%	3.2%
Electricity	1	3	5	7	9	12	15	9.0%	4.1%	3.3%	3.1%	3.1%	2.2%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	2.5%	5.4%	2.5%
Biomass & Other	3	4	4	4	4	4	3	4.1%	0.4%	-1.2%	0.5%	-0.5%	-1.2%
Industry (incl. non-energy use)	**4**	**9**	**10**	**13**	**20**	**23**	**24**	**7.5%**	**0.6%**	**2.7%**	**4.6%**	**1.6%**	**0.5%**
Coal	1	1	0	1	7	8	8	1.7%	-5.5%	5.3%	24.7%	1.5%	-0.6%
Oil	2	2	3	5	4	4	4	3.5%	4.6%	3.3%	-0.9%	0.2%	-1.0%
Gas	1	3	2	1	1	2	2	14.9%	-4.8%	-5.5%	3.6%	2.4%	2.6%
Electricity	1	2	3	4	5	8	10	9.7%	3.4%	3.2%	2.5%	3.4%	2.4%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	-0.2%	-0.3%	-0.2%
Biomass & Other	1	1	1	2	2	2	1	5.3%	-0.3%	6.6%	-1.3%	-1.9%	-4.3%
Buildings	**4**	**5**	**7**	**6**	**6**	**7**	**7**	**4.3%**	**2.0%**	**-1.7%**	**1.3%**	**0.6%**	**0.5%**
Coal	0	0	0	0	0	0	0	-15.5%	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	1	1	1	1	1	1	0	3.6%	1.1%	-2.7%	-2.7%	-2.8%	-2.3%
Gas	0	0	1	1	1	1	1	5.4%	4.5%	2.7%	1.6%	0.2%	-0.3%
Electricity	0	1	2	2	3	4	4	7.8%	5.6%	3.1%	3.4%	1.6%	1.3%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	2.5%	5.4%	2.5%
Biomass & Other	2	3	3	2	2	2	1	3.7%	0.7%	-6.7%	0.2%	-0.5%	-0.6%
Agriculture	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4.3%**	**4.2%**	**-2.1%**	**1.0%**	**0.9%**	**0.7%**
Coal	0	0	0	0	0	0	0	-13.4%	-8.8%	-4.4%	-1.0%	-1.1%	-1.1%
Oil	0	0	0	0	0	0	0	8.3%	5.0%	-2.4%	0.3%	0.1%	0.0%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Electricity	0	0	0	0	0	0	0	5.7%	-6.8%	4.4%	4.8%	4.5%	4.1%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	12.7%	5.4%	2.9%
Transport	**3**	**6**	**7**	**9**	**11**	**11**	**11**	**6.4%**	**2.3%**	**2.6%**	**1.6%**	**0.5%**	**-0.1%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	3	6	7	9	10	9	8	6.4%	2.3%	2.3%	0.8%	-0.6%	-1.6%
Gas	0	0	0	0	0	1	1	3.5%	4.7%	1.7%	33.6%	13.6%	8.3%
Electricity	0	0	0	0	0	1	1	0.4%	7.0%	16.4%	9.9%	7.5%	3.8%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	17.4%	3.0%	2.5%
Other Energy Transformation & Losses[3]	**1**	**3**	**3**	**4**	**5**	**5**	**5**	**9.6%**	**0.7%**	**2.6%**	**3.9%**	**0.4%**	**-0.2%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Mexico	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	85	102	117	133	146	155	161	1.8%	1.4%	1.3%	0.9%	0.6%	0.4%
GDP per capita (ppp, k$'15)	12	14	15	17	21	28	38	1.8%	0.3%	1.5%	2.1%	2.9%	2.9%
Prices													
International/Regional ($'15/boe)													
Coal	2	1	2	2	2	3	3	-4.2%	5.6%	-1.3%	-0.4%	4.2%	1.5%
Oil	39	38	86	91	89	96	107	-0.2%	8.4%	0.5%	-0.2%	0.8%	1.0%
Gas	26	40	34	34	41	51	59	4.6%	-1.6%	-0.1%	1.8%	2.3%	1.6%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**461**	**622**	**752**	**761**	**748**	**776**	**856**	**3.1%**	**1.9%**	**0.1%**	**-0.2%**	**0.4%**	**1.0%**
Total GHG (energy, industry, agriculture)	**444**	**602**	**733**	**750**	**741**	**768**	**840**	**3.1%**	**2.0%**	**0.2%**	**-0.1%**	**0.4%**	**0.9%**
CO_2	292	399	479	527	547	568	631	3.2%	1.9%	0.9%	0.4%	0.4%	1.0%
CH_4	113	121	134	117	120	122	128	0.6%	1.1%	-1.4%	0.2%	0.2%	0.4%
N_2O	37	78	110	95	70	71	73	7.9%	3.5%	-1.5%	-3.0%	0.1%	0.3%
F gases	2	4	10	11	5	6	8	8.0%	10.2%	1.4%	-8.3%	2.9%	2.6%
Total GHG from Energy and Industry	**353**	**511**	**637**	**645**	**624**	**647**	**711**	**3.8%**	**2.2%**	**0.1%**	**-0.3%**	**0.4%**	**0.9%**
CO_2 Emissions from Fuel Comb.	**263**	**365**	**444**	**473**	**486**	**499**	**554**	**3.4%**	**2.0%**	**0.6%**	**0.3%**	**0.3%**	**1.0%**
Power generation/District heating	63	117	133	165	193	205	245	6.5%	1.3%	2.1%	1.6%	0.6%	1.8%
Industry	55	56	64	60	66	71	77	0.1%	1.4%	-0.6%	0.8%	0.8%	0.8%
Buildings	24	31	28	19	19	21	22	2.4%	-1.1%	-3.8%	0.2%	0.8%	0.6%
Agriculture	5	7	9	9	10	10	10	2.6%	2.6%	0.5%	0.4%	0.4%	0.3%
Transport	84	107	153	153	126	112	106	2.4%	3.7%	0.0%	-2.0%	-1.2%	-0.5%
Other	31	48	57	67	72	80	94	4.5%	1.9%	1.6%	0.8%	1.0%	1.6%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**n.s.**	**n.s.**	**n.s.**	**9.4%**	**38.2%**	**19.8%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	24.8%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	16.3%
Biomass	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	9.4%	10.0%	11.8%
Energy Balance, by fuel (Mtoe)													
Primary Production	**179**	**211**	**206**	**142**	**157**	**213**	**229**	**1.6%**	**-0.2%**	**-3.7%**	**1.1%**	**3.1%**	**0.7%**
Coal	3	5	6	9	10	11	13	6.1%	2.0%	3.5%	1.5%	1.3%	1.6%
Oil	138	156	133	68	42	30	22	1.2%	-1.5%	-6.6%	-4.7%	-3.2%	-3.1%
Natural gas	23	32	49	36	52	81	69	3.4%	4.2%	-3.1%	3.9%	4.5%	-1.5%
Biomass	9	9	8	17	21	18	13	0.4%	-1.0%	7.6%	2.2%	-1.8%	-2.7%
Nuclear[1]	0	1	1	1	1	2	4	10.8%	-3.3%	6.0%	1.1%	6.1%	8.3%
Hydro	2	3	3	3	3	3	3	3.5%	1.1%	-0.6%	0.9%	0.3%	0.3%
Other renewables	4	5	6	9	28	68	103	1.5%	1.5%	4.4%	12.0%	9.3%	4.3%
Net Imports	**- 66**	**- 61**	**- 31**	**51**	**63**	**57**	**100**						
Coal	1	1	7	9	12	13	15						
Oil	- 66	- 67	- 43	31	45	43	48						
Natural gas	0	3	6	18	17	9	41						
Biomass	0	0	0	- 7	- 10	- 8	- 5						
Biofuels	0	0	0	0	0	0	0						
Electricity	- 1	1	- 1	0	0	0	0						
Primary Energy Demand[2]	**113**	**149**	**175**	**192**	**220**	**270**	**329**	2.9%	**1.6%**	**1.0%**	**1.4%**	**2.1%**	**2.0%**
Coal	4	6	13	18	22	24	28	4.7%	7.6%	3.2%	2.1%	0.9%	1.6%
Oil	72	89	91	99	87	73	70	2.2%	0.2%	0.9%	-1.3%	-1.7%	-0.4%
Natural gas	23	35	54	53	69	90	110	4.5%	4.3%	-0.1%	2.5%	2.7%	2.1%
Biomass	9	9	8	10	11	10	9	0.4%	-1.0%	1.7%	1.0%	-0.9%	-1.0%
Nuclear[1]	0	1	1	1	1	2	4	10.8%	-3.3%	6.0%	1.1%	6.1%	8.3%
Hydro	2	3	3	3	3	3	3	3.5%	1.1%	-0.6%	0.9%	0.3%	0.3%
Other renewables	4	5	6	9	28	68	103	1.5%	1.5%	4.4%	12.0%	9.3%	4.3%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**113**	**149**	**175**	**192**	**220**	**270**	**329**	**2.9%**	**1.6%**	**1.0%**	**1.4%**	**2.1%**	**2.0%**
Energy for Power Generation	**27**	**49**	**59**	**71**	**101**	**150**	**203**	**5.9%**	**1.9%**	**1.9%**	**3.5%**	**4.0%**	**3.1%**
Other Energy Transformation & Losses	**10**	**17**	**16**	**27**	**32**	**33**	**36**	**5.8%**	**-0.5%**	**5.2%**	**1.7%**	**0.4%**	**0.9%**
Final consumption	**84**	**96**	**118**	**122**	**130**	**149**	**174**	**1.3%**	**2.1%**	**0.3%**	**0.6%**	**1.4%**	**1.6%**
Steel, Non-Met. Minerals and Chem.	15	16	14	15	17	18	18	0.4%	-1.2%	0.8%	1.0%	0.6%	0.5%
Other Industry	11	13	20	22	27	34	43	1.3%	4.3%	1.1%	1.9%	2.6%	2.2%
Non-Energy Use	9	7	7	6	7	7	8	-2.2%	0.1%	-2.1%	1.2%	1.0%	1.0%
Residential	16	18	18	17	18	19	22	1.4%	-0.1%	-0.7%	0.6%	1.0%	1.1%
Services	2	3	5	6	9	15	24	4.6%	3.3%	3.2%	3.6%	5.2%	4.8%
Agriculture	2	3	4	4	5	5	6	2.4%	2.2%	1.3%	1.3%	1.4%	1.3%
Road	27	34	50	50	47	48	50	2.2%	3.9%	0.1%	-0.7%	0.1%	0.6%
Rail	1	1	1	1	1	1	1	-1.0%	0.5%	1.2%	1.2%	1.9%	2.1%
Aviation	0	0	0	0	0	0	0	n.s.	1.1%	-2.8%	2.0%	2.2%	2.2%
Other Transport	0	1	1	1	1	1	1	11.4%	-5.6%	0.5%	1.9%	2.3%	2.0%

[1] Nuclear energy is accounted as primary electricity

Mexico	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**21**	**40**	**49**	**58**	**68**	**76**	**92**	**6.8%**	**2.1%**	**1.7%**	**1.6%**	**1.1%**	**1.9%**
Coal	2	5	8	14	17	19	22	10.6%	5.2%	5.9%	2.1%	0.9%	1.4%
Oil	15	23	11	15	15	10	13	4.4%	-7.6%	3.5%	0.2%	-3.8%	2.1%
Gas	3	11	29	27	33	42	51	12.1%	10.6%	-1.0%	2.2%	2.5%	2.0%
Biomass & Waste	0	1	1	2	2	1	1	n.s.	3.1%	9.0%	-3.9%	-2.3%	-1.0%
Other	0	1	1	0	1	4	6	1.4%	1.2%	-4.0%	14.3%	10.9%	4.1%
Gross Elec. Generation (TWh_e)	**116**	**206**	**276**	**374**	**540**	**797**	**1 125**	**5.9%**	**3.0%**	**3.1%**	**3.8%**	**4.0%**	**3.5%**
Coal	8	19	32	55	71	85	106	9.3%	5.4%	5.4%	2.6%	1.8%	2.2%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	23.3%
Oil	62	94	45	62	67	47	58	4.2%	-7.1%	3.4%	0.7%	-3.5%	2.2%
Gas	14	44	147	151	191	249	302	11.8%	12.8%	0.2%	2.4%	2.7%	1.9%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	16.5%
Biomass & Waste	0	2	1	4	4	4	4	n.s.	-7.4%	18.6%	-0.9%	0.3%	0.7%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	3	8	6	11	12	21	47	10.8%	-3.3%	6.0%	1.1%	6.1%	8.3%
Hydro	23	33	37	35	38	39	41	3.5%	1.1%	-0.6%	0.9%	0.3%	0.3%
Wind	0	0	1	50	126	236	310	34.2%	51.9%	44.6%	9.8%	6.5%	2.8%
Solar	0	0	0	1	15	66	168	21.5%	16.0%	42.3%	30.0%	16.4%	9.7%
Other	5	6	7	6	17	49	88	1.4%	1.2%	-1.5%	11.8%	10.9%	6.1%
Generation Capacity (GW_e)	**27**	**41**	**62**	**84**	**136**	**237**	**358**	**4.4%**	**4.0%**	**3.1%**	**5.0%**	**5.7%**	**4.2%**
Coal	1	5	6	8	10	13	16	15.6%	1.4%	3.5%	1.6%	2.6%	2.4%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	23.6%
Oil	12	15	13	14	21	27	37	2.3%	-1.1%	0.8%	4.0%	2.3%	3.2%
Gas	5	9	27	27	32	51	64	7.1%	11.5%	-0.2%	1.9%	4.7%	2.3%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	17.3%
Biomass & Waste	0	0	1	1	1	1	1	n.s.	5.5%	-1.9%	-1.0%	1.3%	0.2%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	1	1	1	2	2	3	7	7.7%	0.0%	1.2%	0.9%	5.9%	8.1%
Hydro	8	10	12	13	14	14	15	2.1%	1.8%	1.0%	0.9%	0.3%	0.3%
Wind	0	0	1	18	44	78	98	n.s.	n.s.	42.5%	9.4%	5.9%	2.2%
Solar	0	0	0	1	10	41	108	19.9%	8.0%	43.1%	24.5%	15.6%	10.1%
Other	1	1	1	1	3	9	14	2.0%	1.2%	-1.7%	14.3%	11.0%	4.3%
Total Final Consumption[2] (Mtoe)	**84**	**96**	**118**	**122**	**130**	**149**	**174**	**1.3%**	**2.1%**	**0.3%**	**0.6%**	**1.4%**	**1.6%**
Coal	2	2	5	3	4	4	5	-0.7%	11.1%	-3.6%	2.1%	0.6%	1.3%
Oil	51	61	75	69	59	51	46	1.8%	2.0%	-0.7%	-1.7%	-1.3%	-1.0%
Gas	14	13	13	15	19	26	33	-1.0%	0.3%	1.6%	2.5%	3.1%	2.3%
Electricity	9	13	19	26	38	56	78	3.8%	4.0%	3.5%	3.8%	4.0%	3.3%
Heat	0	0	0	1	2	2	2	9.6%	10.3%	24.0%	5.8%	1.5%	1.9%
Biomass & Other	9	8	7	7	8	9	10	-0.4%	-1.4%	-0.4%	1.7%	0.9%	0.8%
Industry (incl. non-energy use)	**36**	**36**	**41**	**43**	**50**	**59**	**69**	**0.1%**	**1.3%**	**0.5%**	**1.5%**	**1.7%**	**1.6%**
Coal	2	2	5	3	4	4	5	-0.7%	11.1%	-3.6%	2.1%	0.6%	1.3%
Oil	14	14	13	11	11	12	12	-0.2%	-0.9%	-1.7%	0.6%	0.6%	0.2%
Gas	13	12	12	14	15	16	18	-0.9%	0.0%	1.3%	0.7%	1.2%	1.1%
Electricity	5	7	11	14	19	25	32	4.5%	4.0%	3.0%	2.7%	3.1%	2.6%
Heat	0	0	0	0	0	0	0	n.s.	9.9%	14.4%	-0.2%	-0.3%	-0.2%
Biomass & Other	2	1	1	1	1	1	1	-3.4%	-4.2%	1.2%	0.9%	0.4%	-0.2%
Buildings	**18**	**21**	**23**	**23**	**27**	**35**	**46**	**1.8%**	**0.5%**	**0.2%**	**1.5%**	**2.6%**	**2.9%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	7	9	8	5	4	3	3	2.8%	-1.5%	-5.0%	-2.3%	-1.2%	-0.6%
Gas	1	1	1	2	3	4	5	-3.0%	5.1%	4.5%	7.1%	3.6%	1.7%
Electricity	3	5	7	11	14	22	33	3.2%	4.5%	4.0%	3.1%	4.3%	4.2%
Heat	0	0	0	1	2	2	2	9.6%	10.3%	24.3%	5.9%	1.6%	2.0%
Biomass & Other	7	7	6	5	4	3	3	0.3%	-0.9%	-1.8%	-2.7%	-2.2%	-2.2%
Agriculture	**2**	**3**	**4**	**4**	**5**	**5**	**6**	**2.4%**	**2.2%**	**1.3%**	**1.3%**	**1.4%**	**1.3%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	2	2	3	3	3	3	3	2.6%	2.6%	0.5%	0.4%	0.4%	0.3%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Electricity	1	1	1	1	1	2	2	1.7%	0.9%	3.6%	2.4%	2.6%	2.5%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	23.8%	6.2%	3.3%
Transport	**28**	**36**	**51**	**52**	**49**	**50**	**53**	**2.4%**	**3.6%**	**0.2%**	**-0.7%**	**0.2%**	**0.6%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	28	36	51	51	40	33	28	2.4%	3.6%	0.0%	-2.3%	-2.1%	-1.6%
Gas	0	0	0	0	2	6	10	n.s.	1.0%	23.0%	49.2%	12.4%	5.6%
Electricity	0	0	0	0	4	7	10	3.2%	0.8%	13.4%	26.3%	6.9%	3.5%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	1	3	4	5	n.s.	n.s.	n.s.	16.8%	4.1%	2.6%
Other Energy Transformation & Losses[3]	**10**	**17**	**16**	**27**	**32**	**33**	**36**	**5.8%**	**-0.5%**	**5.2%**	**1.7%**	**0.4%**	**0.9%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

United States	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	253	282	309	331	354	375	392	1.1%	0.9%	0.7%	0.7%	0.6%	0.5%
GDP per capita (ppp, k$'15)	39	49	53	61	68	78	88	2.3%	0.7%	1.5%	1.0%	1.5%	1.2%
Prices													
International/Regional ($'15/boe)													
Coal	2	1	2	2	2	2	3	-4.2%	5.6%	0.6%	-0.2%	0.7%	1.3%
Oil	39	38	86	91	89	96	107	-0.2%	8.4%	0.5%	-0.2%	0.8%	1.0%
Gas	26	40	34	34	41	51	59	4.6%	-1.6%	-0.1%	1.8%	2.3%	1.6%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**5 403**	**6 470**	**6 483**	**6 262**	**5 338**	**5 079**	**4 944**	**1.8%**	**0.0%**	**-0.3%**	**-1.6%**	**-0.5%**	**-0.3%**
Total GHG (energy, industry, agriculture)	**6 234**	**7 006**	**6 737**	**6 451**	**5 478**	**5 183**	**5 022**	**1.2%**	**-0.4%**	**-0.4%**	**-1.6%**	**-0.6%**	**-0.3%**
CO_2	4 983	5 777	5 508	5 233	4 240	3 898	3 693	1.5%	-0.5%	-0.5%	-2.1%	-0.8%	-0.5%
CH_4	788	716	699	676	660	672	686	-0.9%	-0.2%	-0.3%	-0.2%	0.2%	0.2%
N_2O	363	371	376	355	365	372	376	0.2%	0.1%	-0.6%	0.3%	0.2%	0.1%
F gases	99	142	154	187	213	242	267	3.6%	0.9%	2.0%	1.3%	1.3%	1.0%
Total GHG from Energy and Industry	**5 735**	**6 476**	**6 177**	**5 898**	**4 882**	**4 558**	**4 371**	**1.2%**	**-0.5%**	**-0.5%**	**-1.9%**	**-0.7%**	**-0.4%**
CO_2 Emissions from Fuel Comb.	**4 824**	**5 604**	**5 347**	**5 055**	**4 061**	**3 715**	**3 513**	**1.5%**	**-0.5%**	**-0.6%**	**-2.2%**	**-0.9%**	**-0.6%**
Power generation/District heating	1 866	2 372	2 332	2 013	1 350	984	977	2.4%	-0.2%	-1.5%	-3.9%	-3.1%	-0.1%
Industry	596	542	454	455	444	468	484	-1.0%	-1.7%	0.0%	-0.2%	0.5%	0.3%
Buildings	544	602	545	504	430	409	367	1.0%	-1.0%	-0.8%	-1.6%	-0.5%	-1.1%
Agriculture	46	45	53	53	56	59	61	-0.2%	1.8%	0.0%	0.5%	0.5%	0.4%
Transport	1 424	1 713	1 641	1 554	1 232	1 043	908	1.9%	-0.4%	-0.5%	-2.3%	-1.7%	-1.4%
Other	349	331	322	475	549	753	716	-0.5%	-0.3%	4.0%	1.5%	3.2%	-0.5%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Energy Balance, by fuel (Mtoe)													
Primary Production	**1 452**	**1 466**	**1 525**	**1 902**	**1 784**	**1 817**	**1 899**	**0.1%**	**0.4%**	**2.2%**	**-0.6%**	**0.2%**	**0.4%**
Coal	487	532	530	452	380	499	719	0.9%	0.0%	-1.6%	-1.7%	2.8%	3.7%
Oil	364	299	276	553	506	412	348	-2.0%	-0.8%	7.2%	-0.9%	-2.0%	-1.7%
Natural gas	428	456	509	611	567	547	446	0.6%	1.1%	1.9%	-0.8%	-0.4%	-2.0%
Biomass	82	73	90	131	110	101	84	-1.1%	2.0%	3.9%	-1.8%	-0.9%	-1.8%
Nuclear[1]	53	69	72	71	66	48	29	2.7%	0.5%	-0.2%	-0.7%	-3.2%	-4.7%
Hydro	23	22	23	23	24	26	27	-0.8%	0.4%	0.2%	0.6%	0.5%	0.4%
Other renewables	14	15	26	60	131	185	246	0.3%	5.8%	9.0%	8.0%	3.5%	2.9%
Net Imports	**392**	**693**	**570**	**293**	**128**	**27**	**- 154**						
Coal	- 31	- 5	- 31	- 45	- 81	- 241	- 384						
Oil	408	572	529	222	134	135	109						
Natural gas	13	92	47	38	20	80	75						
Biomass	0	0	0	12	- 9	- 9	- 16						
Biofuels	0	0	- 1	5	3	1	1						
Electricity	2	34	26	61	61	61	61						
Primary Energy Demand[2]	**1 844**	**2 159**	**2 095**	**2 195**	**1 911**	**1 844**	**1 744**	1.6%	**-0.3%**	**0.5%**	**-1.4%**	**-0.4%**	**-0.6%**
Coal	456	528	499	407	299	258	335	1.5%	-0.6%	-2.0%	-3.0%	-1.4%	2.6%
Oil	772	871	805	775	640	547	457	1.2%	-0.8%	-0.4%	-1.9%	-1.6%	-1.8%
Natural gas	441	547	556	649	587	627	521	2.2%	0.2%	1.6%	-1.0%	0.7%	-1.8%
Biomass	82	73	90	144	101	92	68	-1.1%	2.0%	4.8%	-3.5%	-0.9%	-3.0%
Nuclear[1]	53	69	72	71	66	48	29	2.7%	0.5%	-0.2%	-0.7%	-3.2%	-4.7%
Hydro	23	22	23	23	24	26	27	-0.8%	0.4%	0.2%	0.6%	0.5%	0.4%
Other renewables	14	15	26	60	131	185	246	0.3%	5.8%	9.0%	8.0%	3.5%	2.9%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**1 844**	**2 159**	**2 095**	**2 195**	**1 911**	**1 844**	**1 744**	**1.6%**	**-0.3%**	**0.5%**	**-1.4%**	**-0.4%**	**-0.6%**
Energy for Power Generation	**644**	**786**	**806**	**780**	**646**	**578**	**602**	**2.0%**	**0.3%**	**-0.3%**	**-1.9%**	**-1.1%**	**0.4%**
Other Energy Transformation & Losses	**129**	**147**	**148**	**306**	**284**	**348**	**296**	**1.3%**	**0.1%**	**7.6%**	**-0.8%**	**2.1%**	**-1.6%**
Final consumption	**1 300**	**1 538**	**1 500**	**1 539**	**1 353**	**1 277**	**1 210**	**1.7%**	**-0.2%**	**0.3%**	**-1.3%**	**-0.6%**	**-0.5%**
Steel, Non-Met. Minerals and Chem.	127	152	108	100	94	91	84	1.8%	-3.4%	-0.7%	-0.6%	-0.4%	-0.8%
Other Industry	181	185	166	180	176	177	176	0.2%	-1.1%	0.8%	-0.2%	0.1%	-0.1%
Non-Energy Use	119	153	135	133	142	145	146	2.5%	-1.2%	-0.1%	0.6%	0.2%	0.0%
Residential	224	265	270	274	248	242	225	1.7%	0.2%	0.2%	-1.0%	-0.2%	-0.8%
Services	157	193	218	228	194	162	142	2.1%	1.2%	0.4%	-1.6%	-1.8%	-1.3%
Agriculture	14	14	19	19	19	20	21	-0.2%	2.8%	0.0%	0.5%	0.5%	0.4%
Road	397	493	522	531	405	365	345	2.2%	0.6%	0.2%	-2.7%	-1.0%	-0.5%
Rail	11	10	9	13	14	14	15	-0.5%	-1.3%	3.5%	0.6%	0.6%	0.5%
Aviation	64	68	49	52	51	48	43	0.7%	-3.2%	0.6%	-0.2%	-0.6%	-1.1%
Other Transport	6	4	4	9	10	12	13	-4.3%	0.5%	7.1%	1.5%	1.5%	1.1%

[1] Nuclear energy is accounted as primary electricity

United States	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**554**	**681**	**686**	**626**	**424**	**320**	**300**	**2.1%**	**0.1%**	**-0.9%**	**-3.8%**	**-2.8%**	**-0.7%**
Coal	392	492	469	363	238	160	178	2.3%	-0.5%	-2.5%	-4.1%	-3.9%	1.1%
Oil	27	30	11	18	11	10	11	0.8%	-9.5%	5.3%	-5.2%	-0.3%	0.6%
Gas	93	137	185	219	158	134	99	3.9%	3.1%	1.7%	-3.2%	-1.7%	-2.9%
Biomass & Waste	40	21	20	24	15	11	2	-6.0%	-0.8%	2.1%	-4.8%	-3.2%	-14.6%
Other	1	1	2	2	3	5	9	-0.9%	1.9%	0.0%	7.0%	5.0%	6.0%
Gross Elec. Generation (TWh_e)	**3 236**	**4 064**	**4 391**	**4 740**	**4 364**	**3 991**	**3 834**	**2.3%**	**0.8%**	**0.8%**	**-0.8%**	**-0.9%**	**-0.4%**
Coal	1 700	2 129	1 994	1 642	1 067	709	785	2.3%	-0.7%	-1.9%	-4.2%	-4.0%	1.0%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	131	118	48	77	49	48	51	-1.0%	-8.6%	4.9%	-4.5%	-0.2%	0.7%
Gas	382	634	1 018	1 294	989	842	602	5.2%	4.8%	2.4%	-2.7%	-1.6%	-3.3%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	86	72	73	88	55	40	9	-1.8%	0.1%	2.0%	-4.7%	-3.1%	-13.9%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	612	798	839	825	769	556	342	2.7%	0.5%	-0.2%	-0.7%	-3.2%	-4.7%
Hydro	289	280	286	316	309	310	323	-0.3%	0.2%	1.0%	-0.2%	0.0%	0.4%
Wind	3	6	95	372	895	1 094	1 040	6.3%	32.6%	14.6%	9.2%	2.0%	-0.5%
Solar	1	1	5	103	187	324	556	0.6%	20.9%	36.1%	6.1%	5.7%	5.5%
Other	34	26	33	22	44	66	127	-2.5%	2.5%	-4.0%	7.2%	4.1%	6.7%
Generation Capacity (GW_e)	**792**	**870**	**1 139**	**1 106**	**1 232**	**1 253**	**1 265**	**1.0%**	**2.7%**	**-0.3%**	**1.1%**	**0.2%**	**0.1%**
Coal	317	327	333	238	173	144	168	0.3%	0.2%	-3.3%	-3.2%	-1.8%	1.6%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	50	53	49	52	54	58	68	0.6%	-0.8%	0.4%	0.5%	0.6%	1.7%
Gas	182	262	489	422	402	329	188	3.7%	6.4%	-1.5%	-0.5%	-2.0%	-5.4%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	35	13	15	11	7	5	1	-9.6%	1.3%	-2.7%	-4.7%	-2.4%	-14.5%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	106	108	108	102	94	68	42	0.2%	0.0%	-0.6%	-0.8%	-3.2%	-4.7%
Hydro	98	101	101	105	106	107	108	0.3%	0.0%	0.4%	0.1%	0.1%	0.1%
Wind	1	2	40	131	298	351	319	7.3%	32.6%	12.7%	8.5%	1.7%	-0.9%
Solar	0	0	1	41	90	179	348	0.0%	8.5%	46.3%	8.2%	7.1%	6.9%
Other	3	3	3	4	7	12	22	1.1%	1.1%	0.9%	7.0%	5.0%	6.1%
Total Final Consumption[2] (Mtoe)	**1 300**	**1 538**	**1 500**	**1 539**	**1 353**	**1 277**	**1 210**	**1.7%**	**-0.2%**	**0.3%**	**-1.3%**	**-0.6%**	**-0.5%**
Coal	58	39	31	22	27	38	52	-3.8%	-2.4%	-3.0%	1.7%	3.5%	3.2%
Oil	683	793	761	723	606	521	442	1.5%	-0.4%	-0.5%	-1.7%	-1.5%	-1.6%
Gas	288	345	306	310	285	297	303	1.8%	-1.2%	0.1%	-0.8%	0.4%	0.2%
Electricity	226	301	326	347	322	298	286	2.9%	0.8%	0.6%	-0.7%	-0.8%	-0.4%
Heat	2	7	9	12	16	23	31	11.3%	2.0%	3.5%	2.5%	3.7%	3.1%
Biomass & Other	43	52	69	124	97	100	95	2.1%	2.8%	6.1%	-2.4%	0.4%	-0.5%
Industry (incl. non-energy use)	**427**	**490**	**409**	**414**	**412**	**413**	**405**	**1.4%**	**-1.8%**	**0.1%**	**0.0%**	**0.0%**	**-0.2%**
Coal	53	37	29	22	26	37	52	-3.6%	-2.3%	-2.7%	1.8%	3.6%	3.3%
Oil	147	160	150	140	143	139	129	0.8%	-0.6%	-0.7%	0.2%	-0.3%	-0.7%
Gas	124	155	122	144	138	138	132	2.3%	-2.4%	1.7%	-0.4%	0.0%	-0.4%
Electricity	75	98	74	72	74	74	73	2.8%	-2.7%	-0.3%	0.2%	0.0%	-0.1%
Heat	0	4	5	5	5	4	4	n.s.	2.0%	-1.1%	-0.2%	-0.3%	-0.2%
Biomass & Other	29	36	29	31	27	21	16	2.2%	-2.2%	0.7%	-1.4%	-2.3%	-3.0%
Buildings	**381**	**458**	**489**	**503**	**442**	**404**	**367**	**1.8%**	**0.7%**	**0.3%**	**-1.3%**	**-0.9%**	**-1.0%**
Coal	5	2	2	0	0	0	0	-7.0%	-3.8%	-11.2%	-1.7%	-1.1%	-2.4%
Oil	45	48	36	38	38	40	39	0.5%	-2.8%	0.5%	0.0%	0.7%	-0.4%
Gas	164	189	182	164	132	120	104	1.5%	-0.4%	-1.1%	-2.1%	-1.0%	-1.4%
Electricity	152	202	251	272	225	187	165	2.9%	2.2%	0.8%	-1.9%	-1.8%	-1.2%
Heat	2	3	4	8	11	18	26	1.7%	1.8%	8.1%	3.9%	4.9%	3.8%
Biomass & Other	14	13	15	20	36	39	32	-0.3%	1.1%	3.3%	5.9%	0.8%	-2.0%
Agriculture	**14**	**14**	**19**	**19**	**19**	**20**	**21**	**-0.2%**	**2.8%**	**0.0%**	**0.5%**	**0.5%**	**0.4%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	14	14	16	16	16	17	18	-0.2%	1.1%	0.0%	0.5%	0.5%	0.4%
Gas	0	0	1	1	2	2	2	n.s.	n.s.	-0.4%	0.5%	0.5%	0.4%
Electricity	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	1	1	1	1	1	n.s.	n.s.	0.9%	0.0%	0.0%	0.0%
Transport	**477**	**576**	**584**	**604**	**479**	**439**	**416**	**1.9%**	**0.1%**	**0.3%**	**-2.3%**	**-0.9%**	**-0.5%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	477	572	559	530	410	325	256	1.8%	-0.2%	-0.5%	-2.6%	-2.3%	-2.3%
Gas	0	0	1	0	13	38	66	n.s.	n.s.	-5.1%	43.3%	11.3%	5.6%
Electricity	0	0	1	2	24	37	48	0.7%	3.6%	13.7%	28.4%	4.6%	2.6%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	3	24	71	33	39	46	n.s.	22.5%	11.4%	-7.5%	1.7%	1.8%
Other Energy Transformation & Losses[3]	**129**	**147**	**148**	**306**	**284**	**348**	**296**	**1.3%**	**0.1%**	**7.6%**	**-0.8%**	**2.1%**	**-1.6%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Rest Central America	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	63	74	84	93	101	107	110	1.6%	1.3%	1.1%	0.8%	0.5%	0.3%
GDP per capita (ppp, k$'15)	3	4	6	7	9	12	16	3.1%	2.6%	2.0%	2.9%	3.0%	2.9%
Prices													
International/Regional ($'15/boe)													
Coal	2	1	2	2	2	3	3	-4.2%	5.6%	-1.3%	-0.4%	4.2%	1.5%
Oil	39	38	86	91	89	96	107	-0.2%	8.4%	0.5%	-0.2%	0.8%	1.0%
Gas	26	40	34	34	41	51	59	4.6%	-1.6%	-0.1%	1.8%	2.3%	1.6%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**240**	**281**	**402**	**436**	**483**	**450**	**442**	**1.6%**	**3.6%**	**0.8%**	**1.0%**	**-0.7%**	**-0.2%**
Total GHG (energy, industry, agriculture)	**180**	**216**	**277**	**324**	**377**	**414**	**435**	**1.8%**	**2.5%**	**1.6%**	**1.5%**	**0.9%**	**0.5%**
CO_2	94	127	165	201	227	248	263	3.0%	2.7%	2.0%	1.2%	0.9%	0.6%
CH_4	63	65	85	92	112	124	127	0.4%	2.7%	0.8%	2.0%	1.0%	0.3%
N_2O	23	24	25	29	35	39	41	0.2%	0.6%	1.3%	2.1%	0.9%	0.6%
F gases	0	0	2	2	3	4	5	n.s.	17.1%	2.6%	3.3%	2.8%	2.2%
Total GHG from Energy and Industry	**123**	**162**	**215**	**254**	**296**	**326**	**342**	**2.8%**	**2.9%**	**1.7%**	**1.5%**	**1.0%**	**0.5%**
CO_2 Emissions from Fuel Comb.	**84**	**111**	**139**	**171**	**190**	**207**	**220**	**2.8%**	**2.2%**	**2.1%**	**1.0%**	**0.9%**	**0.6%**
Power generation/District heating	23	40	50	55	46	45	46	5.5%	2.3%	0.9%	-1.6%	-0.2%	0.2%
Industry	22	23	27	43	55	63	68	0.3%	1.7%	4.7%	2.6%	1.3%	0.8%
Buildings	8	8	11	13	16	18	19	0.4%	2.4%	2.0%	2.1%	1.4%	0.2%
Agriculture	2	1	1	1	1	1	2	-2.6%	-2.7%	0.6%	1.6%	1.3%	1.1%
Transport	19	31	37	46	52	53	52	4.8%	2.0%	2.1%	1.1%	0.1%	-0.2%
Other	10	8	13	13	19	26	33	-1.5%	4.2%	0.7%	3.5%	3.2%	2.5%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Energy Balance, by fuel (Mtoe)													
Primary Production	**32**	**41**	**69**	**60**	**82**	**93**	**84**	**2.7%**	**5.3%**	**-1.4%**	**3.2%**	**1.2%**	**-1.0%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	8	9	8	8	15	19	18	1.1%	-1.3%	-0.4%	7.0%	2.1%	-0.2%
Natural gas	4	14	39	18	23	24	6	11.7%	11.1%	-7.5%	2.8%	0.2%	-13.3%
Biomass	17	15	17	28	32	28	21	-1.1%	1.2%	4.9%	1.6%	-1.4%	-2.7%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	7.2%
Hydro	1	1	2	2	3	5	6	3.1%	3.2%	1.9%	3.7%	3.0%	2.7%
Other renewables	1	2	3	4	8	17	32	9.2%	5.9%	3.4%	6.2%	8.6%	6.3%
Net Imports	**18**	**21**	**13**	**36**	**32**	**40**	**69**						
Coal	0	0	1	3	7	11	18						
Oil	18	25	30	35	26	19	16						
Natural gas	0	- 4	- 19	5	10	18	40						
Biomass	0	0	0	- 8	- 12	- 9	- 6						
Biofuels	0	0	0	0	0	0	0						
Electricity	0	0	1	1	1	1	1						
Primary Energy Demand[2]	**50**	**62**	**82**	**96**	**114**	**133**	**153**	2.2%	**2.8%**	**1.6%**	**1.7%**	**1.5%**	**1.4%**
Coal	0	0	1	3	7	11	18	5.5%	13.0%	10.3%	7.3%	5.6%	4.4%
Oil	26	34	38	43	42	38	35	2.8%	1.1%	1.3%	-0.4%	-0.9%	-0.9%
Natural gas	5	9	20	23	33	42	46	6.6%	8.2%	1.5%	3.7%	2.3%	0.9%
Biomass	17	15	17	19	21	19	16	-1.1%	1.2%	1.1%	0.8%	-1.0%	-1.7%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	7.2%
Hydro	1	1	2	2	3	5	6	3.1%	3.2%	1.9%	3.7%	3.0%	2.7%
Other renewables	1	2	3	4	8	17	32	9.2%	5.9%	3.4%	6.2%	8.6%	6.3%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**50**	**62**	**82**	**96**	**114**	**133**	**153**	**2.2%**	**2.8%**	**1.6%**	**1.7%**	**1.5%**	**1.4%**
Energy for Power Generation	**11**	**17**	**24**	**26**	**28**	**39**	**55**	**4.8%**	**3.2%**	**0.8%**	**1.0%**	**3.4%**	**3.4%**
Other Energy Transformation & Losses	**5**	**5**	**7**	**9**	**12**	**13**	**14**	**-0.4%**	**3.5%**	**2.6%**	**3.1%**	**0.7%**	**0.4%**
Final consumption	**38**	**46**	**58**	**71**	**87**	**100**	**112**	**1.9%**	**2.4%**	**2.0%**	**2.1%**	**1.4%**	**1.1%**
Steel, Non-Met. Minerals and Chem.	0	1	1	3	4	3	3	6.4%	4.9%	9.3%	3.6%	-1.4%	-2.9%
Other Industry	14	12	12	17	21	24	27	-0.8%	-0.3%	3.4%	1.9%	1.6%	1.3%
Non-Energy Use	3	6	11	12	17	21	24	7.5%	6.6%	0.6%	3.6%	2.1%	1.3%
Residential	11	12	16	17	19	20	22	1.4%	2.5%	1.0%	0.8%	0.8%	0.7%
Services	2	2	4	5	7	9	12	2.9%	5.0%	2.7%	3.2%	3.5%	2.7%
Agriculture	1	1	1	1	1	1	1	-0.2%	-1.8%	1.5%	1.6%	1.5%	1.3%
Road	8	11	13	16	19	20	22	4.0%	1.6%	1.7%	1.7%	0.8%	0.8%
Rail	0	0	0	0	0	0	0	-8.6%	11.1%	3.7%	2.1%	1.9%	1.6%
Aviation	0	0	0	0	0	1	1	4.7%	9.3%	1.2%	4.5%	2.4%	1.1%
Other Transport	1	0	0	0	0	0	0	-14.1%	-6.2%	3.8%	3.4%	2.9%	2.6%

[1] Nuclear energy is accounted as primary electricity

Rest Central America	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**9**	**14**	**19**	**19**	**17**	**17**	**17**	**4.6%**	**2.8%**	**0.2%**	**-1.0%**	**0.1%**	**-0.4%**
Coal	0	0	1	2	2	4	6	28.9%	19.1%	8.5%	1.3%	6.2%	5.6%
Oil	7	11	12	12	8	5	2	5.3%	1.0%	0.0%	-4.0%	-5.6%	-7.5%
Gas	1	2	4	4	6	7	6	5.6%	6.8%	0.9%	3.3%	2.5%	-1.2%
Biomass & Waste	1	1	2	1	1	1	0	-2.0%	5.8%	-7.6%	3.9%	-0.1%	-12.3%
Other	0	0	0	0	0	1	2	9.1%	5.5%	-0.1%	-0.4%	10.7%	8.2%
Gross Elec. Generation (TWh_e)	**43**	**73**	**95**	**123**	**166**	**247**	**347**	**5.4%**	**2.7%**	**2.6%**	**3.1%**	**4.0%**	**3.5%**
Coal	0	1	3	6	7	17	33	28.8%	18.9%	7.9%	1.3%	8.5%	7.0%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	24	44	47	56	38	21	10	6.4%	0.7%	1.8%	-4.0%	-5.6%	-7.4%
Gas	4	7	14	16	23	31	30	6.6%	7.4%	1.5%	3.5%	3.0%	-0.1%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	2	2	3	1	2	2	1	-0.4%	4.8%	-8.5%	5.6%	-0.1%	-11.1%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	13	17	23	28	41	54	71	3.0%	3.2%	1.9%	3.7%	3.0%	2.7%
Wind	0	0	1	7	26	51	75	n.s.	12.4%	27.7%	13.9%	6.9%	4.0%
Solar	0	0	0	4	26	58	98	n.s.	8.4%	41.0%	21.8%	8.6%	5.3%
Other	1	2	3	4	4	13	30	9.8%	5.5%	0.7%	1.8%	11.8%	8.8%
Generation Capacity (GW_e)	**13**	**18**	**25**	**33**	**53**	**86**	**129**	**3.6%**	**3.0%**	**2.8%**	**4.9%**	**4.9%**	**4.1%**
Coal	0	0	0	1	1	2	5	5.6%	1.1%	9.5%	-2.1%	8.5%	8.6%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	8	11	15	13	12	11	11	3.6%	2.7%	-0.8%	-1.2%	-0.7%	-0.1%
Gas	1	2	3	4	4	5	7	4.3%	3.6%	3.2%	0.1%	2.5%	3.3%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	1	1	1	1	0	0	6.1%	5.1%	2.6%	1.0%	-9.0%	-12.6%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	3	4	5	8	11	15	20	2.3%	3.2%	4.3%	3.6%	3.0%	2.7%
Wind	0	0	0	2	7	13	20	n.s.	14.9%	23.4%	13.1%	6.7%	3.8%
Solar	0	0	0	2	16	36	62	n.s.	-11.5%	n.s.	21.0%	8.7%	5.4%
Other	0	0	1	1	1	2	4	9.0%	2.6%	2.1%	-0.3%	10.9%	8.5%
Total Final Consumption[2] (Mtoe)	**38**	**46**	**58**	**71**	**87**	**100**	**112**	**1.9%**	**2.4%**	**2.0%**	**2.1%**	**1.4%**	**1.1%**
Coal	0	0	1	2	4	7	9	1.4%	8.1%	12.2%	10.3%	4.5%	3.0%
Oil	17	21	24	29	32	32	31	1.9%	1.7%	1.8%	0.8%	0.0%	-0.3%
Gas	3	6	12	16	23	28	32	8.1%	7.1%	2.3%	3.8%	2.2%	1.2%
Electricity	3	5	7	9	12	18	25	5.5%	2.8%	2.6%	3.2%	4.0%	3.3%
Heat	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	0.9%	-0.2%	3.8%
Biomass & Other	15	14	14	15	16	16	15	-1.0%	0.4%	0.8%	0.4%	-0.3%	-0.3%
Industry (incl. non-energy use)	**17**	**19**	**25**	**32**	**42**	**49**	**54**	**1.3%**	**2.5%**	**2.6%**	**2.7%**	**1.5%**	**1.1%**
Coal	0	0	1	2	4	7	9	1.4%	8.1%	12.2%	10.3%	4.5%	3.0%
Oil	7	7	7	10	11	12	13	0.1%	0.7%	2.9%	1.3%	0.7%	0.7%
Gas	3	6	12	15	19	22	24	8.0%	7.3%	1.7%	2.9%	1.5%	0.6%
Electricity	1	2	2	3	4	5	7	5.6%	1.6%	2.7%	3.0%	3.2%	2.8%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	6	4	2	3	3	2	1	-3.7%	-5.8%	3.0%	0.6%	-2.7%	-4.5%
Buildings	**12**	**15**	**19**	**22**	**25**	**30**	**34**	**1.6%**	**2.9%**	**1.4%**	**1.3%**	**1.6%**	**1.3%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	3	3	3	3	3	2	2	0.0%	2.6%	0.2%	-2.0%	-1.5%	-1.3%
Gas	0	0	0	1	3	5	5	12.6%	-2.6%	22.2%	11.6%	4.1%	1.1%
Electricity	2	3	4	6	7	11	14	5.2%	3.7%	2.5%	2.7%	3.7%	3.2%
Heat	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	0.9%	-0.2%	3.8%
Biomass & Other	8	9	12	12	12	12	12	0.9%	2.8%	0.1%	-0.1%	0.0%	-0.1%
Agriculture	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**-0.2%**	**-1.8%**	**1.5%**	**1.6%**	**1.5%**	**1.3%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	1	0	0	0	0	0	0	-2.6%	-2.7%	0.6%	1.6%	1.3%	1.1%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Electricity	0	0	0	0	0	0	0	10.2%	-1.3%	1.7%	2.4%	2.2%	2.0%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	4.0%	4.2%	5.5%	0.0%	0.0%	0.0%
Transport	**8**	**12**	**14**	**16**	**19**	**21**	**23**	**3.3%**	**1.7%**	**1.7%**	**1.7%**	**0.9%**	**0.8%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	7	11	13	16	17	17	15	4.3%	2.3%	1.5%	1.0%	-0.3%	-1.0%
Gas	0	0	0	0	0	1	3	n.s.	n.s.	n.s.	53.3%	14.3%	9.4%
Electricity	0	0	0	0	1	2	3	-0.7%	11.1%	8.7%	26.1%	11.6%	5.7%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	1	1	0	1	1	1	2	-3.8%	-10.8%	6.8%	8.1%	2.2%	3.2%
Other Energy Transformation & Losses[3]	**5**	**5**	**7**	**9**	**12**	**13**	**14**	**-0.4%**	**3.5%**	**2.6%**	**3.1%**	**0.7%**	**0.4%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Rest South America

	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	102	122	140	157	172	183	189	1.8%	1.4%	1.2%	0.9%	0.6%	0.4%
GDP per capita (ppp, k$'15)	7	8	10	13	19	26	36	0.9%	2.6%	2.8%	3.5%	3.4%	3.2%
Prices													
International/Regional ($'15/boe)													
Coal	2	1	2	2	2	3	4	-4.2%	5.6%	0.7%	0.7%	3.0%	1.1%
Oil	39	38	86	91	89	96	107	-0.2%	8.4%	0.5%	-0.2%	0.8%	1.0%
Gas	26	40	34	34	41	51	59	4.6%	-1.6%	-0.1%	1.8%	2.3%	1.6%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**953**	**1 099**	**1 321**	**1 511**	**2 110**	**2 073**	**1 973**	**1.4%**	**1.9%**	**1.4%**	**3.4%**	**-0.2%**	**-0.5%**
Total GHG (energy, industry, agriculture)	**469**	**554**	**710**	**844**	**1 372**	**1 426**	**1 420**	**1.7%**	**2.5%**	**1.7%**	**5.0%**	**0.4%**	**0.0%**
CO_2	211	268	378	494	992	1 040	1 031	2.4%	3.5%	2.7%	7.2%	0.5%	-0.1%
CH_4	206	229	262	274	291	287	283	1.1%	1.3%	0.4%	0.6%	-0.1%	-0.1%
N_2O	49	55	67	72	83	89	92	1.3%	1.9%	0.7%	1.5%	0.7%	0.3%
F gases	4	2	3	5	7	10	13	-9.8%	8.8%	3.5%	3.8%	3.5%	3.0%
Total GHG from Energy and Industry	**303**	**368**	**492**	**622**	**1 129**	**1 170**	**1 155**	**2.0%**	**3.0%**	**2.4%**	**6.1%**	**0.4%**	**-0.1%**
CO_2 Emissions from Fuel Comb.	**189**	**237**	**344**	**448**	**877**	**920**	**913**	**2.3%**	**3.8%**	**2.7%**	**6.9%**	**0.5%**	**-0.1%**
Power generation/District heating	29	31	62	98	184	205	243	0.6%	7.2%	4.6%	6.6%	1.1%	1.7%
Industry	44	57	85	101	401	408	363	2.5%	4.1%	1.8%	14.8%	0.2%	-1.2%
Buildings	17	19	22	28	31	33	33	1.6%	1.3%	2.5%	0.9%	0.8%	-0.1%
Agriculture	2	5	6	8	10	11	12	6.7%	2.6%	3.5%	1.5%	1.3%	1.1%
Transport	65	80	116	153	167	155	142	2.0%	3.9%	2.8%	0.9%	-0.8%	-0.9%
Other	31	46	53	60	84	108	119	4.0%	1.4%	1.2%	3.4%	2.5%	1.0%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Energy Balance, by fuel (Mtoe)													
Primary Production	**212**	**305**	**347**	**477**	**621**	**582**	**557**	**3.7%**	**1.3%**	**3.2%**	**2.7%**	**-0.6%**	**-0.4%**
Coal	15	30	50	106	218	81	21	7.4%	5.1%	7.8%	7.5%	-9.5%	-12.5%
Oil	149	217	212	209	170	150	126	3.8%	-0.2%	-0.1%	-2.1%	-1.2%	-1.7%
Natural gas	25	32	54	69	91	203	264	2.4%	5.5%	2.5%	2.9%	8.4%	2.6%
Biomass	14	11	13	70	106	85	55	-2.2%	2.0%	18.0%	4.3%	-2.2%	-4.2%
Nuclear[1]	0	0	0	0	0	1	2	n.s.	n.s.	n.s.	37.8%	13.3%	6.7%
Hydro	10	16	18	23	29	35	41	4.6%	1.5%	2.5%	2.2%	1.7%	1.6%
Other renewables	0	0	0	1	6	28	49	n.s.	-11.6%	44.2%	25.4%	17.0%	5.8%
Net Imports	**- 148**	**- 237**	**- 237**	**- 317**	**- 298**	**- 220**	**- 173**						
Coal	- 11	- 27	- 46	- 97	- 145	10	69						
Oil	- 105	- 161	- 131	- 115	- 63	- 61	- 47						
Natural gas	- 5	- 1	- 16	- 11	30	- 69	- 119						
Biomass	0	0	0	- 52	- 78	- 60	- 35						
Biofuels	0	0	0	0	0	0	0						
Electricity	- 27	- 47	- 44	- 43	- 42	- 40	- 40						
Primary Energy Demand[2]	**64**	**69**	**111**	**160**	**322**	**362**	**385**	0.7%	**4.9%**	**3.8%**	**7.2%**	**1.2%**	**0.6%**
Coal	4	3	4	9	73	91	90	-1.1%	2.5%	8.1%	23.0%	2.2%	-0.1%
Oil	44	55	81	95	107	89	79	2.3%	3.9%	1.5%	1.2%	-1.8%	-1.2%
Natural gas	20	30	37	58	121	134	144	4.0%	2.2%	4.5%	7.7%	1.0%	0.7%
Biomass	14	11	13	18	28	25	20	-2.2%	2.0%	2.9%	4.8%	-1.2%	-2.3%
Nuclear[1]	0	0	0	0	0	1	2	n.s.	n.s.	n.s.	37.8%	13.3%	6.7%
Hydro	10	16	18	23	29	35	41	4.6%	1.5%	2.5%	2.2%	1.7%	1.6%
Other renewables	0	0	0	1	6	28	49	n.s.	-11.6%	44.2%	25.4%	17.0%	5.8%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**64**	**69**	**111**	**160**	**322**	**362**	**385**	**0.7%**	**4.9%**	**3.8%**	**7.2%**	**1.2%**	**0.6%**
Energy for Power Generation	**21**	**27**	**42**	**60**	**102**	**134**	**173**	**2.8%**	**4.4%**	**3.7%**	**5.4%**	**2.8%**	**2.6%**
Other Energy Transformation & Losses	**- 15**	**- 29**	**- 24**	**- 14**	**6**	**18**	**19**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**11.1%**	**0.8%**
Final consumption	**67**	**82**	**110**	**139**	**259**	**281**	**290**	**2.0%**	**3.0%**	**2.3%**	**6.5%**	**0.8%**	**0.3%**
Steel, Non-Met. Minerals and Chem.	9	12	17	22	118	115	98	3.0%	3.3%	2.7%	18.0%	-0.2%	-1.6%
Other Industry	13	15	24	29	37	48	61	1.7%	4.7%	1.8%	2.4%	2.7%	2.4%
Non-Energy Use	2	5	3	3	3	4	4	10.1%	-4.8%	-1.3%	1.6%	2.1%	1.3%
Residential	16	16	18	20	23	26	27	-0.3%	1.5%	1.0%	1.4%	1.2%	0.6%
Services	3	4	6	9	14	21	31	3.6%	4.6%	3.2%	4.6%	4.4%	3.8%
Agriculture	2	2	3	4	4	5	5	2.2%	1.8%	2.8%	1.3%	1.1%	1.0%
Road	22	27	38	51	59	60	60	2.1%	3.6%	3.0%	1.5%	0.1%	0.0%
Rail	0	0	0	0	0	0	0	-2.7%	1.3%	4.1%	1.6%	1.6%	1.5%
Aviation	0	0	0	0	0	1	1	-1.3%	-0.3%	4.4%	7.9%	4.4%	2.6%
Other Transport	1	0	1	1	1	2	3	-5.1%	2.7%	6.6%	4.1%	3.4%	2.9%

[1] Nuclear energy is accounted as primary electricity

Rest South America	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**11**	**12**	**24**	**36**	**67**	**70**	**81**	**0.8%**	**7.4%**	**4.4%**	**6.3%**	**0.5%**	**1.5%**
Coal	1	1	1	3	10	19	25	-4.2%	7.9%	7.6%	12.9%	6.8%	2.6%
Oil	3	4	9	16	20	15	17	1.6%	8.1%	6.4%	2.2%	-3.2%	1.4%
Gas	6	7	12	14	34	35	38	0.9%	6.2%	1.7%	9.0%	0.2%	1.1%
Biomass & Waste	0	0	1	2	2	2	1	1.7%	17.7%	7.4%	-0.3%	-3.4%	-5.2%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**154**	**226**	**303**	**423**	**702**	**1 083**	**1 513**	**3.9%**	**3.0%**	**3.4%**	**5.2%**	**4.4%**	**3.4%**
Coal	4	3	5	12	49	100	133	-3.7%	6.9%	9.3%	14.9%	7.5%	2.9%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	13	15	32	61	79	61	75	1.8%	7.8%	6.6%	2.6%	-2.4%	2.1%
Gas	21	25	50	63	162	178	207	1.8%	7.0%	2.4%	9.9%	0.9%	1.5%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	1	1	4	9	9	6	4	3.6%	19.3%	7.3%	-0.1%	-3.1%	-4.0%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	4	13	26	n.s.	n.s.	n.s.	37.7%	13.3%	6.7%
Hydro	116	182	212	272	339	404	476	4.6%	1.5%	2.5%	2.2%	1.8%	1.6%
Wind	0	0	0	4	21	58	110	n.s.	n.s.	43.0%	18.0%	10.8%	6.6%
Solar	0	0	0	2	41	254	438	n.s.	n.s.	n.s.	34.6%	20.2%	5.6%
Other	0	0	0	0	0	8	43	n.s.	n.s.	27.6%	28.0%	47.3%	18.7%
Generation Capacity (GW_e)	**43**	**55**	**66**	**84**	**136**	**316**	**501**	**2.5%**	**1.7%**	**2.5%**	**5.0%**	**8.8%**	**4.7%**
Coal	1	1	1	2	6	13	19	4.7%	-0.2%	6.5%	14.1%	8.4%	3.7%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	6	9	8	9	10	14	25	3.3%	-0.6%	1.5%	0.5%	3.7%	5.7%
Gas	8	10	16	20	22	31	40	1.8%	5.3%	2.2%	0.9%	3.8%	2.5%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	0	1	1	1	1	1	1.9%	14.0%	6.5%	-0.9%	-1.9%	-4.4%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	1	2	4	n.s.	n.s.	n.s.	37.5%	13.1%	6.5%
Hydro	28	36	40	48	59	71	83	2.4%	1.1%	1.8%	2.2%	1.7%	1.6%
Wind	0	0	0	2	11	27	48	n.s.	n.s.	44.7%	16.1%	9.6%	5.7%
Solar	0	0	0	2	27	156	282	n.s.	n.s.	n.s.	31.9%	19.3%	6.1%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	27.3%	16.8%	12.7%
Total Final Consumption[2] (Mtoe)	**67**	**82**	**110**	**139**	**259**	**281**	**290**	**2.0%**	**3.0%**	**2.3%**	**6.5%**	**0.8%**	**0.3%**
Coal	2	3	2	6	62	69	60	2.6%	-2.2%	9.7%	26.2%	1.1%	-1.4%
Oil	36	46	60	74	84	78	70	2.6%	2.7%	2.1%	1.3%	-0.7%	-1.1%
Gas	8	11	19	21	54	50	51	3.2%	5.8%	1.0%	9.9%	-0.7%	0.2%
Electricity	8	12	17	24	41	65	91	3.4%	4.0%	3.2%	5.7%	4.7%	3.4%
Heat	0	0	0	0	1	1	1	n.s.	-17.4%	29.1%	17.4%	5.0%	4.8%
Biomass & Other	13	10	12	14	18	18	17	-2.3%	1.3%	1.9%	2.5%	0.0%	-0.6%
Industry (incl. non-energy use)	**24**	**33**	**44**	**54**	**157**	**167**	**163**	**3.1%**	**3.1%**	**2.0%**	**11.3%**	**0.6%**	**-0.2%**
Coal	2	3	2	6	62	69	60	3.0%	-2.2%	9.8%	26.3%	1.1%	-1.4%
Oil	8	13	15	15	22	23	23	4.9%	2.1%	-0.2%	3.8%	0.5%	-0.2%
Gas	7	9	16	16	45	37	32	2.3%	5.5%	0.5%	10.7%	-2.1%	-1.3%
Electricity	4	5	7	10	20	31	43	2.2%	3.9%	4.0%	6.7%	4.5%	3.2%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	3	3	4	6	8	7	5	0.9%	2.1%	4.4%	2.8%	-1.4%	-2.6%
Buildings	**19**	**20**	**24**	**29**	**37**	**47**	**58**	**0.4%**	**2.2%**	**1.6%**	**2.5%**	**2.5%**	**2.2%**
Coal	0	0	0	0	0	0	0	-5.9%	-3.0%	4.3%	-0.8%	-1.1%	-1.4%
Oil	5	5	5	6	4	4	3	0.4%	0.6%	1.2%	-2.7%	-2.0%	-1.7%
Gas	1	2	2	4	7	9	10	10.0%	4.1%	5.4%	5.5%	2.7%	0.6%
Electricity	4	7	10	13	19	28	38	4.2%	4.1%	2.6%	3.9%	3.9%	3.4%
Heat	0	0	0	0	1	1	1	n.s.	-17.4%	29.1%	17.4%	5.0%	4.8%
Biomass & Other	9	6	7	6	6	6	6	-3.4%	0.7%	-1.7%	-0.2%	0.0%	-0.4%
Agriculture	**2**	**2**	**3**	**4**	**4**	**5**	**5**	**2.2%**	**1.8%**	**2.8%**	**1.3%**	**1.1%**	**1.0%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	0.0%	0.0%	0.0%
Oil	1	1	2	3	3	3	4	6.6%	2.6%	3.4%	1.5%	1.3%	1.1%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	19.1%	1.3%	1.1%	0.9%
Electricity	0	0	0	0	0	1	1	8.9%	1.7%	3.1%	2.3%	2.1%	1.9%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	1	1	1	1	1	1	1	-3.4%	0.2%	0.6%	0.0%	0.0%	0.0%
Transport	**22**	**27**	**39**	**52**	**61**	**63**	**64**	**1.9%**	**3.6%**	**3.0%**	**1.6%**	**0.2%**	**0.2%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	22	27	38	50	54	48	40	1.9%	3.3%	3.0%	0.7%	-1.2%	-1.8%
Gas	0	0	1	0	1	4	9	28.3%	54.1%	-12.2%	16.3%	12.9%	8.2%
Electricity	0	0	0	0	2	6	9	0.7%	1.3%	15.8%	31.9%	11.1%	4.6%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	2	4	5	6	-22.0%	n.s.	22.9%	9.3%	2.5%	1.6%
Other Energy Transformation & Losses[3]	**- 15**	**- 29**	**- 24**	**- 14**	**6**	**18**	**19**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**11.1%**	**0.8%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Egypt	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	57	70	84	103	117	131	143	2.0%	1.9%	2.0%	1.4%	1.1%	0.9%
GDP per capita (ppp, k$'15)	4	5	6	8	12	17	23	2.3%	2.9%	1.9%	4.4%	3.8%	3.0%
Prices													
International/Regional ($'15/boe)													
Coal	3	2	3	2	2	3	3	-3.4%	3.6%	-3.4%	0.8%	3.7%	0.9%
Oil	39	38	86	91	89	96	107	-0.2%	8.4%	0.5%	-0.2%	0.8%	1.0%
Gas	24	28	33	47	55	62	64	1.5%	1.6%	3.6%	1.4%	1.3%	0.4%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**145**	**186**	**294**	**314**	**378**	**467**	**529**	**2.5%**	**4.7%**	**0.6%**	**1.9%**	**2.1%**	**1.3%**
Total GHG (energy, industry, agriculture)	**145**	**186**	**294**	**314**	**378**	**467**	**529**	**2.5%**	**4.7%**	**0.6%**	**1.9%**	**2.1%**	**1.3%**
CO_2	94	122	206	225	280	355	402	2.7%	5.4%	0.9%	2.2%	2.4%	1.3%
CH_4	38	42	57	55	57	64	71	1.0%	3.0%	-0.4%	0.3%	1.2%	1.1%
N_2O	11	17	25	28	34	39	45	4.4%	3.7%	1.0%	2.0%	1.6%	1.3%
F gases	2	4	6	6	7	9	10	6.9%	3.0%	0.7%	1.3%	2.1%	1.8%
Total GHG from Energy and Industry	**125**	**158**	**262**	**277**	**336**	**421**	**479**	**2.4%**	**5.2%**	**0.6%**	**2.0%**	**2.3%**	**1.3%**
CO_2 Emissions from Fuel Comb.	**81**	**100**	**174**	**175**	**209**	**259**	**283**	**2.2%**	**5.6%**	**0.1%**	**1.8%**	**2.2%**	**0.9%**
Power generation/District heating	22	27	62	61	68	91	96	2.0%	8.7%	-0.2%	1.1%	3.0%	0.6%
Industry	26	24	31	36	41	50	59	-0.6%	2.4%	1.5%	1.4%	1.9%	1.7%
Buildings	11	12	18	16	15	14	14	1.6%	3.7%	-1.1%	-0.8%	-0.6%	0.1%
Agriculture	0	0	7	7	9	10	12	n.s.	40.6%	-0.3%	2.2%	1.7%	1.3%
Transport	16	29	40	42	60	69	69	6.1%	3.3%	0.6%	3.5%	1.4%	0.0%
Other	6	8	16	13	17	26	33	2.1%	7.2%	-1.7%	2.4%	4.3%	2.5%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Energy Balance, by fuel (Mtoe)													
Primary Production	**53**	**54**	**87**	**81**	**85**	**104**	**137**	**0.2%**	**4.9%**	**-0.7%**	**0.5%**	**2.0%**	**2.8%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	44	34	33	18	13	12	10	-2.5%	-0.4%	-5.7%	-3.5%	-0.8%	-1.4%
Natural gas	7	18	52	59	65	75	96	9.9%	11.4%	1.3%	1.0%	1.4%	2.5%
Biomass	2	1	2	0	1	1	0	-1.7%	1.8%	-12.3%	2.0%	-0.1%	-0.4%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	8.3%
Hydro	1	1	1	1	1	1	1	3.4%	-0.5%	1.1%	1.0%	0.3%	0.1%
Other renewables	0	0	0	2	5	15	29	11.4%	26.4%	22.5%	7.3%	11.3%	7.0%
Net Imports	**- 21**	**- 14**	**- 16**	**- 6**	**6**	**16**	**4**						
Coal	1	1	0	2	3	9	16						
Oil	- 22	- 11	1	13	26	33	34						
Natural gas	0	- 3	- 16	- 21	- 24	- 27	- 47						
Biomass	0	0	0	1	1	1	1						
Biofuels	0	0	0	0	0	0	0						
Electricity	0	0	- 1	- 1	- 1	- 1	- 1						
Primary Energy Demand[2]	**32**	**40**	**71**	**76**	**91**	**119**	**141**	2.3%	**5.8%**	**0.6%**	**1.9%**	**2.7%**	**1.7%**
Coal	1	1	0	2	3	9	16	0.8%	-5.6%	17.2%	5.9%	10.3%	5.9%
Oil	22	23	34	32	39	44	45	0.3%	3.9%	-0.6%	2.1%	1.3%	0.1%
Natural gas	7	14	36	37	42	49	49	7.9%	9.5%	0.5%	1.1%	1.6%	0.1%
Biomass	2	1	2	2	1	1	1	-1.9%	1.8%	-0.3%	-1.3%	0.1%	-0.3%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	8.3%
Hydro	1	1	1	1	1	1	1	3.4%	-0.5%	1.1%	1.0%	0.3%	0.1%
Other renewables	0	0	0	2	5	15	29	11.4%	26.4%	22.5%	7.3%	11.3%	7.0%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**32**	**40**	**71**	**76**	**91**	**119**	**141**	**2.3%**	**5.8%**	**0.6%**	**1.9%**	**2.7%**	**1.7%**
Energy for Power Generation	**9**	**12**	**26**	**28**	**33**	**49**	**64**	**3.1%**	**8.1%**	**0.6%**	**1.6%**	**4.2%**	**2.6%**
Other Energy Transformation & Losses	**2**	**2**	**3**	**4**	**6**	**9**	**11**	**-0.5%**	**2.6%**	**4.5%**	**2.8%**	**4.3%**	**2.2%**
Final consumption	**24**	**32**	**53**	**56**	**69**	**90**	**109**	**2.8%**	**5.2%**	**0.7%**	**2.1%**	**2.6%**	**1.9%**
Steel, Non-Met. Minerals and Chem.	1	1	0	2	2	2	2	1.0%	-5.3%	15.1%	0.2%	0.7%	-0.6%
Other Industry	10	9	14	15	18	24	31	-0.3%	4.1%	0.8%	1.8%	2.9%	2.4%
Non-Energy Use	2	3	7	8	10	12	14	4.0%	7.7%	1.2%	2.3%	2.0%	1.6%
Residential	6	7	12	13	12	15	17	2.8%	4.9%	0.6%	-0.2%	1.7%	1.3%
Services	0	1	2	2	3	7	11	11.3%	6.9%	0.6%	3.2%	7.4%	5.2%
Agriculture	0	0	3	3	4	5	5	10.1%	24.9%	0.8%	2.4%	1.9%	1.6%
Road	5	8	14	13	20	25	28	4.9%	5.0%	-0.3%	4.0%	2.5%	1.3%
Rail	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	4.6%	4.0%	2.8%
Aviation	0	0	1	0	0	1	1	8.0%	2.5%	-5.0%	2.1%	1.6%	0.7%
Other Transport	0	1	1	0	0	1	1	n.s.	-3.5%	-7.0%	4.9%	3.8%	2.7%

[1] Nuclear energy is accounted as primary electricity

Egypt	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**8**	**11**	**25**	**24**	**26**	**33**	**33**	**3.0%**	**8.6%**	**-0.2%**	**0.8%**	**2.4%**	**0.0%**
Coal	0	0	0	0	1	5	9	n.s.	n.s.	n.s.	28.3%	17.1%	6.3%
Oil	4	2	5	5	6	7	7	-6.9%	10.1%	-0.6%	2.1%	1.8%	-0.5%
Gas	4	9	20	19	19	21	17	8.3%	8.3%	-0.2%	0.0%	0.9%	-2.0%
Biomass & Waste	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	34.1%	14.3%	2.2%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**42**	**78**	**147**	**173**	**214**	**355**	**525**	**6.4%**	**6.5%**	**1.7%**	**2.1%**	**5.2%**	**4.0%**
Coal	0	0	0	0	5	25	48	n.s.	n.s.	n.s.	28.9%	17.5%	6.7%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	13	22	20	21	26	32	31	5.2%	-1.2%	0.7%	2.3%	2.0%	-0.4%
Gas	19	42	112	112	112	123	102	8.3%	10.3%	0.0%	0.0%	0.9%	-1.9%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	35.3%	14.7%	2.4%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	10	14	13	15	16	16	17	3.3%	-0.5%	1.1%	1.0%	0.3%	0.1%
Wind	0	0	1	24	40	94	168	n.s.	27.0%	32.0%	5.1%	9.0%	6.0%
Solar	0	0	0	1	12	58	143	n.s.	n.s.	13.5%	32.5%	16.8%	9.5%
Other	0	0	0	0	2	5	15	n.s.	n.s.	n.s.	21.2%	9.8%	12.0%
Generation Capacity (GW_e)	**12**	**19**	**26**	**42**	**55**	**114**	**193**	**4.9%**	**3.5%**	**4.7%**	**2.9%**	**7.5%**	**5.4%**
Coal	0	0	0	0	1	3	7	n.s.	n.s.	n.s.	29.1%	18.1%	7.7%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	4	6	5	5	6	10	13	3.1%	-2.1%	-0.6%	3.0%	4.5%	2.8%
Gas	5	10	18	24	23	29	27	8.3%	6.2%	2.9%	-0.5%	2.6%	-0.8%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	35.5%	15.1%	2.8%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	3	3	3	3	3	3	3	0.3%	0.2%	0.2%	1.0%	0.3%	0.1%
Wind	0	0	1	10	16	36	61	n.s.	30.0%	33.3%	5.0%	8.6%	5.3%
Solar	0	0	0	0	7	32	82	n.s.	n.s.	39.0%	32.6%	16.9%	9.7%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	19.0%	14.4%
Total Final Consumption[2] (Mtoe)	**24**	**32**	**53**	**56**	**69**	**90**	**109**	**2.8%**	**5.2%**	**0.7%**	**2.1%**	**2.6%**	**1.9%**
Coal	1	1	0	2	2	3	4	1.0%	-5.3%	14.9%	1.7%	3.3%	5.0%
Oil	16	20	30	26	32	36	36	2.2%	3.8%	-1.3%	2.1%	1.1%	0.1%
Gas	2	4	11	14	18	22	26	5.0%	10.5%	3.0%	2.2%	2.1%	1.6%
Electricity	3	6	11	13	16	26	38	5.9%	6.8%	1.7%	2.1%	5.2%	3.9%
Heat	0	0	0	0	1	2	2	n.s.	n.s.	n.s.	4.5%	11.4%	3.3%
Biomass & Other	2	1	2	1	1	2	2	-1.9%	1.8%	-0.7%	-1.3%	2.3%	3.0%
Industry (incl. non-energy use)	**13**	**13**	**21**	**25**	**30**	**38**	**46**	**0.6%**	**4.8%**	**1.4%**	**1.8%**	**2.5%**	**2.0%**
Coal	1	1	0	2	2	3	4	1.0%	-5.3%	14.9%	1.7%	3.3%	5.0%
Oil	8	7	8	6	7	9	11	-0.9%	1.0%	-2.0%	1.8%	2.3%	1.6%
Gas	2	4	10	13	15	17	19	4.4%	10.4%	2.7%	1.7%	1.5%	0.7%
Electricity	1	2	4	4	5	8	12	3.8%	5.2%	1.3%	2.2%	5.1%	3.9%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	1	0	0	0	0	0	0	n.s.	n.s.	n.s.	26.1%	4.3%	1.1%
Buildings	**6**	**9**	**14**	**15**	**16**	**21**	**28**	**3.6%**	**5.2%**	**0.6%**	**0.4%**	**3.2%**	**2.7%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	3	4	5	4	3	2	2	1.1%	3.1%	-2.7%	-3.4%	-2.7%	-1.3%
Gas	0	0	1	2	3	3	4	16.9%	9.7%	6.9%	4.7%	1.8%	1.2%
Electricity	2	3	7	8	9	14	20	7.5%	7.7%	1.5%	1.3%	4.6%	3.5%
Heat	0	0	0	0	1	2	2	n.s.	n.s.	n.s.	4.5%	11.4%	3.3%
Biomass & Other	1	1	2	1	1	1	0	2.1%	1.8%	-1.5%	-3.7%	-3.5%	-2.8%
Agriculture	**0**	**0**	**3**	**3**	**4**	**5**	**5**	**10.1%**	**24.9%**	**0.8%**	**2.4%**	**1.9%**	**1.6%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	0	0	2	2	3	3	4	n.s.	40.6%	-0.3%	2.2%	1.7%	1.3%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Electricity	0	0	0	1	1	1	2	6.9%	6.9%	5.6%	3.0%	2.5%	2.1%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Transport	**5**	**10**	**15**	**14**	**21**	**26**	**30**	**6.0%**	**4.4%**	**-0.6%**	**4.0%**	**2.5%**	**1.3%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	5	10	15	14	19	21	19	6.0%	4.3%	-0.7%	3.4%	1.0%	-0.8%
Gas	0	0	0	0	0	2	4	n.s.	n.s.	-5.8%	15.4%	15.8%	9.3%
Electricity	0	0	0	0	1	3	5	n.s.	n.s.	n.s.	24.5%	13.1%	6.2%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	1	2	n.s.	n.s.	n.s.	10.3%	11.9%	6.4%
Other Energy Transformation & Losses[3]	**2**	**2**	**3**	**4**	**6**	**9**	**11**	**-0.5%**	**2.6%**	**4.5%**	**2.8%**	**4.3%**	**2.2%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Algeria & Libya	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	30	37	42	50	55	59	62	1.9%	1.5%	1.6%	1.0%	0.7%	0.6%
GDP per capita (ppp, k$'15)	6	8	8	10	15	20	26	3.0%	-0.6%	2.5%	4.2%	3.2%	2.5%
Prices													
International/Regional ($'15/boe)													
Coal	3	2	3	2	2	3	3	-3.4%	3.6%	-3.4%	0.8%	3.7%	0.9%
Oil	39	38	86	91	89	96	107	-0.2%	8.4%	0.5%	-0.2%	0.8%	1.0%
Gas	24	28	33	47	55	62	64	1.5%	1.6%	3.6%	1.4%	1.3%	0.4%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**240**	**260**	**300**	**393**	**389**	**398**	**396**	**0.8%**	**1.4%**	**2.7%**	**-0.1%**	**0.2%**	**-0.1%**
Total GHG (energy, industry, agriculture)	**239**	**254**	**298**	**391**	**388**	**398**	**396**	**0.6%**	**1.6%**	**2.8%**	**-0.1%**	**0.3%**	**-0.1%**
CO_2	112	142	187	283	290	305	313	2.4%	2.8%	4.2%	0.3%	0.5%	0.3%
CH_4	122	106	102	98	85	80	68	-1.3%	-0.4%	-0.4%	-1.4%	-0.7%	-1.6%
N_2O	5	5	7	9	11	12	13	1.3%	3.3%	2.0%	1.6%	1.1%	0.8%
F gases	1	1	1	1	1	1	1	-0.8%	7.2%	2.7%	-0.9%	0.7%	0.5%
Total GHG from Energy and Industry	**230**	**245**	**286**	**377**	**373**	**382**	**379**	**0.6%**	**1.5%**	**2.8%**	**-0.1%**	**0.2%**	**-0.1%**
CO_2 Emissions from Fuel Comb.	**84**	**106**	**153**	**241**	**245**	**254**	**256**	**2.3%**	**3.7%**	**4.6%**	**0.2%**	**0.4%**	**0.1%**
Power generation/District heating	18	32	47	86	78	77	71	5.7%	4.2%	6.2%	-1.0%	-0.2%	-0.7%
Industry	8	10	15	18	12	13	15	2.0%	4.2%	1.8%	-3.4%	0.5%	1.3%
Buildings	10	14	20	27	29	28	28	3.6%	3.7%	3.4%	0.6%	-0.2%	-0.1%
Agriculture	0	0	0	0	0	0	0	0.9%	17.6%	2.8%	1.8%	1.3%	1.0%
Transport	22	27	53	81	92	95	98	2.2%	7.1%	4.3%	1.3%	0.3%	0.3%
Other	27	25	18	28	33	40	43	-0.9%	-3.1%	4.7%	1.6%	2.0%	0.7%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Energy Balance, by fuel (Mtoe)													
Primary Production	**150**	**189**	**225**	**176**	**171**	**185**	**216**	**2.3%**	**1.7%**	**-2.4%**	**-0.3%**	**0.8%**	**1.6%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	103	110	143	79	65	58	41	0.7%	2.6%	-5.7%	-1.9%	-1.2%	-3.5%
Natural gas	47	79	82	96	102	118	160	5.3%	0.4%	1.6%	0.6%	1.4%	3.1%
Biomass	0	0	0	1	2	3	2	3.6%	0.8%	14.6%	11.4%	0.7%	-0.5%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	-3.7%
Hydro	0	0	0	0	0	0	0	-8.8%	12.4%	8.5%	3.3%	2.3%	1.6%
Other renewables	0	0	0	0	1	6	13	n.s.	n.s.	n.s.	50.0%	21.2%	7.7%
Net Imports	**- 116**	**- 147**	**- 165**	**- 81**	**- 72**	**- 79**	**- 105**						
Coal	0	0	0	0	1	6	13						
Oil	- 86	- 90	- 112	- 44	- 28	- 20	- 7						
Natural gas	- 31	- 58	- 53	- 37	- 45	- 65	- 111						
Biomass	0	0	0	0	0	0	0						
Biofuels	0	0	0	0	0	0	0						
Electricity	0	0	0	0	0	0	0						
Primary Energy Demand[2]	**34**	**42**	**60**	**95**	**99**	**106**	**111**	2.3%	**3.5%**	**4.7%**	**0.4%**	**0.7%**	**0.4%**
Coal	0	0	0	0	1	6	13	0.5%	-5.1%	1.0%	16.1%	16.5%	8.3%
Oil	17	21	31	36	37	38	34	1.9%	3.9%	1.5%	0.5%	0.2%	-1.2%
Natural gas	16	21	29	59	57	53	49	2.6%	3.3%	7.3%	-0.3%	-0.7%	-0.8%
Biomass	0	0	0	0	2	3	3	3.6%	0.8%	6.3%	19.7%	2.2%	-0.4%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	-3.7%
Hydro	0	0	0	0	0	0	0	-8.8%	12.4%	8.5%	3.3%	2.3%	1.6%
Other renewables	0	0	0	0	1	6	13	n.s.	n.s.	n.s.	50.0%	21.2%	7.7%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**34**	**42**	**60**	**95**	**99**	**106**	**111**	**2.3%**	**3.5%**	**4.7%**	**0.4%**	**0.7%**	**0.4%**
Energy for Power Generation	**7**	**12**	**19**	**34**	**31**	**34**	**35**	**5.8%**	**4.6%**	**6.3%**	**-0.8%**	**0.7%**	**0.5%**
Other Energy Transformation & Losses	**11**	**9**	**7**	**11**	**15**	**18**	**19**	**-2.1%**	**-2.5%**	**5.5%**	**2.9%**	**1.7%**	**0.4%**
Final consumption	**18**	**24**	**39**	**57**	**61**	**66**	**72**	**3.0%**	**4.9%**	**3.8%**	**0.7%**	**0.8%**	**0.9%**
Steel, Non-Met. Minerals and Chem.	1	1	2	4	3	2	3	-1.6%	12.1%	5.7%	-4.0%	-0.6%	0.1%
Other Industry	3	4	5	5	5	5	6	3.3%	2.0%	1.5%	-1.5%	1.1%	1.5%
Non-Energy Use	3	5	5	5	6	7	8	3.5%	1.5%	0.1%	1.3%	1.1%	0.9%
Residential	4	6	8	12	12	12	13	4.5%	3.0%	4.4%	0.1%	0.0%	0.3%
Services	0	1	2	4	4	4	6	4.3%	15.6%	3.6%	0.0%	2.2%	2.3%
Agriculture	0	0	0	0	0	1	1	0.9%	10.0%	0.0%	2.4%	2.0%	1.7%
Road	7	8	16	25	31	34	37	2.2%	6.5%	4.9%	1.9%	0.9%	0.9%
Rail	0	0	0	1	1	1	1	1.2%	9.6%	5.4%	0.6%	0.4%	0.2%
Aviation	0	0	0	0	0	0	0	7.2%	26.5%	-1.6%	2.1%	0.8%	0.0%
Other Transport	0	0	0	0	0	0	0	0.9%	9.8%	2.8%	3.1%	2.7%	1.9%

[1] Nuclear energy is accounted as primary electricity

Algeria & Libya	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**7**	**12**	**19**	**34**	**31**	**28**	**23**	**5.8%**	**4.6%**	**6.3%**	**-1.1%**	**-1.0%**	**-2.0%**
Coal	0	0	0	0	1	3	8	n.s.	n.s.	n.s.	35.6%	19.6%	9.1%
Oil	3	5	5	8	7	8	7	5.0%	0.6%	4.9%	-0.6%	0.9%	-1.4%
Gas	4	7	14	26	23	16	7	6.3%	6.5%	6.7%	-1.6%	-3.3%	-7.9%
Biomass & Waste	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	26.0%	18.1%	13.0%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**27**	**43**	**81**	**168**	**166**	**210**	**261**	**4.6%**	**6.5%**	**7.6%**	**-0.1%**	**2.3%**	**2.2%**
Coal	0	0	0	0	3	18	45	n.s.	n.s.	n.s.	36.1%	20.1%	9.4%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	11	13	18	33	32	36	32	1.5%	3.5%	6.1%	-0.4%	1.3%	-1.1%
Gas	16	30	62	135	120	88	39	6.4%	7.6%	8.0%	-1.2%	-3.0%	-7.8%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	27.3%	18.5%	13.4%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	0	0	0	0	1	1	1	-8.8%	12.4%	8.5%	3.3%	2.3%	1.7%
Wind	0	0	0	0	4	26	58	n.s.	n.s.	n.s.	41.9%	21.3%	8.4%
Solar	0	0	0	0	6	37	75	n.s.	n.s.	n.s.	56.0%	20.5%	7.4%
Other	0	0	0	0	2	4	9	n.s.	n.s.	n.s.	19.4%	7.8%	9.4%
Generation Capacity (GW_e)	**8**	**11**	**20**	**32**	**38**	**65**	**106**	**2.7%**	**6.2%**	**5.1%**	**1.7%**	**5.5%**	**5.0%**
Coal	0	0	0	0	0	2	7	n.s.	n.s.	n.s.	36.1%	20.3%	10.9%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	4	4	4	6	6	9	15	-0.5%	-0.1%	3.3%	1.7%	3.0%	5.9%
Gas	4	6	15	26	25	21	12	5.8%	9.1%	5.5%	-0.2%	-2.0%	-5.3%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	18.7%	14.4%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	0	0	0	0	0	1	1	-0.4%	0.0%	0.8%	3.3%	2.3%	1.7%
Wind	0	0	0	0	1	9	20	n.s.	n.s.	n.s.	40.2%	20.3%	8.0%
Solar	0	0	0	0	4	23	52	n.s.	n.s.	44.0%	32.2%	20.1%	8.2%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	20.3%	16.1%
Total Final Consumption[2] (Mtoe)	**18**	**24**	**39**	**57**	**61**	**66**	**72**	**3.0%**	**4.9%**	**3.8%**	**0.7%**	**0.8%**	**0.9%**
Coal	0	0	0	0	0	1	2	-3.2%	-0.9%	-2.8%	7.8%	7.9%	5.6%
Oil	12	15	24	32	35	35	34	2.3%	4.9%	3.3%	0.8%	0.1%	-0.3%
Gas	4	7	11	16	16	17	20	4.6%	4.7%	4.4%	-0.2%	0.7%	1.5%
Electricity	2	2	5	8	8	10	12	4.7%	6.4%	5.4%	-0.2%	2.3%	2.3%
Heat	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	n.s.	24.9%	6.3%
Biomass & Other	0	0	0	0	2	2	3	3.6%	0.8%	3.3%	20.7%	2.6%	2.4%
Industry (incl. non-energy use)	**7**	**9**	**12**	**15**	**13**	**14**	**16**	**2.9%**	**3.0%**	**1.8%**	**-1.0%**	**0.8%**	**1.0%**
Coal	0	0	0	0	0	1	2	-3.2%	-0.9%	-2.8%	7.8%	7.9%	5.6%
Oil	2	3	4	4	3	3	4	2.6%	2.8%	-1.5%	-1.4%	0.6%	1.4%
Gas	3	5	6	8	7	7	7	3.7%	3.2%	2.7%	-1.6%	0.0%	-0.1%
Electricity	1	1	1	2	3	3	3	2.7%	4.0%	6.7%	0.5%	1.4%	1.5%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	5.7%	9.5%	5.9%
Buildings	**4**	**7**	**10**	**16**	**16**	**17**	**18**	**4.5%**	**4.9%**	**4.2%**	**0.0%**	**0.5%**	**0.8%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	2	3	3	3	3	3	3	2.3%	1.0%	-1.1%	0.6%	0.4%	0.2%
Gas	1	2	4	8	8	8	8	6.9%	7.5%	6.6%	0.6%	-0.6%	-0.3%
Electricity	1	1	3	5	4	4	5	6.6%	7.4%	5.2%	-2.2%	0.9%	2.0%
Heat	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	n.s.	24.9%	6.3%
Biomass & Other	0	0	0	0	1	1	1	3.6%	0.8%	0.3%	10.2%	3.0%	0.1%
Agriculture	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0.9%**	**10.0%**	**0.0%**	**2.4%**	**2.0%**	**1.7%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	0	0	0	0	0	0	0	0.9%	12.0%	1.4%	1.9%	1.3%	1.0%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	4.7%	1.6%	1.1%	0.8%
Electricity	0	0	0	0	0	0	0	1.0%	8.8%	-0.7%	2.7%	2.2%	1.9%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Transport	**7**	**9**	**16**	**26**	**32**	**35**	**38**	**2.2%**	**6.6%**	**4.9%**	**1.9%**	**0.9%**	**0.9%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	7	9	16	26	29	29	27	2.2%	6.6%	4.9%	1.1%	0.0%	-0.5%
Gas	0	0	0	0	0	2	5	n.s.	n.s.	n.s.	n.s.	16.0%	9.9%
Electricity	0	0	0	0	1	2	3	3.0%	7.5%	10.4%	19.0%	9.9%	3.9%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	1	2	2	n.s.	n.s.	n.s.	34.9%	2.3%	3.3%
Other Energy Transformation & Losses[3]	**11**	**9**	**7**	**11**	**15**	**18**	**19**	**-2.1%**	**-2.5%**	**5.5%**	**2.9%**	**1.7%**	**0.4%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Morocco & Tunisia	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	33	39	44	49	53	55	57	1.5%	1.1%	1.2%	0.8%	0.4%	0.2%
GDP per capita (ppp, k$'15)	4	4	6	8	13	20	28	1.7%	3.6%	3.1%	4.4%	4.2%	3.5%
Prices													
International/Regional ($'15/boe)													
Coal	3	2	3	2	2	3	3	-3.4%	3.6%	-3.4%	0.8%	3.7%	0.9%
Oil	39	38	86	91	89	96	107	-0.2%	8.4%	0.5%	-0.2%	0.8%	1.0%
Gas	24	28	33	47	55	62	64	1.5%	1.6%	3.6%	1.4%	1.3%	0.4%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**53**	**79**	**120**	**147**	**186**	**219**	**242**	**4.1%**	**4.3%**	**2.1%**	**2.3%**	**1.7%**	**1.0%**
Total GHG (energy, industry, agriculture)	**62**	**85**	**112**	**142**	**182**	**218**	**242**	**3.1%**	**2.8%**	**2.4%**	**2.5%**	**1.8%**	**1.1%**
CO_2	39	57	81	106	137	167	187	3.8%	3.5%	2.7%	2.6%	2.0%	1.2%
CH_4	16	19	22	26	34	39	42	1.9%	1.3%	1.7%	2.5%	1.5%	0.7%
N_2O	7	8	8	9	11	12	14	1.1%	0.9%	0.9%	1.5%	1.2%	1.1%
F gases	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Total GHG from Energy and Industry	**49**	**70**	**96**	**124**	**162**	**197**	**220**	**3.7%**	**3.3%**	**2.6%**	**2.7%**	**2.0%**	**1.1%**
CO_2 Emissions from Fuel Comb.	**32**	**49**	**72**	**95**	**122**	**148**	**165**	**4.2%**	**4.0%**	**2.7%**	**2.6%**	**1.9%**	**1.1%**
Power generation/District heating	12	17	24	32	46	57	63	3.9%	3.7%	2.9%	3.6%	2.2%	1.0%
Industry	9	9	11	13	15	19	23	0.2%	2.2%	2.0%	1.6%	2.1%	1.7%
Buildings	3	6	9	12	14	15	15	6.2%	3.8%	3.1%	1.2%	0.8%	0.3%
Agriculture	1	2	3	3	4	5	5	5.8%	3.9%	2.7%	1.9%	1.5%	1.2%
Transport	7	14	22	30	37	43	45	6.9%	4.9%	3.2%	2.2%	1.4%	0.4%
Other	1	1	3	3	5	9	14	5.2%	9.9%	-0.4%	4.2%	6.1%	4.5%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Energy Balance, by fuel (Mtoe)													
Primary Production	**7**	**8**	**10**	**11**	**20**	**29**	**35**	**1.0%**	**2.5%**	**1.0%**	**6.4%**	**3.5%**	**2.0%**
Coal	0	0	0	0	0	0	0	-22.8%	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	5	4	4	4	9	13	15	-2.1%	0.2%	0.0%	8.3%	4.0%	1.3%
Natural gas	0	2	3	3	5	7	8	17.5%	6.1%	0.9%	4.9%	2.3%	1.3%
Biomass	2	2	3	3	4	3	3	2.8%	1.8%	1.0%	2.8%	-0.8%	-1.0%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	0	0	0	0	0	0	0	-4.7%	16.2%	-2.8%	0.7%	0.4%	0.3%
Other renewables	0	0	0	1	2	5	9	n.s.	29.0%	19.9%	14.4%	8.9%	5.8%
Net Imports	**6**	**13**	**21**	**29**	**31**	**34**	**38**						
Coal	1	3	3	4	7	9	12						
Oil	4	7	12	15	13	11	9						
Natural gas	1	1	3	5	6	8	12						
Biomass	0	0	0	0	- 1	- 1	0						
Biofuels	0	0	0	0	0	0	0						
Electricity	0	2	4	6	6	6	6						
Primary Energy Demand[2]	**13**	**20**	**31**	**40**	**51**	**63**	**73**	5.0%	**4.2%**	**2.6%**	**2.5%**	**2.0%**	**1.5%**
Coal	1	3	3	4	7	9	12	8.3%	0.3%	3.0%	5.7%	3.6%	2.2%
Oil	8	10	16	19	22	23	23	2.4%	4.1%	2.1%	1.2%	0.9%	-0.2%
Natural gas	1	3	6	8	12	15	19	8.2%	7.4%	3.5%	3.9%	2.8%	2.4%
Biomass	2	2	3	2	3	3	3	2.8%	1.8%	-0.9%	2.4%	-0.2%	-0.2%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	0	0	0	0	0	0	0	-4.7%	16.2%	-2.8%	0.7%	0.4%	0.3%
Other renewables	0	0	0	1	2	5	9	n.s.	29.0%	19.9%	14.4%	8.9%	5.8%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**13**	**20**	**31**	**40**	**51**	**63**	**73**	**5.0%**	**4.2%**	**2.6%**	**2.5%**	**2.0%**	**1.5%**
Energy for Power Generation	**4**	**5**	**8**	**11**	**17**	**24**	**30**	**3.7%**	**4.4%**	**3.2%**	**4.2%**	**3.2%**	**2.3%**
Other Energy Transformation & Losses	**1**	**3**	**5**	**7**	**9**	**10**	**12**	**18.0%**	**7.0%**	**2.9%**	**2.1%**	**1.6%**	**1.4%**
Final consumption	**9**	**14**	**20**	**26**	**33**	**41**	**48**	**4.2%**	**3.7%**	**2.5%**	**2.5%**	**2.1%**	**1.6%**
Steel, Non-Met. Minerals and Chem.	0	0	2	3	4	5	6	0.1%	21.0%	3.8%	1.8%	2.1%	1.8%
Other Industry	3	3	3	3	4	5	7	1.4%	-2.4%	1.1%	2.9%	3.0%	2.3%
Non-Energy Use	0	0	1	1	1	1	1	8.5%	4.7%	0.5%	0.3%	0.7%	0.3%
Residential	2	4	5	6	7	7	8	4.7%	3.6%	1.6%	1.1%	0.7%	0.5%
Services	1	1	2	2	4	5	7	3.7%	4.6%	2.8%	4.6%	4.2%	3.3%
Agriculture	0	1	1	2	2	2	3	5.8%	5.3%	3.0%	2.1%	1.8%	1.4%
Road	2	4	6	8	11	13	15	6.1%	3.6%	3.3%	3.2%	1.8%	1.0%
Rail	0	0	0	0	0	0	0	5.7%	3.4%	2.0%	1.0%	1.0%	0.7%
Aviation	0	0	0	0	0	0	0	n.s.	n.s.	6.8%	7.5%	3.8%	1.9%
Other Transport	0	0	1	1	1	2	2	9.9%	5.3%	3.4%	3.9%	3.5%	2.5%

[1] Nuclear energy is accounted as primary electricity

Morocco & Tunisia	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**4**	**5**	**8**	**11**	**15**	**18**	**21**	**3.8%**	**4.1%**	**3.0%**	**3.4%**	**2.1%**	**1.1%**
Coal	1	2	3	4	6	8	8	10.9%	2.7%	3.0%	5.0%	2.4%	0.7%
Oil	2	1	1	2	2	2	2	-5.9%	1.7%	1.8%	2.1%	2.3%	-0.1%
Gas	1	2	4	5	7	8	10	9.2%	6.2%	3.3%	2.5%	1.8%	1.8%
Biomass & Waste	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	40.3%	8.7%	4.1%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**15**	**23**	**40**	**60**	**101**	**157**	**220**	**4.3%**	**5.4%**	**4.2%**	**5.4%**	**4.5%**	**3.4%**
Coal	2	9	11	15	26	35	40	14.8%	2.2%	3.1%	5.8%	3.2%	1.3%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	8	5	6	8	9	11	11	-5.8%	2.4%	2.9%	1.7%	2.4%	0.0%
Gas	4	9	19	28	36	46	56	9.6%	7.2%	4.0%	2.8%	2.3%	2.0%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	41.7%	9.2%	4.5%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	1	1	4	4	4	4	4	-4.7%	16.8%	0.0%	1.8%	-0.6%	-0.1%
Wind	0	0	1	6	22	47	70	n.s.	24.8%	22.7%	13.7%	7.9%	3.9%
Solar	0	0	0	0	2	11	34	n.s.	n.s.	n.s.	28.7%	16.6%	11.7%
Other	0	0	0	0	1	2	5	n.s.	n.s.	n.s.	29.1%	8.6%	9.1%
Generation Capacity (GW_e)	**4**	**7**	**10**	**15**	**26**	**48**	**77**	**6.8%**	**3.5%**	**4.2%**	**5.7%**	**6.1%**	**4.9%**
Coal	0	1	2	3	4	6	7	12.1%	2.1%	3.7%	4.3%	4.0%	1.5%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	2	2	2	2	3	5	6	3.4%	-0.6%	-0.1%	5.2%	4.3%	1.9%
Gas	1	2	4	5	7	10	14	10.7%	7.7%	2.9%	1.8%	4.3%	3.5%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	9.4%	5.3%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	1	2	2	2	3	3	3	4.3%	1.4%	3.0%	0.6%	0.3%	0.2%
Wind	0	0	0	2	8	16	22	n.s.	18.7%	21.2%	12.8%	7.2%	3.5%
Solar	0	0	0	0	2	9	25	n.s.	n.s.	25.6%	20.2%	14.6%	11.3%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	17.9%	13.0%
Total Final Consumption[2] (Mtoe)	**9**	**14**	**20**	**26**	**33**	**41**	**48**	**4.2%**	**3.7%**	**2.5%**	**2.5%**	**2.1%**	**1.6%**
Coal	0	1	0	0	0	1	2	2.8%	-30.6%	7.3%	26.6%	12.9%	6.9%
Oil	6	9	14	17	19	20	19	4.3%	4.1%	2.4%	1.0%	0.5%	-0.4%
Gas	0	1	1	2	4	6	8	6.1%	6.1%	6.7%	6.4%	3.9%	2.9%
Electricity	1	2	3	4	7	11	15	5.2%	5.5%	3.4%	4.9%	4.4%	3.3%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	9.0%	10.1%	6.3%	4.1%
Biomass & Other	1	2	2	2	2	2	3	2.7%	2.0%	-1.4%	1.7%	0.0%	0.8%
Industry (incl. non-energy use)	**3**	**4**	**6**	**7**	**9**	**11**	**13**	**1.8%**	**3.2%**	**2.2%**	**2.1%**	**2.4%**	**1.9%**
Coal	0	1	0	0	0	1	2	2.8%	-30.6%	7.3%	26.6%	12.9%	6.9%
Oil	2	2	4	4	4	4	4	-0.1%	5.2%	1.8%	0.4%	-0.3%	-1.3%
Gas	0	0	1	1	1	2	2	5.1%	5.7%	1.4%	2.1%	2.9%	2.1%
Electricity	1	1	1	2	3	4	5	4.3%	3.0%	3.7%	4.5%	4.0%	3.0%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	n.s.	4.4%	2.8%	-2.4%	-2.4%	0.3%
Buildings	**3**	**5**	**7**	**8**	**10**	**13**	**15**	**4.5%**	**3.8%**	**1.9%**	**2.2%**	**2.1%**	**1.8%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	1	2	3	3	2	2	2	6.0%	3.5%	1.1%	-2.5%	-2.0%	-1.2%
Gas	0	0	0	1	3	4	4	10.1%	6.9%	14.9%	8.5%	3.2%	1.3%
Electricity	0	1	2	2	4	6	8	6.4%	7.1%	3.1%	5.0%	4.1%	3.3%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	9.0%	10.1%	6.3%	4.1%
Biomass & Other	1	2	2	2	1	1	1	2.3%	1.9%	-2.3%	-3.0%	-2.1%	-1.5%
Agriculture	**0**	**1**	**1**	**2**	**2**	**2**	**3**	**5.8%**	**5.3%**	**3.0%**	**2.1%**	**1.8%**	**1.4%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	0	1	1	1	1	2	2	5.8%	3.8%	2.6%	1.9%	1.5%	1.2%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	13.9%	1.7%	1.3%	1.0%
Electricity	0	0	0	0	1	1	1	6.1%	11.3%	3.6%	2.7%	2.3%	2.0%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Transport	**2**	**5**	**7**	**9**	**12**	**15**	**17**	**6.3%**	**3.8%**	**3.3%**	**3.2%**	**2.0%**	**1.2%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	2	5	7	9	11	12	12	6.4%	3.8%	3.1%	2.1%	1.1%	-0.2%
Gas	0	0	0	0	0	1	2	n.s.	n.s.	n.s.	n.s.	16.7%	10.4%
Electricity	0	0	0	0	0	1	2	2.8%	-1.8%	7.8%	18.3%	11.4%	5.3%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	1	1	2	n.s.	n.s.	n.s.	23.3%	2.5%	2.5%
Other Energy Transformation & Losses[3]	**1**	**3**	**5**	**7**	**9**	**10**	**12**	**18.0%**	**7.0%**	**2.9%**	**2.1%**	**1.6%**	**1.4%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

South Africa	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	38	46	52	59	64	68	71	2.0%	1.2%	1.3%	0.9%	0.6%	0.4%
GDP per capita (ppp, k$'15)	9	9	11	12	14	19	23	-0.2%	2.3%	0.5%	1.8%	2.9%	2.0%
Prices													
International/Regional ($'15/boe)													
Coal	3	2	3	2	3	4	4	-3.4%	3.6%	-2.8%	2.5%	2.8%	1.7%
Oil	39	38	86	91	89	96	107	-0.2%	8.4%	0.5%	-0.2%	0.8%	1.0%
Gas	24	28	33	47	55	62	64	1.5%	1.6%	3.6%	1.4%	1.3%	0.4%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**386**	**446**	**582**	**661**	**651**	**598**	**569**	**1.5%**	**2.7%**	**1.3%**	**-0.1%**	**-0.8%**	**-0.5%**
Total GHG (energy, industry, agriculture)	**385**	**441**	**572**	**662**	**643**	**587**	**552**	**1.4%**	**2.6%**	**1.5%**	**-0.3%**	**-0.9%**	**-0.6%**
CO_2	304	349	471	562	555	495	459	1.4%	3.0%	1.8%	-0.1%	-1.1%	-0.7%
CH_4	62	70	78	76	65	68	69	1.2%	1.0%	-0.2%	-1.5%	0.5%	0.1%
N_2O	18	20	20	21	21	21	21	1.0%	0.0%	0.4%	0.4%	0.0%	-0.2%
F gases	2	2	4	3	2	2	3	4.6%	5.1%	-1.8%	-3.9%	1.3%	0.5%
Total GHG from Energy and Industry	**349**	**405**	**534**	**623**	**603**	**547**	**511**	**1.5%**	**2.8%**	**1.6%**	**-0.3%**	**-1.0%**	**-0.7%**
CO_2 Emissions from Fuel Comb.	**278**	**321**	**426**	**520**	**503**	**428**	**382**	**1.4%**	**2.9%**	**2.0%**	**-0.3%**	**-1.6%**	**-1.1%**
Power generation/District heating	144	190	244	240	223	167	131	2.8%	2.5%	-0.2%	-0.7%	-2.9%	-2.4%
Industry	53	40	53	59	57	51	43	-2.7%	2.7%	1.1%	-0.2%	-1.1%	-1.8%
Buildings	12	9	17	29	27	24	22	-2.2%	6.3%	5.5%	-0.8%	-1.0%	-1.0%
Agriculture	3	4	3	6	6	6	6	2.0%	-1.1%	5.4%	0.1%	0.2%	0.0%
Transport	29	36	48	54	55	54	51	2.0%	2.9%	1.2%	0.1%	-0.1%	-0.7%
Other	37	41	61	133	135	125	130	1.0%	4.1%	8.0%	0.2%	-0.8%	0.4%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**n.s.**	**n.s.**	**n.s.**	**7.8%**	**40.6%**	**19.1%**
Coal	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	19.5%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	7.8%	7.5%	9.2%
Energy Balance, by fuel (Mtoe)													
Primary Production	**109**	**151**	**164**	**225**	**309**	**352**	**395**	**3.4%**	**0.8%**	**3.2%**	**3.2%**	**1.3%**	**1.2%**
Coal	91	126	143	185	263	304	346	3.3%	1.3%	2.6%	3.6%	1.5%	1.3%
Oil	5	10	4	0	0	0	0	6.8%	-8.2%	-56.3%	25.0%	24.7%	10.9%
Natural gas	2	1	1	7	10	9	9	-0.8%	-1.0%	19.1%	2.5%	-0.5%	-0.7%
Biomass	10	13	15	30	31	25	20	2.0%	1.4%	7.3%	0.4%	-1.9%	-2.3%
Nuclear[1]	1	1	1	1	2	4	5	4.4%	-0.7%	2.3%	2.9%	8.4%	1.9%
Hydro	0	0	0	0	0	0	0	0.9%	6.7%	2.5%	0.9%	0.6%	0.3%
Other renewables	0	0	0	1	4	9	16	n.s.	n.s.	32.1%	12.8%	9.8%	5.3%
Net Imports	**- 22**	**- 34**	**- 29**	**- 71**	**- 155**	**- 208**	**- 259**						
Coal	- 23	- 45	- 44	- 68	- 151	- 217	- 269						
Oil	3	- 1	15	14	13	13	9						
Natural gas	- 1	0	3	- 3	- 2	7	10						
Biomass	0	0	0	- 12	- 13	- 10	- 8						
Biofuels	0	0	0	0	0	0	0						
Electricity	- 1	12	- 2	- 1	- 1	- 1	- 1						
Primary Energy Demand[2]	**87**	**117**	**136**	**154**	**154**	**144**	**137**	3.1%	**1.5%**	**1.3%**	**0.0%**	**-0.7%**	**-0.5%**
Coal	68	81	99	117	112	87	77	1.8%	2.0%	1.7%	-0.4%	-2.4%	-1.2%
Oil	9	9	20	14	13	13	9	0.2%	8.5%	-3.2%	-0.7%	0.0%	-3.3%
Natural gas	0	1	4	4	7	17	19	10.9%	10.7%	1.4%	4.8%	8.8%	1.3%
Biomass	10	13	15	18	18	15	12	2.0%	1.4%	1.9%	0.3%	-1.8%	-2.4%
Nuclear[1]	1	1	1	1	2	4	5	4.4%	-0.7%	2.3%	2.9%	8.4%	1.9%
Hydro	0	0	0	0	0	0	0	0.9%	6.7%	2.5%	0.9%	0.6%	0.3%
Other renewables	0	0	0	1	4	9	16	n.s.	n.s.	32.1%	12.8%	9.8%	5.3%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**87**	**117**	**136**	**154**	**154**	**144**	**137**	**3.1%**	**1.5%**	**1.3%**	**0.0%**	**-0.7%**	**-0.5%**
Energy for Power Generation	**37**	**49**	**63**	**64**	**63**	**60**	**58**	**2.9%**	**2.5%**	**0.1%**	**-0.1%**	**-0.5%**	**-0.3%**
Other Energy Transformation & Losses	**10**	**27**	**22**	**32**	**34**	**30**	**28**	**10.4%**	**-2.0%**	**3.8%**	**0.6%**	**-1.3%**	**-0.4%**
Final consumption	**52**	**57**	**69**	**76**	**79**	**82**	**81**	**0.9%**	**2.0%**	**1.0%**	**0.4%**	**0.3%**	**-0.1%**
Steel, Non-Met. Minerals and Chem.	10	7	9	11	12	11	10	-3.5%	2.4%	1.8%	0.9%	-0.7%	-1.4%
Other Industry	13	14	18	18	17	18	18	0.9%	2.6%	-0.1%	-0.3%	0.4%	0.1%
Non-Energy Use	4	6	4	3	3	3	3	2.8%	-2.6%	-4.3%	0.1%	1.2%	0.2%
Residential	10	12	15	17	16	15	15	1.5%	2.2%	1.3%	-0.4%	-0.5%	-0.6%
Services	3	4	5	6	7	8	8	2.5%	1.8%	2.4%	0.7%	1.5%	0.9%
Agriculture	1	2	2	2	2	3	3	1.7%	0.3%	3.5%	1.2%	1.3%	1.0%
Road	9	11	15	18	20	22	22	1.8%	3.0%	2.0%	1.1%	0.7%	0.1%
Rail	0	1	0	0	0	1	1	5.2%	-6.5%	2.0%	1.3%	1.9%	1.1%
Aviation	0	1	1	1	1	1	2	5.7%	5.0%	-1.2%	1.9%	2.1%	1.6%
Other Transport	0	0	0	0	0	0	0	n.s.	4.5%	19.2%	1.6%	2.3%	1.1%

[1] Nuclear energy is accounted as primary electricity

South Africa	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**36**	**48**	**61**	**61**	**57**	**46**	**37**	**2.9%**	**2.5%**	**-0.1%**	**-0.7%**	**-2.1%**	**-2.1%**
Coal	36	48	61	60	55	36	26	2.8%	2.5%	-0.2%	-0.9%	-4.1%	-3.2%
Oil	0	0	0	1	1	1	2	n.s.	n.s.	29.1%	4.5%	4.4%	4.5%
Gas	0	0	0	0	1	8	8	n.s.	n.s.	n.s.	40.7%	24.2%	0.2%
Biomass & Waste	0	0	0	0	0	1	1	n.s.	-0.7%	15.1%	-1.7%	4.2%	1.3%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**168**	**211**	**262**	**255**	**287**	**350**	**403**	**2.3%**	**2.2%**	**-0.2%**	**1.2%**	**2.0%**	**1.4%**
Coal	156	193	242	220	211	149	113	2.2%	2.3%	-1.0%	-0.4%	-3.4%	-2.8%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	17.0%
Oil	0	0	0	1	2	6	10	n.s.	n.s.	16.6%	10.1%	9.2%	5.9%
Gas	0	0	0	0	5	37	42	n.s.	n.s.	n.s.	37.9%	23.5%	1.2%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	0	0	1	1	2	3	n.s.	-0.7%	15.1%	-1.0%	7.5%	2.3%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	8	13	12	15	20	45	54	4.4%	-0.7%	2.3%	2.9%	8.4%	1.9%
Hydro	3	4	5	7	7	7	6	3.3%	2.6%	3.8%	0.1%	-0.5%	-1.4%
Wind	0	0	0	6	21	58	96	n.s.	n.s.	n.s.	14.3%	10.6%	5.2%
Solar	0	0	0	5	18	42	70	n.s.	n.s.	n.s.	13.4%	8.7%	5.2%
Other	1	0	2	0	1	3	9	-19.8%	36.8%	-22.4%	19.0%	13.2%	9.5%
Generation Capacity (GW_e)	**36**	**43**	**47**	**50**	**68**	**102**	**142**	**1.6%**	**1.0%**	**0.7%**	**3.0%**	**4.1%**	**3.4%**
Coal	31	37	38	33	30	23	21	1.8%	0.2%	-1.4%	-0.8%	-2.6%	-0.9%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	17.4%
Oil	0	0	0	0	0	1	2	29.8%	0.0%	-1.3%	2.2%	8.9%	8.8%
Gas	0	0	2	3	4	8	12	n.s.	n.s.	2.7%	4.8%	5.9%	4.4%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	0	0	0	0	0	0	n.s.	0.0%	10.8%	-2.6%	7.5%	2.7%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	2	2	2	2	2	6	7	0.0%	0.0%	0.3%	2.9%	8.4%	1.9%
Hydro	4	4	5	5	4	4	4	0.2%	3.3%	-0.3%	-0.7%	-0.9%	-1.2%
Wind	0	0	0	3	9	23	37	n.s.	n.s.	n.s.	13.2%	9.7%	4.6%
Solar	0	0	0	5	16	36	60	n.s.	n.s.	n.s.	13.1%	8.4%	5.1%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	17.1%	12.9%
Total Final Consumption[2] (Mtoe)	**52**	**57**	**69**	**76**	**79**	**82**	**81**	**0.9%**	**2.0%**	**1.0%**	**0.4%**	**0.3%**	**-0.1%**
Coal	17	16	15	18	16	13	10	-0.8%	-0.1%	1.4%	-0.9%	-2.1%	-2.5%
Oil	15	16	23	27	26	26	23	0.7%	3.6%	1.6%	-0.1%	-0.2%	-1.2%
Gas	0	1	3	4	6	8	10	5.6%	11.8%	3.8%	3.9%	3.5%	2.4%
Electricity	12	15	17	17	19	23	27	2.3%	1.5%	-0.4%	1.3%	2.1%	1.4%
Heat	0	0	0	0	0	1	1	n.s.	n.s.	14.3%	4.0%	8.6%	5.8%
Biomass & Other	8	9	11	11	12	11	10	1.8%	1.5%	0.4%	0.4%	-0.7%	-0.8%
Industry (incl. non-energy use)	**27**	**27**	**31**	**31**	**32**	**32**	**31**	**-0.2%**	**1.7%**	**0.0%**	**0.1%**	**0.1%**	**-0.4%**
Coal	14	14	12	11	11	10	8	-0.3%	-1.5%	-0.6%	0.0%	-1.5%	-2.2%
Oil	4	2	4	5	5	5	4	-6.6%	9.4%	1.1%	-0.6%	0.3%	-0.8%
Gas	0	1	3	3	3	3	3	5.5%	12.2%	2.4%	-0.4%	0.7%	-0.2%
Electricity	7	8	10	10	11	13	14	1.6%	2.2%	-0.4%	0.9%	1.6%	1.1%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	1	2	2	2	2	1	1	1.3%	1.6%	0.1%	-0.4%	-2.0%	-2.0%
Buildings	**14**	**16**	**20**	**23**	**23**	**23**	**23**	**1.7%**	**2.1%**	**1.6%**	**-0.1%**	**0.1%**	**0.0%**
Coal	2	1	3	6	4	3	2	-4.6%	8.3%	6.1%	-2.9%	-3.7%	-3.7%
Oil	1	1	1	1	1	1	1	5.0%	1.6%	0.9%	0.3%	0.7%	0.3%
Gas	0	0	0	1	2	3	4	8.2%	-4.6%	36.4%	15.0%	4.5%	1.6%
Electricity	4	6	6	6	7	8	8	3.4%	0.7%	-0.4%	0.9%	1.3%	1.0%
Heat	0	0	0	0	0	1	1	n.s.	n.s.	14.3%	4.0%	8.6%	5.8%
Biomass & Other	6	8	9	9	8	7	6	1.9%	1.4%	0.1%	-1.2%	-1.4%	-1.7%
Agriculture	**1**	**2**	**2**	**2**	**2**	**3**	**3**	**1.7%**	**0.3%**	**3.5%**	**1.2%**	**1.3%**	**1.0%**
Coal	0	0	0	0	0	0	0	3.3%	-0.3%	23.1%	-1.0%	-1.1%	-1.1%
Oil	1	1	1	1	1	1	2	2.0%	-1.2%	3.0%	0.5%	0.6%	0.2%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Electricity	0	0	1	0	1	1	1	0.8%	4.1%	-0.2%	2.4%	2.6%	2.3%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	24.6%	6.6%	3.6%
Transport	**10**	**12**	**16**	**20**	**22**	**24**	**24**	**2.1%**	**2.8%**	**1.8%**	**1.1%**	**0.8%**	**0.2%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	10	12	16	19	19	18	15	2.1%	3.0%	1.6%	0.0%	-0.5%	-1.5%
Gas	0	0	0	0	0	1	3	n.s.	n.s.	n.s.	55.8%	14.8%	8.7%
Electricity	0	0	0	0	1	2	3	2.9%	-4.1%	1.3%	11.1%	8.7%	3.8%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	2	2	3	n.s.	n.s.	n.s.	18.4%	2.6%	1.9%
Other Energy Transformation & Losses[3]	**10**	**27**	**22**	**32**	**34**	**30**	**28**	**10.4%**	**-2.0%**	**3.8%**	**0.6%**	**-1.3%**	**-0.4%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Rest Sub Saharan Africa	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	475	626	827	1 085	1 361	1 648	1 921	2.8%	2.8%	2.8%	2.3%	1.9%	1.5%
GDP per capita (ppp, k$'15)	1	1	2	2	4	6	9	-0.3%	3.6%	3.0%	4.1%	4.4%	4.5%
Prices													
International/Regional ($'15/boe)													
Coal	3	2	3	2	3	4	4	-3.4%	3.6%	-2.8%	2.5%	2.8%	1.7%
Oil	39	38	86	91	89	96	107	-0.2%	8.4%	0.5%	-0.2%	0.8%	1.0%
Gas	24	28	33	47	55	62	64	1.5%	1.6%	3.6%	1.4%	1.3%	0.4%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**2 499**	**2 050**	**1 480**	**2 401**	**3 912**	**5 003**	**5 893**	**-2.0%**	**-3.2%**	**5.0%**	**5.0%**	**2.5%**	**1.7%**
Total GHG (energy, industry, agriculture)	**896**	**1 012**	**1 218**	**1 723**	**2 513**	**3 450**	**4 513**	**1.2%**	**1.9%**	**3.5%**	**3.8%**	**3.2%**	**2.7%**
CO_2	164	225	270	520	1 143	1 810	2 564	3.2%	1.8%	6.8%	8.2%	4.7%	3.5%
CH_4	602	624	733	956	1 078	1 300	1 555	0.4%	1.6%	2.7%	1.2%	1.9%	1.8%
N_2O	128	161	212	241	282	323	365	2.3%	2.8%	1.3%	1.6%	1.4%	1.2%
F gases	2	2	3	5	10	17	29	-0.1%	4.3%	5.9%	6.0%	6.0%	5.5%
Total GHG from Energy and Industry	**561**	**600**	**672**	**1 129**	**1 869**	**2 777**	**3 810**	**0.7%**	**1.1%**	**5.3%**	**5.2%**	**4.0%**	**3.2%**
CO_2 Emissions from Fuel Comb.	**96**	**131**	**198**	**416**	**858**	**1 386**	**1 933**	**3.2%**	**4.2%**	**7.7%**	**7.5%**	**4.9%**	**3.4%**
Power generation/District heating	20	27	42	140	271	489	741	3.0%	4.3%	12.8%	6.8%	6.1%	4.2%
Industry	19	19	27	44	209	298	311	-0.2%	3.8%	5.0%	16.8%	3.6%	0.4%
Buildings	12	17	23	48	88	148	231	3.5%	3.0%	7.5%	6.3%	5.4%	4.5%
Agriculture	2	4	3	4	5	7	10	6.3%	-1.5%	1.1%	3.7%	3.1%	2.6%
Transport	38	54	90	150	216	306	407	3.6%	5.2%	5.3%	3.7%	3.5%	2.9%
Other	5	10	13	31	69	137	233	8.4%	2.3%	9.1%	8.5%	7.1%	5.4%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Energy Balance, by fuel (Mtoe)													
Primary Production	**324**	**445**	**643**	**714**	**933**	**1 065**	**1 047**	**3.2%**	**3.7%**	**1.1%**	**2.7%**	**1.3%**	**-0.2%**
Coal	4	4	3	36	23	39	60	-0.8%	-4.0%	30.1%	-4.6%	5.5%	4.5%
Oil	139	197	285	279	218	205	173	3.5%	3.8%	-0.2%	-2.5%	-0.6%	-1.7%
Natural gas	5	16	47	63	116	193	211	12.2%	11.6%	2.9%	6.4%	5.2%	0.9%
Biomass	172	223	300	319	519	519	425	2.6%	3.0%	0.6%	5.0%	0.0%	-2.0%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	6.4%	0.1%
Hydro	4	5	8	9	9	9	9	3.1%	4.4%	1.5%	0.2%	-0.2%	-0.2%
Other renewables	0	0	1	8	48	100	168	2.9%	13.0%	19.5%	20.3%	7.6%	5.4%
Net Imports	**- 116**	**- 172**	**- 259**	**- 186**	**238**	**320**	**396**						
Coal	1	0	1	- 26	39	79	115						
Oil	- 115	- 163	- 231	- 176	- 70	- 2	80						
Natural gas	- 1	- 8	- 33	- 29	- 33	- 47	8						
Biomass	0	0	0	43	301	290	193						
Biofuels	0	0	0	- 2	- 3	- 3	- 3						
Electricity	0	- 1	4	3	3	3	3						
Primary Energy Demand[2]	**208**	**273**	**384**	**528**	**1 171**	**1 385**	**1 443**	2.7%	**3.5%**	**3.2%**	**8.3%**	**1.7%**	**0.4%**
Coal	5	4	3	10	62	117	176	-2.0%	-1.5%	12.0%	19.6%	6.6%	4.1%
Oil	24	34	54	104	148	204	254	3.6%	4.7%	6.7%	3.6%	3.2%	2.2%
Natural gas	4	8	14	34	83	146	219	7.2%	6.1%	9.4%	9.4%	5.8%	4.1%
Biomass	172	223	300	363	820	810	618	2.6%	3.0%	1.9%	8.5%	-0.1%	-2.7%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	6.4%	0.1%
Hydro	4	5	8	9	9	9	9	3.1%	4.4%	1.5%	0.2%	-0.2%	-0.2%
Other renewables	0	0	1	8	48	100	168	2.9%	13.0%	19.5%	20.3%	7.6%	5.4%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**208**	**273**	**384**	**528**	**1 171**	**1 385**	**1 443**	**2.7%**	**3.5%**	**3.2%**	**8.3%**	**1.7%**	**0.4%**
Energy for Power Generation	**11**	**15**	**24**	**64**	**149**	**273**	**417**	**3.4%**	**5.0%**	**10.1%**	**8.9%**	**6.3%**	**4.3%**
Other Energy Transformation & Losses	**29**	**40**	**63**	**88**	**529**	**543**	**403**	**3.2%**	**4.7%**	**3.3%**	**19.7%**	**0.3%**	**-2.9%**
Final consumption	**173**	**224**	**307**	**399**	**541**	**667**	**800**	**2.6%**	**3.2%**	**2.7%**	**3.1%**	**2.1%**	**1.8%**
Steel, Non-Met. Minerals and Chem.	1	1	1	3	47	62	55	0.3%	0.5%	10.6%	30.3%	2.8%	-1.1%
Other Industry	14	17	31	41	56	69	88	2.4%	6.1%	2.7%	3.2%	2.1%	2.5%
Non-Energy Use	1	1	2	4	6	8	12	0.6%	3.8%	8.1%	4.6%	4.1%	3.3%
Residential	138	177	228	281	326	367	403	2.5%	2.6%	2.1%	1.5%	1.2%	0.9%
Services	5	7	10	14	20	35	66	3.6%	3.7%	3.6%	3.6%	5.7%	6.5%
Agriculture	1	2	2	3	3	4	5	4.7%	0.4%	1.9%	2.3%	2.2%	2.0%
Road	12	18	31	51	76	107	145	4.0%	5.4%	5.1%	4.1%	3.5%	3.1%
Rail	0	0	0	0	0	1	1	-5.7%	-1.1%	7.9%	1.8%	2.3%	2.7%
Aviation	0	0	1	2	5	12	22	4.6%	8.2%	7.1%	12.5%	8.3%	6.7%
Other Transport	0	0	0	1	1	2	3	-1.2%	2.2%	9.6%	5.6%	5.2%	4.9%

[1] Nuclear energy is accounted as primary electricity

Rest Sub Saharan Africa	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**7**	**9**	**15**	**47**	**91**	**164**	**240**	**3.7%**	**4.8%**	**12.0%**	**6.9%**	**6.0%**	**3.9%**
Coal	2	2	2	7	21	48	93	-1.2%	-0.6%	15.1%	11.1%	8.4%	6.9%
Oil	2	3	6	27	43	61	68	4.1%	5.5%	16.3%	4.9%	3.5%	1.1%
Gas	2	4	7	11	21	45	67	7.1%	6.1%	4.7%	7.0%	8.0%	4.0%
Biomass & Waste	0	0	1	1	2	3	5	4.1%	5.8%	9.1%	2.6%	7.2%	3.7%
Other	0	0	0	1	4	7	8	2.9%	13.0%	19.0%	19.3%	5.0%	1.7%
Gross Elec. Generation (TWh_e)	**66**	**90**	**147**	**304**	**617**	**1 322**	**2 503**	**3.1%**	**5.0%**	**7.5%**	**7.3%**	**7.9%**	**6.6%**
Coal	6	5	4	23	98	241	492	-1.1%	-1.9%	17.8%	15.4%	9.5%	7.4%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	8	12	20	111	190	280	317	3.7%	5.5%	18.5%	5.5%	3.9%	1.3%
Gas	7	12	29	49	99	229	360	5.3%	8.9%	5.4%	7.2%	8.8%	4.6%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	1	1	3	5	14	23	3.8%	5.5%	11.0%	5.0%	10.2%	4.7%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	44	59	90	105	106	104	105	3.1%	4.4%	1.5%	0.2%	-0.2%	0.1%
Wind	0	0	0	3	38	146	378	21.5%	11.2%	n.s.	28.6%	14.5%	10.0%
Solar	0	0	0	1	31	210	625	n.s.	19.0%	46.9%	44.0%	21.2%	11.5%
Other	0	0	1	9	51	98	203	2.9%	13.0%	20.0%	18.7%	6.8%	7.6%
Generation Capacity (GW_e)	**24**	**27**	**41**	**67**	**149**	**424**	**951**	**1.3%**	**4.2%**	**5.0%**	**8.4%**	**11.0%**	**8.4%**
Coal	2	2	2	3	12	31	66	-0.5%	1.1%	4.4%	15.2%	9.6%	7.9%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	4	5	8	18	48	121	187	1.2%	5.3%	8.2%	10.5%	9.6%	4.5%
Gas	3	6	11	17	19	40	74	8.2%	6.6%	4.7%	1.2%	7.8%	6.2%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	0	0	0	1	2	3	1.0%	8.8%	1.5%	4.1%	10.2%	5.0%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	15	15	20	25	26	25	25	-0.2%	2.9%	2.5%	0.2%	-0.2%	0.0%
Wind	0	0	0	1	14	51	123	7.4%	13.2%	n.s.	27.1%	13.6%	9.3%
Solar	0	0	0	1	21	141	456	n.s.	39.0%	31.7%	37.6%	21.2%	12.5%
Other	0	0	0	1	8	13	16	4.1%	12.0%	20.4%	19.3%	5.2%	2.2%
Total Final Consumption[2] (Mtoe)	**173**	**224**	**307**	**399**	**541**	**667**	**800**	**2.6%**	**3.2%**	**2.7%**	**3.1%**	**2.1%**	**1.8%**
Coal	3	2	1	3	38	59	60	-2.6%	-4.2%	7.7%	30.2%	4.6%	0.1%
Oil	21	29	46	75	107	148	190	3.4%	4.9%	5.0%	3.6%	3.3%	2.5%
Gas	1	2	4	10	32	51	84	5.3%	6.1%	11.2%	12.3%	4.8%	5.1%
Electricity	4	6	10	21	42	90	165	3.3%	5.7%	7.3%	7.2%	7.8%	6.3%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	7.4%	-1.5%	-3.0%	-0.7%
Biomass & Other	144	185	245	290	322	318	301	2.6%	2.8%	1.7%	1.1%	-0.1%	-0.6%
Industry (incl. non-energy use)	**16**	**19**	**34**	**48**	**108**	**139**	**154**	**2.1%**	**5.7%**	**3.4%**	**8.6%**	**2.5%**	**1.1%**
Coal	2	1	1	3	38	59	60	-3.6%	-4.1%	11.3%	30.9%	4.6%	0.1%
Oil	4	4	6	9	12	16	20	1.0%	3.9%	3.2%	3.6%	2.9%	2.2%
Gas	1	1	4	7	18	18	20	2.3%	9.2%	7.2%	9.8%	0.3%	1.1%
Electricity	2	3	4	8	14	24	39	2.0%	4.2%	6.7%	5.3%	5.7%	5.2%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	7	10	19	21	27	21	14	3.9%	7.1%	1.0%	2.4%	-2.4%	-3.9%
Buildings	**142**	**184**	**238**	**295**	**346**	**402**	**469**	**2.6%**	**2.6%**	**2.2%**	**1.6%**	**1.5%**	**1.6%**
Coal	0	0	0	0	0	0	0	-2.8%	-4.3%	-2.8%	-0.3%	-0.6%	-0.9%
Oil	3	5	7	13	18	26	38	3.3%	4.1%	5.9%	3.4%	3.9%	3.9%
Gas	0	0	0	3	14	28	48	n.s.	n.s.	n.s.	15.9%	7.7%	5.3%
Electricity	2	3	6	13	27	59	111	4.7%	7.3%	7.7%	7.8%	8.2%	6.5%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	7.4%	-1.5%	-3.0%	-0.7%
Biomass & Other	137	175	225	267	288	289	272	2.5%	2.5%	1.7%	0.8%	0.0%	-0.6%
Agriculture	**1**	**2**	**2**	**3**	**3**	**4**	**5**	**4.7%**	**0.4%**	**1.9%**	**2.3%**	**2.2%**	**2.0%**
Coal	0	0	0	0	0	0	0	6.1%	-4.6%	-24.3%	0.0%	0.0%	0.0%
Oil	0	1	1	1	2	2	3	6.4%	0.1%	4.5%	3.7%	3.1%	2.6%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Electricity	0	0	0	0	0	1	1	3.2%	-0.6%	5.9%	4.5%	3.8%	3.3%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	1	1	1	1	1	1	1	3.2%	2.5%	1.3%	0.0%	0.0%	0.0%
Transport	**13**	**19**	**32**	**53**	**83**	**122**	**172**	**3.8%**	**5.4%**	**5.2%**	**4.5%**	**3.9%**	**3.5%**
Coal	0	0	0	0	0	0	0	-22.1%	-3.5%	6.9%	0.0%	0.0%	0.0%
Oil	13	19	32	53	75	103	129	3.9%	5.4%	5.1%	3.6%	3.2%	2.2%
Gas	0	0	0	0	1	5	16	n.s.	n.s.	n.s.	n.s.	19.5%	13.3%
Electricity	0	0	0	0	1	6	13	n.s.	4.7%	39.7%	35.4%	15.8%	8.5%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	1	6	7	13	n.s.	n.s.	n.s.	22.6%	2.7%	5.7%
Other Energy Transformation & Losses[3]	**29**	**40**	**63**	**88**	**529**	**543**	**403**	**3.2%**	**4.7%**	**3.3%**	**19.7%**	**0.3%**	**-2.9%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Iran	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	56	66	75	84	92	97	100	1.6%	1.2%	1.2%	0.9%	0.5%	0.4%
GDP per capita (ppp, k$'15)	7	9	13	15	20	29	37	2.1%	4.0%	1.2%	3.3%	3.5%	2.5%
Prices													
International/Regional ($'15/boe)													
Coal	3	2	3	2	2	3	3	-3.4%	3.6%	-3.9%	2.6%	1.7%	1.1%
Oil	39	38	86	91	89	96	107	-0.2%	8.4%	0.5%	-0.2%	0.8%	1.0%
Gas	28	26	46	73	84	97	101	-0.7%	5.8%	4.7%	1.5%	1.5%	0.3%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**387**	**515**	**792**	**964**	**949**	**916**	**951**	**2.9%**	**4.4%**	**2.0%**	**-0.2%**	**-0.4%**	**0.4%**
Total GHG (energy, industry, agriculture)	**388**	**508**	**781**	**955**	**943**	**914**	**951**	**2.7%**	**4.4%**	**2.0%**	**-0.1%**	**-0.3%**	**0.4%**
CO_2	216	358	583	752	739	692	713	5.2%	5.0%	2.6%	-0.2%	-0.7%	0.3%
CH_4	148	122	164	165	163	179	192	-1.9%	3.0%	0.1%	-0.2%	0.9%	0.7%
N_2O	21	26	31	33	37	38	41	2.5%	1.7%	0.6%	1.1%	0.4%	0.6%
F gases	3	2	3	4	5	5	6	-2.5%	4.9%	3.2%	0.6%	1.0%	1.0%
Total GHG from Energy and Industry	**352**	**466**	**738**	**911**	**893**	**861**	**893**	**2.8%**	**4.7%**	**2.1%**	**-0.2%**	**-0.4%**	**0.4%**
CO_2 Emissions from Fuel Comb.	**184**	**319**	**512**	**663**	**634**	**571**	**580**	**5.7%**	**4.9%**	**2.6%**	**-0.4%**	**-1.1%**	**0.2%**
Power generation/District heating	36	69	131	221	215	134	102	6.8%	6.6%	5.4%	-0.3%	-4.6%	-2.7%
Industry	38	45	86	113	101	119	143	1.8%	6.7%	2.7%	-1.1%	1.6%	1.8%
Buildings	43	92	122	123	110	103	105	8.0%	2.8%	0.1%	-1.1%	-0.6%	0.2%
Agriculture	12	11	14	12	14	15	16	-0.8%	1.8%	-1.0%	1.2%	1.1%	0.7%
Transport	39	75	122	131	123	113	105	6.7%	5.1%	0.7%	-0.6%	-0.9%	-0.7%
Other	16	26	37	62	71	86	109	4.9%	3.4%	5.3%	1.4%	1.9%	2.4%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Energy Balance, by fuel (Mtoe)													
Primary Production	**184**	**243**	**325**	**358**	**356**	**421**	**517**	**2.8%**	**2.9%**	**1.0%**	**-0.1%**	**1.7%**	**2.1%**
Coal	0	1	1	1	1	1	1	7.9%	-0.3%	2.7%	3.4%	1.3%	-0.7%
Oil	161	192	194	186	182	226	264	1.8%	0.1%	-0.5%	-0.2%	2.2%	1.5%
Natural gas	22	50	128	167	160	161	201	8.5%	9.9%	2.6%	-0.4%	0.1%	2.2%
Biomass	0	0	1	2	4	5	4	-3.5%	15.0%	13.5%	6.4%	1.2%	-0.3%
Nuclear[1]	0	0	0	1	2	7	9	n.s.	n.s.	n.s.	15.6%	11.3%	2.9%
Hydro	1	0	1	2	4	4	4	-5.0%	10.1%	8.6%	6.7%	2.2%	0.1%
Other renewables	0	0	0	0	3	17	33	n.s.	17.9%	20.3%	39.5%	19.2%	6.8%
Net Imports	**- 114**	**- 121**	**- 126**	**- 93**	**- 93**	**- 162**	**- 238**						
Coal	0	1	1	0	3	12	22						
Oil	- 110	- 123	- 115	- 88	- 84	- 142	- 179						
Natural gas	- 5	3	- 8	2	- 5	- 27	- 76						
Biomass	0	0	0	- 1	- 1	0	0						
Biofuels	0	0	0	0	0	0	0						
Electricity	0	- 1	- 4	- 6	- 6	- 6	- 6						
Primary Energy Demand[2]	**70**	**122**	**199**	**265**	**263**	**259**	**279**	5.7%	**5.0%**	**2.9%**	**-0.1%**	**-0.2%**	**0.7%**
Coal	1	1	1	1	4	14	24	8.7%	-0.1%	1.0%	12.4%	12.5%	5.7%
Oil	51	69	80	98	98	84	84	2.9%	1.5%	2.1%	0.1%	-1.5%	0.0%
Natural gas	17	53	120	169	155	135	126	11.6%	8.6%	3.4%	-0.9%	-1.4%	-0.7%
Biomass	0	0	1	1	3	4	4	-3.5%	15.0%	3.2%	14.5%	2.5%	-0.2%
Nuclear[1]	0	0	0	1	2	7	9	n.s.	n.s.	n.s.	15.6%	11.3%	2.9%
Hydro	1	0	1	2	4	4	4	-5.0%	10.1%	8.6%	6.7%	2.2%	0.1%
Other renewables	0	0	0	0	3	17	33	n.s.	17.9%	20.3%	39.5%	19.2%	6.8%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**70**	**122**	**199**	**265**	**263**	**259**	**279**	**5.7%**	**5.0%**	**2.9%**	**-0.1%**	**-0.2%**	**0.7%**
Energy for Power Generation	**14**	**27**	**52**	**88**	**89**	**76**	**79**	**7.2%**	**6.8%**	**5.3%**	**0.1%**	**-1.5%**	**0.4%**
Other Energy Transformation & Losses	**6**	**8**	**8**	**15**	**19**	**24**	**31**	**3.9%**	**-1.0%**	**6.6%**	**2.8%**	**2.0%**	**2.8%**
Final consumption	**55**	**95**	**155**	**192**	**190**	**204**	**224**	**5.6%**	**5.1%**	**2.2%**	**-0.1%**	**0.7%**	**0.9%**
Steel, Non-Met. Minerals and Chem.	1	3	9	11	9	11	12	17.6%	12.1%	1.5%	-1.5%	1.6%	1.4%
Other Industry	14	16	30	44	41	47	55	1.7%	6.4%	3.8%	-0.6%	1.4%	1.5%
Non-Energy Use	6	8	14	22	26	29	32	1.9%	6.0%	4.9%	1.5%	1.3%	1.0%
Residential	13	30	47	55	52	50	51	8.9%	4.6%	1.7%	-0.6%	-0.3%	0.1%
Services	4	9	11	13	13	15	21	7.4%	2.3%	1.2%	0.1%	1.8%	2.9%
Agriculture	4	4	6	8	9	11	12	0.4%	4.0%	2.0%	1.7%	1.6%	1.3%
Road	13	24	38	37	38	36	36	6.3%	4.5%	-0.2%	0.1%	-0.3%	0.0%
Rail	0	0	0	0	0	0	0	n.s.	36.8%	4.2%	3.0%	2.8%	1.9%
Aviation	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Other Transport	0	1	0	3	3	4	5	n.s.	-30.1%	n.s.	1.5%	2.7%	1.7%

[1] Nuclear energy is accounted as primary electricity

Iran	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**13**	**27**	**51**	**85**	**80**	**48**	**33**	**7.5%**	**6.7%**	**5.2%**	**-0.7%**	**-5.0%**	**-3.7%**
Coal	0	0	0	1	3	9	15	22.3%	-3.1%	21.2%	15.4%	11.7%	5.0%
Oil	6	7	13	26	29	10	2	1.5%	6.1%	6.9%	1.0%	-10.3%	-13.8%
Gas	7	19	38	58	48	28	14	11.2%	7.0%	4.4%	-2.0%	-5.1%	-6.6%
Biomass & Waste	0	0	0	0	0	0	1	n.s.	n.s.	25.9%	11.1%	6.7%	15.8%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**59**	**121**	**233**	**397**	**461**	**543**	**703**	**7.5%**	**6.7%**	**5.5%**	**1.5%**	**1.7%**	**2.6%**
Coal	0	0	0	3	15	49	83	22.2%	-3.1%	22.0%	19.1%	12.7%	5.5%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	22	25	46	91	107	40	9	1.5%	6.1%	7.1%	1.6%	-9.5%	-13.5%
Gas	31	92	177	271	232	143	75	11.5%	6.8%	4.4%	-1.6%	-4.7%	-6.3%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	0	0	0	0	1	4	n.s.	n.s.	26.0%	13.4%	7.8%	17.1%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	6	27	79	105	n.s.	n.s.	n.s.	15.6%	11.3%	2.9%
Hydro	6	4	10	24	44	54	56	-5.0%	10.1%	9.7%	6.3%	2.1%	0.3%
Wind	0	0	0	1	15	69	132	n.s.	16.0%	18.5%	32.7%	16.4%	6.7%
Solar	0	0	0	0	19	102	209	n.s.	n.s.	27.4%	49.7%	18.5%	7.4%
Other	0	0	0	0	2	7	31	n.s.	n.s.	n.s.	24.4%	13.7%	16.0%
Generation Capacity (GW_e)	**18**	**34**	**61**	**84**	**121**	**190**	**281**	**6.5%**	**6.2%**	**3.2%**	**3.8%**	**4.6%**	**4.0%**
Coal	0	0	0	0	2	6	12	22.4%	-3.2%	4.9%	18.0%	12.7%	7.0%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	6	8	13	16	20	21	15	3.5%	4.1%	2.4%	2.1%	0.7%	-3.2%
Gas	10	23	40	49	48	29	29	8.6%	5.8%	2.1%	-0.2%	-5.0%	0.1%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	0	0	0	0	0	0	n.s.	n.s.	5.1%	13.2%	8.0%	18.3%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	1	4	12	16	n.s.	n.s.	n.s.	15.3%	11.1%	2.7%
Hydro	2	2	8	16	30	37	38	0.2%	15.6%	6.8%	6.3%	2.1%	0.3%
Wind	0	0	0	0	6	25	45	n.s.	18.8%	15.1%	31.2%	15.5%	6.2%
Solar	0	0	0	0	11	60	125	n.s.	n.s.	27.4%	49.7%	18.6%	7.7%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	22.7%	15.7%
Total Final Consumption[2] (Mtoe)	**55**	**95**	**155**	**192**	**190**	**204**	**224**	**5.6%**	**5.1%**	**2.2%**	**-0.1%**	**0.7%**	**0.9%**
Coal	0	1	1	1	2	3	6	7.4%	-0.8%	4.6%	2.8%	6.8%	6.8%
Oil	41	56	64	64	63	65	69	3.3%	1.3%	0.0%	-0.2%	0.3%	0.6%
Gas	9	29	73	97	88	88	90	12.0%	9.7%	2.8%	-1.0%	0.0%	0.2%
Electricity	4	8	16	29	34	39	49	6.7%	7.0%	6.1%	1.5%	1.7%	2.2%
Heat	0	0	0	0	0	2	4	n.s.	n.s.	n.s.	n.s.	n.s.	4.5%
Biomass & Other	0	0	1	1	4	5	6	-1.8%	16.3%	1.9%	18.0%	3.4%	0.8%
Industry (incl. non-energy use)	**21**	**27**	**53**	**76**	**76**	**87**	**99**	**2.7%**	**7.0%**	**3.7%**	**-0.1%**	**1.4%**	**1.3%**
Coal	0	1	1	1	2	3	6	7.2%	-0.7%	4.7%	2.8%	6.8%	6.8%
Oil	12	12	16	15	16	21	28	0.3%	2.6%	-0.4%	0.4%	2.6%	2.8%
Gas	7	11	31	51	48	51	51	4.6%	11.2%	5.3%	-0.6%	0.5%	-0.1%
Electricity	1	3	5	8	9	12	14	8.6%	6.7%	4.2%	1.4%	2.1%	2.1%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	33.9%	16.2%	6.8%
Buildings	**17**	**39**	**58**	**68**	**65**	**66**	**71**	**8.6%**	**4.1%**	**1.6%**	**-0.5%**	**0.1%**	**0.8%**
Coal	0	0	0	0	0	0	0	n.s.	-7.3%	-0.6%	-2.3%	-2.6%	-2.9%
Oil	12	15	9	6	7	8	9	3.0%	-5.0%	-3.8%	1.0%	1.5%	1.4%
Gas	3	19	40	44	38	33	33	21.7%	7.9%	1.1%	-1.6%	-1.2%	-0.3%
Electricity	3	5	8	17	17	18	23	5.3%	6.5%	7.2%	0.2%	0.6%	2.2%
Heat	0	0	0	0	0	2	4	n.s.	n.s.	n.s.	n.s.	n.s.	4.5%
Biomass & Other	0	0	1	1	3	4	3	-1.8%	16.3%	0.4%	15.8%	2.4%	-1.6%
Agriculture	**4**	**4**	**6**	**8**	**9**	**11**	**12**	**0.4%**	**4.0%**	**2.0%**	**1.7%**	**1.6%**	**1.3%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	4	4	4	3	3	4	4	-0.8%	1.1%	-3.2%	1.2%	1.1%	0.7%
Gas	0	0	0	1	1	2	2	n.s.	n.s.	12.6%	1.2%	1.1%	0.7%
Electricity	0	1	2	4	5	6	7	9.4%	10.2%	5.9%	2.2%	2.1%	1.7%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Transport	**13**	**25**	**38**	**40**	**41**	**40**	**41**	**6.6%**	**4.3%**	**0.5%**	**0.2%**	**-0.1%**	**0.2%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	13	25	35	39	37	32	28	6.6%	3.4%	1.2%	-0.7%	-1.2%	-1.3%
Gas	0	0	3	0	1	2	5	n.s.	n.s.	-24.4%	12.3%	14.7%	8.1%
Electricity	0	0	0	0	2	4	5	n.s.	36.8%	21.3%	28.7%	6.1%	3.2%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	1	2	2	n.s.	n.s.	n.s.	26.5%	4.1%	3.3%
Other Energy Transformation & Losses[3]	**6**	**8**	**8**	**15**	**19**	**24**	**31**	**3.9%**	**-1.0%**	**6.6%**	**2.8%**	**2.0%**	**2.8%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Saudi Arabia	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	16	21	27	35	40	45	48	2.4%	2.8%	2.4%	1.5%	1.1%	0.8%
GDP per capita (ppp, k$'15)	23	23	30	32	36	42	46	0.3%	2.5%	0.8%	1.2%	1.6%	0.9%
Prices													
International/Regional ($'15/boe)													
Coal	3	2	3	2	2	3	3	-3.4%	3.6%	-3.9%	2.6%	1.7%	1.1%
Oil	39	38	86	91	89	96	107	-0.2%	8.4%	0.5%	-0.2%	0.8%	1.0%
Gas	28	26	46	73	84	97	101	-0.7%	5.8%	4.7%	1.5%	1.5%	0.3%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**251**	**341**	**578**	**737**	**702**	**823**	**943**	**3.1%**	**5.4%**	**2.5%**	**-0.5%**	**1.6%**	**1.4%**
Total GHG (energy, industry, agriculture)	**251**	**340**	**577**	**736**	**701**	**823**	**943**	**3.1%**	**5.4%**	**2.5%**	**-0.5%**	**1.6%**	**1.4%**
CO_2	177	269	487	616	580	687	803	4.3%	6.1%	2.4%	-0.6%	1.7%	1.6%
CH_4	66	63	80	108	111	125	128	-0.4%	2.3%	3.1%	0.2%	1.2%	0.3%
N_2O	6	7	7	10	8	9	9	1.3%	0.8%	2.5%	-1.2%	0.7%	0.4%
F gases	2	1	3	3	2	2	2	-5.7%	8.1%	0.4%	-3.6%	-0.7%	-0.7%
Total GHG from Energy and Industry	**246**	**335**	**571**	**730**	**694**	**815**	**934**	**3.1%**	**5.5%**	**2.5%**	**-0.5%**	**1.6%**	**1.4%**
CO_2 Emissions from Fuel Comb.	**156**	**240**	**427**	**514**	**463**	**549**	**653**	**4.4%**	**5.9%**	**1.9%**	**-1.1%**	**1.7%**	**1.7%**
Power generation/District heating	59	104	181	178	119	104	78	5.9%	5.7%	-0.1%	-3.9%	-1.3%	-2.8%
Industry	28	53	112	151	139	158	181	6.5%	7.8%	3.1%	-0.8%	1.3%	1.4%
Buildings	3	4	5	5	6	6	6	3.0%	2.8%	0.2%	0.7%	0.1%	0.5%
Agriculture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Transport	49	61	105	126	95	93	90	2.1%	5.6%	1.8%	-2.8%	-0.2%	-0.3%
Other	17	19	24	54	103	188	297	1.1%	2.4%	8.2%	6.7%	6.2%	4.7%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Energy Balance, by fuel (Mtoe)													
Primary Production	**344**	**441**	**476**	**665**	**686**	**816**	**892**	**2.5%**	**0.8%**	**3.4%**	**0.3%**	**1.7%**	**0.9%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	316	399	403	586	606	722	743	2.4%	0.1%	3.8%	0.3%	1.8%	0.3%
Natural gas	28	42	74	78	78	88	139	3.9%	5.9%	0.5%	0.0%	1.2%	4.7%
Biomass	0	0	0	0	2	3	3	-9.3%	2.9%	53.3%	17.5%	4.4%	-0.1%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Other renewables	0	0	0	0	1	3	6	n.s.	n.s.	n.s.	20.4%	16.6%	7.4%
Net Imports	**- 282**	**- 343**	**- 291**	**- 451**	**- 478**	**- 565**	**- 592**						
Coal	0	0	0	0	1	5	13						
Oil	- 273	- 332	- 277	- 444	- 486	- 591	- 607						
Natural gas	- 9	- 11	- 14	- 7	6	19	- 2						
Biomass	0	0	0	0	1	3	5						
Biofuels	0	0	0	0	0	0	0						
Electricity	0	0	0	0	0	0	0						
Primary Energy Demand[2]	**62**	**98**	**186**	**213**	**208**	**251**	**300**	4.6%	**6.6%**	**1.4%**	**-0.3%**	**1.9%**	**1.8%**
Coal	0	0	0	0	1	5	13	n.s.	n.s.	n.s.	18.0%	21.2%	10.7%
Oil	43	67	126	142	120	131	136	4.6%	6.5%	1.3%	-1.7%	0.9%	0.4%
Natural gas	19	31	60	71	84	107	137	4.7%	6.9%	1.7%	1.7%	2.4%	2.5%
Biomass	0	0	0	0	3	6	8	-9.5%	2.9%	51.9%	21.5%	8.5%	2.8%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Other renewables	0	0	0	0	1	3	6	n.s.	n.s.	n.s.	20.4%	16.6%	7.4%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**62**	**98**	**186**	**213**	**208**	**251**	**300**	**4.6%**	**6.6%**	**1.4%**	**-0.3%**	**1.9%**	**1.8%**
Energy for Power Generation	**22**	**37**	**65**	**64**	**43**	**39**	**33**	**5.6%**	**5.7%**	**-0.2%**	**-3.8%**	**-1.1%**	**-1.8%**
Other Energy Transformation & Losses	**6**	**5**	**17**	**20**	**44**	**80**	**122**	**-0.4%**	**12.3%**	**1.6%**	**8.0%**	**6.2%**	**4.3%**
Final consumption	**39**	**64**	**121**	**148**	**135**	**148**	**163**	**4.9%**	**6.6%**	**2.1%**	**-0.9%**	**1.0%**	**0.9%**
Steel, Non-Met. Minerals and Chem.	0	0	1	1	2	2	2	n.s.	n.s.	0.4%	0.6%	0.7%	0.2%
Other Industry	11	20	42	57	52	59	66	6.3%	7.7%	3.0%	-0.8%	1.1%	1.2%
Non-Energy Use	7	14	25	31	36	43	49	7.1%	5.7%	2.0%	1.6%	1.7%	1.5%
Residential	3	6	11	12	9	7	6	5.9%	6.1%	1.0%	-3.4%	-1.9%	-1.2%
Services	1	2	5	4	2	2	3	5.3%	8.2%	-2.3%	-9.8%	3.3%	2.4%
Agriculture	0	0	0	1	1	1	1	9.2%	4.8%	5.6%	1.9%	1.8%	1.5%
Road	16	20	35	41	33	34	35	2.2%	5.8%	1.8%	-2.2%	0.4%	0.3%
Rail	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Aviation	1	1	1	1	1	1	1	2.0%	0.5%	2.4%	0.3%	0.3%	-0.4%
Other Transport	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.

[1] Nuclear energy is accounted as primary electricity

Saudi Arabia	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**22**	**37**	**65**	**64**	**43**	**36**	**26**	**5.6%**	**5.7%**	**-0.2%**	**-3.9%**	**-1.7%**	**-3.1%**
Coal	0	0	0	0	0	1	4	n.s.	n.s.	n.s.	0.1%	33.3%	14.6%
Oil	9	19	35	35	23	23	14	7.7%	6.0%	0.1%	-4.0%	-0.1%	-4.9%
Gas	12	18	30	28	19	12	8	3.7%	5.3%	-0.7%	-3.8%	-4.9%	-3.4%
Biomass & Waste	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	-0.4%	21.6%	13.1%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**69**	**126**	**240**	**249**	**179**	**180**	**190**	**6.2%**	**6.6%**	**0.4%**	**-3.2%**	**0.1%**	**0.5%**
Coal	0	0	0	0	0	5	21	n.s.	n.s.	n.s.	0.2%	34.4%	15.0%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	34	68	129	131	89	90	59	7.2%	6.6%	0.1%	-3.8%	0.1%	-4.2%
Gas	35	58	111	116	80	52	39	5.1%	6.7%	0.4%	-3.6%	-4.2%	-3.0%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	0.2%	22.8%	13.6%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Wind	0	0	0	1	3	11	25	n.s.	n.s.	n.s.	10.2%	13.9%	9.1%
Solar	0	0	0	0	5	20	40	n.s.	n.s.	n.s.	41.2%	15.7%	7.4%
Other	0	0	0	1	1	2	5	n.s.	n.s.	n.s.	9.0%	5.0%	7.9%
Generation Capacity (GW_e)	**24**	**31**	**60**	**72**	**57**	**62**	**82**	**2.6%**	**6.8%**	**1.9%**	**-2.5%**	**0.9%**	**2.8%**
Coal	0	0	0	0	0	1	3	n.s.	n.s.	n.s.	0.0%	34.5%	15.4%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	13	18	33	43	33	33	36	3.2%	6.4%	2.7%	-2.6%	-0.1%	1.0%
Gas	11	13	27	29	20	14	11	1.9%	7.2%	0.8%	-3.7%	-3.6%	-2.2%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	0.0%	22.9%	13.9%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Wind	0	0	0	0	1	4	8	n.s.	n.s.	n.s.	10.0%	13.2%	8.5%
Solar	0	0	0	0	3	11	24	n.s.	n.s.	n.s.	41.6%	15.7%	7.6%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	19.6%
Total Final Consumption[2] (Mtoe)	**39**	**64**	**121**	**148**	**135**	**148**	**163**	**4.9%**	**6.6%**	**2.1%**	**-0.9%**	**1.0%**	**0.9%**
Coal	0	0	0	0	1	3	7	n.s.	n.s.	n.s.	23.6%	18.2%	9.4%
Oil	29	43	76	97	87	90	89	4.3%	5.7%	2.5%	-1.1%	0.3%	-0.1%
Gas	6	12	27	32	33	39	49	6.4%	9.0%	1.7%	0.0%	1.8%	2.3%
Electricity	5	9	17	19	13	13	14	6.1%	7.4%	0.6%	-3.3%	0.0%	0.3%
Heat	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	n.s.	31.1%	3.8%
Biomass & Other	0	0	0	0	1	2	3	-9.6%	2.9%	19.0%	40.5%	7.6%	3.0%
Industry (incl. non-energy use)	**18**	**34**	**69**	**89**	**90**	**103**	**117**	**6.6%**	**7.2%**	**2.6%**	**0.1%**	**1.4%**	**1.3%**
Coal	0	0	0	0	1	3	7	n.s.	n.s.	n.s.	23.6%	18.2%	9.4%
Oil	11	22	39	53	54	59	61	6.9%	6.0%	3.1%	0.2%	0.9%	0.4%
Gas	6	12	27	32	31	36	43	6.4%	9.0%	1.7%	-0.3%	1.5%	1.8%
Electricity	1	1	2	3	4	4	5	4.2%	8.7%	3.2%	0.8%	1.4%	1.0%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	10.2%	1.5%
Buildings	**5**	**8**	**16**	**16**	**10**	**9**	**9**	**5.7%**	**6.8%**	**0.0%**	**-4.7%**	**-1.0%**	**-0.3%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	1	1	2	2	1	1	1	3.0%	2.8%	-0.6%	-2.5%	-2.0%	-1.2%
Gas	0	0	0	0	1	1	1	n.s.	n.s.	n.s.	16.7%	3.5%	2.2%
Electricity	4	7	15	15	8	6	6	6.3%	7.3%	0.0%	-5.8%	-2.2%	-1.1%
Heat	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	n.s.	31.1%	3.8%
Biomass & Other	0	0	0	0	0	0	0	-9.6%	2.9%	6.5%	17.5%	5.2%	1.4%
Agriculture	**0**	**0**	**0**	**1**	**1**	**1**	**1**	**9.2%**	**4.8%**	**5.6%**	**1.9%**	**1.8%**	**1.5%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Electricity	0	0	0	1	1	1	1	9.2%	4.8%	5.6%	1.9%	1.8%	1.5%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Transport	**16**	**20**	**35**	**42**	**34**	**35**	**36**	**2.2%**	**5.6%**	**1.8%**	**-2.2%**	**0.4%**	**0.3%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	16	20	35	42	32	30	27	2.2%	5.6%	1.8%	-2.9%	-0.5%	-1.1%
Gas	0	0	0	0	0	2	4	n.s.	n.s.	n.s.	n.s.	14.5%	10.3%
Electricity	0	0	0	0	1	2	2	n.s.	n.s.	n.s.	36.0%	6.6%	2.4%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	1	2	3	n.s.	n.s.	n.s.	44.5%	7.5%	3.2%
Other Energy Transformation & Losses[3]	**6**	**5**	**17**	**20**	**44**	**80**	**122**	**-0.4%**	**12.3%**	**1.6%**	**8.0%**	**6.2%**	**4.3%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Turkey	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	54	63	72	82	89	94	96	1.6%	1.4%	1.3%	0.8%	0.5%	0.3%
GDP per capita (ppp, k$'15)	10	12	15	23	31	39	47	2.0%	2.5%	4.4%	2.8%	2.5%	1.9%
Prices													
International/Regional ($'15/boe)													
Coal	3	2	3	2	2	3	3	-3.4%	3.6%	-2.8%	1.1%	2.3%	1.0%
Oil	39	38	86	91	89	96	107	-0.2%	8.4%	0.5%	-0.2%	0.8%	1.0%
Gas	24	28	33	47	55	62	64	1.5%	1.6%	3.6%	1.4%	1.3%	0.4%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**178**	**280**	**395**	**538**	**681**	**786**	**801**	**4.7%**	**3.5%**	**3.2%**	**2.4%**	**1.4%**	**0.2%**
Total GHG (energy, industry, agriculture)	**208**	**292**	**392**	**516**	**645**	**742**	**760**	**3.4%**	**3.0%**	**2.8%**	**2.3%**	**1.4%**	**0.2%**
CO_2	142	223	307	419	537	626	640	4.6%	3.2%	3.1%	2.5%	1.6%	0.2%
CH_4	41	42	51	54	59	62	64	0.3%	1.9%	0.6%	0.8%	0.6%	0.3%
N_2O	24	25	29	36	40	43	45	0.5%	1.4%	2.2%	1.2%	0.7%	0.4%
F gases	1	1	5	7	9	10	11	7.1%	13.2%	4.5%	2.0%	1.5%	0.5%
Total GHG from Energy and Industry	**164**	**250**	**347**	**456**	**577**	**669**	**682**	**4.3%**	**3.3%**	**2.8%**	**2.4%**	**1.5%**	**0.2%**
CO_2 Emissions from Fuel Comb.	**125**	**201**	**267**	**364**	**464**	**538**	**546**	**4.8%**	**2.9%**	**3.1%**	**2.4%**	**1.5%**	**0.1%**
Power generation/District heating	31	68	96	109	162	207	220	8.1%	3.6%	1.2%	4.1%	2.5%	0.6%
Industry	33	58	54	64	87	108	107	5.8%	-0.7%	1.7%	3.1%	2.2%	-0.1%
Buildings	23	27	49	54	51	46	40	1.6%	6.2%	1.1%	-0.7%	-1.0%	-1.4%
Agriculture	6	8	14	15	17	19	20	3.4%	5.4%	0.5%	1.2%	1.0%	0.7%
Transport	27	34	43	88	97	94	83	2.6%	2.2%	7.5%	1.0%	-0.3%	-1.2%
Other	5	5	11	34	49	65	76	-0.8%	7.9%	12.1%	3.7%	2.8%	1.6%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Energy Balance, by fuel (Mtoe)													
Primary Production	**23**	**25**	**31**	**46**	**62**	**92**	**117**	**0.8%**	**2.0%**	**4.2%**	**3.0%**	**4.0%**	**2.4%**
Coal	10	13	17	16	18	21	22	2.1%	3.4%	-0.9%	1.2%	1.5%	0.6%
Oil	4	3	2	2	1	1	1	-2.9%	-1.0%	-2.7%	-5.0%	-4.3%	1.1%
Natural gas	0	1	1	1	2	2	2	11.5%	0.7%	8.1%	4.1%	1.1%	0.5%
Biomass	7	7	5	11	11	10	10	-1.0%	-3.5%	9.1%	0.3%	-0.8%	-0.9%
Nuclear[1]	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	42.4%	17.0%	7.6%
Hydro	2	3	4	8	12	14	14	2.9%	5.3%	5.9%	4.6%	1.0%	0.2%
Other renewables	0	0	1	9	18	44	68	12.2%	14.3%	21.1%	7.6%	9.6%	4.3%
Net Imports	**26**	**52**	**73**	**101**	**132**	**151**	**152**						
Coal	4	9	14	22	37	53	58						
Oil	20	28	29	45	53	55	49						
Natural gas	3	12	31	36	42	42	42						
Biomass	0	0	0	- 6	- 4	- 3	- 2						
Biofuels	0	0	0	0	0	0	0						
Electricity	- 1	3	- 1	4	4	4	4						
Primary Energy Demand[2]	**49**	**78**	**104**	**147**	**194**	**243**	**269**	4.6%	**3.0%**	**3.5%**	**2.8%**	**2.3%**	**1.0%**
Coal	15	22	32	38	55	74	81	4.2%	3.8%	1.9%	3.7%	3.0%	0.9%
Oil	23	30	31	47	54	56	50	2.6%	0.4%	4.2%	1.3%	0.3%	-1.1%
Natural gas	3	13	31	37	44	44	44	16.0%	9.5%	1.6%	1.8%	0.0%	0.0%
Biomass	7	7	5	4	7	7	7	-1.0%	-3.5%	-0.3%	4.2%	0.6%	0.4%
Nuclear[1]	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	42.4%	17.0%	7.6%
Hydro	2	3	4	8	12	14	14	2.9%	5.3%	5.9%	4.6%	1.0%	0.2%
Other renewables	0	0	1	9	18	44	68	12.2%	14.3%	21.1%	7.6%	9.6%	4.3%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**49**	**78**	**104**	**147**	**194**	**243**	**269**	**4.6%**	**3.0%**	**3.5%**	**2.8%**	**2.3%**	**1.0%**
Energy for Power Generation	**11**	**24**	**37**	**51**	**81**	**121**	**150**	**7.9%**	**4.6%**	**3.1%**	**4.8%**	**4.2%**	**2.2%**
Other Energy Transformation & Losses	**1**	**5**	**4**	**15**	**20**	**23**	**24**	**11.9%**	**-0.2%**	**13.1%**	**2.8%**	**1.2%**	**0.5%**
Final consumption	**41**	**59**	**80**	**110**	**136**	**157**	**163**	**3.7%**	**3.1%**	**3.2%**	**2.2%**	**1.4%**	**0.4%**
Steel, Non-Met. Minerals and Chem.	5	6	9	17	25	32	33	2.1%	4.6%	6.1%	4.0%	2.4%	0.3%
Other Industry	7	15	15	17	20	26	30	8.1%	0.3%	0.8%	2.0%	2.5%	1.4%
Non-Energy Use	3	4	7	8	10	12	12	2.3%	7.3%	1.4%	1.7%	1.8%	0.5%
Residential	15	18	23	21	24	25	24	1.8%	2.7%	-0.6%	1.2%	0.3%	-0.6%
Services	1	2	6	13	17	21	22	13.4%	9.7%	8.6%	2.8%	1.7%	0.7%
Agriculture	2	3	5	5	6	7	7	4.1%	5.5%	0.6%	1.2%	1.0%	0.8%
Road	8	11	13	26	31	32	32	2.3%	2.3%	6.8%	1.8%	0.6%	-0.1%
Rail	0	0	0	0	0	0	0	0.4%	-3.6%	4.1%	1.2%	1.2%	0.8%
Aviation	0	1	0	1	2	2	2	9.5%	-5.7%	13.7%	4.0%	0.1%	0.2%
Other Transport	0	0	1	1	1	1	1	-2.6%	11.9%	0.1%	3.1%	2.0%	1.0%

[1] Nuclear energy is accounted as primary electricity

Turkey	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**9**	**21**	**32**	**34**	**50**	**63**	**68**	**8.7%**	**4.3%**	**0.8%**	**4.0%**	**2.2%**	**0.7%**
Coal	6	11	14	19	28	39	44	6.4%	2.6%	3.1%	4.2%	3.5%	1.0%
Oil	1	3	1	1	1	2	1	8.9%	-14.3%	1.8%	7.0%	4.6%	-3.2%
Gas	2	7	17	14	20	19	18	13.3%	8.7%	-2.0%	3.6%	-0.7%	-0.3%
Biomass & Waste	0	0	0	1	1	1	1	n.s.	7.3%	18.1%	-1.1%	-0.6%	1.4%
Other	0	0	0	0	1	2	4	-0.5%	24.3%	19.3%	8.0%	12.6%	5.2%
Gross Elec. Generation (TWh_e)	**58**	**125**	**211**	**306**	**494**	**676**	**805**	**8.1%**	**5.4%**	**3.8%**	**4.9%**	**3.2%**	**1.8%**
Coal	20	38	55	74	112	157	174	6.6%	3.7%	3.1%	4.2%	3.5%	1.0%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	4	9	2	3	6	9	7	9.0%	-13.5%	2.3%	7.7%	4.9%	-3.1%
Gas	10	46	98	86	120	106	104	16.3%	7.8%	-1.3%	3.4%	-1.2%	-0.2%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	0	0	2	2	2	3	n.s.	7.6%	18.3%	-1.1%	0.4%	2.5%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	1	7	14	n.s.	n.s.	n.s.	42.3%	17.0%	7.6%
Hydro	23	31	52	92	143	158	161	2.9%	5.3%	5.9%	4.6%	1.0%	0.2%
Wind	0	0	3	43	84	140	156	n.s.	56.5%	30.8%	6.9%	5.3%	1.1%
Solar	0	0	0	1	15	63	127	n.s.	n.s.	n.s.	28.4%	15.2%	7.2%
Other	0	0	1	4	11	33	59	-0.5%	24.3%	20.9%	8.9%	12.2%	5.9%
Generation Capacity (GW_e)	**17**	**27**	**49**	**99**	**160**	**248**	**306**	**5.1%**	**6.1%**	**7.3%**	**4.9%**	**4.5%**	**2.1%**
Coal	6	7	12	14	17	24	29	2.9%	5.1%	1.5%	2.0%	3.4%	1.7%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	2	2	2	2	3	5	6	-2.7%	-0.4%	0.0%	7.0%	5.4%	1.8%
Gas	2	7	18	25	32	49	53	12.3%	10.0%	3.2%	2.7%	4.3%	0.7%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	0	0	0	0	0	0	n.s.	10.2%	12.9%	-2.0%	0.3%	2.7%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	1	2	n.s.	n.s.	n.s.	42.0%	16.8%	7.3%
Hydro	7	11	16	40	61	67	69	5.1%	3.5%	9.7%	4.4%	0.9%	0.2%
Wind	0	0	1	16	31	50	53	n.s.	53.0%	28.6%	6.5%	5.0%	0.5%
Solar	0	0	0	1	13	44	84	n.s.	n.s.	n.s.	24.3%	13.5%	6.6%
Other	0	0	0	1	2	6	10	0.0%	20.2%	23.7%	8.1%	13.0%	5.3%
Total Final Consumption[2] (Mtoe)	**41**	**59**	**80**	**110**	**136**	**157**	**163**	**3.7%**	**3.1%**	**3.2%**	**2.2%**	**1.4%**	**0.4%**
Coal	8	12	17	16	20	24	24	3.5%	3.3%	-0.6%	2.6%	1.9%	-0.1%
Oil	20	26	28	42	46	47	42	2.5%	0.8%	3.9%	1.1%	0.1%	-1.1%
Gas	1	5	13	22	22	24	24	21.0%	10.3%	5.3%	0.3%	0.6%	0.2%
Electricity	4	8	15	22	35	48	57	7.9%	5.9%	4.1%	4.9%	3.1%	1.6%
Heat	0	1	3	5	6	7	8	12.4%	9.2%	5.2%	0.9%	1.8%	1.3%
Biomass & Other	7	6	4	4	6	8	9	-1.1%	-3.7%	-1.6%	5.4%	1.6%	1.4%
Industry (incl. non-energy use)	**15**	**24**	**32**	**42**	**55**	**69**	**75**	**5.3%**	**2.7%**	**2.7%**	**2.8%**	**2.3%**	**0.8%**
Coal	5	10	9	10	15	20	20	6.5%	-0.8%	0.3%	4.5%	2.9%	0.2%
Oil	6	8	8	9	11	12	12	2.9%	-0.2%	1.1%	1.6%	1.4%	-0.1%
Gas	1	2	7	10	11	12	11	10.1%	14.0%	4.7%	0.9%	0.7%	-0.8%
Electricity	2	4	7	11	16	22	28	5.4%	5.3%	4.8%	4.1%	3.5%	2.3%
Heat	0	0	1	2	2	2	2	50.7%	10.9%	4.4%	-0.2%	-0.3%	-0.2%
Biomass & Other	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	21.5%	5.6%	5.5%
Buildings	**15**	**20**	**29**	**35**	**42**	**46**	**46**	**2.6%**	**3.7%**	**1.9%**	**1.8%**	**0.9%**	**0.0%**
Coal	3	2	7	6	5	5	4	-4.5%	13.9%	-1.9%	-1.1%	-1.4%	-1.7%
Oil	3	4	1	1	1	2	1	1.4%	-8.7%	-1.6%	1.9%	0.3%	-0.6%
Gas	0	3	6	11	11	10	8	50.4%	7.5%	5.9%	-0.7%	-0.9%	-1.3%
Electricity	1	4	7	11	17	21	23	10.7%	6.5%	3.5%	4.9%	2.3%	0.7%
Heat	0	1	2	3	4	5	6	7.4%	8.0%	5.8%	1.6%	2.9%	1.9%
Biomass & Other	7	6	4	3	4	4	3	-1.1%	-3.7%	-5.1%	3.4%	0.2%	-1.3%
Agriculture	**2**	**3**	**5**	**5**	**6**	**7**	**7**	**4.1%**	**5.5%**	**0.6%**	**1.2%**	**1.0%**	**0.8%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	2	3	4	5	5	6	6	3.4%	5.3%	0.5%	1.2%	1.0%	0.7%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	10.2%	1.0%	0.8%	0.5%
Electricity	0	0	0	1	1	1	1	18.2%	6.2%	0.8%	1.5%	1.3%	1.0%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Transport	**9**	**12**	**14**	**28**	**34**	**36**	**36**	**2.4%**	**2.1%**	**6.8%**	**2.0%**	**0.6%**	**-0.1%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	9	12	14	27	29	27	22	2.4%	2.1%	6.3%	0.9%	-0.7%	-2.0%
Gas	0	0	0	0	0	2	4	n.s.	n.s.	-2.0%	34.5%	14.3%	8.9%
Electricity	0	0	0	0	2	4	5	8.3%	-6.5%	20.3%	24.9%	6.7%	3.0%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	1	2	3	4	n.s.	n.s.	n.s.	7.8%	2.8%	3.0%
Other Energy Transformation & Losses[3]	**1**	**5**	**4**	**15**	**20**	**23**	**24**	**11.9%**	**-0.2%**	**13.1%**	**2.8%**	**1.2%**	**0.5%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Mediterranean Middle East	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	25	34	44	51	59	66	73	3.0%	2.6%	1.4%	1.5%	1.2%	0.9%
GDP per capita (ppp, k$'15)	7	9	10	13	16	21	26	2.6%	1.4%	2.2%	2.4%	2.5%	2.4%
Prices													
International/Regional ($'15/boe)													
Coal	3	2	3	2	2	3	3	-3.4%	3.6%	-3.9%	2.6%	1.7%	1.1%
Oil	39	38	86	91	89	96	107	-0.2%	8.4%	0.5%	-0.2%	0.8%	1.0%
Gas	28	26	46	73	84	97	101	-0.7%	5.8%	4.7%	1.5%	1.5%	0.3%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**122**	**176**	**213**	**214**	**257**	**299**	**349**	**3.7%**	**1.9%**	**0.1%**	**1.8%**	**1.5%**	**1.5%**
Total GHG (energy, industry, agriculture)	**123**	**176**	**212**	**213**	**256**	**299**	**349**	**3.6%**	**1.9%**	**0.1%**	**1.9%**	**1.6%**	**1.5%**
CO_2	86	133	169	165	192	217	248	4.5%	2.4%	-0.2%	1.5%	1.2%	1.3%
CH_4	29	32	29	33	45	58	70	1.0%	-1.0%	1.1%	3.3%	2.5%	1.8%
N_2O	7	9	10	10	12	13	14	2.0%	1.1%	0.5%	1.2%	0.9%	0.9%
F gases	1	2	3	5	7	11	17	6.3%	5.8%	4.4%	3.9%	4.1%	4.2%
Total GHG from Energy and Industry	**115**	**166**	**201**	**201**	**242**	**283**	**332**	**3.8%**	**1.9%**	**0.0%**	**1.9%**	**1.6%**	**1.6%**
CO_2 Emissions from Fuel Comb.	**77**	**118**	**157**	**151**	**174**	**195**	**221**	**4.4%**	**2.9%**	**-0.4%**	**1.4%**	**1.1%**	**1.3%**
Power generation/District heating	29	59	88	84	95	105	118	7.3%	4.1%	-0.5%	1.3%	1.0%	1.2%
Industry	8	10	13	12	15	20	28	2.4%	2.3%	-0.7%	2.5%	3.0%	3.2%
Buildings	12	13	14	9	10	10	10	1.0%	0.4%	-3.8%	0.4%	0.4%	-0.3%
Agriculture	1	1	2	1	1	2	2	4.0%	2.5%	-4.3%	1.5%	1.3%	1.2%
Transport	18	26	35	39	43	44	43	3.7%	2.8%	1.0%	1.1%	0.1%	-0.2%
Other	8	8	6	6	9	14	20	-0.8%	-3.1%	1.0%	4.2%	3.9%	3.9%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Energy Balance, by fuel (Mtoe)													
Primary Production	**23**	**33**	**31**	**18**	**30**	**44**	**57**	**3.8%**	**-0.5%**	**-5.1%**	**5.1%**	**3.8%**	**2.8%**
Coal	0	0	0	0	0	0	0	5.1%	0.1%	n.s.	n.s.	n.s.	n.s.
Oil	20	27	19	3	1	1	1	2.9%	-3.2%	-16.3%	-8.4%	-6.0%	-1.7%
Natural gas	1	5	10	12	23	31	37	12.1%	7.8%	2.5%	6.2%	3.1%	1.9%
Biomass	0	0	0	1	1	1	1	3.1%	1.2%	12.0%	8.6%	0.4%	-0.5%
Nuclear[1]	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	n.s.	13.2%	8.7%
Hydro	0	0	0	0	0	0	0	1.5%	-0.6%	-0.2%	0.7%	0.3%	0.3%
Other renewables	1	1	1	2	5	10	17	2.3%	6.7%	3.6%	9.7%	8.5%	5.1%
Net Imports	**4**	**11**	**25**	**33**	**35**	**34**	**36**						
Coal	2	7	8	8	10	14	20						
Oil	2	4	15	30	32	32	31						
Natural gas	0	0	5	1	- 3	- 9	- 12						
Biomass	0	0	0	0	0	1	1						
Biofuels	0	0	0	0	0	0	0						
Electricity	0	0	- 2	- 5	- 5	- 4	- 4						
Primary Energy Demand[2]	**27**	**43**	**56**	**52**	**65**	**78**	**93**	4.9%	**2.6%**	**-0.8%**	**2.3%**	**1.8%**	**1.8%**
Coal	2	7	8	8	10	14	20	11.2%	1.4%	0.0%	2.4%	4.0%	3.4%
Oil	23	31	35	33	33	33	31	3.2%	1.1%	-0.5%	0.2%	-0.2%	-0.4%
Natural gas	1	5	15	13	20	22	26	12.4%	11.8%	-1.0%	4.0%	1.1%	1.6%
Biomass	0	0	0	1	2	2	2	2.9%	1.2%	13.9%	9.9%	1.6%	-0.3%
Nuclear[1]	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	n.s.	13.2%	8.7%
Hydro	0	0	0	0	0	0	0	1.5%	-0.6%	-0.2%	0.7%	0.3%	0.3%
Other renewables	1	1	1	2	5	10	17	2.3%	6.7%	3.6%	9.7%	8.5%	5.1%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**27**	**43**	**56**	**52**	**65**	**78**	**93**	**4.9%**	**2.6%**	**-0.8%**	**2.3%**	**1.8%**	**1.8%**
Energy for Power Generation	**10**	**19**	**31**	**30**	**37**	**45**	**56**	**6.9%**	**5.1%**	**-0.4%**	**2.2%**	**2.1%**	**2.2%**
Other Energy Transformation & Losses	**2**	**2**	**- 1**	**- 3**	**- 1**	**0**	**2**	**0.0%**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**20.6%**
Final consumption	**18**	**29**	**37**	**37**	**46**	**57**	**69**	**4.9%**	**2.4%**	**0.1%**	**2.2%**	**2.0%**	**2.0%**
Steel, Non-Met. Minerals and Chem.	0	1	2	1	2	3	4	17.8%	2.5%	-1.8%	4.5%	3.7%	2.4%
Other Industry	3	4	5	5	7	10	15	2.1%	2.7%	0.6%	2.8%	3.6%	3.8%
Non-Energy Use	1	4	3	3	3	4	4	11.9%	-1.9%	-2.5%	1.6%	1.6%	1.4%
Residential	3	6	8	7	8	9	10	6.2%	3.3%	-1.0%	1.2%	1.2%	0.9%
Services	3	3	4	5	6	9	12	0.1%	3.4%	1.4%	3.1%	3.1%	2.9%
Agriculture	0	1	1	1	1	1	1	4.6%	2.7%	-1.9%	1.9%	1.8%	1.6%
Road	7	10	13	15	18	20	22	4.1%	3.0%	1.0%	2.0%	1.2%	1.0%
Rail	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Aviation	0	0	0	0	0	0	0	32.7%	-12.2%	-4.4%	2.1%	0.8%	0.4%
Other Transport	0	0	0	0	0	0	0	n.s.	5.8%	0.4%	3.0%	2.6%	2.2%

[1] Nuclear energy is accounted as primary electricity

Mediterranean Middle East	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**9**	**18**	**29**	**28**	**32**	**34**	**38**	**7.3%**	**5.2%**	**-0.6%**	**1.5%**	**0.7%**	**1.0%**
Coal	2	6	7	7	8	11	14	10.6%	1.7%	-0.5%	1.8%	3.2%	2.4%
Oil	6	9	9	9	8	8	8	4.5%	0.3%	0.2%	-1.2%	-0.7%	0.2%
Gas	1	2	13	11	15	15	15	13.8%	18.1%	-1.3%	3.2%	-0.1%	0.2%
Biomass & Waste	0	0	0	0	0	0	0	n.s.	n.s.	3.6%	13.8%	6.1%	2.8%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**38**	**85**	**135**	**137**	**190**	**277**	**391**	**8.5%**	**4.8%**	**0.1%**	**3.3%**	**3.9%**	**3.5%**
Coal	10	29	34	32	40	57	77	10.9%	1.6%	-0.6%	2.1%	3.7%	2.9%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	21	42	39	44	38	36	37	7.0%	-0.8%	1.2%	-1.4%	-0.5%	0.3%
Gas	3	10	59	52	73	74	83	13.6%	19.3%	-1.3%	3.4%	0.2%	1.1%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	0	0	0	0	1	1	n.s.	n.s.	4.8%	15.4%	6.6%	3.2%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	2	6	14	n.s.	n.s.	n.s.	n.s.	13.2%	8.7%
Hydro	3	4	4	4	5	5	5	1.5%	-0.6%	1.8%	1.5%	0.2%	0.1%
Wind	0	0	0	1	9	28	51	11.6%	13.9%	55.6%	26.3%	11.4%	6.2%
Solar	0	0	0	4	22	65	111	n.s.	n.s.	49.9%	18.6%	11.4%	5.4%
Other	0	0	0	0	1	5	13	n.s.	n.s.	n.s.	26.2%	16.1%	10.4%
Generation Capacity (GW_e)	**11**	**20**	**27**	**34**	**50**	**92**	**140**	**6.4%**	**2.9%**	**2.2%**	**3.9%**	**6.3%**	**4.3%**
Coal	2	4	5	4	5	8	11	7.8%	1.2%	-1.5%	2.0%	4.1%	3.5%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	7	9	6	6	7	13	20	2.9%	-4.3%	0.3%	1.5%	6.5%	4.1%
Gas	1	5	15	18	17	17	20	19.5%	11.5%	2.3%	-0.6%	0.1%	1.3%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	0	0	0	0	0	0	n.s.	n.s.	0.2%	15.4%	6.9%	3.5%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	1	2	n.s.	n.s.	n.s.	n.s.	13.0%	8.5%
Hydro	1	2	2	2	3	3	3	4.6%	-0.4%	2.4%	0.6%	0.3%	0.3%
Wind	0	0	0	0	4	10	17	0.0%	18.1%	48.5%	24.9%	10.7%	5.6%
Solar	0	0	0	3	14	40	67	n.s.	n.s.	42.9%	17.8%	11.0%	5.3%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	16.2%	12.3%
Total Final Consumption[2] (Mtoe)	**18**	**29**	**37**	**37**	**46**	**57**	**69**	**4.9%**	**2.4%**	**0.1%**	**2.2%**	**2.0%**	**2.0%**
Coal	0	0	0	1	1	2	3	30.2%	-0.1%	13.3%	5.3%	6.2%	6.2%
Oil	14	20	24	22	24	24	22	3.5%	1.9%	-0.8%	0.7%	-0.1%	-0.7%
Gas	1	2	2	2	3	6	9	11.5%	-2.5%	-0.2%	6.9%	5.1%	4.4%
Electricity	3	6	9	10	14	20	28	8.4%	4.8%	0.4%	3.5%	3.9%	3.4%
Heat	0	1	1	2	3	3	4	4.8%	6.6%	6.0%	1.8%	1.5%	2.1%
Biomass & Other	0	0	0	1	2	2	3	2.9%	-0.2%	16.1%	10.2%	4.1%	2.7%
Industry (incl. non-energy use)	**5**	**9**	**10**	**9**	**12**	**17**	**23**	**6.9%**	**0.9%**	**-0.7%**	**2.8%**	**3.2%**	**3.1%**
Coal	0	0	0	1	1	2	3	30.2%	-0.1%	13.3%	5.3%	6.2%	6.2%
Oil	4	5	6	5	5	6	7	2.7%	1.1%	-1.7%	1.5%	1.5%	1.0%
Gas	0	2	2	1	2	2	3	55.4%	-2.5%	-3.5%	2.6%	2.8%	3.0%
Electricity	1	2	3	3	4	7	10	7.3%	3.7%	1.2%	4.0%	4.4%	3.9%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	8.9%	6.1%
Buildings	**6**	**9**	**12**	**12**	**15**	**18**	**22**	**3.7%**	**3.3%**	**-0.2%**	**2.0%**	**2.1%**	**1.9%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	3	4	4	3	2	2	1	2.6%	0.4%	-5.0%	-2.5%	-2.0%	-1.7%
Gas	1	0	0	0	1	2	2	n.s.	n.s.	n.s.	11.5%	3.9%	1.1%
Electricity	2	4	7	6	8	10	13	9.1%	5.4%	-0.2%	1.9%	2.8%	2.7%
Heat	0	1	1	2	3	3	4	4.8%	6.6%	6.0%	1.8%	1.5%	2.1%
Biomass & Other	0	0	0	0	1	1	1	2.9%	-0.2%	9.2%	9.7%	1.9%	-1.5%
Agriculture	**0**	**1**	**1**	**1**	**1**	**1**	**1**	**4.6%**	**2.7%**	**-1.9%**	**1.9%**	**1.8%**	**1.6%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	0	0	1	0	0	0	1	4.0%	2.5%	-4.3%	1.5%	1.3%	1.2%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Electricity	0	0	0	0	0	1	1	5.8%	3.0%	1.7%	2.3%	2.2%	2.0%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Transport	**7**	**10**	**14**	**15**	**18**	**20**	**23**	**4.4%**	**2.8%**	**1.0%**	**2.0%**	**1.2%**	**1.0%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	7	10	14	15	16	15	13	4.4%	2.8%	0.7%	0.9%	-0.5%	-1.4%
Gas	0	0	0	0	0	1	3	n.s.	n.s.	n.s.	52.5%	14.9%	9.6%
Electricity	0	0	0	0	1	3	4	n.s.	n.s.	n.s.	34.2%	8.5%	4.3%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	1	1	2	n.s.	n.s.	n.s.	10.1%	5.8%	4.9%
Other Energy Transformation & Losses[3]	**2**	**2**	**- 1**	**- 3**	**- 1**	**0**	**2**	**0.0%**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**20.6%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Rest Gulf	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	36	50	72	95	116	137	156	3.3%	3.6%	2.9%	2.0%	1.7%	1.3%
GDP per capita (ppp, k$'15)	6	13	13	16	18	20	22	7.2%	0.6%	1.6%	1.6%	1.0%	0.7%
Prices													
International/Regional ($'15/boe)													
Coal	3	2	3	2	2	3	3	-3.4%	3.6%	-3.9%	2.6%	1.7%	1.1%
Oil	39	38	86	91	89	96	107	-0.2%	8.4%	0.5%	-0.2%	0.8%	1.0%
Gas	28	26	46	73	84	97	101	-0.7%	5.8%	4.7%	1.5%	1.5%	0.3%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**365**	**490**	**808**	**1 149**	**1 131**	**1 242**	**1 430**	**3.0%**	**5.1%**	**3.6%**	**-0.2%**	**0.9%**	**1.4%**
Total GHG (energy, industry, agriculture)	**368**	**490**	**806**	**1 148**	**1 130**	**1 241**	**1 430**	**2.9%**	**5.1%**	**3.6%**	**-0.2%**	**0.9%**	**1.4%**
CO_2	214	327	574	813	754	822	980	4.3%	5.8%	3.5%	-0.7%	0.9%	1.8%
CH_4	140	150	212	312	353	394	422	0.7%	3.5%	4.0%	1.3%	1.1%	0.7%
N_2O	9	12	16	18	18	19	21	2.8%	2.9%	1.5%	-0.3%	0.8%	1.0%
F gases	4	2	4	5	5	6	7	-6.0%	6.5%	1.9%	0.0%	1.0%	1.5%
Total GHG from Energy and Industry	**355**	**476**	**787**	**1 127**	**1 107**	**1 215**	**1 402**	**3.0%**	**5.2%**	**3.7%**	**-0.2%**	**0.9%**	**1.4%**
CO_2 Emissions from Fuel Comb.	**176**	**275**	**496**	**703**	**635**	**692**	**840**	**4.5%**	**6.1%**	**3.6%**	**-1.0%**	**0.9%**	**2.0%**
Power generation/District heating	60	105	207	275	185	139	112	5.7%	7.0%	2.9%	-3.9%	-2.8%	-2.1%
Industry	44	61	109	163	142	152	179	3.3%	6.0%	4.2%	-1.4%	0.7%	1.6%
Buildings	9	15	19	19	21	22	25	4.8%	2.6%	0.3%	0.7%	0.3%	1.4%
Agriculture	0	1	1	1	1	1	1	11.0%	-5.2%	1.5%	1.3%	0.9%	0.7%
Transport	43	58	103	129	109	101	93	3.0%	5.8%	2.3%	-1.6%	-0.8%	-0.8%
Other	19	35	58	115	177	276	430	6.1%	5.2%	7.1%	4.4%	4.6%	4.5%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Energy Balance, by fuel (Mtoe)													
Primary Production	**347**	**527**	**650**	**1 020**	**1 191**	**1 390**	**1 567**	**4.3%**	**2.1%**	**4.6%**	**1.6%**	**1.6%**	**1.2%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	309	447	444	712	830	950	1 034	3.8%	-0.1%	4.8%	1.5%	1.4%	0.9%
Natural gas	37	80	205	307	356	428	515	8.1%	9.8%	4.1%	1.5%	1.9%	1.9%
Biomass	0	0	0	1	2	2	2	1.6%	4.5%	11.9%	13.5%	-0.3%	-0.7%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	0	0	0	0	0	0	0	-13.5%	22.8%	-2.3%	1.6%	1.2%	0.1%
Other renewables	0	0	0	0	2	9	16	n.s.	n.s.	n.s.	26.0%	15.2%	5.5%
Net Imports	**- 277**	**- 420**	**- 445**	**- 717**	**- 906**	**-1 074**	**-1 188**						
Coal	0	0	1	1	2	6	16						
Oil	- 273	- 397	- 361	- 608	- 738	- 845	- 912						
Natural gas	- 4	- 23	- 91	- 118	- 179	- 248	- 309						
Biomass	0	0	0	0	1	5	8						
Biofuels	0	0	0	0	0	0	0						
Electricity	0	0	6	8	8	8	8						
Primary Energy Demand[2]	**70**	**108**	**206**	**303**	**285**	**316**	**379**	4.5%	**6.7%**	**4.0%**	**-0.6%**	**1.0%**	**1.8%**
Coal	0	0	1	1	2	6	16	n.s.	n.s.	6.1%	4.4%	10.7%	9.9%
Oil	36	50	83	104	91	105	123	3.4%	5.2%	2.2%	-1.3%	1.4%	1.5%
Natural gas	33	57	115	189	178	180	206	5.5%	7.2%	5.1%	-0.6%	0.1%	1.4%
Biomass	0	0	0	1	4	7	10	1.6%	4.5%	10.4%	21.0%	6.6%	3.9%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	0	0	0	0	0	0	0	-13.5%	22.8%	-2.3%	1.6%	1.2%	0.1%
Other renewables	0	0	0	0	2	9	16	n.s.	n.s.	n.s.	26.0%	15.2%	5.5%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**70**	**108**	**206**	**303**	**285**	**316**	**379**	**4.5%**	**6.7%**	**4.0%**	**-0.6%**	**1.0%**	**1.8%**
Energy for Power Generation	**23**	**40**	**79**	**108**	**73**	**60**	**54**	**5.7%**	**7.1%**	**3.2%**	**-3.9%**	**-2.0%**	**-1.0%**
Other Energy Transformation & Losses	**7**	**12**	**31**	**62**	**92**	**132**	**191**	**5.2%**	**9.7%**	**7.1%**	**4.0%**	**3.7%**	**3.8%**
Final consumption	**45**	**65**	**114**	**162**	**143**	**147**	**160**	**3.8%**	**5.8%**	**3.5%**	**-1.3%**	**0.3%**	**0.9%**
Steel, Non-Met. Minerals and Chem.	2	4	6	12	9	9	10	6.8%	5.3%	6.8%	-2.5%	0.5%	0.7%
Other Industry	17	23	41	61	54	56	63	3.3%	5.9%	4.0%	-1.2%	0.4%	1.2%
Non-Energy Use	5	6	13	16	19	23	26	3.5%	7.1%	2.6%	1.6%	1.7%	1.2%
Residential	6	9	14	18	12	11	12	4.4%	4.3%	2.2%	-3.5%	-0.7%	0.9%
Services	1	3	8	12	8	8	9	11.3%	10.1%	4.0%	-3.5%	-0.5%	1.9%
Agriculture	0	0	0	0	0	0	0	8.0%	-4.4%	2.1%	1.4%	1.1%	0.8%
Road	14	19	32	43	39	37	37	3.1%	5.1%	3.0%	-1.1%	-0.3%	-0.2%
Rail	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Aviation	0	0	0	1	1	2	2	n.s.	n.s.	8.6%	7.0%	3.2%	1.5%
Other Transport	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.

[1] Nuclear energy is accounted as primary electricity

Rest Gulf	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**23**	**40**	**79**	**108**	**70**	**50**	**38**	**5.8%**	**7.1%**	**3.2%**	**-4.2%**	**-3.3%**	**-2.8%**
Coal	0	0	0	0	0	1	6	n.s.	n.s.	n.s.	9.3%	20.0%	21.2%
Oil	9	14	26	28	24	25	17	5.0%	6.6%	0.6%	-1.4%	0.2%	-3.5%
Gas	14	26	53	80	46	24	14	6.3%	7.4%	4.3%	-5.4%	-6.1%	-5.1%
Biomass & Waste	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	21.2%	18.1%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**79**	**140**	**283**	**444**	**313**	**303**	**362**	**5.9%**	**7.3%**	**4.6%**	**-3.4%**	**-0.3%**	**1.8%**
Coal	0	0	0	0	1	4	32	n.s.	n.s.	n.s.	9.4%	20.8%	21.7%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	31	53	65	77	70	75	66	5.6%	2.1%	1.6%	-1.0%	0.7%	-1.3%
Gas	45	86	213	360	212	116	71	6.7%	9.5%	5.4%	-5.2%	-5.8%	-4.8%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	21.8%	18.5%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	3	1	5	4	4	5	6	-13.5%	22.8%	-2.3%	1.6%	1.7%	1.1%
Wind	0	0	0	0	1	14	42	n.s.	n.s.	n.s.	33.1%	26.0%	11.6%
Solar	0	0	0	2	24	81	127	n.s.	n.s.	n.s.	25.5%	13.0%	4.6%
Other	0	0	0	1	2	8	18	n.s.	n.s.	46.0%	7.2%	16.7%	8.8%
Generation Capacity (GW_e)	**26**	**35**	**68**	**124**	**120**	**128**	**138**	**2.9%**	**6.9%**	**6.3%**	**-0.4%**	**0.7%**	**0.7%**
Coal	0	0	0	0	0	1	4	n.s.	n.s.	n.s.	9.3%	20.9%	21.8%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	14	14	16	28	19	19	25	-0.1%	1.2%	6.1%	-3.8%	-0.3%	3.0%
Gas	10	18	50	92	83	55	18	5.7%	10.5%	6.4%	-1.0%	-4.0%	-10.6%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	21.9%	18.5%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	2	3	3	3	3	4	4	4.7%	-0.4%	0.7%	1.5%	1.5%	0.7%
Wind	0	0	0	0	1	5	13	n.s.	n.s.	n.s.	31.7%	25.0%	11.0%
Solar	0	0	0	1	14	46	74	n.s.	n.s.	n.s.	26.0%	12.8%	4.9%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	9.3%	30.7%
Total Final Consumption[2] (Mtoe)	**45**	**65**	**114**	**162**	**143**	**147**	**160**	**3.8%**	**5.8%**	**3.5%**	**-1.3%**	**0.3%**	**0.9%**
Coal	0	0	1	1	2	5	8	n.s.	n.s.	5.6%	3.8%	8.1%	6.4%
Oil	24	33	53	67	60	60	62	3.1%	4.8%	2.4%	-1.1%	0.0%	0.3%
Gas	15	22	41	64	58	59	62	4.1%	6.5%	4.5%	-0.9%	0.1%	0.6%
Electricity	6	10	19	29	21	20	23	6.2%	6.8%	4.2%	-3.2%	-0.5%	1.5%
Heat	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	n.s.	37.9%	0.6%
Biomass & Other	0	0	0	0	1	2	3	2.5%	5.7%	10.0%	14.4%	5.1%	4.2%
Industry (incl. non-energy use)	**23**	**33**	**60**	**89**	**82**	**88**	**99**	**3.7%**	**6.1%**	**4.0%**	**-0.8%**	**0.7%**	**1.2%**
Coal	0	0	1	1	2	5	8	n.s.	n.s.	5.6%	3.8%	8.1%	6.4%
Oil	7	9	14	18	19	24	31	2.2%	5.1%	2.4%	0.6%	2.2%	2.5%
Gas	15	22	41	63	54	52	51	4.0%	6.5%	4.3%	-1.5%	-0.4%	-0.2%
Electricity	1	3	4	6	6	7	8	6.3%	3.3%	6.1%	0.0%	1.1%	1.5%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	22.7%	11.8%	5.9%
Buildings	**7**	**12**	**22**	**29**	**20**	**19**	**22**	**5.7%**	**6.0%**	**2.9%**	**-3.5%**	**-0.6%**	**1.3%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	3	4	6	5	4	3	3	4.6%	2.7%	-0.8%	-2.5%	-2.3%	-0.5%
Gas	0	0	0	1	3	5	6	12.0%	-3.8%	21.1%	12.4%	3.7%	3.0%
Electricity	4	7	16	23	13	10	11	6.2%	7.8%	3.6%	-5.7%	-2.5%	1.0%
Heat	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	n.s.	37.9%	0.6%
Biomass & Other	0	0	0	0	0	0	1	2.5%	5.7%	2.5%	7.3%	2.4%	1.9%
Agriculture	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**8.0%**	**-4.4%**	**2.1%**	**1.4%**	**1.1%**	**0.8%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	0	0	0	0	0	0	0	11.0%	-5.2%	1.5%	1.3%	0.9%	0.7%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Electricity	0	0	0	0	0	0	0	-24.9%	22.5%	7.0%	2.3%	1.9%	1.7%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Transport	**14**	**19**	**32**	**44**	**40**	**39**	**38**	**3.1%**	**5.2%**	**3.1%**	**-0.9%**	**-0.2%**	**-0.1%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	14	19	32	43	36	32	27	3.1%	5.2%	3.0%	-1.7%	-1.1%	-1.6%
Gas	0	0	0	0	1	2	5	n.s.	n.s.	n.s.	51.1%	14.3%	9.0%
Electricity	0	0	0	0	2	3	4	n.s.	n.s.	n.s.	29.1%	3.9%	2.8%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	1	1	2	n.s.	n.s.	n.s.	18.5%	4.9%	4.4%
Other Energy Transformation & Losses[3]	**7**	**12**	**31**	**62**	**92**	**132**	**191**	**5.2%**	**9.7%**	**7.1%**	**4.0%**	**3.7%**	**3.8%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

China	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	1 179	1 290	1 367	1 428	1 434	1 389	1 316	0.9%	0.6%	0.4%	0.0%	-0.3%	-0.5%
GDP per capita (ppp, k$'15)	1	3	8	16	25	36	48	8.9%	9.6%	6.8%	4.8%	3.7%	2.8%
Prices													
International/Regional ($'15/boe)													
Coal	4	2	4	3	4	4	5	-9.4%	8.8%	-0.9%	1.1%	1.2%	0.9%
Oil	39	38	86	91	89	96	107	-0.2%	8.4%	0.5%	-0.2%	0.8%	1.0%
Gas	28	26	46	73	84	97	101	-0.7%	5.8%	4.7%	1.5%	1.5%	0.3%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**3 745**	**5 151**	**11 117**	**14 608**	**17 848**	**18 846**	**17 767**	**3.2%**	**8.0%**	**2.8%**	**2.0%**	**0.5%**	**-0.6%**
Total GHG (energy, industry, agriculture)	**4 067**	**5 441**	**11 450**	**14 888**	**18 068**	**19 277**	**18 297**	**3.0%**	**7.7%**	**2.7%**	**2.0%**	**0.6%**	**-0.5%**
CO_2	2 550	3 811	9 099	12 038	14 665	15 648	14 658	4.1%	9.1%	2.8%	2.0%	0.7%	-0.7%
CH_4	1 185	1 169	1 583	1 802	2 052	2 057	1 928	-0.1%	3.1%	1.3%	1.3%	0.0%	-0.6%
N_2O	317	394	505	594	696	736	727	2.2%	2.5%	1.6%	1.6%	0.6%	-0.1%
F gases	15	68	263	454	656	836	984	16.3%	14.5%	5.6%	3.7%	2.5%	1.6%
Total GHG from Energy and Industry	**3 198**	**4 566**	**10 419**	**13 740**	**16 712**	**17 800**	**16 764**	**3.6%**	**8.6%**	**2.8%**	**2.0%**	**0.6%**	**-0.6%**
CO_2 Emissions from Fuel Comb.	**2 282**	**3 292**	**7 800**	**10 137**	**12 413**	**13 153**	**12 034**	**3.7%**	**9.0%**	**2.7%**	**2.0%**	**0.6%**	**-0.9%**
Power generation/District heating	595	1 254	3 175	4 611	6 509	6 647	5 772	7.7%	9.7%	3.8%	3.5%	0.2%	-1.4%
Industry	858	992	2 711	2 677	2 717	3 001	2 658	1.5%	10.6%	-0.1%	0.1%	1.0%	-1.2%
Buildings	417	319	502	579	463	375	317	-2.6%	4.6%	1.4%	-2.2%	-2.1%	-1.7%
Agriculture	89	49	89	111	111	108	104	-5.9%	6.3%	2.2%	0.0%	-0.2%	-0.4%
Transport	112	263	591	1 090	1 291	1 391	1 365	8.9%	8.4%	6.3%	1.7%	0.7%	-0.2%
Other	211	415	732	1 069	1 321	1 631	1 818	7.0%	5.8%	3.9%	2.1%	2.1%	1.1%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Energy Balance, by fuel (Mtoe)													
Primary Production	**898**	**1 124**	**2 130**	**2 620**	**3 146**	**3 052**	**2 797**	**2.3%**	**6.6%**	**2.1%**	**1.8%**	**-0.3%**	**-0.9%**
Coal	536	719	1 632	1 922	2 205	1 844	1 410	3.0%	8.5%	1.7%	1.4%	-1.8%	-2.6%
Oil	137	161	202	232	257	237	171	1.7%	2.3%	1.4%	1.0%	-0.8%	-3.2%
Natural gas	13	24	83	118	186	301	363	5.8%	13.5%	3.5%	4.6%	4.9%	1.9%
Biomass	200	198	133	129	192	200	164	-0.1%	-3.9%	-0.3%	4.0%	0.4%	-2.0%
Nuclear[1]	0	1	6	27	38	55	91	n.s.	16.0%	15.7%	3.3%	3.7%	5.2%
Hydro	11	19	61	129	144	149	152	5.8%	12.3%	7.8%	1.1%	0.4%	0.2%
Other renewables	0	1	12	62	125	267	447	28.2%	27.7%	17.4%	7.3%	7.9%	5.3%
Net Imports	**- 32**	**9**	**370**	**704**	**954**	**1 501**	**1 666**						
Coal	- 47	- 52	139	210	353	674	802						
Oil	14	60	224	448	556	761	805						
Natural gas	1	- 1	9	34	59	92	86						
Biomass	0	0	0	18	- 8	- 22	- 22						
Biofuels	0	0	0	0	0	1	1						
Electricity	0	1	- 2	- 6	- 6	- 6	- 6						
Primary Energy Demand[2]	**866**	**1 133**	**2 500**	**3 324**	**4 100**	**4 553**	**4 463**	2.7%	**8.2%**	**2.9%**	**2.1%**	**1.1%**	**-0.2%**
Coal	489	668	1 771	2 132	2 557	2 518	2 211	3.2%	10.2%	1.9%	1.8%	-0.2%	-1.3%
Oil	151	222	426	680	813	998	975	3.9%	6.8%	4.8%	1.8%	2.1%	-0.2%
Natural gas	15	23	93	152	245	393	449	4.7%	14.9%	5.1%	4.9%	4.8%	1.3%
Biomass	200	198	133	147	184	179	142	-0.1%	-3.9%	1.0%	2.3%	-0.3%	-2.3%
Nuclear[1]	0	1	6	27	38	55	91	n.s.	16.0%	15.7%	3.3%	3.7%	5.2%
Hydro	11	19	61	129	144	149	152	5.8%	12.3%	7.8%	1.1%	0.4%	0.2%
Other renewables	0	1	12	62	125	267	447	28.2%	27.7%	17.4%	7.3%	7.9%	5.3%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**866**	**1 133**	**2 500**	**3 324**	**4 100**	**4 553**	**4 463**	**2.7%**	**8.2%**	**2.9%**	**2.1%**	**1.1%**	**-0.2%**
Energy for Power Generation	**163**	**342**	**897**	**1 407**	**2 018**	**2 270**	**2 265**	**7.7%**	**10.1%**	**4.6%**	**3.7%**	**1.2%**	**0.0%**
Other Energy Transformation & Losses	**56**	**71**	**282**	**368**	**453**	**534**	**561**	**2.3%**	**14.7%**	**2.7%**	**2.1%**	**1.7%**	**0.5%**
Final consumption	**703**	**840**	**1 697**	**2 238**	**2 584**	**2 909**	**2 943**	**1.8%**	**7.3%**	**2.8%**	**1.4%**	**1.2%**	**0.1%**
Steel, Non-Met. Minerals and Chem.	159	225	664	717	759	825	760	3.5%	11.4%	0.8%	0.6%	0.8%	-0.8%
Other Industry	108	119	298	411	565	734	822	0.9%	9.6%	3.3%	3.2%	2.7%	1.1%
Non-Energy Use	52	67	121	177	200	224	227	2.7%	6.0%	3.9%	1.2%	1.2%	0.1%
Residential	294	278	281	347	369	350	306	-0.5%	0.1%	2.1%	0.6%	-0.6%	-1.3%
Services	26	41	98	169	206	231	264	4.8%	9.2%	5.6%	2.0%	1.2%	1.3%
Agriculture	29	18	34	41	43	42	41	-4.5%	6.2%	2.1%	0.2%	-0.1%	-0.3%
Road	22	66	161	306	342	383	396	11.6%	9.3%	6.6%	1.1%	1.1%	0.4%
Rail	10	9	12	13	16	18	20	-1.3%	2.9%	0.9%	1.9%	1.3%	0.9%
Aviation	1	4	11	24	39	45	45	22.1%	10.3%	7.7%	5.0%	1.5%	0.1%
Other Transport	3	12	17	33	47	57	62	16.7%	3.8%	6.7%	3.6%	1.9%	0.8%

[1] Nuclear energy is accounted as primary electricity

China	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**152**	**320**	**817**	**1 189**	**1 712**	**1 800**	**1 575**	**7.7%**	**9.8%**	**3.8%**	**3.7%**	**0.5%**	**-1.3%**
Coal	139	302	783	1 126	1 531	1 440	1 230	8.1%	10.0%	3.7%	3.1%	-0.6%	-1.6%
Oil	13	14	4	29	73	169	161	0.6%	-10.9%	20.9%	9.7%	8.7%	-0.5%
Gas	1	4	18	15	77	161	156	19.5%	17.1%	-1.9%	17.9%	7.6%	-0.3%
Biomass & Waste	0	1	12	19	31	29	28	n.s.	30.2%	4.9%	5.0%	-0.4%	-0.4%
Other	0	0	0	0	0	0	0	6.7%	1.4%	-3.0%	-6.0%	0.0%	n.s.
Gross Elec. Generation (TWh_e)	**651**	**1 399**	**4 269**	**7 663**	**11 209**	**13 750**	**15 684**	**7.9%**	**11.8%**	**6.0%**	**3.9%**	**2.1%**	**1.3%**
Coal	470	1 079	3 264	5 099	7 021	6 709	5 927	8.7%	11.7%	4.6%	3.2%	-0.5%	-1.2%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	52	49	16	124	331	768	745	-0.5%	-10.6%	22.6%	10.3%	8.8%	-0.3%
Gas	3	18	92	79	420	860	894	20.6%	17.8%	-1.5%	18.1%	7.4%	0.4%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	2	34	56	108	111	122	n.s.	30.2%	5.1%	6.8%	0.3%	1.0%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	17	74	318	440	636	1 058	n.s.	16.0%	15.7%	3.3%	3.7%	5.2%
Hydro	127	222	722	1 570	1 762	1 828	1 866	5.8%	12.5%	8.1%	1.2%	0.4%	0.2%
Wind	0	1	45	319	819	1 575	2 435	n.s.	53.5%	21.7%	9.9%	6.8%	4.5%
Solar	0	0	1	92	266	1 135	2 379	27.1%	41.4%	n.s.	11.1%	15.6%	7.7%
Other	0	11	22	5	42	128	258	52.0%	7.3%	-13.7%	24.0%	11.7%	7.2%
Generation Capacity (GW_e)	**158**	**352**	**1 041**	**1 941**	**2 915**	**4 063**	**5 550**	**8.4%**	**11.4%**	**6.4%**	**4.1%**	**3.4%**	**3.2%**
Coal	98	232	707	1 003	1 414	1 530	1 658	9.0%	11.8%	3.6%	3.5%	0.8%	0.8%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	21	21	16	23	87	163	283	0.2%	-2.9%	3.7%	14.5%	6.4%	5.6%
Gas	3	11	35	47	91	152	241	14.9%	12.4%	3.1%	6.7%	5.3%	4.7%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	0	7	9	15	15	16	n.s.	30.4%	3.0%	5.2%	-0.3%	1.0%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	2	10	48	65	92	151	n.s.	16.6%	16.9%	3.1%	3.5%	5.0%
Hydro	36	85	234	441	480	494	501	9.0%	10.6%	6.6%	0.8%	0.3%	0.1%
Wind	0	0	31	187	433	749	1 065	7.4%	57.2%	19.5%	8.8%	5.6%	3.6%
Solar	0	0	1	183	329	867	1 633	26.7%	31.7%	n.s.	6.1%	10.2%	6.5%
Other	0	0	0	0	0	1	3	0.0%	0.4%	4.8%	15.8%	18.4%	13.0%
Total Final Consumption[2] (Mtoe)	**703**	**840**	**1 697**	**2 238**	**2 584**	**2 909**	**2 943**	**1.8%**	**7.3%**	**2.8%**	**1.4%**	**1.2%**	**0.1%**
Coal	322	297	767	750	729	748	622	-0.8%	10.0%	-0.2%	-0.3%	0.3%	-1.8%
Oil	114	210	373	597	682	743	722	6.3%	5.9%	4.8%	1.3%	0.9%	-0.3%
Gas	10	16	62	106	109	146	198	4.9%	14.4%	5.5%	0.3%	3.0%	3.1%
Electricity	43	92	301	547	794	970	1 100	7.8%	12.5%	6.2%	3.8%	2.0%	1.3%
Heat	13	28	73	127	155	170	173	7.7%	10.2%	5.7%	1.9%	0.9%	0.2%
Biomass & Other	200	197	120	111	116	132	129	-0.2%	-4.8%	-0.8%	0.5%	1.3%	-0.2%
Industry (incl. non-energy use)	**319**	**411**	**1 082**	**1 305**	**1 524**	**1 783**	**1 809**	**2.6%**	**10.2%**	**1.9%**	**1.6%**	**1.6%**	**0.1%**
Coal	204	226	670	659	655	686	574	1.0%	11.5%	-0.2%	-0.1%	0.5%	-1.8%
Oil	67	97	138	178	209	262	277	3.8%	3.6%	2.6%	1.6%	2.3%	0.6%
Gas	8	10	28	57	64	87	105	2.4%	11.2%	7.4%	1.2%	3.1%	1.9%
Electricity	30	60	204	352	521	657	751	7.1%	13.0%	5.6%	4.0%	2.3%	1.3%
Heat	11	19	43	58	71	82	87	5.9%	8.4%	3.2%	2.0%	1.4%	0.7%
Biomass & Other	0	0	0	0	4	10	15	n.s.	n.s.	n.s.	28.9%	10.6%	3.9%
Buildings	**319**	**319**	**379**	**516**	**575**	**581**	**570**	**0.0%**	**1.7%**	**3.1%**	**1.1%**	**0.1%**	**-0.2%**
Coal	97	61	82	76	61	50	38	-4.6%	3.1%	-0.8%	-2.2%	-2.0%	-2.8%
Oil	8	19	34	56	43	33	29	9.8%	6.0%	4.9%	-2.6%	-2.7%	-1.0%
Gas	2	7	27	43	36	31	32	10.8%	15.4%	4.6%	-1.6%	-1.5%	0.1%
Electricity	9	27	85	178	246	277	305	11.4%	12.3%	7.6%	3.3%	1.2%	1.0%
Heat	3	9	31	69	84	88	85	13.4%	13.2%	8.5%	1.9%	0.5%	-0.3%
Biomass & Other	200	197	119	95	105	102	81	-0.2%	-4.9%	-2.2%	1.0%	-0.3%	-2.3%
Agriculture	**29**	**18**	**34**	**41**	**43**	**42**	**41**	**-4.5%**	**6.2%**	**2.1%**	**0.2%**	**-0.1%**	**-0.3%**
Coal	11	6	11	12	11	10	9	-5.8%	6.8%	0.9%	-1.0%	-1.0%	-1.0%
Oil	15	8	14	20	21	22	21	-5.9%	5.8%	3.3%	0.7%	0.2%	-0.1%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	6.0%	1.2%	0.7%	0.4%
Electricity	4	5	8	10	10	11	10	2.2%	6.2%	1.3%	0.7%	0.2%	-0.1%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Transport	**35**	**92**	**201**	**376**	**443**	**502**	**523**	**9.9%**	**8.2%**	**6.4%**	**1.7%**	**1.3%**	**0.4%**
Coal	10	4	3	2	2	2	1	-8.0%	-2.8%	-2.9%	-2.0%	-2.0%	-2.0%
Oil	25	86	186	344	409	427	394	13.1%	8.0%	6.3%	1.7%	0.4%	-0.8%
Gas	0	0	7	7	8	28	61	n.s.	n.s.	-0.5%	2.4%	12.6%	8.2%
Electricity	1	1	3	7	16	26	34	9.6%	10.3%	7.4%	8.9%	4.6%	2.7%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	2	16	7	20	34	n.s.	n.s.	25.2%	-7.3%	10.7%	5.2%
Other Energy Transformation & Losses[3]	**56**	**71**	**282**	**368**	**453**	**534**	**561**	**2.3%**	**14.7%**	**2.7%**	**2.1%**	**1.7%**	**0.5%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

India	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	870	1 053	1 231	1 386	1 520	1 619	1 681	1.9%	1.6%	1.2%	0.9%	0.6%	0.4%
GDP per capita (ppp, k$'15)	1	2	4	6	12	18	27	3.6%	5.9%	5.8%	6.3%	4.5%	3.8%
Prices													
International/Regional ($'15/boe)													
Coal	3	1	3	4	4	5	5	-7.8%	10.3%	2.0%	1.1%	0.8%	0.7%
Oil	39	38	86	91	89	96	107	-0.2%	8.4%	0.5%	-0.2%	0.8%	1.0%
Gas	28	26	46	73	84	97	101	-0.7%	5.8%	4.7%	1.5%	1.5%	0.3%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**1 311**	**1 896**	**2 790**	**4 194**	**5 376**	**6 018**	**6 864**	**3.8%**	**3.9%**	**4.2%**	**2.5%**	**1.1%**	**1.3%**
Total GHG (energy, industry, agriculture)	**1 359**	**1 866**	**2 761**	**4 193**	**5 320**	**5 990**	**6 843**	**3.2%**	**4.0%**	**4.3%**	**2.4%**	**1.2%**	**1.3%**
CO_2	586	995	1 701	2 946	3 839	4 318	4 955	5.4%	5.5%	5.6%	2.7%	1.2%	1.4%
CH_4	617	673	794	909	1 045	1 148	1 261	0.9%	1.7%	1.4%	1.4%	0.9%	0.9%
N_2O	146	182	238	286	338	371	409	2.2%	2.7%	1.9%	1.7%	0.9%	1.0%
F gases	10	16	28	52	98	153	218	4.6%	5.8%	6.4%	6.6%	4.5%	3.6%
Total GHG from Energy and Industry	**804**	**1 275**	**2 077**	**3 443**	**4 478**	**5 101**	**5 891**	**4.7%**	**5.0%**	**5.2%**	**2.7%**	**1.3%**	**1.5%**
CO_2 Emissions from Fuel Comb.	**534**	**910**	**1 554**	**2 689**	**3 432**	**3 786**	**4 310**	**5.5%**	**5.5%**	**5.6%**	**2.5%**	**1.0%**	**1.3%**
Power generation/District heating	213	488	791	1 532	1 999	2 115	2 373	8.6%	4.9%	6.8%	2.7%	0.6%	1.2%
Industry	143	171	391	480	545	608	712	1.9%	8.6%	2.1%	1.3%	1.1%	1.6%
Buildings	75	96	151	179	236	301	345	2.5%	4.6%	1.7%	2.8%	2.4%	1.4%
Agriculture	14	26	27	37	45	50	55	6.6%	0.5%	3.4%	1.9%	1.1%	0.9%
Transport	74	95	163	316	408	447	453	2.5%	5.5%	6.8%	2.6%	0.9%	0.1%
Other	16	33	30	144	198	264	373	7.6%	-0.7%	16.8%	3.2%	2.9%	3.5%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Energy Balance, by fuel (Mtoe)													
Primary Production	**268**	**343**	**485**	**616**	**766**	**867**	**964**	**2.5%**	**3.5%**	**2.4%**	**2.2%**	**1.2%**	**1.1%**
Coal	85	132	212	326	405	417	450	4.5%	4.9%	4.4%	2.2%	0.3%	0.8%
Oil	33	33	38	30	18	11	7	-0.2%	1.5%	-2.2%	-4.9%	-4.8%	-4.3%
Natural gas	10	22	42	59	91	107	78	8.0%	6.5%	3.6%	4.4%	1.6%	-3.1%
Biomass	133	149	178	168	177	169	142	1.1%	1.8%	-0.6%	0.5%	-0.4%	-1.7%
Nuclear[1]	1	1	2	3	4	9	19	10.7%	4.5%	3.2%	2.9%	8.0%	8.2%
Hydro	6	6	11	14	19	25	32	0.4%	5.2%	2.6%	3.4%	2.8%	2.4%
Other renewables	0	0	2	14	51	127	235	30.6%	27.2%	21.9%	13.6%	9.5%	6.3%
Net Imports	**34**	**92**	**204**	**431**	**553**	**645**	**814**						
Coal	7	11	62	148	165	142	172						
Oil	26	79	124	213	305	402	453						
Natural gas	1	1	12	21	49	91	182						
Biomass	0	0	0	44	28	4	0						
Biofuels	0	0	0	0	1	1	1						
Electricity	1	1	6	5	5	5	5						
Primary Energy Demand[2]	**302**	**436**	**689**	**1 047**	**1 320**	**1 512**	**1 778**	3.7%	**4.7%**	**4.3%**	**2.3%**	**1.4%**	**1.6%**
Coal	91	143	275	474	570	559	622	4.6%	6.8%	5.6%	1.9%	-0.2%	1.1%
Oil	59	112	162	243	323	413	460	6.6%	3.7%	4.2%	2.9%	2.5%	1.1%
Natural gas	11	23	54	80	140	198	260	7.9%	8.8%	4.1%	5.7%	3.5%	2.8%
Biomass	133	149	178	212	205	173	142	1.1%	1.8%	1.8%	-0.3%	-1.7%	-2.0%
Nuclear[1]	1	1	2	3	4	9	19	10.7%	4.5%	3.2%	2.9%	8.0%	8.2%
Hydro	6	6	11	14	19	25	32	0.4%	5.2%	2.6%	3.4%	2.8%	2.4%
Other renewables	0	0	2	14	51	127	235	30.6%	27.2%	21.9%	13.6%	9.5%	6.3%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**302**	**436**	**689**	**1 047**	**1 320**	**1 512**	**1 778**	**3.7%**	**4.7%**	**4.3%**	**2.3%**	**1.4%**	**1.6%**
Energy for Power Generation	**63**	**137**	**234**	**456**	**656**	**799**	**1 004**	**8.1%**	**5.5%**	**6.9%**	**3.7%**	**2.0%**	**2.3%**
Other Energy Transformation & Losses	**11**	**10**	**29**	**48**	**65**	**82**	**113**	**-1.3%**	**11.5%**	**5.1%**	**3.1%**	**2.4%**	**3.2%**
Final consumption	**247**	**321**	**488**	**673**	**815**	**943**	**1 108**	**2.7%**	**4.3%**	**3.3%**	**1.9%**	**1.5%**	**1.6%**
Steel, Non-Met. Minerals and Chem.	24	38	79	106	110	106	108	4.8%	7.6%	3.1%	0.3%	-0.3%	0.1%
Other Industry	46	49	86	115	167	200	237	0.6%	5.8%	3.0%	3.8%	1.8%	1.7%
Non-Energy Use	14	30	37	57	68	77	86	7.7%	2.3%	4.4%	1.8%	1.2%	1.1%
Residential	120	141	171	212	209	214	231	1.7%	1.9%	2.2%	-0.2%	0.2%	0.8%
Services	14	16	33	47	81	134	214	1.6%	7.1%	3.6%	5.7%	5.2%	4.8%
Agriculture	9	15	19	30	36	42	46	6.0%	2.3%	4.4%	2.0%	1.3%	1.0%
Road	16	28	57	96	127	145	155	6.2%	7.3%	5.3%	2.8%	1.3%	0.7%
Rail	4	2	4	5	8	12	16	-6.1%	5.0%	4.1%	4.4%	3.6%	3.2%
Aviation	1	1	2	3	7	9	11	3.0%	8.5%	5.9%	8.4%	3.6%	2.0%
Other Transport	1	1	1	1	2	3	4	-0.5%	4.4%	0.6%	6.7%	4.5%	3.5%

[1] Nuclear energy is accounted as primary electricity

India	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**56**	**129**	**219**	**425**	**582**	**638**	**717**	**8.7%**	**5.4%**	**6.8%**	**3.2%**	**0.9%**	**1.2%**
Coal	47	110	177	347	424	399	435	8.8%	4.9%	7.0%	2.0%	-0.6%	0.9%
Oil	5	9	7	17	41	86	109	6.0%	-1.9%	8.8%	9.0%	7.7%	2.4%
Gas	3	9	27	41	77	109	127	10.3%	11.1%	4.3%	6.7%	3.5%	1.5%
Biomass & Waste	0	1	8	20	39	44	47	n.s.	27.3%	9.3%	7.0%	1.3%	0.5%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**293**	**573**	**988**	**1 969**	**3 266**	**4 695**	**6 869**	**6.9%**	**5.6%**	**7.1%**	**5.2%**	**3.7%**	**3.9%**
Coal	192	390	658	1 318	1 723	1 684	1 958	7.4%	5.4%	7.2%	2.7%	-0.2%	1.5%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	13	29	24	67	179	388	501	8.2%	-1.8%	10.7%	10.2%	8.1%	2.6%
Gas	10	56	113	178	341	483	574	18.8%	7.3%	4.6%	6.7%	3.5%	1.8%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	1	15	43	124	170	192	n.s.	27.6%	11.4%	11.1%	3.2%	1.3%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	6	17	26	36	48	103	227	10.7%	4.5%	3.2%	2.9%	8.0%	8.2%
Hydro	72	74	123	174	251	323	402	0.4%	5.2%	3.5%	3.7%	2.5%	2.2%
Wind	0	2	20	79	253	610	1 019	48.6%	27.9%	15.0%	12.3%	9.2%	5.3%
Solar	0	0	0	73	317	840	1 684	n.s.	49.7%	n.s.	15.8%	10.2%	7.2%
Other	1	3	8	1	31	95	313	18.7%	9.5%	-18.3%	39.7%	12.0%	12.7%
Generation Capacity (GW_e)	**80**	**127**	**222**	**495**	**1 034**	**1 734**	**2 668**	**4.7%**	**5.8%**	**8.3%**	**7.7%**	**5.3%**	**4.4%**
Coal	52	80	133	241	331	351	402	4.4%	5.2%	6.1%	3.3%	0.6%	1.4%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	3	5	5	17	77	178	284	5.9%	-1.2%	13.7%	16.2%	8.8%	4.8%
Gas	3	10	21	53	141	186	227	11.4%	7.5%	9.7%	10.3%	2.8%	2.0%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	2	3	11	20	28	29	n.s.	6.8%	12.2%	6.3%	3.5%	0.3%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	1	3	4	5	7	15	32	8.2%	4.9%	2.7%	2.7%	7.8%	8.0%
Hydro	20	25	42	58	78	101	128	2.2%	5.2%	3.2%	3.0%	2.6%	2.4%
Wind	0	1	13	45	130	285	439	44.9%	27.1%	12.9%	11.1%	8.2%	4.4%
Solar	0	0	0	65	250	591	1 126	8.8%	11.8%	n.s.	14.4%	9.0%	6.7%
Other	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	32.1%	21.1%	14.4%
Total Final Consumption[2] (Mtoe)	**247**	**321**	**488**	**673**	**815**	**943**	**1 108**	**2.7%**	**4.3%**	**3.3%**	**1.9%**	**1.5%**	**1.6%**
Coal	42	40	99	108	119	125	137	-0.4%	9.3%	0.9%	1.0%	0.5%	0.9%
Oil	50	94	134	213	264	300	320	6.5%	3.6%	4.7%	2.2%	1.3%	0.6%
Gas	6	10	27	37	58	82	113	5.1%	10.6%	3.4%	4.6%	3.6%	3.2%
Electricity	18	32	62	126	209	301	432	5.8%	6.8%	7.3%	5.2%	3.7%	3.7%
Heat	0	0	0	2	3	3	3	16.5%	23.5%	18.6%	5.3%	0.2%	0.0%
Biomass & Other	130	144	166	188	163	132	104	1.0%	1.4%	1.3%	-1.4%	-2.1%	-2.4%
Industry (incl. non-energy use)	**84**	**116**	**201**	**278**	**345**	**384**	**431**	**3.3%**	**5.7%**	**3.3%**	**2.2%**	**1.1%**	**1.2%**
Coal	30	32	83	96	105	109	121	0.5%	10.1%	1.4%	0.9%	0.4%	1.0%
Oil	17	36	37	64	80	98	115	8.1%	0.2%	5.8%	2.3%	2.0%	1.6%
Gas	6	9	25	29	33	40	51	4.8%	10.3%	1.5%	1.4%	1.9%	2.5%
Electricity	9	14	28	46	73	91	113	4.1%	7.3%	5.3%	4.7%	2.3%	2.1%
Heat	0	0	0	0	0	0	0	n.s.	23.5%	8.9%	-0.2%	-0.3%	-0.2%
Biomass & Other	23	26	29	43	54	46	32	1.3%	1.4%	4.0%	2.2%	-1.5%	-3.7%
Buildings	**134**	**158**	**204**	**259**	**290**	**348**	**445**	**1.7%**	**2.6%**	**2.4%**	**1.1%**	**1.8%**	**2.5%**
Coal	10	9	16	12	14	16	16	-1.3%	5.9%	-2.7%	1.7%	1.4%	0.0%
Oil	11	19	27	36	40	48	55	5.6%	3.6%	2.8%	1.0%	1.9%	1.3%
Gas	0	0	1	7	23	36	46	21.0%	14.3%	21.4%	12.1%	4.6%	2.4%
Electricity	5	11	23	60	107	168	265	8.5%	7.8%	10.1%	6.0%	4.7%	4.6%
Heat	0	0	0	2	3	3	3	16.5%	23.5%	19.0%	5.4%	0.2%	0.0%
Biomass & Other	108	119	137	143	104	77	60	1.0%	1.4%	0.4%	-3.1%	-3.0%	-2.5%
Agriculture	**9**	**15**	**19**	**30**	**36**	**42**	**46**	**6.0%**	**2.3%**	**4.4%**	**2.0%**	**1.3%**	**1.0%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	4	8	8	12	14	16	17	6.6%	0.4%	3.4%	1.9%	1.1%	0.9%
Gas	0	0	0	0	0	0	0	5.4%	2.7%	1.3%	1.7%	0.9%	0.7%
Electricity	4	7	11	18	22	26	29	5.3%	4.1%	5.1%	2.2%	1.4%	1.2%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Transport	**21**	**32**	**64**	**106**	**144**	**169**	**187**	**4.4%**	**7.1%**	**5.2%**	**3.1%**	**1.6%**	**1.0%**
Coal	2	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	18	31	62	100	130	139	133	5.5%	7.1%	5.0%	2.6%	0.7%	-0.4%
Gas	0	0	1	1	2	6	15	n.s.	36.3%	2.2%	6.4%	14.0%	10.2%
Electricity	0	1	1	2	7	16	26	7.2%	5.0%	7.8%	11.8%	7.9%	4.9%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	2	5	9	12	n.s.	-0.7%	41.5%	9.6%	4.8%	3.5%
Other Energy Transformation & Losses[3]	**11**	**10**	**29**	**48**	**65**	**82**	**113**	**-1.3%**	**11.5%**	**5.1%**	**3.1%**	**2.4%**	**3.2%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Indonesia	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	181	212	243	272	292	304	308	1.5%	1.4%	1.1%	0.7%	0.4%	0.1%
GDP per capita (ppp, k$'15)	2	3	5	7	11	16	23	2.6%	3.8%	4.2%	4.5%	3.8%	3.6%
Prices													
International/Regional ($'15/boe)													
Coal	3	1	3	4	5	5	6	-7.8%	10.3%	1.2%	2.1%	1.7%	0.9%
Oil	39	38	86	91	89	96	107	-0.2%	8.4%	0.5%	-0.2%	0.8%	1.0%
Gas	28	26	46	73	84	97	101	-0.7%	5.8%	4.7%	1.5%	1.5%	0.3%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**1 331**	**895**	**1 190**	**1 364**	**1 453**	**1 479**	**1 507**	**-3.9%**	**2.9%**	**1.4%**	**0.6%**	**0.2%**	**0.2%**
Total GHG (energy, industry, agriculture)	**429**	**573**	**786**	**941**	**1 009**	**1 102**	**1 157**	**2.9%**	**3.2%**	**1.8%**	**0.7%**	**0.9%**	**0.5%**
CO_2	163	300	431	560	651	731	780	6.3%	3.7%	2.7%	1.5%	1.2%	0.6%
CH_4	207	208	279	298	263	267	265	0.1%	2.9%	0.7%	-1.3%	0.2%	-0.1%
N_2O	58	64	75	82	92	99	103	0.9%	1.6%	0.9%	1.2%	0.7%	0.4%
F gases	2	1	2	2	3	5	9	-3.6%	3.0%	2.5%	3.5%	6.1%	5.1%
Total GHG from Energy and Industry	**283**	**430**	**612**	**760**	**806**	**890**	**939**	**4.3%**	**3.6%**	**2.2%**	**0.6%**	**1.0%**	**0.5%**
CO_2 Emissions from Fuel Comb.	**137**	**267**	**395**	**509**	**584**	**650**	**684**	**6.9%**	**4.0%**	**2.6%**	**1.4%**	**1.1%**	**0.5%**
Power generation/District heating	22	62	122	179	222	223	190	10.7%	7.1%	3.9%	2.2%	0.0%	-1.6%
Industry	31	58	92	104	108	124	151	6.6%	4.7%	1.2%	0.3%	1.4%	2.0%
Buildings	21	39	24	30	33	37	43	6.1%	-4.6%	2.2%	0.9%	1.2%	1.6%
Agriculture	3	9	9	5	6	6	6	10.5%	1.0%	-5.8%	1.1%	0.5%	0.2%
Transport	32	66	107	140	158	193	205	7.4%	5.0%	2.7%	1.2%	2.0%	0.6%
Other	27	34	40	50	57	68	88	2.1%	1.8%	2.1%	1.4%	1.7%	2.6%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**n.s.**	**n.s.**	**n.s.**	**8.8%**	**22.2%**	**20.6%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	23.8%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	8.8%	10.5%	11.3%
Energy Balance, by fuel (Mtoe)													
Primary Production	**160**	**229**	**367**	**461**	**298**	**268**	**329**	**3.6%**	**4.8%**	**2.3%**	**-4.3%**	**-1.0%**	**2.1%**
Coal	6	45	186	284	89	15	0	22.5%	15.2%	4.3%	-10.9%	-16.3%	n.s.
Oil	72	70	47	39	36	38	29	-0.3%	-4.0%	-1.8%	-0.6%	0.3%	-2.7%
Natural gas	37	58	72	77	85	97	145	4.6%	2.1%	0.6%	1.0%	1.3%	4.2%
Biomass	44	50	53	51	66	61	51	1.4%	0.5%	-0.3%	2.6%	-0.8%	-1.8%
Nuclear[1]	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	n.s.	n.s.	8.2%
Hydro	0	1	2	2	3	6	8	5.8%	5.7%	1.5%	6.3%	5.6%	4.3%
Other renewables	1	4	8	8	18	52	94	15.8%	6.8%	-0.2%	8.6%	11.1%	6.2%
Net Imports	**- 62**	**- 77**	**- 162**	**- 231**	**- 36**	**47**	**39**						
Coal	- 1	- 33	- 154	- 247	- 40	42	58						
Oil	- 38	- 12	26	31	39	52	67						
Natural gas	- 22	- 32	- 33	- 25	- 29	- 43	- 86						
Biomass	0	0	0	8	- 9	- 7	- 3						
Biofuels	0	0	0	- 1	0	0	0						
Electricity	0	0	0	3	3	3	3						
Primary Energy Demand[2]	**98**	**152**	**204**	**230**	**263**	**315**	**368**	4.5%	**3.0%**	**1.2%**	**1.4%**	**1.8%**	**1.6%**
Coal	5	12	32	37	49	57	58	10.2%	10.2%	1.5%	2.9%	1.5%	0.2%
Oil	34	58	72	70	76	89	96	5.6%	2.2%	-0.3%	0.8%	1.7%	0.7%
Natural gas	15	27	39	51	56	54	59	6.0%	3.9%	2.9%	0.8%	-0.4%	1.0%
Biomass	44	50	53	59	58	54	48	1.4%	0.5%	1.2%	-0.3%	-0.7%	-1.1%
Nuclear[1]	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	n.s.	n.s.	8.2%
Hydro	0	1	2	2	3	6	8	5.8%	5.7%	1.5%	6.3%	5.6%	4.3%
Other renewables	1	4	8	8	18	52	94	15.8%	6.8%	-0.2%	8.6%	11.1%	6.2%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**98**	**152**	**204**	**230**	**263**	**315**	**368**	**4.5%**	**3.0%**	**1.2%**	**1.4%**	**1.8%**	**1.6%**
Energy for Power Generation	**8**	**24**	**46**	**65**	**88**	**126**	**166**	**11.7%**	**6.7%**	**3.5%**	**3.1%**	**3.6%**	**2.8%**
Other Energy Transformation & Losses	**12**	**14**	**22**	**14**	**15**	**14**	**17**	**1.2%**	**4.6%**	**-4.4%**	**0.8%**	**-0.5%**	**1.7%**
Final consumption	**80**	**120**	**149**	**173**	**188**	**215**	**243**	**4.2%**	**2.2%**	**1.5%**	**0.8%**	**1.3%**	**1.2%**
Steel, Non-Met. Minerals and Chem.	3	5	10	10	10	11	13	6.1%	6.4%	0.6%	0.0%	0.9%	1.4%
Other Industry	15	25	32	39	40	44	51	5.0%	2.3%	2.0%	0.4%	1.0%	1.5%
Non-Energy Use	7	10	10	7	8	8	8	2.9%	0.4%	-4.1%	1.2%	0.6%	0.4%
Residential	42	53	56	62	65	68	69	2.4%	0.5%	1.1%	0.5%	0.4%	0.2%
Services	1	4	5	6	9	15	25	13.9%	2.5%	1.6%	5.0%	5.1%	4.7%
Agriculture	1	3	3	2	2	3	3	11.1%	1.1%	-4.9%	1.9%	1.4%	1.2%
Road	10	19	30	41	42	49	54	6.8%	4.8%	3.3%	0.2%	1.6%	0.9%
Rail	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Aviation	0	1	2	4	8	11	13	7.4%	14.1%	5.6%	6.7%	4.2%	1.5%
Other Transport	1	2	2	3	4	5	6	7.9%	2.0%	3.2%	3.5%	2.4%	1.9%

[1] Nuclear energy is accounted as primary electricity

Indonesia	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**7**	**19**	**37**	**56**	**67**	**68**	**62**	**11.3%**	**6.7%**	**4.2%**	**1.9%**	**0.2%**	**-1.0%**
Coal	2	8	19	26	36	40	33	13.7%	8.4%	3.1%	3.5%	0.9%	-1.8%
Oil	4	5	8	12	13	12	12	1.5%	6.3%	3.2%	1.0%	-0.8%	-0.1%
Gas	0	6	9	17	16	12	9	39.3%	4.1%	7.3%	-0.7%	-2.9%	-2.7%
Biomass & Waste	0	0	0	0	0	1	1	n.s.	31.8%	22.2%	0.3%	9.3%	-0.1%
Other	0	0	1	1	2	4	7	15.8%	6.8%	-0.3%	7.4%	10.4%	5.4%
Gross Elec. Generation (TWh_e)	**33**	**93**	**170**	**254**	**349**	**508**	**727**	**11.1%**	**6.2%**	**4.1%**	**3.2%**	**3.8%**	**3.6%**
Coal	10	34	68	99	141	164	146	13.3%	7.2%	3.8%	3.6%	1.5%	-1.2%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	20.3%
Oil	15	18	34	48	54	54	54	1.8%	6.4%	3.4%	1.3%	0.0%	0.0%
Gas	1	26	40	73	68	51	42	42.9%	4.4%	6.1%	-0.8%	-2.7%	-1.9%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	0	0	1	1	4	4	n.s.	31.8%	28.6%	1.0%	10.5%	0.6%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	6	13	n.s.	n.s.	n.s.	n.s.	n.s.	8.2%
Hydro	6	10	17	23	40	68	105	5.8%	5.7%	2.6%	5.9%	5.4%	4.4%
Wind	0	0	0	0	6	24	68	n.s.	n.s.	54.1%	35.9%	13.9%	11.1%
Solar	0	0	0	1	18	78	182	n.s.	n.s.	n.s.	43.0%	15.9%	8.8%
Other	1	5	9	9	20	59	112	15.8%	6.8%	-0.1%	8.1%	11.2%	6.7%
Generation Capacity (GW_e)	**13**	**25**	**34**	**60**	**80**	**157**	**274**	**6.9%**	**3.1%**	**5.8%**	**3.0%**	**6.9%**	**5.8%**
Coal	2	8	13	28	27	33	31	16.1%	5.4%	7.8%	-0.3%	2.1%	-0.7%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	20.9%
Oil	7	5	6	7	9	15	22	-4.6%	2.2%	2.4%	2.2%	5.0%	4.1%
Gas	1	8	10	14	12	10	9	32.6%	2.1%	3.4%	-2.0%	-1.6%	-0.6%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	0	0	0	0	0	0	n.s.	30.5%	2.0%	0.9%	10.8%	1.2%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	1	2	n.s.	n.s.	n.s.	n.s.	n.s.	8.0%
Hydro	3	4	4	9	16	30	48	2.9%	-1.2%	8.8%	6.3%	6.5%	4.8%
Wind	0	0	0	0	2	8	22	n.s.	n.s.	n.s.	34.8%	13.2%	10.4%
Solar	0	0	0	0	11	51	124	n.s.	n.s.	n.s.	43.5%	16.3%	9.4%
Other	0	0	1	2	3	8	15	9.9%	12.7%	2.5%	7.4%	10.5%	5.7%
Total Final Consumption[2] (Mtoe)	**80**	**120**	**149**	**173**	**188**	**215**	**243**	**4.2%**	**2.2%**	**1.5%**	**0.8%**	**1.3%**	**1.2%**
Coal	2	5	8	11	13	16	21	7.7%	5.7%	3.5%	1.3%	2.2%	2.6%
Oil	27	48	61	64	70	82	87	5.8%	2.5%	0.5%	0.8%	1.7%	0.6%
Gas	6	12	16	21	23	26	32	6.7%	3.2%	2.7%	1.0%	1.2%	2.2%
Electricity	2	7	13	19	26	38	53	10.8%	6.5%	4.1%	3.2%	3.7%	3.4%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	42	49	51	57	56	53	49	1.6%	0.4%	1.1%	-0.2%	-0.6%	-0.7%
Industry (incl. non-energy use)	**26**	**40**	**51**	**55**	**58**	**63**	**72**	**4.6%**	**2.5%**	**0.8%**	**0.4%**	**0.9%**	**1.3%**
Coal	2	5	8	11	13	16	21	7.7%	5.7%	3.5%	1.3%	2.2%	2.6%
Oil	9	12	17	10	11	13	16	3.3%	3.2%	-4.6%	0.9%	1.6%	1.8%
Gas	6	12	16	19	18	18	19	6.7%	3.2%	1.9%	-0.7%	0.0%	0.7%
Electricity	1	3	4	7	8	10	12	8.9%	4.2%	4.3%	1.9%	2.0%	2.0%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	7	9	6	8	8	6	4	1.8%	-3.0%	2.1%	-0.2%	-2.3%	-3.9%
Buildings	**43**	**57**	**61**	**68**	**74**	**83**	**94**	**2.9%**	**0.7%**	**1.1%**	**0.9%**	**1.1%**	**1.2%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	7	12	8	8	7	6	7	6.1%	-4.7%	0.8%	-2.0%	-0.3%	0.6%
Gas	0	0	0	2	5	7	9	8.1%	14.4%	27.7%	11.0%	3.6%	2.7%
Electricity	1	4	8	12	17	26	38	12.2%	8.1%	4.0%	3.7%	4.3%	3.7%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	35	41	45	46	45	44	40	1.6%	1.0%	0.2%	-0.1%	-0.4%	-0.8%
Agriculture	**1**	**3**	**3**	**2**	**2**	**3**	**3**	**11.1%**	**1.1%**	**-4.9%**	**1.9%**	**1.4%**	**1.2%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	1	3	3	2	2	2	2	10.5%	1.0%	-5.8%	1.1%	0.5%	0.2%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Electricity	0	0	0	0	0	1	1	n.s.	2.5%	3.1%	3.8%	3.4%	3.1%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	24.1%	6.5%	3.4%
Transport	**11**	**21**	**34**	**48**	**54**	**66**	**73**	**6.9%**	**5.1%**	**3.5%**	**1.1%**	**2.1%**	**1.1%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	11	21	34	44	50	60	62	6.9%	5.0%	2.7%	1.2%	1.9%	0.3%
Gas	0	0	0	0	0	1	4	n.s.	9.0%	-0.1%	50.3%	14.1%	13.0%
Electricity	0	0	0	0	0	1	2	n.s.	n.s.	n.s.	37.4%	9.8%	7.1%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	4	3	3	5	n.s.	n.s.	36.3%	-2.8%	0.4%	4.2%
Other Energy Transformation & Losses[3]	**12**	**14**	**22**	**14**	**15**	**14**	**17**	**1.2%**	**4.6%**	**-4.4%**	**0.8%**	**-0.5%**	**1.7%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Malaysia	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	18	23	28	33	37	41	44	2.5%	1.9%	1.6%	1.3%	0.9%	0.7%
GDP per capita (ppp, k$'15)	8	13	17	23	32	42	53	4.5%	2.6%	3.5%	3.2%	2.7%	2.3%
Prices													
International/Regional ($'15/boe)													
Coal	3	1	3	4	5	5	6	-7.8%	10.3%	1.2%	2.1%	1.7%	0.9%
Oil	39	38	86	91	89	96	107	-0.2%	8.4%	0.5%	-0.2%	0.8%	1.0%
Gas	28	26	46	73	84	97	101	-0.7%	5.8%	4.7%	1.5%	1.5%	0.3%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**224**	**358**	**369**	**457**	**513**	**541**	**594**	**4.8%**	**0.3%**	**2.2%**	**1.2%**	**0.5%**	**0.9%**
Total GHG (energy, industry, agriculture)	**100**	**179**	**275**	**357**	**407**	**453**	**514**	**6.0%**	**4.4%**	**2.7%**	**1.3%**	**1.1%**	**1.3%**
CO_2	64	131	218	293	342	387	446	7.4%	5.2%	3.0%	1.6%	1.3%	1.4%
CH_4	27	38	43	48	46	43	42	3.2%	1.4%	1.0%	-0.5%	-0.7%	-0.2%
N_2O	8	10	12	14	16	18	18	2.2%	2.5%	1.5%	1.5%	0.6%	0.5%
F gases	1	1	1	2	4	5	7	-0.7%	9.1%	5.6%	5.1%	4.2%	3.2%
Total GHG from Energy and Industry	**86**	**165**	**260**	**340**	**387**	**431**	**491**	**6.8%**	**4.6%**	**2.7%**	**1.3%**	**1.1%**	**1.3%**
CO_2 Emissions from Fuel Comb.	**58**	**117**	**196**	**266**	**307**	**347**	**400**	**7.3%**	**5.3%**	**3.1%**	**1.5%**	**1.2%**	**1.4%**
Power generation/District heating	16	37	96	113	141	168	194	8.9%	9.9%	1.6%	2.3%	1.8%	1.5%
Industry	14	26	31	39	44	50	54	6.4%	1.6%	2.6%	1.2%	1.1%	0.8%
Buildings	2	4	6	5	5	6	6	7.0%	3.5%	-1.5%	0.1%	0.4%	0.5%
Agriculture	0	0	3	4	4	4	5	n.s.	25.9%	0.7%	1.3%	1.0%	0.8%
Transport	15	32	44	73	76	81	79	8.3%	3.2%	5.2%	0.3%	0.7%	-0.3%
Other	11	17	16	31	36	38	63	4.2%	-0.8%	7.1%	1.6%	0.4%	5.2%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Energy Balance, by fuel (Mtoe)													
Primary Production	**48**	**73**	**84**	**108**	**114**	**106**	**82**	**4.3%**	**1.5%**	**2.5%**	**0.6%**	**-0.7%**	**-2.6%**
Coal	0	0	2	2	3	5	7	14.1%	20.3%	3.6%	4.7%	4.3%	3.0%
Oil	31	31	33	30	21	13	9	0.0%	0.6%	-0.9%	-3.4%	-4.5%	-3.8%
Natural gas	15	39	47	64	72	69	46	10.4%	1.9%	3.1%	1.2%	-0.5%	-4.0%
Biomass	2	2	2	9	12	10	6	0.0%	-0.2%	16.9%	3.5%	-1.8%	-4.7%
Nuclear[1]	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	10.3%
Hydro	0	1	1	2	3	3	3	5.7%	-0.7%	14.5%	3.0%	0.1%	-0.1%
Other renewables	0	0	0	0	2	6	10	n.s.	n.s.	n.s.	29.8%	10.4%	6.2%
Net Imports	**- 25**	**- 24**	**- 10**	**- 1**	**9**	**31**	**78**						
Coal	1	2	13	16	24	31	37						
Oil	- 18	- 11	- 7	12	22	31	33						
Natural gas	- 8	- 14	- 16	- 26	- 30	- 26	10						
Biomass	0	0	0	- 4	- 6	- 5	- 3						
Biofuels	0	0	0	0	0	0	0						
Electricity	0	0	0	0	0	0	0						
Primary Energy Demand[2]	**23**	**49**	**74**	**106**	**123**	**137**	**159**	8.0%	**4.2%**	**3.7%**	**1.5%**	**1.1%**	**1.5%**
Coal	1	2	15	19	27	36	44	5.7%	20.3%	2.4%	3.9%	2.9%	2.1%
Oil	12	20	26	42	43	45	42	4.6%	3.0%	4.9%	0.1%	0.4%	-0.6%
Natural gas	7	25	31	38	43	43	56	13.6%	2.3%	2.2%	1.0%	0.0%	2.7%
Biomass	2	2	2	5	6	5	3	0.0%	-0.2%	10.1%	2.1%	-2.1%	-4.4%
Nuclear[1]	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	10.3%
Hydro	0	1	1	2	3	3	3	5.7%	-0.7%	14.5%	3.0%	0.1%	-0.1%
Other renewables	0	0	0	0	2	6	10	n.s.	n.s.	n.s.	29.8%	10.4%	6.2%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**23**	**49**	**74**	**106**	**123**	**137**	**159**	**8.0%**	**4.2%**	**3.7%**	**1.5%**	**1.1%**	**1.5%**
Energy for Power Generation	**6**	**15**	**33**	**41**	**51**	**60**	**70**	**10.7%**	**8.0%**	**2.4%**	**2.1%**	**1.6%**	**1.6%**
Other Energy Transformation & Losses	**5**	**9**	**9**	**17**	**20**	**20**	**30**	**5.9%**	**-0.9%**	**7.1%**	**1.8%**	**0.0%**	**4.0%**
Final consumption	**14**	**30**	**42**	**63**	**72**	**82**	**92**	**8.0%**	**3.6%**	**4.0%**	**1.4%**	**1.3%**	**1.1%**
Steel, Non-Met. Minerals and Chem.	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	n.s.	54.7%	5.8%
Other Industry	6	12	15	20	24	27	30	7.9%	2.4%	3.1%	1.6%	1.4%	1.2%
Non-Energy Use	1	2	4	6	7	8	9	10.4%	5.1%	5.4%	1.7%	1.1%	0.8%
Residential	2	3	4	5	6	6	6	3.8%	3.0%	2.4%	2.5%	0.6%	0.4%
Services	1	2	4	6	8	10	14	10.9%	6.9%	2.8%	3.2%	2.8%	3.2%
Agriculture	0	0	1	1	1	1	2	n.s.	26.2%	0.9%	1.3%	1.0%	0.8%
Road	5	10	14	24	25	27	28	8.5%	3.2%	5.5%	0.3%	0.9%	0.3%
Rail	0	0	0	0	0	0	0	n.s.	15.1%	4.8%	3.3%	2.5%	2.0%
Aviation	0	0	0	1	1	1	1	10.0%	4.2%	5.0%	2.9%	0.5%	-0.2%
Other Transport	0	0	0	0	0	0	0	-20.8%	11.6%	18.3%	3.2%	2.0%	1.3%

[1] Nuclear energy is accounted as primary electricity

Malaysia	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**5**	**15**	**32**	**39**	**46**	**51**	**56**	**10.9%**	**8.2%**	**2.0%**	**1.6%**	**1.1%**	**1.0%**
Coal	1	1	13	15	23	31	38	6.3%	24.1%	1.2%	4.5%	3.1%	2.0%
Oil	3	1	1	3	3	3	3	-10.7%	-2.6%	16.1%	-2.5%	0.0%	0.2%
Gas	1	12	18	19	19	16	16	24.4%	4.1%	0.5%	-0.2%	-1.3%	-0.3%
Biomass & Waste	0	0	0	2	2	2	1	n.s.	n.s.	21.1%	0.3%	-3.2%	-10.6%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**23**	**69**	**125**	**187**	**250**	**319**	**407**	**11.6%**	**6.1%**	**4.1%**	**3.0%**	**2.5%**	**2.4%**
Coal	3	8	43	60	89	118	143	10.1%	18.7%	3.3%	4.1%	2.9%	2.0%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	11	4	4	13	11	12	12	-10.2%	0.2%	13.9%	-2.0%	0.6%	0.4%
Gas	6	51	71	80	85	78	82	24.9%	3.3%	1.2%	0.6%	-0.8%	0.4%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	0	1	7	8	6	2	n.s.	n.s.	21.3%	0.8%	-2.8%	-10.5%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	3	8	n.s.	n.s.	n.s.	n.s.	n.s.	10.3%
Hydro	4	7	6	25	34	34	34	5.7%	-0.7%	14.5%	3.0%	0.1%	-0.1%
Wind	0	0	0	0	5	19	38	n.s.	n.s.	n.s.	36.3%	14.9%	7.3%
Solar	0	0	0	2	19	45	79	n.s.	n.s.	n.s.	28.6%	9.1%	5.7%
Other	0	0	0	0	1	4	10	n.s.	n.s.	n.s.	8.2%	17.4%	8.3%
Generation Capacity (GW_e)	**5**	**14**	**27**	**40**	**59**	**91**	**133**	**11.4%**	**7.0%**	**3.8%**	**4.0%**	**4.5%**	**3.8%**
Coal	1	1	8	9	12	16	21	0.8%	19.4%	1.1%	3.1%	3.3%	2.6%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	1	2	2	3	4	7	10	4.7%	-3.6%	6.2%	2.5%	6.6%	3.7%
Gas	1	8	15	17	15	16	19	24.4%	6.6%	1.0%	-0.9%	0.5%	1.9%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	0	1	1	1	1	0	n.s.	20.9%	4.0%	0.6%	0.1%	-12.9%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	10.1%
Hydro	1	2	2	9	13	13	13	6.6%	0.1%	16.1%	3.0%	0.1%	-0.1%
Wind	0	0	0	0	2	6	12	n.s.	n.s.	53.4%	35.3%	14.2%	6.8%
Solar	0	0	0	1	13	31	56	n.s.	n.s.	n.s.	29.1%	9.5%	5.9%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	14.6%	12.0%
Total Final Consumption[2] (Mtoe)	**14**	**30**	**42**	**63**	**72**	**82**	**92**	**8.0%**	**3.6%**	**4.0%**	**1.4%**	**1.3%**	**1.1%**
Coal	1	1	2	3	3	4	5	6.8%	6.3%	4.4%	1.7%	1.9%	1.7%
Oil	9	18	24	35	36	38	36	7.2%	2.7%	3.9%	0.3%	0.5%	-0.7%
Gas	1	4	6	9	11	14	18	13.4%	4.7%	4.0%	2.3%	2.1%	2.4%
Electricity	2	5	10	15	20	25	31	11.9%	6.1%	4.4%	3.0%	2.4%	2.4%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	1	1	1	1	2	2	3	0.5%	-3.8%	4.4%	0.8%	1.0%	4.2%
Industry (incl. non-energy use)	**6**	**14**	**19**	**26**	**31**	**36**	**40**	**8.2%**	**2.9%**	**3.6%**	**1.6%**	**1.5%**	**1.2%**
Coal	1	1	2	3	3	4	5	6.8%	6.3%	4.4%	1.7%	1.9%	1.7%
Oil	4	6	6	8	9	9	9	5.1%	0.3%	2.3%	1.1%	0.5%	-0.3%
Gas	1	4	6	9	10	12	14	13.5%	4.5%	3.8%	1.6%	1.5%	1.4%
Electricity	1	3	5	7	9	11	13	12.9%	4.9%	4.5%	2.2%	2.3%	1.8%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	2.5%	n.s.	n.s.	n.s.	9.2%	2.4%
Buildings	**3**	**5**	**8**	**10**	**14**	**16**	**20**	**6.5%**	**4.9%**	**2.6%**	**2.9%**	**1.9%**	**2.2%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	1	1	2	1	1	1	1	7.0%	3.4%	-2.8%	-4.0%	-2.9%	-1.9%
Gas	0	0	0	0	1	1	2	7.4%	8.2%	24.4%	12.1%	3.7%	1.9%
Electricity	1	2	5	8	11	13	17	10.7%	7.3%	4.3%	3.5%	2.3%	2.6%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	1	1	1	1	1	1	1	0.0%	-1.0%	-0.7%	0.4%	-0.1%	-0.6%
Agriculture	**0**	**0**	**1**	**1**	**1**	**1**	**2**	**n.s.**	**26.2%**	**0.9%**	**1.3%**	**1.0%**	**0.8%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	0	0	1	1	1	1	2	n.s.	25.9%	0.7%	1.3%	1.0%	0.8%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Electricity	0	0	0	0	0	0	0	n.s.	n.s.	6.4%	2.3%	2.0%	1.8%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Transport	**5**	**11**	**15**	**25**	**26**	**29**	**29**	**8.5%**	**3.2%**	**5.5%**	**0.4%**	**0.9%**	**0.3%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	5	11	15	25	25	27	25	8.4%	3.2%	5.3%	0.3%	0.5%	-0.8%
Gas	0	0	0	0	0	1	2	n.s.	32.0%	-5.5%	15.4%	15.0%	12.7%
Electricity	0	0	0	0	0	0	1	n.s.	15.1%	6.3%	17.8%	10.5%	7.3%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	1	1	1	2	n.s.	n.s.	n.s.	0.6%	1.7%	8.5%
Other Energy Transformation & Losses[3]	**5**	**9**	**9**	**17**	**20**	**20**	**30**	**5.9%**	**-0.9%**	**7.1%**	**1.8%**	**0.0%**	**4.0%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Thailand	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	57	63	67	70	71	70	67	1.1%	0.7%	0.4%	0.1%	-0.1%	-0.4%
GDP per capita (ppp, k$'15)	5	7	9	13	18	25	33	3.3%	3.6%	2.9%	3.6%	3.5%	2.8%
Prices													
International/Regional ($'15/boe)													
Coal	3	1	3	4	5	5	6	-7.8%	10.3%	1.2%	2.1%	1.7%	0.9%
Oil	39	38	86	91	89	96	107	-0.2%	8.4%	0.5%	-0.2%	0.8%	1.0%
Gas	28	26	46	73	84	97	101	-0.7%	5.8%	4.7%	1.5%	1.5%	0.3%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**217**	**328**	**468**	**485**	**489**	**528**	**577**	**4.2%**	**3.6%**	**0.4%**	**0.1%**	**0.8%**	**0.9%**
Total GHG (energy, industry, agriculture)	**206**	**282**	**398**	**428**	**433**	**480**	**536**	**3.2%**	**3.5%**	**0.7%**	**0.1%**	**1.0%**	**1.1%**
CO_2	93	171	255	292	292	332	384	6.3%	4.0%	1.4%	0.0%	1.3%	1.5%
CH_4	96	94	120	110	115	120	123	-0.3%	2.5%	-0.9%	0.4%	0.5%	0.2%
N_2O	15	17	22	25	26	27	29	1.2%	2.8%	1.1%	0.5%	0.6%	0.4%
F gases	1	0	1	1	1	1	1	-10.8%	11.8%	-0.6%	-6.4%	0.8%	1.2%
Total GHG from Energy and Industry	**122**	**205**	**304**	**335**	**330**	**373**	**427**	**5.3%**	**4.0%**	**1.0%**	**-0.1%**	**1.2%**	**1.4%**
CO_2 Emissions from Fuel Comb.	**82**	**154**	**230**	**262**	**256**	**289**	**337**	**6.5%**	**4.1%**	**1.3%**	**-0.2%**	**1.2%**	**1.5%**
Power generation/District heating	27	54	81	86	67	71	100	7.1%	4.2%	0.6%	-2.6%	0.6%	3.5%
Industry	14	32	50	60	64	77	89	8.3%	4.7%	1.9%	0.6%	1.8%	1.5%
Buildings	3	5	9	7	8	9	10	6.0%	5.8%	-2.0%	1.1%	1.2%	0.4%
Agriculture	6	9	11	14	14	14	14	4.5%	2.1%	2.4%	0.4%	0.1%	-0.2%
Transport	27	44	60	72	77	86	79	4.9%	3.0%	1.9%	0.8%	1.0%	-0.8%
Other	5	11	19	22	25	32	44	8.8%	5.7%	1.8%	1.0%	2.6%	3.3%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**31.7%**	**19.6%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	30.6%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	15.2%
Biomass	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	9.5%	12.5%
Energy Balance, by fuel (Mtoe)													
Primary Production	**26**	**43**	**71**	**56**	**71**	**67**	**53**	**5.0%**	**5.2%**	**-2.4%**	**2.4%**	**-0.6%**	**-2.3%**
Coal	3	5	5	5	6	8	12	4.6%	0.5%	-0.6%	2.5%	2.3%	4.1%
Oil	2	6	12	5	3	2	1	9.5%	8.1%	-9.0%	-4.8%	-4.4%	-4.1%
Natural gas	5	17	30	20	28	21	9	11.8%	6.1%	-4.2%	3.8%	-2.9%	-8.5%
Biomass	15	15	23	24	27	25	16	-0.1%	4.5%	0.4%	1.3%	-0.6%	-4.2%
Nuclear[1]	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	9.5%
Hydro	0	1	0	1	1	2	3	1.9%	-0.8%	7.2%	4.5%	3.1%	2.3%
Other renewables	0	0	0	2	5	8	11	n.s.	7.0%	n.s.	9.4%	5.4%	3.0%
Net Imports	**17**	**32**	**52**	**99**	**90**	**106**	**136**						
Coal	1	3	11	9	8	7	8						
Oil	16	26	33	63	63	66	62						
Natural gas	0	1	2	9	4	23	54						
Biomass	0	0	0	5	2	- 3	- 2						
Biofuels	0	0	0	0	0	0	0						
Electricity	1	3	6	13	13	13	13						
Primary Energy Demand[2]	**43**	**75**	**123**	**155**	**161**	**173**	**189**	5.7%	**5.1%**	**2.4%**	**0.4%**	**0.8%**	**0.9%**
Coal	4	8	16	14	14	15	20	7.0%	7.8%	-1.6%	0.1%	0.9%	2.9%
Oil	18	32	45	68	66	68	63	5.8%	3.5%	4.2%	-0.3%	0.3%	-0.7%
Natural gas	5	17	33	29	32	44	63	13.3%	6.5%	-1.2%	1.1%	3.2%	3.6%
Biomass	15	15	23	29	29	22	14	-0.1%	4.5%	2.3%	0.2%	-2.6%	-4.4%
Nuclear[1]	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	9.5%
Hydro	0	1	0	1	1	2	3	1.9%	-0.8%	7.2%	4.5%	3.1%	2.3%
Other renewables	0	0	0	2	5	8	11	n.s.	7.0%	n.s.	9.4%	5.4%	3.0%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**43**	**75**	**123**	**155**	**161**	**173**	**189**	**5.7%**	**5.1%**	**2.4%**	**0.4%**	**0.8%**	**0.9%**
Energy for Power Generation	**9**	**20**	**33**	**40**	**38**	**40**	**51**	**8.0%**	**4.9%**	**1.9%**	**-0.5%**	**0.6%**	**2.4%**
Other Energy Transformation & Losses	**8**	**11**	**19**	**26**	**28**	**31**	**35**	**3.5%**	**5.5%**	**3.3%**	**0.6%**	**1.2%**	**1.0%**
Final consumption	**29**	**51**	**84**	**107**	**115**	**126**	**135**	**5.9%**	**5.2%**	**2.4%**	**0.7%**	**0.9%**	**0.7%**
Steel, Non-Met. Minerals and Chem.	2	6	12	13	13	15	19	8.7%	7.6%	0.6%	0.4%	1.6%	2.0%
Other Industry	6	12	15	23	24	25	26	6.5%	2.4%	4.7%	0.2%	0.6%	0.4%
Non-Energy Use	0	6	18	24	27	28	29	29.3%	12.4%	2.9%	1.0%	0.5%	0.3%
Residential	8	8	11	13	13	13	14	0.2%	3.9%	1.2%	0.2%	0.3%	0.4%
Services	1	3	6	6	7	9	13	8.2%	6.1%	0.9%	1.5%	2.8%	3.3%
Agriculture	2	3	3	4	5	5	6	4.5%	2.1%	2.5%	1.0%	0.8%	0.5%
Road	9	14	19	23	25	28	27	5.3%	2.7%	2.1%	0.5%	1.2%	-0.3%
Rail	0	0	0	0	0	0	0	-0.6%	-1.1%	1.0%	1.2%	1.3%	0.9%
Aviation	0	0	0	1	1	1	1	n.s.	n.s.	4.3%	5.8%	1.9%	-0.8%
Other Transport	0	0	0	0	0	0	0	-16.2%	2.7%	6.9%	2.1%	1.6%	0.6%

[1] Nuclear energy is accounted as primary electricity

Thailand	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**9**	**20**	**32**	**37**	**31**	**29**	**36**	**8.2%**	**5.0%**	**1.3%**	**-1.6%**	**-0.7%**	**2.1%**
Coal	3	4	7	7	7	6	9	5.0%	5.2%	0.3%	-0.8%	-1.1%	3.8%
Oil	3	2	0	6	1	2	5	-0.8%	-19.6%	36.6%	-14.0%	5.4%	7.5%
Gas	4	13	23	17	16	17	22	12.8%	5.9%	-3.0%	-0.8%	1.1%	2.4%
Biomass & Waste	0	0	2	7	8	4	1	n.s.	17.5%	11.3%	1.4%	-7.1%	-17.2%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**44**	**98**	**162**	**201**	**216**	**271**	**368**	**8.3%**	**5.2%**	**2.1%**	**0.8%**	**2.3%**	**3.1%**
Coal	11	18	30	30	28	26	38	4.9%	5.4%	-0.1%	-0.6%	-0.7%	3.9%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	25.2%
Oil	10	10	1	27	6	10	21	-0.3%	-19.3%	36.8%	-14.0%	5.4%	7.6%
Gas	18	62	119	87	80	94	126	13.2%	6.8%	-3.1%	-0.8%	1.5%	3.0%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	15.3%
Biomass & Waste	0	1	3	19	23	11	2	n.s.	20.9%	19.0%	1.6%	-6.9%	-17.1%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	4	9	n.s.	n.s.	n.s.	n.s.	n.s.	9.4%
Hydro	5	6	6	14	20	26	32	1.9%	-0.8%	9.8%	3.8%	2.4%	2.1%
Wind	0	0	0	18	41	57	46	n.s.	n.s.	n.s.	8.5%	3.3%	-2.0%
Solar	0	0	0	5	16	41	85	n.s.	n.s.	n.s.	12.1%	9.5%	7.7%
Other	0	2	3	0	1	3	8	n.s.	5.0%	-22.1%	18.2%	9.3%	11.0%
Generation Capacity (GW_e)	**10**	**28**	**42**	**61**	**81**	**106**	**141**	**11.2%**	**4.2%**	**3.7%**	**2.9%**	**2.7%**	**2.9%**
Coal	1	3	4	4	4	4	5	5.7%	4.3%	1.3%	-0.4%	-1.8%	3.8%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	20.6%
Oil	3	6	10	8	8	7	10	7.0%	5.6%	-1.9%	-0.2%	-1.7%	4.0%
Gas	3	15	21	24	22	22	24	17.7%	3.4%	1.0%	-0.8%	0.2%	0.8%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	15.6%
Biomass & Waste	0	0	1	3	3	1	0	n.s.	9.8%	11.1%	-0.2%	-6.8%	-17.1%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	n.s.	n.s.	9.2%
Hydro	2	4	6	10	14	19	23	6.1%	4.0%	4.8%	3.8%	2.8%	2.2%
Wind	0	0	0	8	17	23	17	n.s.	n.s.	n.s.	8.6%	3.0%	-3.2%
Solar	0	0	0	5	13	30	60	n.s.	n.s.	n.s.	11.0%	8.7%	7.3%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	15.3%	12.2%
Total Final Consumption[2] (Mtoe)	**29**	**51**	**84**	**107**	**115**	**126**	**135**	**5.9%**	**5.2%**	**2.4%**	**0.7%**	**0.9%**	**0.7%**
Coal	1	4	9	7	8	9	12	10.3%	10.0%	-2.9%	0.9%	2.3%	2.1%
Oil	15	29	44	58	61	62	55	6.9%	4.2%	2.9%	0.5%	0.1%	-1.1%
Gas	0	2	4	6	10	17	26	27.8%	10.0%	3.8%	5.0%	5.6%	4.4%
Electricity	3	8	13	16	18	22	29	8.7%	5.4%	2.5%	0.8%	2.2%	2.9%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	9	9	14	20	18	15	13	0.2%	4.4%	3.1%	-0.7%	-1.7%	-1.9%
Industry (incl. non-energy use)	**9**	**23**	**45**	**60**	**63**	**68**	**74**	**9.7%**	**6.9%**	**3.0%**	**0.6%**	**0.8%**	**0.7%**
Coal	1	4	9	7	8	9	12	10.3%	10.0%	-2.9%	0.9%	2.3%	2.1%
Oil	3	10	20	30	31	30	27	12.1%	7.1%	4.3%	0.4%	-0.3%	-1.1%
Gas	0	2	3	5	8	14	20	27.8%	6.9%	5.1%	4.3%	5.6%	4.2%
Electricity	2	3	5	7	8	9	11	8.4%	4.7%	3.1%	0.5%	1.8%	1.9%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	3	4	7	10	9	6	3	4.0%	5.0%	3.9%	-1.3%	-4.0%	-5.5%
Buildings	**9**	**11**	**17**	**19**	**20**	**23**	**27**	**1.9%**	**4.6%**	**1.1%**	**0.7%**	**1.2%**	**1.7%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	1	2	3	2	1	1	1	6.0%	5.8%	-3.4%	-3.5%	-2.5%	-2.0%
Gas	0	0	0	0	2	3	3	n.s.	n.s.	n.s.	14.4%	4.4%	1.6%
Electricity	2	4	7	9	10	12	17	8.9%	6.0%	2.1%	0.8%	2.2%	3.3%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	6	5	7	8	8	7	7	-2.1%	2.9%	1.1%	0.0%	-0.4%	-0.8%
Agriculture	**2**	**3**	**3**	**4**	**5**	**5**	**6**	**4.5%**	**2.1%**	**2.5%**	**1.0%**	**0.8%**	**0.5%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	2	3	3	4	5	5	4	4.5%	2.1%	2.4%	0.4%	0.1%	-0.2%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Electricity	0	0	0	0	0	0	0	4.8%	8.1%	1.0%	13.0%	8.5%	6.2%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	24.0%	6.4%	3.1%
Transport	**9**	**15**	**20**	**24**	**26**	**29**	**28**	**4.9%**	**2.9%**	**2.2%**	**0.7%**	**1.2%**	**-0.3%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	9	15	18	22	24	26	23	4.9%	2.0%	2.2%	0.9%	0.9%	-1.3%
Gas	0	0	1	0	0	1	3	n.s.	n.s.	-7.9%	-2.8%	9.2%	11.7%
Electricity	0	0	0	0	0	1	1	n.s.	6.6%	16.0%	20.4%	10.9%	7.2%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	1	2	1	2	2	n.s.	n.s.	9.8%	-1.3%	1.7%	1.4%
Other Energy Transformation & Losses[3]	**8**	**11**	**19**	**26**	**28**	**31**	**35**	**3.5%**	**5.5%**	**3.3%**	**0.6%**	**1.2%**	**1.0%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Vietnam	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	68	80	88	98	104	106	106	1.6%	1.0%	1.0%	0.6%	0.2%	0.0%
GDP per capita (ppp, k$'15)	1	2	4	6	10	15	21	5.8%	5.6%	5.1%	5.4%	4.3%	3.5%
Prices													
International/Regional ($'15/boe)													
Coal	3	1	3	4	5	5	6	-7.8%	10.3%	1.2%	2.1%	1.7%	0.9%
Oil	39	38	86	91	89	96	107	-0.2%	8.4%	0.5%	-0.2%	0.8%	1.0%
Gas	28	26	46	73	84	97	101	-0.7%	5.8%	4.7%	1.5%	1.5%	0.3%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**52**	**141**	**326**	**477**	**608**	**689**	**729**	**10.5%**	**8.8%**	**3.9%**	**2.4%**	**1.3%**	**0.6%**
Total GHG (energy, industry, agriculture)	**97**	**153**	**266**	**408**	**535**	**626**	**672**	**4.6%**	**5.7%**	**4.4%**	**2.7%**	**1.6%**	**0.7%**
CO_2	19	53	153	274	376	458	497	10.7%	11.1%	6.0%	3.2%	2.0%	0.8%
CH_4	68	81	93	109	129	135	140	1.8%	1.4%	1.6%	1.7%	0.5%	0.4%
N_2O	10	19	20	24	30	33	35	6.1%	0.9%	1.9%	2.0%	1.0%	0.4%
F gases	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Total GHG from Energy and Industry	**34**	**76**	**182**	**315**	**424**	**511**	**551**	**8.4%**	**9.1%**	**5.7%**	**3.0%**	**1.9%**	**0.8%**
CO_2 Emissions from Fuel Comb.	**17**	**44**	**125**	**235**	**321**	**390**	**417**	**9.9%**	**11.1%**	**6.5%**	**3.2%**	**2.0%**	**0.7%**
Power generation/District heating	5	11	41	83	137	179	190	9.0%	13.7%	7.4%	5.1%	2.7%	0.6%
Industry	6	14	39	81	103	114	124	9.9%	10.8%	7.5%	2.4%	1.0%	0.8%
Buildings	2	7	11	13	13	14	15	12.9%	5.4%	1.3%	0.3%	0.5%	0.5%
Agriculture	1	1	2	2	3	3	3	5.0%	3.8%	2.1%	2.0%	1.3%	0.9%
Transport	4	11	31	49	54	63	63	9.8%	11.2%	4.8%	1.0%	1.5%	0.0%
Other	0	0	1	6	11	16	23	8.3%	49.0%	15.9%	5.7%	3.9%	3.5%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Energy Balance, by fuel (Mtoe)													
Primary Production	**18**	**39**	**65**	**64**	**53**	**59**	**66**	**8.1%**	**5.2%**	**-0.3%**	**-1.8%**	**1.0%**	**1.2%**
Coal	2	6	25	13	0	0	0	10.1%	14.5%	-6.7%	n.s.	n.s.	n.s.
Oil	3	16	15	23	18	13	8	19.7%	-0.5%	4.0%	-2.3%	-3.2%	-4.5%
Natural gas	0	1	8	9	10	12	16	44.5%	19.4%	0.8%	1.4%	2.3%	2.3%
Biomass	12	14	15	15	18	18	14	1.3%	0.4%	-0.1%	2.0%	-0.1%	-2.0%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	0	1	2	5	5	5	5	10.5%	6.6%	7.7%	0.5%	0.4%	-0.1%
Other renewables	0	0	0	0	2	10	23	n.s.	n.s.	52.5%	23.0%	16.1%	8.3%
Net Imports	**0**	**- 11**	**- 2**	**34**	**76**	**96**	**102**						
Coal	0	- 2	- 10	21	48	59	67						
Oil	0	- 8	3	3	17	30	35						
Natural gas	0	0	0	2	4	3	- 1						
Biomass	0	0	0	5	5	3	0						
Biofuels	0	0	0	0	0	0	0						
Electricity	0	0	5	2	2	2	2						
Primary Energy Demand[2]	**18**	**29**	**63**	**97**	**129**	**154**	**168**	4.9%	**8.2%**	**4.4%**	**2.8%**	**1.8%**	**0.9%**
Coal	2	4	15	34	48	59	67	7.0%	12.9%	8.8%	3.4%	2.2%	1.2%
Oil	3	8	19	25	35	43	43	11.2%	9.1%	3.1%	3.1%	2.1%	0.1%
Natural gas	0	1	8	11	14	15	14	n.s.	21.9%	3.1%	2.6%	0.4%	-0.5%
Biomass	12	14	15	20	23	20	14	1.3%	0.4%	3.1%	1.4%	-1.2%	-3.4%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	0	1	2	5	5	5	5	10.5%	6.6%	7.7%	0.5%	0.4%	-0.1%
Other renewables	0	0	0	0	2	10	23	n.s.	n.s.	52.5%	23.0%	16.1%	8.3%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**18**	**29**	**63**	**97**	**129**	**154**	**168**	**4.9%**	**8.2%**	**4.4%**	**2.8%**	**1.8%**	**0.9%**
Energy for Power Generation	**2**	**5**	**16**	**30**	**48**	**67**	**81**	**10.7%**	**12.8%**	**6.6%**	**4.7%**	**3.5%**	**1.8%**
Other Energy Transformation & Losses	**1**	**1**	**6**	**5**	**9**	**9**	**9**	**2.4%**	**23.6%**	**-2.6%**	**5.8%**	**0.1%**	**0.5%**
Final consumption	**16**	**25**	**48**	**77**	**94**	**109**	**118**	**4.6%**	**6.8%**	**4.8%**	**2.1%**	**1.5%**	**0.8%**
Steel, Non-Met. Minerals and Chem.	0	0	6	16	23	28	32	n.s.	n.s.	10.1%	3.7%	2.1%	1.4%
Other Industry	5	8	11	19	23	27	30	5.7%	3.8%	5.0%	2.4%	1.3%	1.3%
Non-Energy Use	0	0	2	4	6	7	8	16.9%	32.8%	6.6%	3.3%	2.3%	1.2%
Residential	10	12	16	20	21	20	17	2.4%	2.9%	2.4%	0.2%	-0.2%	-1.8%
Services	0	1	2	3	4	6	9	12.6%	4.8%	4.3%	4.1%	4.3%	3.8%
Agriculture	0	0	1	1	1	1	1	5.4%	3.8%	3.4%	2.3%	1.6%	1.2%
Road	1	3	10	14	16	18	20	10.3%	11.4%	3.5%	1.2%	1.6%	0.7%
Rail	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Aviation	0	0	0	0	1	1	1	1.4%	3.9%	8.3%	7.6%	1.8%	-0.2%
Other Transport	0	0	0	0	0	0	0	17.8%	8.3%	-7.4%	4.6%	2.9%	1.9%

[1] Nuclear energy is accounted as primary electricity

Vietnam	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**1**	**4**	**14**	**25**	**40**	**52**	**53**	**10.8%**	**14.4%**	**6.2%**	**4.9%**	**2.5%**	**0.2%**
Coal	1	1	5	15	24	33	39	2.6%	15.5%	12.0%	4.8%	3.4%	1.7%
Oil	0	1	1	1	5	7	6	13.1%	-1.2%	-2.4%	18.8%	3.8%	-1.9%
Gas	0	1	8	9	11	10	6	n.s.	21.4%	1.5%	1.9%	-1.1%	-5.0%
Biomass & Waste	0	0	0	0	0	1	1	n.s.	n.s.	23.4%	7.7%	7.9%	1.5%
Other	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	12.3%	17.8%	5.3%
Gross Elec. Generation (TWh_e)	**9**	**27**	**95**	**186**	**279**	**393**	**515**	**11.8%**	**13.6%**	**6.9%**	**4.1%**	**3.5%**	**2.7%**
Coal	2	3	20	69	110	151	172	4.6%	20.2%	13.3%	4.8%	3.2%	1.3%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	1	5	3	4	21	33	28	13.2%	-2.8%	0.6%	19.2%	4.6%	-1.6%
Gas	0	4	44	53	64	56	35	n.s.	26.1%	1.9%	1.9%	-1.3%	-4.8%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	0	0	0	1	3	3	n.s.	n.s.	23.8%	9.4%	8.8%	2.0%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	5	15	28	58	61	64	63	10.5%	6.6%	7.7%	0.5%	0.4%	-0.1%
Wind	0	0	0	1	7	30	87	n.s.	n.s.	32.7%	23.1%	16.2%	11.1%
Solar	0	0	0	0	12	49	109	n.s.	n.s.	n.s.	n.s.	14.7%	8.4%
Other	0	0	0	0	3	9	19	n.s.	n.s.	n.s.	18.7%	12.1%	8.0%
Generation Capacity (GW_e)	**2**	**6**	**20**	**42**	**57**	**106**	**181**	**11.7%**	**11.7%**	**7.9%**	**3.1%**	**6.4%**	**5.5%**
Coal	1	1	3	14	16	24	31	-1.0%	17.4%	15.9%	1.2%	4.3%	2.6%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	1	2	2	4	5	9	16	8.2%	2.2%	7.7%	2.3%	6.6%	5.4%
Gas	0	1	6	9	9	10	7	n.s.	19.4%	3.2%	0.6%	0.7%	-3.9%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	0	0	0	0	0	0	n.s.	n.s.	16.4%	9.3%	9.1%	2.6%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	1	3	8	15	15	16	16	16.6%	9.7%	6.3%	0.5%	0.4%	-0.1%
Wind	0	0	0	0	3	10	29	n.s.	n.s.	45.9%	21.9%	15.3%	10.8%
Solar	0	0	0	0	8	34	80	n.s.	n.s.	n.s.	n.s.	15.0%	8.9%
Other	0	0	0	0	0	2	3	3.4%	0.0%	3.0%	12.6%	18.0%	5.8%
Total Final Consumption[2] (Mtoe)	**16**	**25**	**48**	**77**	**94**	**109**	**118**	**4.6%**	**6.8%**	**4.8%**	**2.1%**	**1.5%**	**0.8%**
Coal	1	3	10	19	23	25	25	9.2%	11.8%	6.8%	2.1%	0.6%	0.1%
Oil	2	7	17	23	27	32	33	10.8%	9.8%	3.5%	1.5%	1.6%	0.4%
Gas	0	0	0	2	3	5	8	n.s.	39.2%	15.7%	5.1%	4.0%	4.8%
Electricity	1	2	7	14	22	30	39	13.7%	14.5%	6.8%	4.0%	3.4%	2.6%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	13.5%
Biomass & Other	12	13	14	18	19	17	12	1.2%	0.3%	2.5%	0.5%	-1.0%	-3.0%
Industry (incl. non-energy use)	**5**	**8**	**20**	**39**	**52**	**62**	**71**	**5.8%**	**9.4%**	**7.0%**	**3.0%**	**1.8%**	**1.3%**
Coal	1	2	8	17	22	23	24	8.5%	13.4%	7.7%	2.4%	0.7%	0.2%
Oil	0	2	4	7	9	12	14	13.2%	10.3%	4.8%	3.0%	2.3%	1.6%
Gas	0	0	0	2	2	3	5	n.s.	39.2%	12.9%	3.0%	3.4%	4.2%
Electricity	0	1	4	8	14	20	25	12.3%	17.7%	7.6%	5.1%	3.7%	2.5%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	3	3	3	4	5	4	3	1.3%	-2.1%	5.3%	1.1%	-1.7%	-3.0%
Buildings	**10**	**13**	**18**	**23**	**25**	**26**	**26**	**2.9%**	**3.1%**	**2.6%**	**0.7%**	**0.6%**	**-0.2%**
Coal	0	1	2	2	2	2	1	14.3%	6.2%	0.7%	-0.4%	-0.7%	-1.0%
Oil	0	1	2	2	1	1	1	11.7%	4.6%	0.1%	-2.2%	0.2%	0.7%
Gas	0	0	0	0	1	2	2	n.s.	n.s.	n.s.	9.9%	3.3%	2.4%
Electricity	0	1	3	6	7	10	13	15.9%	12.1%	5.8%	2.2%	2.8%	2.7%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	13.5%
Biomass & Other	9	10	11	13	13	12	8	1.2%	1.0%	1.7%	0.0%	-0.9%	-3.8%
Agriculture	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**5.4%**	**3.8%**	**3.4%**	**2.3%**	**1.6%**	**1.2%**
Coal	0	0	0	0	0	0	0	-9.4%	-2.0%	2.1%	0.0%	0.0%	0.0%
Oil	0	0	1	1	1	1	1	8.8%	4.2%	2.1%	2.1%	1.4%	0.9%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Electricity	0	0	0	0	0	0	0	4.0%	3.5%	9.6%	3.1%	2.4%	1.9%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Transport	**1**	**3**	**10**	**14**	**16**	**19**	**21**	**9.7%**	**11.2%**	**3.5%**	**1.4%**	**1.6%**	**0.6%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	1	3	10	14	16	18	17	9.9%	11.2%	3.5%	1.0%	1.4%	-0.5%
Gas	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	16.7%	13.2%
Electricity	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	41.4%	13.1%	8.0%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	1	1	1	n.s.	n.s.	n.s.	19.0%	0.6%	7.9%
Other Energy Transformation & Losses[3]	**1**	**1**	**6**	**5**	**9**	**9**	**9**	**2.4%**	**23.6%**	**-2.6%**	**5.8%**	**0.1%**	**0.5%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Rest South Asia	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	263	334	400	472	542	602	651	2.4%	1.8%	1.7%	1.4%	1.1%	0.8%
GDP per capita (ppp, k$'15)	1	2	2	3	6	9	14	1.9%	3.4%	3.6%	5.4%	5.1%	4.4%
Prices													
International/Regional ($'15/boe)													
Coal	3	1	3	4	4	5	5	-7.8%	10.3%	0.9%	1.8%	1.0%	0.6%
Oil	39	38	86	91	89	96	107	-0.2%	8.4%	0.5%	-0.2%	0.8%	1.0%
Gas	28	26	46	73	84	97	101	-0.7%	5.8%	4.7%	1.5%	1.5%	0.3%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**463**	**572**	**718**	**895**	**1 134**	**1 367**	**1 539**	**2.1%**	**2.3%**	**2.2%**	**2.4%**	**1.9%**	**1.2%**
Total GHG (energy, industry, agriculture)	**373**	**481**	**668**	**869**	**1 103**	**1 351**	**1 531**	**2.6%**	**3.3%**	**2.7%**	**2.4%**	**2.0%**	**1.3%**
CO_2	84	152	245	406	597	799	923	6.1%	4.9%	5.2%	3.9%	2.9%	1.5%
CH_4	249	279	344	376	407	439	482	1.1%	2.1%	0.9%	0.8%	0.7%	0.9%
N_2O	38	50	78	85	97	111	123	2.7%	4.6%	0.9%	1.3%	1.4%	1.0%
F gases	1	0	1	2	2	3	4	-10.1%	11.6%	4.4%	2.3%	3.8%	2.7%
Total GHG from Energy and Industry	**144**	**234**	**348**	**534**	**760**	**1 004**	**1 173**	**5.0%**	**4.0%**	**4.4%**	**3.6%**	**2.8%**	**1.6%**
CO_2 Emissions from Fuel Comb.	**75**	**135**	**217**	**368**	**538**	**718**	**822**	**6.1%**	**4.8%**	**5.4%**	**3.9%**	**2.9%**	**1.4%**
Power generation/District heating	20	45	68	158	236	339	364	8.4%	4.3%	8.8%	4.1%	3.7%	0.7%
Industry	19	28	49	60	75	95	125	3.7%	6.0%	1.9%	2.3%	2.3%	2.8%
Buildings	12	18	26	42	61	68	84	3.5%	4.1%	4.9%	3.8%	1.1%	2.0%
Agriculture	2	3	3	4	6	8	9	3.2%	2.8%	2.8%	3.3%	2.5%	1.8%
Transport	20	38	63	90	136	162	168	6.9%	5.3%	3.5%	4.2%	1.8%	0.3%
Other	2	5	7	13	23	45	73	10.4%	3.0%	7.3%	5.6%	6.9%	4.8%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Energy Balance, by fuel (Mtoe)													
Primary Production	**56**	**77**	**116**	**122**	**120**	**138**	**174**	**3.1%**	**4.2%**	**0.5%**	**-0.2%**	**1.5%**	**2.3%**
Coal	1	1	2	3	5	9	13	2.0%	5.1%	2.7%	6.9%	5.6%	3.5%
Oil	3	3	3	3	3	5	6	0.8%	1.2%	-2.5%	0.8%	5.3%	3.5%
Natural gas	15	26	52	66	59	53	53	6.0%	7.2%	2.4%	-1.1%	-1.1%	-0.1%
Biomass	36	44	53	45	41	35	29	2.1%	1.9%	-1.7%	-1.0%	-1.5%	-2.0%
Nuclear[1]	0	0	0	1	1	3	6	21.2%	5.5%	6.5%	8.0%	9.4%	6.9%
Hydro	2	2	4	5	6	7	8	0.4%	7.0%	0.9%	2.6%	1.6%	1.2%
Other renewables	0	0	0	0	4	26	59	n.s.	n.s.	51.2%	27.1%	20.2%	8.6%
Net Imports	**10**	**22**	**21**	**65**	**120**	**174**	**200**						
Coal	1	1	4	9	18	33	51						
Oil	12	25	29	61	96	126	122						
Natural gas	- 1	- 2	- 9	- 7	6	14	27						
Biomass	0	0	0	3	0	0	0						
Biofuels	0	0	0	0	0	0	0						
Electricity	- 1	- 1	- 3	0	0	0	0						
Primary Energy Demand[2]	**67**	**99**	**136**	**187**	**240**	**312**	**374**	4.0%	**3.3%**	**3.2%**	**2.5%**	**2.7%**	**1.8%**
Coal	2	2	6	11	23	42	64	0.7%	9.1%	7.1%	7.5%	6.2%	4.2%
Oil	14	27	32	63	99	131	129	6.7%	1.5%	7.1%	4.5%	2.9%	-0.2%
Natural gas	13	24	43	59	66	68	80	5.9%	6.2%	3.1%	1.0%	0.3%	1.6%
Biomass	36	44	53	48	41	35	29	2.1%	1.9%	-1.1%	-1.5%	-1.5%	-2.0%
Nuclear[1]	0	0	0	1	1	3	6	21.2%	5.5%	6.5%	8.0%	9.4%	6.9%
Hydro	2	2	4	5	6	7	8	0.4%	7.0%	0.9%	2.6%	1.6%	1.2%
Other renewables	0	0	0	0	4	26	59	n.s.	n.s.	51.2%	27.1%	20.2%	8.6%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**67**	**99**	**136**	**187**	**240**	**312**	**374**	**4.0%**	**3.3%**	**3.2%**	**2.5%**	**2.7%**	**1.8%**
Energy for Power Generation	**10**	**19**	**30**	**61**	**89**	**144**	**187**	**6.6%**	**4.9%**	**7.3%**	**3.9%**	**4.9%**	**2.7%**
Other Energy Transformation & Losses	**0**	**2**	**2**	**8**	**15**	**17**	**26**	**n.s.**	**-4.4%**	**17.5%**	**6.9%**	**1.3%**	**4.2%**
Final consumption	**60**	**84**	**116**	**141**	**173**	**218**	**268**	**3.4%**	**3.3%**	**2.0%**	**2.1%**	**2.4%**	**2.1%**
Steel, Non-Met. Minerals and Chem.	3	4	7	9	11	14	16	2.7%	5.0%	2.4%	2.5%	2.0%	1.6%
Other Industry	7	11	19	23	29	39	44	5.0%	5.4%	1.8%	2.6%	2.9%	1.2%
Non-Energy Use	4	5	5	5	6	7	8	4.2%	-0.4%	0.2%	1.6%	1.5%	1.5%
Residential	38	48	60	65	61	67	76	2.4%	2.4%	0.7%	-0.6%	1.0%	1.2%
Services	1	2	3	6	11	23	42	5.1%	5.1%	5.8%	6.1%	7.7%	6.0%
Agriculture	1	1	2	2	4	5	6	2.0%	4.1%	2.8%	3.7%	2.9%	2.2%
Road	6	10	17	28	47	59	71	6.0%	5.0%	5.2%	5.2%	2.2%	1.9%
Rail	0	0	0	1	1	1	1	1.5%	0.4%	2.9%	1.9%	2.2%	2.1%
Aviation	0	1	1	1	1	1	1	16.2%	0.1%	-0.8%	3.0%	1.6%	0.7%
Other Transport	0	0	1	1	1	2	3	5.2%	10.5%	2.5%	5.9%	5.1%	4.0%

[1] Nuclear energy is accounted as primary electricity

Rest South Asia	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**8**	**16**	**25**	**55**	**78**	**108**	**115**	**7.8%**	**4.6%**	**8.0%**	**3.5%**	**3.4%**	**0.6%**
Coal	0	0	0	5	13	25	37	17.8%	12.7%	32.3%	10.4%	6.6%	3.7%
Oil	2	8	10	25	40	59	52	12.5%	2.1%	10.1%	4.7%	3.9%	-1.2%
Gas	5	8	16	25	24	22	23	4.8%	6.3%	4.9%	-0.3%	-0.7%	0.2%
Biomass & Waste	0	0	0	0	0	2	3	n.s.	n.s.	15.5%	12.1%	20.1%	5.9%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**52**	**95**	**157**	**326**	**508**	**910**	**1 394**	**6.2%**	**5.2%**	**7.6%**	**4.5%**	**6.0%**	**4.4%**
Coal	0	0	1	19	62	126	191	20.3%	13.6%	36.0%	12.7%	7.5%	4.2%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	8	32	40	126	191	278	247	14.2%	2.3%	12.1%	4.3%	3.8%	-1.2%
Gas	19	36	64	106	108	104	116	6.4%	5.9%	5.3%	0.1%	-0.3%	1.0%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	0	0	0	1	8	16	n.s.	n.s.	19.7%	18.8%	22.3%	6.4%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	2	3	6	14	34	66	21.2%	5.5%	6.5%	7.9%	9.4%	6.9%
Hydro	24	25	49	59	77	90	100	0.4%	7.0%	1.9%	2.6%	1.6%	1.1%
Wind	0	0	0	3	28	107	233	n.s.	33.3%	51.4%	23.6%	14.4%	8.0%
Solar	0	0	0	1	18	141	380	n.s.	7.8%	50.6%	33.5%	22.7%	10.4%
Other	0	0	0	5	10	21	46	n.s.	n.s.	n.s.	7.3%	7.9%	8.2%
Generation Capacity (GW_e)	**13**	**24**	**34**	**63**	**114**	**267**	**522**	**6.5%**	**3.7%**	**6.3%**	**6.2%**	**8.9%**	**6.9%**
Coal	0	0	0	2	8	16	26	0.0%	10.7%	19.5%	12.3%	7.4%	5.1%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	3	5	7	21	42	80	132	4.7%	3.4%	11.8%	7.4%	6.5%	5.2%
Gas	4	11	16	21	19	17	23	9.9%	3.6%	3.0%	-1.1%	-0.9%	3.1%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	0	0	0	0	1	2	n.s.	n.s.	9.3%	17.0%	22.4%	7.1%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	1	2	5	10	13.7%	0.0%	8.4%	7.7%	9.1%	6.7%
Hydro	5	7	11	15	18	21	24	3.7%	4.0%	3.3%	2.2%	1.4%	1.1%
Wind	0	0	0	1	10	37	76	n.s.	29.9%	42.1%	22.4%	13.6%	7.4%
Solar	0	0	0	1	14	90	227	n.s.	n.s.	35.4%	27.4%	20.5%	9.8%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	18.0%	12.9%
Total Final Consumption[2] (Mtoe)	**60**	**84**	**116**	**141**	**173**	**218**	**268**	**3.4%**	**3.3%**	**2.0%**	**2.1%**	**2.4%**	**2.1%**
Coal	2	2	5	6	8	12	17	0.3%	9.0%	1.6%	3.1%	3.1%	3.7%
Oil	11	18	22	37	57	68	72	5.0%	1.5%	5.5%	4.4%	1.9%	0.6%
Gas	8	14	26	31	37	41	51	5.7%	6.5%	1.8%	2.0%	0.9%	2.2%
Electricity	3	6	11	22	34	61	95	6.1%	6.5%	7.1%	4.5%	6.1%	4.5%
Heat	0	0	0	0	0	5	6	n.s.	n.s.	n.s.	n.s.	40.4%	3.5%
Biomass & Other	36	43	52	45	36	31	27	2.0%	1.9%	-1.5%	-2.2%	-1.4%	-1.3%
Industry (incl. non-energy use)	**14**	**21**	**31**	**37**	**47**	**60**	**68**	**4.3%**	**4.1%**	**1.7%**	**2.4%**	**2.5%**	**1.3%**
Coal	2	2	5	6	8	11	16	0.5%	8.5%	1.7%	3.3%	3.3%	3.8%
Oil	2	3	2	4	5	7	11	6.0%	-4.1%	5.1%	3.2%	3.8%	3.9%
Gas	6	9	15	16	18	19	20	4.8%	4.9%	0.8%	1.1%	0.6%	0.5%
Electricity	1	2	4	6	8	11	14	4.6%	7.4%	4.7%	2.3%	2.8%	2.6%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	3	4	5	5	7	11	7	4.2%	2.0%	-0.4%	4.6%	4.6%	-4.6%
Buildings	**39**	**50**	**64**	**71**	**72**	**91**	**118**	**2.5%**	**2.6%**	**1.0%**	**0.2%**	**2.3%**	**2.7%**
Coal	0	0	0	0	0	0	0	-11.7%	31.8%	0.0%	-0.8%	-1.1%	-1.4%
Oil	2	2	2	3	6	8	11	-0.1%	-2.0%	4.9%	6.6%	3.7%	3.0%
Gas	2	4	8	13	18	18	20	7.8%	6.4%	5.1%	3.0%	-0.2%	1.5%
Electricity	2	3	6	14	22	41	66	8.4%	6.0%	8.8%	4.5%	6.5%	4.7%
Heat	0	0	0	0	0	5	6	n.s.	n.s.	n.s.	n.s.	40.4%	3.5%
Biomass & Other	33	40	48	40	26	19	15	1.9%	1.9%	-1.7%	-4.1%	-3.3%	-2.5%
Agriculture	**1**	**1**	**2**	**2**	**4**	**5**	**6**	**2.0%**	**4.1%**	**2.8%**	**3.7%**	**2.9%**	**2.2%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	1	1	1	1	2	2	3	3.1%	2.8%	2.8%	3.3%	2.5%	1.8%
Gas	0	0	0	0	0	0	0	n.s.	2.9%	3.0%	3.1%	2.3%	1.6%
Electricity	0	0	1	1	2	2	3	0.1%	6.0%	2.8%	4.1%	3.3%	2.6%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Transport	**7**	**12**	**19**	**30**	**50**	**63**	**76**	**6.3%**	**4.7%**	**4.8%**	**5.1%**	**2.3%**	**1.9%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	7	12	16	29	44	50	48	6.3%	3.2%	5.8%	4.3%	1.4%	-0.6%
Gas	0	0	3	1	1	4	10	n.s.	n.s.	-7.6%	2.1%	11.6%	9.1%
Electricity	0	0	0	0	2	7	12	-7.2%	n.s.	n.s.	33.1%	13.2%	6.1%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	3	1	6	n.s.	n.s.	n.s.	24.4%	-7.1%	16.1%
Other Energy Transformation & Losses[3]	**0**	**2**	**2**	**8**	**15**	**17**	**26**	**n.s.**	**-4.4%**	**17.5%**	**6.9%**	**1.3%**	**4.2%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Rest South East Asia	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	163	194	221	248	269	284	293	1.8%	1.3%	1.1%	0.8%	0.6%	0.3%
GDP per capita (ppp, k$'15)	2	3	4	5	6	8	9	2.8%	4.0%	2.9%	2.0%	2.1%	2.2%
Prices													
International/Regional ($'15/boe)													
Coal	3	1	3	4	5	5	6	-7.8%	10.3%	1.2%	2.1%	1.7%	0.9%
Oil	39	38	86	91	89	96	107	-0.2%	8.4%	0.5%	-0.2%	0.8%	1.0%
Gas	28	26	46	73	84	97	101	-0.7%	5.8%	4.7%	1.5%	1.5%	0.3%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**737**	**991**	**1 237**	**1 371**	**1 500**	**1 433**	**1 389**	**3.0%**	**2.2%**	**1.0%**	**0.9%**	**-0.5%**	**-0.3%**
Total GHG (energy, industry, agriculture)	**558**	**703**	**825**	**945**	**1 054**	**1 060**	**1 040**	**2.3%**	**1.6%**	**1.4%**	**1.1%**	**0.1%**	**-0.2%**
CO_2	353	463	530	592	596	552	515	2.8%	1.4%	1.1%	0.1%	-0.8%	-0.7%
CH_4	169	185	233	278	368	406	412	0.9%	2.4%	1.7%	2.9%	1.0%	0.1%
N_2O	35	44	45	51	59	61	64	2.5%	0.1%	1.4%	1.4%	0.4%	0.4%
F gases	3	11	17	24	32	40	49	15.0%	4.7%	3.6%	2.6%	2.4%	2.1%
Total GHG from Energy and Industry	**414**	**545**	**635**	**729**	**795**	**789**	**755**	**2.8%**	**1.6%**	**1.4%**	**0.9%**	**-0.1%**	**-0.4%**
CO_2 Emissions from Fuel Comb.	**317**	**431**	**491**	**541**	**536**	**485**	**440**	**3.1%**	**1.3%**	**1.0%**	**-0.1%**	**-1.0%**	**-1.0%**
Power generation/District heating	88	180	228	250	231	179	132	7.4%	2.4%	0.9%	-0.8%	-2.6%	-3.0%
Industry	127	110	121	126	138	135	128	-1.4%	1.0%	0.4%	0.9%	-0.3%	-0.5%
Buildings	30	31	32	34	35	36	39	0.4%	0.3%	0.5%	0.3%	0.2%	0.7%
Agriculture	4	4	2	3	3	4	4	-0.6%	-5.7%	3.5%	1.1%	1.0%	0.9%
Transport	47	74	78	96	97	97	95	4.5%	0.6%	2.1%	0.0%	0.0%	-0.2%
Other	20	31	28	31	32	36	44	4.7%	-1.2%	1.1%	0.3%	1.1%	2.2%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Energy Balance, by fuel (Mtoe)													
Primary Production	**80**	**82**	**114**	**121**	**341**	**426**	**307**	**0.2%**	**3.4%**	**0.6%**	**10.9%**	**2.3%**	**-3.2%**
Coal	27	20	39	37	222	288	151	-3.2%	7.1%	-0.7%	19.8%	2.7%	-6.3%
Oil	8	10	10	6	7	11	12	2.1%	-0.3%	-4.9%	1.4%	4.8%	1.0%
Natural gas	9	13	24	30	29	30	39	3.3%	6.4%	2.3%	-0.3%	0.4%	2.5%
Biomass	25	23	26	34	53	46	35	-0.8%	1.0%	2.8%	4.6%	-1.3%	-2.9%
Nuclear[1]	3	3	4	3	3	3	2	1.6%	0.8%	-2.5%	0.8%	0.8%	-7.3%
Hydro	3	2	3	5	8	12	17	-0.7%	1.8%	4.8%	5.3%	4.3%	3.8%
Other renewables	5	10	9	8	19	35	51	7.9%	-1.4%	-1.4%	9.4%	6.6%	3.8%
Net Imports	**54**	**94**	**103**	**130**	**- 65**	**- 146**	**- 20**						
Coal	15	34	28	27	- 154	- 229	- 103						
Oil	44	67	71	97	96	91	85						
Natural gas	- 6	- 3	3	6	5	0	1						
Biomass	0	0	0	0	- 13	- 10	- 4						
Biofuels	0	0	0	0	0	0	0						
Electricity	0	- 3	1	1	1	1	1						
Primary Energy Demand[2]	**134**	**176**	**217**	**252**	**275**	**280**	**287**	2.8%	**2.1%**	**1.5%**	**0.9%**	**0.2%**	**0.2%**
Coal	43	53	68	64	68	60	48	2.3%	2.4%	-0.6%	0.7%	-1.3%	-2.1%
Oil	53	77	81	103	103	102	97	3.8%	0.5%	2.4%	0.0%	-0.1%	-0.5%
Natural gas	4	10	27	36	34	31	40	10.0%	10.9%	2.8%	-0.7%	-1.0%	2.7%
Biomass	25	23	26	33	40	36	30	-0.8%	1.0%	2.6%	2.0%	-1.0%	-1.8%
Nuclear[1]	3	3	4	3	3	3	2	1.6%	0.8%	-2.5%	0.8%	0.8%	-7.3%
Hydro	3	2	3	5	8	12	17	-0.7%	1.8%	4.8%	5.3%	4.3%	3.8%
Other renewables	5	10	9	8	19	35	51	7.9%	-1.4%	-1.4%	9.4%	6.6%	3.8%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**134**	**176**	**217**	**252**	**275**	**280**	**287**	**2.8%**	**2.1%**	**1.5%**	**0.9%**	**0.2%**	**0.2%**
Energy for Power Generation	**36**	**69**	**85**	**95**	**102**	**105**	**111**	**6.6%**	**2.2%**	**1.1%**	**0.7%**	**0.3%**	**0.5%**
Other Energy Transformation & Losses	**10**	**11**	**13**	**19**	**25**	**24**	**24**	**0.7%**	**2.3%**	**3.6%**	**2.8%**	**-0.6%**	**-0.2%**
Final consumption	**101**	**119**	**150**	**176**	**193**	**203**	**211**	**1.6%**	**2.4%**	**1.6%**	**1.0%**	**0.5%**	**0.4%**
Steel, Non-Met. Minerals and Chem.	14	18	23	28	31	31	30	2.4%	2.4%	2.0%	1.3%	-0.1%	-0.3%
Other Industry	27	25	28	30	33	35	37	-0.9%	1.3%	0.6%	0.9%	0.5%	0.7%
Non-Energy Use	6	11	28	33	38	42	46	5.7%	9.8%	1.7%	1.6%	1.0%	0.8%
Residential	26	28	29	33	34	34	33	0.5%	0.6%	1.2%	0.3%	0.0%	-0.1%
Services	9	11	14	16	18	21	23	2.0%	2.4%	1.4%	1.1%	1.3%	1.2%
Agriculture	1	1	1	1	2	2	2	-0.1%	-3.2%	3.6%	1.5%	1.4%	1.3%
Road	14	22	24	30	32	32	33	4.4%	0.8%	2.5%	0.5%	0.1%	0.1%
Rail	0	0	1	1	1	1	1	0.5%	11.1%	4.7%	0.9%	0.9%	0.9%
Aviation	1	1	1	1	2	3	3	5.4%	-4.5%	9.2%	4.7%	2.0%	1.3%
Other Transport	1	1	1	1	2	2	2	5.6%	-0.8%	0.4%	1.5%	1.0%	0.8%

[1] Nuclear energy is accounted as primary electricity

Rest South East Asia	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**26**	**53**	**70**	**80**	**72**	**55**	**41**	**7.4%**	**2.9%**	**1.3%**	**-1.0%**	**-2.7%**	**-2.9%**
Coal	12	29	40	37	40	33	24	9.6%	3.1%	-0.7%	0.7%	-1.7%	-3.1%
Oil	12	16	7	11	7	6	3	2.4%	-7.6%	4.8%	-4.7%	-2.3%	-4.6%
Gas	1	6	21	29	22	12	10	18.2%	12.9%	3.3%	-2.6%	-5.7%	-1.6%
Biomass & Waste	0	1	2	2	2	2	0	11.5%	9.0%	3.0%	-0.3%	-2.5%	-13.9%
Other	0	1	1	1	1	2	3	7.8%	-1.6%	-2.7%	6.4%	4.8%	3.3%
Gross Elec. Generation (TWh_e)	**168**	**297**	**405**	**483**	**534**	**613**	**707**	**5.9%**	**3.2%**	**1.8%**	**1.0%**	**1.4%**	**1.4%**
Coal	41	116	161	149	161	137	99	11.1%	3.3%	-0.8%	0.8%	-1.7%	-3.1%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	53	67	29	52	32	26	16	2.3%	-8.0%	6.1%	-4.8%	-2.3%	-4.5%
Gas	3	28	117	168	129	71	60	23.7%	15.2%	3.6%	-2.6%	-5.7%	-1.7%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	1	2	5	6	6	5	1	13.8%	8.4%	1.7%	0.4%	-2.1%	-11.9%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	33	39	42	32	35	38	18	1.6%	0.8%	-2.5%	0.8%	0.8%	-7.3%
Hydro	32	32	37	61	93	142	204	0.2%	1.3%	5.1%	4.4%	4.3%	3.7%
Wind	0	0	1	6	26	57	86	n.s.	n.s.	18.2%	16.8%	8.1%	4.2%
Solar	0	0	0	2	37	110	177	n.s.	41.4%	47.9%	36.8%	11.6%	4.9%
Other	6	13	14	8	15	28	46	8.7%	0.7%	-5.4%	6.8%	6.5%	5.1%
Generation Capacity (GW_e)	**41**	**69**	**93**	**111**	**156**	**223**	**292**	**5.3%**	**3.1%**	**1.7%**	**3.5%**	**3.7%**	**2.7%**
Coal	11	22	28	28	27	22	15	7.3%	2.2%	0.1%	-0.3%	-2.1%	-3.8%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	13	19	12	11	8	5	9	4.1%	-4.7%	-0.7%	-3.6%	-3.2%	5.7%
Gas	2	7	26	31	31	24	18	16.5%	14.0%	1.5%	0.0%	-2.3%	-3.1%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	1	1	1	1	1	0	23.2%	4.2%	-3.4%	0.6%	-0.9%	-13.1%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	5	5	5	5	5	6	3	0.0%	0.2%	0.3%	0.6%	0.6%	-7.5%
Hydro	10	13	19	28	45	66	95	2.4%	3.9%	4.2%	4.7%	4.0%	3.7%
Wind	0	0	1	2	10	21	30	n.s.	n.s.	16.6%	15.7%	7.4%	3.6%
Solar	0	0	0	3	26	73	116	n.s.	n.s.	29.0%	25.5%	10.8%	4.7%
Other	1	2	2	2	3	5	6	8.0%	0.2%	-2.4%	6.5%	4.8%	3.4%
Total Final Consumption[2] (Mtoe)	**101**	**119**	**150**	**176**	**193**	**203**	**211**	**1.6%**	**2.4%**	**1.6%**	**1.0%**	**0.5%**	**0.4%**
Coal	30	23	27	25	26	25	22	-2.7%	1.7%	-0.9%	0.6%	-0.8%	-1.2%
Oil	34	51	66	81	85	85	81	4.0%	2.5%	2.1%	0.5%	0.0%	-0.5%
Gas	1	2	4	7	11	18	28	5.5%	8.0%	4.6%	5.1%	4.7%	4.7%
Electricity	12	21	30	36	40	46	52	5.8%	3.5%	1.7%	1.1%	1.4%	1.4%
Heat	1	1	1	2	2	3	3	-2.9%	4.0%	5.7%	3.4%	2.0%	0.3%
Biomass & Other	22	21	22	26	29	27	25	-0.7%	0.5%	1.9%	1.0%	-0.6%	-0.7%
Industry (incl. non-energy use)	**48**	**54**	**79**	**91**	**103**	**108**	**113**	**1.2%**	**3.9%**	**1.4%**	**1.3%**	**0.5%**	**0.4%**
Coal	26	19	23	22	24	22	20	-2.9%	2.0%	-0.4%	0.7%	-0.8%	-1.2%
Oil	14	21	35	42	47	48	46	4.2%	5.2%	1.8%	1.2%	0.2%	-0.4%
Gas	1	1	3	4	7	11	18	6.6%	10.6%	3.9%	4.4%	5.3%	5.0%
Electricity	6	10	15	18	21	23	27	5.0%	3.6%	2.1%	1.3%	1.1%	1.3%
Heat	0	0	0	0	0	0	0	-3.6%	0.7%	1.3%	-0.2%	-0.3%	-0.2%
Biomass & Other	1	2	2	4	4	4	3	7.7%	2.8%	4.5%	1.4%	-2.0%	-2.7%
Buildings	**36**	**39**	**44**	**49**	**52**	**55**	**57**	**0.9%**	**1.2%**	**1.2%**	**0.6%**	**0.5%**	**0.4%**
Coal	5	4	4	3	3	2	2	-1.6%	0.4%	-4.2%	-0.4%	-0.7%	-1.0%
Oil	3	4	4	6	5	4	5	2.6%	-0.3%	2.9%	-1.6%	-0.9%	0.3%
Gas	1	1	1	2	4	5	7	4.3%	3.4%	6.6%	5.7%	2.6%	2.2%
Electricity	5	11	14	16	17	20	22	6.9%	3.2%	1.2%	0.7%	1.2%	1.2%
Heat	1	0	1	1	2	2	2	-2.5%	5.3%	6.8%	3.9%	2.2%	0.4%
Biomass & Other	21	19	19	21	21	20	19	-1.2%	0.1%	1.1%	0.1%	-0.4%	-0.8%
Agriculture	**1**	**1**	**1**	**1**	**2**	**2**	**2**	**-0.1%**	**-3.2%**	**3.6%**	**1.5%**	**1.4%**	**1.3%**
Coal	0	0	0	0	0	0	0	-32.8%	12.8%	4.7%	0.0%	0.0%	0.0%
Oil	1	1	1	1	1	1	1	0.0%	-5.7%	3.5%	1.2%	1.0%	0.9%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Electricity	0	0	0	1	1	1	1	1.5%	4.7%	3.9%	2.2%	2.0%	1.9%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	4.3%	7.0%	2.9%	0.0%	0.0%	0.0%
Transport	**16**	**25**	**26**	**34**	**37**	**38**	**39**	**4.4%**	**0.7%**	**2.6%**	**0.7%**	**0.3%**	**0.3%**
Coal	0	0	0	0	0	0	0	-4.4%	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	16	24	26	33	32	32	30	4.4%	0.5%	2.4%	0.0%	-0.2%	-0.8%
Gas	0	0	0	0	0	1	3	n.s.	n.s.	-11.9%	26.4%	15.0%	10.6%
Electricity	0	0	0	0	1	2	3	7.5%	15.5%	3.9%	7.6%	7.0%	4.2%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	1	3	3	4	n.s.	n.s.	19.0%	10.6%	-0.4%	1.7%
Other Energy Transformation & Losses[3]	**10**	**11**	**13**	**19**	**25**	**24**	**24**	**0.7%**	**2.3%**	**3.6%**	**2.8%**	**-0.6%**	**-0.2%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Australia	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	17	19	22	25	28	30	33	1.1%	1.5%	1.3%	1.0%	0.8%	0.8%
GDP per capita (ppp, k$'15)	29	35	41	48	57	68	80	2.2%	1.5%	1.5%	1.7%	1.9%	1.6%
Prices													
International/Regional ($'15/boe)													
Coal	3	1	3	4	4	5	5	-7.8%	10.3%	1.7%	1.4%	1.1%	0.9%
Oil	39	38	86	91	89	96	107	-0.2%	8.4%	0.5%	-0.2%	0.8%	1.0%
Gas	28	26	46	73	84	97	101	-0.7%	5.8%	4.7%	1.5%	1.5%	0.3%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**575**	**505**	**467**	**467**	**375**	**339**	**335**	**-1.3%**	**-0.8%**	**0.0%**	**-2.2%**	**-1.0%**	**-0.1%**
Total GHG (energy, industry, agriculture)	**435**	**504**	**556**	**547**	**464**	**439**	**432**	**1.5%**	**1.0%**	**-0.2%**	**-1.6%**	**-0.6%**	**-0.2%**
CO_2	274	352	409	412	351	323	313	2.5%	1.5%	0.1%	-1.6%	-0.8%	-0.3%
CH_4	133	124	112	101	83	84	84	-0.7%	-1.0%	-1.1%	-1.9%	0.1%	0.1%
N_2O	22	25	27	23	22	21	21	1.4%	0.5%	-1.5%	-0.4%	-0.3%	-0.2%
F gases	6	3	9	12	9	11	14	-6.8%	10.7%	3.2%	-3.0%	2.5%	2.1%
Total GHG from Energy and Industry	**336**	**410**	**475**	**469**	**386**	**360**	**352**	**2.0%**	**1.5%**	**-0.1%**	**-1.9%**	**-0.7%**	**-0.2%**
CO_2 Emissions from Fuel Comb.	**256**	**331**	**385**	**389**	**328**	**299**	**287**	**2.6%**	**1.5%**	**0.1%**	**-1.7%**	**-0.9%**	**-0.4%**
Power generation/District heating	129	180	206	186	139	107	91	3.4%	1.4%	-1.0%	-2.8%	-2.6%	-1.7%
Industry	43	48	42	45	41	45	53	1.2%	-1.4%	0.8%	-0.9%	1.0%	1.5%
Buildings	9	11	13	15	15	15	14	2.1%	1.8%	1.2%	0.0%	0.1%	-0.5%
Agriculture	3	4	6	7	6	6	6	2.2%	3.9%	0.6%	-0.4%	-0.5%	-0.6%
Transport	59	71	87	95	84	76	69	1.9%	2.0%	0.9%	-1.2%	-0.9%	-1.0%
Other	13	17	32	43	43	48	54	2.9%	6.6%	3.0%	0.0%	1.3%	1.1%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**56.4%**	**18.5%**
Coal	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	n.s.	18.6%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	6.7%	11.6%
Energy Balance, by fuel (Mtoe)													
Primary Production	**173**	**219**	**306**	**374**	**425**	**443**	**446**	**2.4%**	**3.4%**	**2.0%**	**1.3%**	**0.4%**	**0.1%**
Coal	126	163	236	290	322	333	327	2.6%	3.7%	2.1%	1.0%	0.3%	-0.2%
Oil	25	24	20	29	24	19	10	-0.6%	-1.5%	3.7%	-1.8%	-2.6%	-6.5%
Natural gas	17	25	42	36	48	57	75	4.2%	5.4%	-1.7%	2.9%	1.9%	2.7%
Biomass	4	5	5	13	20	17	13	2.4%	0.4%	9.9%	4.2%	-1.6%	-2.7%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	31.6%	9.5%	4.0%
Hydro	1	1	1	1	2	2	2	1.5%	-1.9%	2.4%	1.0%	0.3%	0.1%
Other renewables	0	0	1	4	8	14	19	-1.4%	23.2%	17.3%	9.0%	5.3%	2.8%
Net Imports	**- 86**	**- 111**	**- 179**	**- 251**	**- 311**	**- 331**	**- 334**						
Coal	- 91	- 116	- 186	- 242	- 286	- 301	- 295						
Oil	7	10	21	14	14	16	20						
Natural gas	- 2	- 6	- 14	- 16	- 28	- 37	- 53						
Biomass	0	0	0	- 6	- 11	- 8	- 5						
Biofuels	0	0	0	0	0	0	0						
Electricity	0	0	0	0	0	0	0						
Primary Energy Demand[2]	**88**	**108**	**127**	**123**	**114**	**112**	**112**	2.1%	**1.7%**	**-0.3%**	**-0.8%**	**-0.2%**	**0.0%**
Coal	35	48	50	48	36	32	32	3.0%	0.4%	-0.4%	-2.7%	-1.4%	0.2%
Oil	33	34	42	44	38	35	29	0.5%	2.0%	0.5%	-1.3%	-1.0%	-1.6%
Natural gas	14	19	28	20	20	20	22	2.9%	4.0%	-3.6%	-0.1%	0.3%	0.8%
Biomass	4	5	5	7	9	9	8	2.4%	0.4%	3.3%	2.6%	0.0%	-1.6%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	31.6%	9.5%	4.0%
Hydro	1	1	1	1	2	2	2	1.5%	-1.9%	2.4%	1.0%	0.3%	0.1%
Other renewables	0	0	1	4	8	14	19	-1.4%	23.2%	17.3%	9.0%	5.3%	2.8%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**88**	**108**	**127**	**123**	**114**	**112**	**112**	**2.1%**	**1.7%**	**-0.3%**	**-0.8%**	**-0.2%**	**0.0%**
Energy for Power Generation	**36**	**49**	**59**	**57**	**50**	**47**	**47**	**3.1%**	**1.8%**	**-0.4%**	**-1.2%**	**-0.6%**	**-0.1%**
Other Energy Transformation & Losses	**5**	**3**	**9**	**3**	**5**	**7**	**8**	**-5.3%**	**11.8%**	**-11.7%**	**5.7%**	**3.9%**	**2.0%**
Final consumption	**58**	**70**	**78**	**84**	**82**	**84**	**87**	**2.0%**	**1.0%**	**0.8%**	**-0.3%**	**0.3%**	**0.3%**
Steel, Non-Met. Minerals and Chem.	7	8	7	6	6	6	6	0.4%	-0.5%	-0.9%	-0.6%	-0.3%	-0.1%
Other Industry	13	17	17	19	19	21	24	2.9%	-0.2%	1.2%	-0.3%	1.1%	1.3%
Non-Energy Use	4	4	4	4	4	4	5	1.2%	0.0%	-0.2%	-0.3%	0.5%	0.6%
Residential	7	9	10	11	10	10	10	1.9%	1.2%	0.6%	-0.6%	0.0%	-0.1%
Services	3	5	7	8	8	8	8	3.8%	3.3%	1.7%	0.0%	0.0%	-0.7%
Agriculture	1	2	2	2	3	3	3	2.1%	3.2%	0.9%	1.0%	0.9%	0.7%
Road	19	22	25	27	25	25	25	1.7%	1.3%	0.8%	-0.8%	-0.2%	-0.1%
Rail	1	1	1	1	1	2	2	0.9%	3.3%	2.8%	0.3%	0.3%	0.2%
Aviation	1	2	2	3	4	4	4	5.9%	2.8%	2.8%	2.5%	0.8%	-0.2%
Other Transport	1	0	1	1	1	1	1	-3.9%	7.6%	-2.6%	1.2%	1.3%	0.9%

[1] Nuclear energy is accounted as primary electricity

Australia	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**35**	**48**	**57**	**52**	**40**	**31**	**26**	**3.2%**	**1.8%**	**-1.0%**	**-2.5%**	**-2.4%**	**-1.7%**
Coal	30	42	45	40	29	21	18	3.6%	0.6%	-1.1%	-3.2%	-3.0%	-1.8%
Oil	1	1	1	2	2	2	2	-5.7%	10.4%	5.3%	-2.8%	-0.4%	0.1%
Gas	3	4	10	8	8	7	6	1.6%	9.2%	-2.3%	0.0%	-0.9%	-1.4%
Biomass & Waste	1	1	1	1	1	1	0	-0.2%	0.5%	5.7%	0.6%	-3.6%	-6.2%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**157**	**214**	**257**	**275**	**287**	**319**	**355**	**3.1%**	**1.8%**	**0.7%**	**0.4%**	**1.1%**	**1.1%**
Coal	121	174	180	162	116	86	72	3.7%	0.3%	-1.0%	-3.3%	-3.0%	-1.6%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	19.6%
Oil	4	2	6	11	8	8	8	-6.7%	13.1%	5.7%	-2.8%	-0.1%	0.3%
Gas	14	16	45	37	39	37	34	1.2%	10.6%	-1.8%	0.5%	-0.5%	-0.8%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	1	1	3	5	6	4	2	4.2%	9.4%	6.5%	0.6%	-3.5%	-5.5%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	1	3	4	n.s.	n.s.	n.s.	31.6%	9.5%	4.0%
Hydro	15	17	14	23	23	23	23	1.2%	-2.1%	5.2%	0.3%	0.0%	0.0%
Wind	0	0	5	26	74	122	151	n.s.	56.3%	17.7%	11.1%	5.1%	2.2%
Solar	0	0	0	11	18	34	53	n.s.	27.5%	37.6%	5.5%	6.6%	4.5%
Other	2	4	4	0	1	3	6	6.2%	1.0%	-18.9%	10.9%	8.1%	7.4%
Generation Capacity (GW_e)	**40**	**47**	**62**	**76**	**91**	**113**	**136**	**1.7%**	**2.8%**	**2.0%**	**1.7%**	**2.2%**	**1.9%**
Coal	24	27	30	26	19	16	17	0.9%	1.1%	-1.2%	-3.2%	-1.6%	0.6%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	20.0%
Oil	2	4	3	3	4	6	10	9.3%	-3.1%	0.4%	4.3%	3.6%	4.8%
Gas	4	6	16	18	17	15	14	4.6%	10.6%	0.8%	-0.5%	-1.1%	-0.8%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	0	1	1	1	1	0	4.5%	5.7%	1.8%	0.5%	-2.5%	-5.7%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	31.3%	9.2%	3.8%
Hydro	10	10	11	11	11	11	11	0.3%	0.3%	0.2%	0.6%	0.0%	-0.1%
Wind	0	0	2	9	23	37	45	n.s.	49.7%	16.6%	10.4%	4.8%	1.8%
Solar	0	0	0	9	14	25	37	13.6%	22.3%	47.1%	4.8%	5.8%	4.0%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	14.2%	10.8%
Total Final Consumption[2] (Mtoe)	**58**	**70**	**78**	**84**	**82**	**84**	**87**	**2.0%**	**1.0%**	**0.8%**	**-0.3%**	**0.3%**	**0.3%**
Coal	5	5	4	3	4	5	6	-0.2%	-3.5%	-0.9%	0.7%	2.6%	3.2%
Oil	29	35	39	43	38	35	31	1.8%	1.2%	1.0%	-1.1%	-0.9%	-1.3%
Gas	9	11	12	13	12	13	16	2.4%	1.0%	0.3%	-0.8%	1.1%	1.8%
Electricity	11	15	18	19	20	23	25	2.9%	2.0%	0.6%	0.6%	1.1%	1.0%
Heat	0	0	0	1	1	1	1	0.0%	11.9%	9.4%	1.4%	2.9%	2.6%
Biomass & Other	3	4	5	6	7	8	8	2.9%	0.4%	2.1%	2.8%	0.9%	0.0%
Industry (incl. non-energy use)	**24**	**29**	**29**	**30**	**29**	**31**	**34**	**1.9%**	**-0.2%**	**0.5%**	**-0.4%**	**0.7%**	**1.0%**
Coal	5	5	4	3	4	5	6	0.0%	-3.4%	-0.8%	0.7%	2.6%	3.2%
Oil	6	8	7	8	7	8	8	1.8%	-1.0%	1.8%	-1.0%	0.3%	0.2%
Gas	6	8	8	8	7	7	7	2.1%	0.8%	0.1%	-1.6%	-0.2%	0.5%
Electricity	5	7	7	7	8	10	11	2.7%	0.6%	0.0%	1.5%	1.8%	1.6%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	1	2	3	3	3	2	2	5.2%	1.9%	1.1%	-1.4%	-2.3%	-3.5%
Buildings	**11**	**14**	**17**	**19**	**19**	**19**	**18**	**2.5%**	**2.0%**	**1.1%**	**-0.3%**	**0.0%**	**-0.4%**
Coal	0	0	0	0	0	0	0	-10.4%	-11.9%	n.s.	n.s.	n.s.	n.s.
Oil	1	1	1	1	2	2	2	0.4%	4.1%	2.9%	2.7%	1.8%	0.2%
Gas	3	4	4	4	4	4	3	3.1%	1.3%	0.7%	-1.3%	-1.0%	-1.0%
Electricity	6	8	10	11	10	10	9	3.2%	3.0%	0.8%	-1.1%	-0.4%	-0.4%
Heat	0	0	0	1	1	1	1	0.0%	11.9%	9.4%	1.4%	2.9%	2.6%
Biomass & Other	2	2	1	1	2	2	2	0.6%	-3.3%	0.5%	3.8%	0.5%	-1.2%
Agriculture	**1**	**2**	**2**	**2**	**3**	**3**	**3**	**2.1%**	**3.2%**	**0.9%**	**1.0%**	**0.9%**	**0.7%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	1	1	2	2	2	2	2	2.2%	3.9%	0.6%	-0.4%	-0.5%	-0.6%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	26.9%	-0.2%	-0.3%	-0.4%
Electricity	0	0	0	0	0	0	1	2.0%	-2.1%	2.0%	3.1%	3.3%	3.1%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	24.0%	6.2%	3.1%
Transport	**21**	**25**	**30**	**33**	**32**	**32**	**32**	**1.9%**	**1.6%**	**1.0%**	**-0.3%**	**0.0%**	**0.0%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	21	25	29	31	27	23	19	1.8%	1.5%	0.7%	-1.4%	-1.5%	-2.1%
Gas	0	0	0	0	1	3	5	n.s.	n.s.	-3.4%	30.6%	13.0%	6.8%
Electricity	0	0	0	1	2	3	4	2.6%	4.5%	5.4%	11.7%	5.4%	3.3%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	1	2	3	4	n.s.	n.s.	16.3%	10.4%	3.8%	2.2%
Other Energy Transformation & Losses[3]	**5**	**3**	**9**	**3**	**5**	**7**	**8**	**-5.3%**	**11.8%**	**-11.7%**	**5.7%**	**3.9%**	**2.0%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Japan	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	125	128	129	126	121	114	107	0.2%	0.1%	-0.2%	-0.4%	-0.6%	-0.6%
GDP per capita (ppp, k$'15)	31	34	37	41	47	56	66	0.9%	0.7%	1.2%	1.3%	1.8%	1.7%
Prices													
International/Regional ($'15/boe)													
Coal	3	1	3	4	4	5	5	-7.8%	10.3%	1.3%	1.1%	1.2%	0.7%
Oil	39	38	86	91	89	96	107	-0.2%	8.4%	0.5%	-0.2%	0.8%	1.0%
Gas	28	26	46	73	84	97	101	-0.7%	5.8%	4.7%	1.5%	1.5%	0.3%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**1 153**	**1 222**	**1 157**	**1 062**	**969**	**833**	**721**	**0.6%**	**-0.5%**	**-0.9%**	**-0.9%**	**-1.5%**	**-1.4%**
Total GHG (energy, industry, agriculture)	**1 217**	**1 318**	**1 240**	**1 134**	**1 021**	**869**	**744**	**0.8%**	**-0.6%**	**-0.9%**	**-1.0%**	**-1.6%**	**-1.5%**
CO_2	1 112	1 221	1 171	1 065	952	800	676	0.9%	-0.4%	-0.9%	-1.1%	-1.7%	-1.7%
CH_4	44	38	35	31	30	29	27	-1.6%	-0.8%	-1.2%	-0.3%	-0.5%	-0.6%
N_2O	32	30	22	20	19	17	15	-0.6%	-2.8%	-1.1%	-0.8%	-0.8%	-1.0%
F gases	29	29	12	18	20	23	25	0.0%	-8.5%	4.1%	1.3%	1.2%	1.1%
Total GHG from Energy and Industry	**1 180**	**1 283**	**1 205**	**1 101**	**988**	**837**	**713**	**0.8%**	**-0.6%**	**-0.9%**	**-1.1%**	**-1.6%**	**-1.6%**
CO_2 Emissions from Fuel Comb.	**1 027**	**1 137**	**1 104**	**999**	**889**	**739**	**620**	**1.0%**	**-0.3%**	**-1.0%**	**-1.2%**	**-1.8%**	**-1.7%**
Power generation/District heating	358	414	446	374	322	234	180	1.5%	0.8%	-1.7%	-1.5%	-3.1%	-2.6%
Industry	290	273	256	255	243	213	174	-0.6%	-0.6%	-0.1%	-0.5%	-1.3%	-2.0%
Buildings	126	155	124	114	93	77	64	2.1%	-2.2%	-0.9%	-2.0%	-1.8%	-1.8%
Agriculture	6	3	3	2	3	3	3	-7.3%	-1.5%	-0.4%	0.3%	0.4%	0.3%
Transport	202	249	219	195	159	134	107	2.1%	-1.3%	-1.1%	-2.0%	-1.7%	-2.2%
Other	44	43	56	59	70	78	93	-0.2%	2.6%	0.4%	1.7%	1.2%	1.7%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Energy Balance, by fuel (Mtoe)													
Primary Production	**39**	**48**	**48**	**53**	**66**	**82**	**91**	**2.0%**	**0.0%**	**1.0%**	**2.3%**	**2.1%**	**1.1%**
Coal	4	2	0	0	0	0	0	-9.3%	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	0	0	0	0	0	1	1	-0.5%	-6.0%	0.9%	5.6%	2.4%	0.6%
Natural gas	2	2	3	2	1	0	0	1.5%	3.0%	-3.8%	-8.2%	-10.3%	-12.4%
Biomass	5	5	9	13	14	12	10	0.4%	7.0%	3.5%	0.4%	-1.7%	-1.5%
Nuclear[1]	17	28	25	20	19	17	16	4.8%	-1.1%	-2.3%	-0.6%	-0.7%	-0.7%
Hydro	7	7	7	7	7	7	7	-0.2%	-0.4%	0.4%	0.0%	-0.1%	0.0%
Other renewables	3	4	3	10	25	45	57	1.6%	-1.1%	11.6%	9.5%	5.8%	2.4%
Net Imports	**359**	**412**	**399**	**350**	**313**	**263**	**225**						
Coal	73	94	114	105	115	102	88						
Oil	239	254	202	182	144	117	89						
Natural gas	47	63	83	64	52	44	49						
Biomass	0	0	0	- 1	1	- 1	- 2						
Biofuels	0	0	0	0	0	0	1						
Electricity	0	0	0	0	0	0	0						
Primary Energy Demand[2]	**398**	**460**	**447**	**403**	**379**	**345**	**316**	1.4%	**-0.3%**	**-1.0%**	**-0.6%**	**-1.0%**	**-0.9%**
Coal	77	96	114	105	115	102	88	2.2%	1.8%	-0.8%	0.9%	-1.2%	-1.5%
Oil	240	255	202	183	145	118	90	0.6%	-2.3%	-1.0%	-2.3%	-2.0%	-2.7%
Natural gas	49	66	86	66	53	44	49	2.9%	2.7%	-2.7%	-2.1%	-1.7%	1.0%
Biomass	5	5	9	12	15	10	8	0.4%	7.0%	2.6%	2.2%	-3.7%	-2.0%
Nuclear[1]	17	28	25	20	19	17	16	4.8%	-1.1%	-2.3%	-0.6%	-0.7%	-0.7%
Hydro	7	7	7	7	7	7	7	-0.2%	-0.4%	0.4%	0.0%	-0.1%	0.0%
Other renewables	3	4	3	10	25	45	57	1.6%	-1.1%	11.6%	9.5%	5.8%	2.4%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**398**	**460**	**447**	**403**	**379**	**345**	**316**	**1.4%**	**-0.3%**	**-1.0%**	**-0.6%**	**-1.0%**	**-0.9%**
Energy for Power Generation	**145**	**172**	**183**	**159**	**153**	**140**	**137**	**1.7%**	**0.6%**	**-1.4%**	**-0.4%**	**-0.8%**	**-0.2%**
Other Energy Transformation & Losses	**16**	**24**	**24**	**18**	**19**	**18**	**21**	**4.0%**	**0.1%**	**-2.8%**	**0.4%**	**-0.2%**	**1.5%**
Final consumption	**305**	**349**	**329**	**306**	**289**	**266**	**240**	**1.4%**	**-0.6%**	**-0.7%**	**-0.6%**	**-0.8%**	**-1.0%**
Steel, Non-Met. Minerals and Chem.	74	70	66	67	66	57	46	-0.5%	-0.7%	0.2%	-0.2%	-1.4%	-2.2%
Other Industry	48	46	41	35	34	35	36	-0.5%	-0.9%	-1.7%	-0.1%	0.3%	0.3%
Non-Energy Use	40	46	45	40	42	42	39	1.5%	-0.3%	-1.0%	0.4%	0.1%	-0.7%
Residential	39	49	50	42	38	32	28	2.5%	0.2%	-1.6%	-1.0%	-1.6%	-1.4%
Services	34	52	51	52	49	44	40	4.3%	-0.1%	0.1%	-0.6%	-1.0%	-1.0%
Agriculture	2	1	1	1	1	1	1	-6.6%	-0.8%	0.1%	0.4%	0.4%	0.4%
Road	60	74	65	60	51	46	43	2.2%	-1.3%	-0.8%	-1.7%	-1.0%	-0.8%
Rail	2	2	2	2	2	2	2	0.5%	0.0%	-0.6%	-0.1%	-0.5%	-0.5%
Aviation	3	4	4	4	3	3	2	2.1%	1.0%	-1.6%	-1.3%	-1.3%	-2.2%
Other Transport	4	5	3	3	3	3	3	0.9%	-3.3%	-0.6%	0.0%	0.1%	-0.1%

[1] Nuclear energy is accounted as primary electricity

Japan	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**117**	**133**	**148**	**122**	**101**	**71**	**57**	**1.3%**	**1.0%**	**-1.9%**	**-1.9%**	**-3.5%**	**-2.2%**
Coal	25	48	61	54	58	45	33	6.8%	2.5%	-1.3%	0.8%	-2.4%	-3.2%
Oil	57	35	19	22	7	4	3	-4.8%	-6.0%	1.4%	-10.3%	-5.7%	-4.7%
Gas	33	48	61	39	29	17	17	3.8%	2.3%	-4.4%	-3.0%	-4.9%	0.0%
Biomass & Waste	2	2	7	8	6	3	2	0.7%	12.3%	1.5%	-1.6%	-8.7%	-4.6%
Other	0	0	0	0	1	2	2	6.8%	-2.3%	-2.3%	15.5%	7.7%	3.7%
Gross Elec. Generation (TWh_e)	**893**	**1 118**	**1 168**	**1 064**	**1 049**	**1 012**	**993**	**2.3%**	**0.4%**	**-0.9%**	**-0.1%**	**-0.4%**	**-0.2%**
Coal	118	234	310	270	291	229	171	7.1%	2.8%	-1.4%	0.8%	-2.4%	-2.9%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	284	179	100	123	42	23	14	-4.5%	-5.7%	2.1%	-10.2%	-5.8%	-5.2%
Gas	171	254	319	201	146	90	95	4.0%	2.3%	-4.5%	-3.2%	-4.7%	0.4%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	10	10	30	35	30	12	8	0.7%	11.4%	1.5%	-1.7%	-8.7%	-4.0%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	202	322	288	229	217	202	189	4.8%	-1.1%	-2.3%	-0.6%	-0.7%	-0.7%
Hydro	96	97	91	111	112	113	112	0.1%	-0.7%	2.1%	0.0%	0.1%	-0.1%
Wind	0	0	4	23	103	173	177	n.s.	43.4%	19.4%	16.0%	5.3%	0.2%
Solar	0	0	4	69	97	143	184	n.s.	27.0%	33.7%	3.5%	3.9%	2.6%
Other	14	22	22	3	11	27	45	4.7%	0.3%	-19.5%	15.7%	9.3%	5.3%
Generation Capacity (GW_e)	**223**	**258**	**287**	**341**	**372**	**414**	**434**	**1.5%**	**1.0%**	**1.7%**	**0.9%**	**1.1%**	**0.5%**
Coal	31	63	63	67	62	50	32	7.4%	0.1%	0.6%	-0.9%	-2.1%	-4.3%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	78	66	56	45	38	39	51	-1.6%	-1.6%	-2.1%	-1.7%	0.3%	2.7%
Gas	45	37	55	52	48	46	48	-1.9%	4.1%	-0.6%	-1.0%	-0.2%	0.2%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	3	3	8	5	5	2	1	1.8%	9.6%	-4.0%	0.6%	-8.7%	-5.8%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	29	42	46	37	34	31	29	4.0%	0.9%	-2.2%	-0.8%	-0.9%	-0.9%
Hydro	38	46	51	58	53	48	44	2.0%	1.0%	1.1%	-0.8%	-0.9%	-1.0%
Wind	0	0	2	11	44	71	69	n.s.	32.7%	16.4%	15.5%	4.8%	-0.3%
Solar	0	0	4	65	86	121	154	43.4%	27.1%	33.5%	2.8%	3.5%	2.4%
Other	0	1	1	1	2	5	7	7.0%	0.1%	-0.3%	15.6%	7.9%	4.0%
Total Final Consumption[2] (Mtoe)	**305**	**349**	**329**	**306**	**289**	**266**	**240**	**1.4%**	**-0.6%**	**-0.7%**	**-0.6%**	**-0.8%**	**-1.0%**
Coal	48	45	44	47	48	45	39	-0.7%	-0.3%	0.7%	0.3%	-0.7%	-1.4%
Oil	171	194	164	147	125	104	78	1.3%	-1.7%	-1.1%	-1.6%	-1.9%	-2.8%
Gas	15	22	30	28	26	29	33	3.6%	3.3%	-0.7%	-0.7%	1.1%	1.4%
Electricity	66	83	88	79	78	75	73	2.3%	0.5%	-1.0%	-0.1%	-0.4%	-0.3%
Heat	2	2	1	1	1	2	4	-0.3%	-3.0%	-0.3%	1.8%	6.3%	4.7%
Biomass & Other	3	3	3	4	10	11	13	0.2%	0.3%	4.7%	9.0%	1.1%	1.4%
Industry (incl. non-energy use)	**161**	**162**	**152**	**142**	**142**	**135**	**122**	**0.0%**	**-0.6%**	**-0.7%**	**0.0%**	**-0.5%**	**-1.0%**
Coal	47	45	44	46	48	44	38	-0.6%	-0.2%	0.6%	0.3%	-0.7%	-1.4%
Oil	71	72	62	55	51	44	35	0.2%	-1.5%	-1.3%	-0.7%	-1.4%	-2.4%
Gas	4	8	14	13	13	14	15	7.1%	6.1%	-0.6%	-0.6%	0.9%	0.8%
Electricity	36	34	29	25	28	29	30	-0.6%	-1.7%	-1.4%	0.9%	0.6%	0.4%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	3	3	3	2	3	3	3	0.5%	0.4%	-1.0%	1.8%	-0.6%	-0.3%
Buildings	**73**	**101**	**102**	**94**	**87**	**77**	**68**	**3.4%**	**0.0%**	**-0.7%**	**-0.8%**	**-1.3%**	**-1.1%**
Coal	1	0	0	1	0	0	0	-5.7%	-9.8%	11.1%	-2.4%	-2.7%	-3.0%
Oil	30	38	28	25	20	16	13	2.3%	-3.2%	-1.1%	-2.0%	-2.0%	-2.0%
Gas	11	14	16	14	12	10	9	2.0%	1.3%	-0.8%	-1.8%	-1.4%	-1.4%
Electricity	28	47	57	52	47	41	37	5.2%	1.9%	-0.9%	-0.9%	-1.4%	-1.1%
Heat	2	2	1	1	1	2	4	-0.3%	-3.0%	-0.3%	1.8%	6.3%	4.7%
Biomass & Other	0	0	0	1	6	6	5	-7.5%	-6.7%	50.4%	15.6%	0.1%	-1.9%
Agriculture	**2**	**1**	**1**	**1**	**1**	**1**	**1**	**-6.6%**	**-0.8%**	**0.1%**	**0.4%**	**0.4%**	**0.4%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	2	1	1	1	1	1	1	-7.3%	-1.5%	-0.4%	0.3%	0.4%	0.3%
Gas	0	0	0	0	0	0	0	n.s.	0.0%	-0.8%	0.1%	0.2%	0.1%
Electricity	0	0	0	0	0	0	0	0.3%	2.6%	1.6%	0.6%	0.7%	0.6%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Transport	**69**	**85**	**75**	**69**	**59**	**54**	**49**	**2.1%**	**-1.2%**	**-0.8%**	**-1.5%**	**-0.9%**	**-0.8%**
Coal	0	0	0	0	0	0	0	n.s.	-0.3%	0.2%	0.0%	0.0%	0.0%
Oil	67	83	73	67	53	42	29	2.1%	-1.3%	-0.9%	-2.2%	-2.3%	-3.6%
Gas	0	0	0	0	1	5	9	n.s.	n.s.	-5.4%	38.2%	13.3%	6.9%
Electricity	1	2	2	2	3	4	6	1.0%	0.3%	-0.1%	6.6%	3.8%	2.3%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	1	1	3	6	n.s.	n.s.	n.s.	11.3%	6.5%	7.3%
Other Energy Transformation & Losses[3]	**16**	**24**	**24**	**18**	**19**	**18**	**21**	**4.0%**	**0.1%**	**-2.8%**	**0.4%**	**-0.2%**	**1.5%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

South Korea	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	43	47	50	51	52	51	48	1.0%	0.4%	0.3%	0.1%	-0.2%	-0.5%
GDP per capita (ppp, k$'15)	14	22	32	41	52	65	80	5.0%	3.7%	2.6%	2.4%	2.1%	2.1%
Prices													
International/Regional ($'15/boe)													
Coal	3	1	3	4	4	5	5	-7.8%	10.3%	1.2%	1.1%	1.2%	0.7%
Oil	39	38	86	91	89	96	107	-0.2%	8.4%	0.5%	-0.2%	0.8%	1.0%
Gas	28	26	46	73	84	97	101	-0.7%	5.8%	4.7%	1.5%	1.5%	0.3%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**288**	**520**	**645**	**668**	**661**	**662**	**608**	**6.1%**	**2.2%**	**0.4%**	**-0.1%**	**0.0%**	**-0.9%**
Total GHG (energy, industry, agriculture)	**323**	**535**	**653**	**677**	**660**	**668**	**610**	**5.2%**	**2.0%**	**0.4%**	**-0.2%**	**0.1%**	**-0.9%**
CO_2	268	463	594	620	604	613	555	5.6%	2.5%	0.4%	-0.3%	0.1%	-1.0%
CH_4	39	37	37	34	34	34	33	-0.4%	-0.1%	-0.7%	0.0%	-0.1%	-0.1%
N_2O	9	18	13	13	13	13	12	6.5%	-3.0%	0.0%	0.0%	0.0%	-0.5%
F gases	7	17	9	10	8	9	9	9.9%	-5.9%	0.1%	-1.2%	0.7%	0.1%
Total GHG from Energy and Industry	**299**	**514**	**630**	**654**	**635**	**642**	**582**	**5.6%**	**2.1%**	**0.4%**	**-0.3%**	**0.1%**	**-1.0%**
CO_2 Emissions from Fuel Comb.	**229**	**411**	**538**	**561**	**544**	**552**	**495**	**6.0%**	**2.7%**	**0.4%**	**-0.3%**	**0.1%**	**-1.1%**
Power generation/District heating	42	133	264	256	254	270	224	12.1%	7.1%	-0.3%	-0.1%	0.6%	-1.9%
Industry	60	97	98	106	106	109	109	4.9%	0.2%	0.8%	0.0%	0.2%	0.0%
Buildings	69	65	55	49	39	31	25	-0.6%	-1.7%	-1.1%	-2.1%	-2.3%	-2.3%
Agriculture	5	10	7	6	6	6	6	7.5%	-3.7%	-0.8%	0.1%	-0.2%	-0.3%
Transport	44	80	90	109	98	88	79	6.2%	1.2%	1.9%	-1.0%	-1.1%	-1.1%
Other	9	27	24	34	40	48	53	11.0%	-0.9%	3.5%	1.5%	1.8%	1.0%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**n.s.**	**n.s.**	**n.s.**	**8.4%**	**40.9%**	**15.5%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	17.3%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	10.8%
Biomass	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	8.5%	9.6%	9.4%
Energy Balance, by fuel (Mtoe)													
Primary Production	**14**	**17**	**24**	**28**	**33**	**36**	**41**	**2.3%**	**3.6%**	**1.2%**	**1.7%**	**1.0%**	**1.2%**
Coal	7	4	1	1	1	1	0	-6.4%	-12.2%	-3.8%	-1.7%	-0.1%	-0.9%
Oil	0	1	1	0	0	0	0	n.s.	0.4%	n.s.	n.s.	n.s.	9.5%
Natural gas	0	0	0	0	0	0	0	n.s.	n.s.	-7.4%	6.4%	1.0%	0.3%
Biomass	2	3	9	11	11	11	8	5.7%	10.7%	1.9%	0.3%	-0.1%	-3.7%
Nuclear[1]	5	9	13	14	14	9	5	7.5%	3.2%	0.9%	-0.1%	-4.2%	-6.1%
Hydro	0	0	0	0	0	0	1	-1.7%	-0.8%	-0.3%	2.7%	1.7%	1.2%
Other renewables	0	0	0	2	6	15	27	13.1%	14.3%	25.1%	14.8%	9.0%	6.3%
Net Imports	**69**	**152**	**202**	**226**	**222**	**213**	**189**						
Coal	16	37	70	68	66	72	64						
Oil	50	98	94	109	103	91	76						
Natural gas	3	17	38	40	44	46	49						
Biomass	0	0	0	9	9	4	0						
Biofuels	0	0	0	0	0	0	0						
Electricity	0	0	0	0	0	0	0						
Primary Energy Demand[2]	**83**	**169**	**227**	**254**	**255**	**249**	**230**	7.4%	**3.0%**	**1.1%**	**0.0%**	**-0.2%**	**-0.8%**
Coal	23	40	71	69	66	72	65	5.8%	5.9%	-0.4%	-0.3%	0.9%	-1.1%
Oil	50	99	95	109	103	91	76	7.0%	-0.4%	1.4%	-0.6%	-1.2%	-1.9%
Natural gas	3	17	38	40	44	47	50	20.1%	8.5%	0.4%	0.9%	0.6%	0.7%
Biomass	2	3	9	20	21	15	8	5.7%	10.6%	8.0%	0.4%	-3.3%	-6.3%
Nuclear[1]	5	9	13	14	14	9	5	7.5%	3.2%	0.9%	-0.1%	-4.2%	-6.1%
Hydro	0	0	0	0	0	0	1	-1.7%	-0.8%	-0.3%	2.7%	1.7%	1.2%
Other renewables	0	0	0	2	6	15	27	13.1%	14.3%	25.1%	14.8%	9.0%	6.3%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**83**	**169**	**227**	**254**	**255**	**249**	**230**	**7.4%**	**3.0%**	**1.1%**	**0.0%**	**-0.2%**	**-0.8%**
Energy for Power Generation	**17**	**47**	**88**	**93**	**99**	**106**	**101**	**10.5%**	**6.5%**	**0.5%**	**0.7%**	**0.7%**	**-0.5%**
Other Energy Transformation & Losses	**4**	**13**	**10**	**14**	**14**	**15**	**14**	**13.6%**	**-2.1%**	**2.9%**	**0.4%**	**0.7%**	**-0.9%**
Final consumption	**70**	**135**	**171**	**197**	**197**	**190**	**180**	**6.8%**	**2.4%**	**1.4%**	**0.0%**	**-0.4%**	**-0.5%**
Steel, Non-Met. Minerals and Chem.	13	25	32	38	38	36	32	6.5%	2.7%	1.6%	0.0%	-0.6%	-1.2%
Other Industry	10	21	26	34	39	42	44	7.7%	2.0%	2.9%	1.3%	0.7%	0.6%
Non-Energy Use	7	25	38	45	45	41	37	14.0%	4.4%	1.6%	-0.1%	-0.9%	-0.9%
Residential	14	15	20	20	18	16	14	0.8%	2.8%	-0.1%	-1.0%	-1.3%	-1.2%
Services	10	18	22	21	20	19	17	6.4%	1.8%	-0.4%	-0.5%	-0.6%	-1.0%
Agriculture	2	4	3	3	4	4	4	8.1%	-1.8%	0.9%	1.1%	0.9%	0.8%
Road	11	22	28	34	32	31	30	7.7%	2.4%	1.9%	-0.6%	-0.2%	-0.4%
Rail	0	0	0	0	0	1	1	2.9%	-2.7%	0.6%	1.6%	1.3%	1.1%
Aviation	2	3	1	2	2	1	1	3.9%	-11.6%	7.5%	-0.6%	-0.9%	-2.3%
Other Transport	2	1	1	0	0	0	0	-1.4%	-6.1%	-15.2%	1.4%	0.7%	0.3%

[1] Nuclear energy is accounted as primary electricity

South Korea	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**12**	**37**	**75**	**77**	**79**	**82**	**69**	**11.7%**	**7.2%**	**0.2%**	**0.2%**	**0.4%**	**-1.7%**
Coal	6	24	52	46	43	46	36	15.2%	8.1%	-1.2%	-0.7%	0.7%	-2.5%
Oil	5	8	5	9	9	10	9	5.4%	-4.7%	6.6%	0.5%	0.6%	-1.2%
Gas	2	6	18	19	23	24	23	10.9%	12.0%	0.6%	2.0%	0.3%	-0.3%
Biomass & Waste	0	0	0	3	3	2	1	n.s.	34.9%	21.3%	1.3%	-4.3%	-4.6%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**105**	**291**	**503**	**577**	**641**	**702**	**741**	**10.7%**	**5.6%**	**1.4%**	**1.1%**	**0.9%**	**0.5%**
Coal	18	111	219	207	195	217	179	20.2%	7.0%	-0.6%	-0.6%	1.1%	-1.9%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	16.3%
Oil	19	35	19	45	46	48	43	6.3%	-5.8%	9.1%	0.2%	0.5%	-1.3%
Gas	10	29	103	126	149	150	143	11.9%	13.4%	2.0%	1.7%	0.1%	-0.5%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	10.9%
Biomass & Waste	0	0	1	9	11	7	4	n.s.	28.1%	23.5%	1.9%	-4.3%	-4.5%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	53	109	149	163	161	105	56	7.5%	3.2%	0.9%	-0.1%	-4.2%	-6.1%
Hydro	6	6	6	12	12	12	12	-1.2%	1.4%	6.5%	-0.2%	-0.1%	-0.1%
Wind	0	0	1	11	31	65	118	n.s.	47.3%	29.8%	10.7%	7.7%	6.2%
Solar	0	0	1	4	34	91	173	17.5%	n.s.	17.4%	24.3%	10.4%	6.6%
Other	0	1	4	1	2	6	13	n.s.	13.1%	-16.2%	12.9%	10.7%	7.5%
Generation Capacity (GW_e)	**20**	**49**	**77**	**126**	**165**	**216**	**306**	**9.4%**	**4.6%**	**5.0%**	**2.7%**	**2.7%**	**3.6%**
Coal	4	14	28	32	30	35	30	14.3%	7.1%	1.2%	-0.5%	1.6%	-1.4%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	17.2%
Oil	4	4	4	9	10	10	16	2.1%	0.0%	7.0%	1.1%	0.3%	4.5%
Gas	3	13	20	43	51	46	56	17.5%	4.6%	7.9%	1.7%	-1.0%	2.0%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	12.2%
Biomass & Waste	0	1	0	1	1	1	1	n.s.	-12.0%	24.3%	0.1%	-3.7%	-4.0%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	8	14	18	23	22	14	7	6.1%	2.6%	2.6%	-0.3%	-4.3%	-6.3%
Hydro	2	3	6	7	7	6	6	3.0%	5.8%	2.0%	-0.2%	-0.5%	-0.7%
Wind	0	0	0	6	16	32	54	n.s.	40.3%	32.5%	9.9%	6.8%	5.5%
Solar	0	0	1	5	27	71	135	n.s.	n.s.	23.0%	18.1%	10.0%	6.7%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	23.6%	14.7%	10.8%
Total Final Consumption[2] (Mtoe)	**70**	**135**	**171**	**197**	**197**	**190**	**180**	**6.8%**	**2.4%**	**1.4%**	**0.0%**	**-0.4%**	**-0.5%**
Coal	16	15	18	20	20	20	21	-0.5%	1.8%	1.2%	-0.2%	0.3%	0.2%
Oil	44	80	82	93	86	75	62	6.2%	0.2%	1.2%	-0.7%	-1.4%	-1.9%
Gas	1	11	20	20	19	21	25	32.1%	6.4%	-0.2%	-0.3%	0.9%	1.7%
Electricity	8	23	39	44	49	54	57	10.8%	5.5%	1.4%	1.1%	0.9%	0.5%
Heat	0	3	4	5	6	6	6	n.s.	2.8%	1.8%	0.6%	0.8%	0.6%
Biomass & Other	2	3	8	15	17	14	9	5.3%	9.9%	6.3%	1.0%	-1.9%	-4.1%
Industry (incl. non-energy use)	**30**	**71**	**96**	**117**	**122**	**118**	**113**	**9.0%**	**3.1%**	**1.9%**	**0.4%**	**-0.3%**	**-0.4%**
Coal	7	14	17	19	19	20	21	8.1%	1.7%	1.4%	-0.1%	0.4%	0.3%
Oil	18	36	44	50	48	42	35	7.4%	2.0%	1.2%	-0.3%	-1.3%	-1.8%
Gas	0	3	7	8	9	11	14	44.4%	9.4%	0.6%	1.6%	2.1%	2.2%
Electricity	5	13	20	24	29	33	36	10.0%	4.3%	2.2%	1.6%	1.4%	0.9%
Heat	0	2	2	3	3	3	3	n.s.	1.0%	1.4%	-0.2%	-0.3%	-0.2%
Biomass & Other	1	3	7	13	14	10	5	13.8%	9.4%	7.2%	0.4%	-3.4%	-5.9%
Buildings	**24**	**33**	**42**	**41**	**38**	**34**	**31**	**3.4%**	**2.3%**	**-0.2%**	**-0.7%**	**-0.9%**	**-1.1%**
Coal	9	1	1	1	0	0	0	-24.1%	4.5%	-4.4%	-3.1%	-3.8%	-3.9%
Oil	10	14	7	6	5	4	3	3.3%	-6.7%	-1.8%	-2.0%	-2.1%	-2.1%
Gas	1	8	12	12	10	8	6	29.6%	4.5%	-0.3%	-2.1%	-2.4%	-2.3%
Electricity	3	9	18	18	18	18	17	11.9%	7.1%	0.2%	-0.1%	-0.3%	-0.7%
Heat	0	1	2	3	3	3	4	n.s.	5.5%	2.3%	1.3%	1.6%	1.2%
Biomass & Other	1	0	1	1	2	2	1	-8.4%	9.7%	0.3%	2.5%	-0.8%	-3.0%
Agriculture	**2**	**4**	**3**	**3**	**4**	**4**	**4**	**8.1%**	**-1.8%**	**0.9%**	**1.1%**	**0.9%**	**0.8%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	2	3	2	2	2	2	2	7.5%	-3.7%	-0.8%	0.1%	-0.2%	-0.3%
Gas	0	0	0	0	0	0	0	n.s.	-9.6%	-2.4%	0.1%	-0.1%	-0.3%
Electricity	0	0	1	1	2	2	2	13.8%	6.6%	4.1%	2.0%	1.9%	1.7%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	21.3%	6.2%	3.1%
Transport	**15**	**27**	**30**	**37**	**34**	**34**	**32**	**6.3%**	**1.1%**	**1.9%**	**-0.6%**	**-0.2%**	**-0.5%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	14	27	29	35	31	27	22	6.3%	0.7%	2.0%	-1.1%	-1.6%	-2.1%
Gas	0	0	1	0	1	3	5	n.s.	n.s.	-7.0%	6.9%	12.9%	7.4%
Electricity	0	0	0	0	1	2	2	7.2%	0.7%	4.7%	13.1%	5.8%	3.0%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	1	1	2	2	n.s.	n.s.	5.7%	7.1%	7.6%	0.4%
Other Energy Transformation & Losses[3]	**4**	**13**	**10**	**14**	**14**	**15**	**14**	**13.6%**	**-2.1%**	**2.9%**	**0.4%**	**0.7%**	**-0.9%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

New Zealand	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	3	4	4	5	5	5	6	1.3%	1.3%	0.9%	0.7%	0.6%	0.4%
GDP per capita (ppp, k$'15)	23	27	30	37	44	52	62	1.7%	1.1%	2.0%	1.7%	1.8%	1.7%
Prices													
International/Regional ($'15/boe)													
Coal	3	1	3	4	4	5	5	-7.8%	10.3%	1.7%	1.4%	1.1%	0.9%
Oil	39	38	86	91	89	96	107	-0.2%	8.4%	0.5%	-0.2%	0.8%	1.0%
Gas	28	26	46	73	84	97	101	-0.7%	5.8%	4.7%	1.5%	1.5%	0.3%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**34**	**54**	**70**	**78**	**83**	**84**	**89**	**4.8%**	**2.7%**	**1.1%**	**0.7%**	**0.1%**	**0.6%**
Total GHG (energy, industry, agriculture)	**64**	**75**	**78**	**82**	**84**	**86**	**89**	**1.6%**	**0.4%**	**0.5%**	**0.3%**	**0.1%**	**0.4%**
CO_2	25	32	34	37	36	37	40	2.5%	0.8%	0.7%	-0.1%	0.1%	0.7%
CH_4	33	35	34	35	37	37	37	0.8%	-0.4%	0.2%	0.6%	0.1%	0.1%
N_2O	6	7	8	9	9	9	9	2.3%	0.8%	0.9%	0.4%	0.1%	0.1%
F gases	1	0	1	2	2	3	3	-9.7%	13.9%	3.6%	1.8%	2.0%	1.8%
Total GHG from Energy and Industry	**31**	**38**	**41**	**44**	**45**	**46**	**49**	**2.1%**	**0.8%**	**0.6%**	**0.2%**	**0.2%**	**0.6%**
CO_2 Emissions from Fuel Comb.	**23**	**29**	**31**	**33**	**33**	**33**	**36**	**2.6%**	**0.5%**	**0.7%**	**-0.1%**	**0.1%**	**0.8%**
Power generation/District heating	4	6	6	1	1	1	2	5.1%	0.2%	-16.6%	-5.2%	4.0%	10.1%
Industry	7	7	6	10	11	11	11	-0.1%	-0.5%	4.8%	0.7%	-0.1%	0.3%
Buildings	1	1	1	2	2	2	3	0.7%	-0.2%	1.6%	2.3%	1.4%	0.4%
Agriculture	1	2	1	2	2	2	2	2.2%	-0.6%	1.1%	0.8%	0.8%	0.7%
Transport	9	12	14	15	13	12	11	3.6%	1.4%	0.8%	-1.4%	-0.8%	-0.7%
Other	1	2	2	4	4	5	7	3.0%	1.1%	7.5%	1.4%	1.9%	2.6%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Energy Balance, by fuel (Mtoe)													
Primary Production	**12**	**15**	**18**	**22**	**22**	**22**	**25**	**1.7%**	**1.8%**	**2.3%**	**0.0%**	**-0.1%**	**1.4%**
Coal	1	2	3	2	3	3	3	4.7%	2.3%	-1.6%	2.6%	0.2%	-0.2%
Oil	2	2	2	3	8	6	4	-3.9%	4.2%	2.9%	9.0%	-2.6%	-3.9%
Natural gas	4	5	4	4	3	3	3	2.5%	-2.6%	-0.9%	-2.1%	-0.5%	-0.7%
Biomass	1	1	1	1	1	1	1	4.0%	0.7%	-1.5%	1.8%	-0.7%	-2.0%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	2	2	2	2	2	2	2	0.5%	0.1%	0.2%	1.4%	-0.2%	-0.2%
Other renewables	2	3	5	10	5	7	12	3.2%	7.5%	6.4%	-6.8%	3.2%	6.5%
Net Imports	**1**	**3**	**2**	**4**	**- 1**	**1**	**4**						
Coal	0	- 1	- 1	- 1	- 1	- 1	0						
Oil	2	4	4	4	- 1	0	2						
Natural gas	- 1	0	0	0	1	2	2						
Biomass	0	0	0	0	0	0	0						
Biofuels	0	0	0	0	0	0	0						
Electricity	0	0	0	0	0	0	0						
Primary Energy Demand[2]	**13**	**18**	**20**	**26**	**21**	**23**	**29**	2.9%	**1.1%**	**2.7%**	**-1.9%**	**0.8%**	**2.5%**
Coal	1	1	1	1	2	2	3	-1.1%	1.6%	2.2%	2.2%	1.0%	2.6%
Oil	4	6	6	7	7	6	6	2.7%	0.8%	1.5%	-0.9%	-0.4%	-0.3%
Natural gas	3	5	4	4	4	4	5	5.2%	-3.0%	0.3%	0.6%	0.7%	0.9%
Biomass	1	1	1	1	1	1	1	4.0%	0.7%	0.4%	1.2%	-1.9%	-2.2%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	2	2	2	2	2	2	2	0.5%	0.1%	0.2%	1.4%	-0.2%	-0.2%
Other renewables	2	3	5	10	5	7	12	3.2%	7.5%	6.4%	-6.8%	3.2%	6.5%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**13**	**18**	**20**	**26**	**21**	**23**	**29**	**2.9%**	**1.1%**	**2.7%**	**-1.9%**	**0.8%**	**2.5%**
Energy for Power Generation	**6**	**7**	**10**	**13**	**8**	**10**	**17**	**2.8%**	**3.4%**	**2.5%**	**-5.0%**	**2.2%**	**5.3%**
Other Energy Transformation & Losses	**0**	**0**	**0**	**0**	**1**	**1**	**1**	**-2.3%**	**n.s.**	**n.s.**	**19.0%**	**0.3%**	**-1.7%**
Final consumption	**10**	**13**	**13**	**16**	**16**	**17**	**17**	**2.9%**	**0.0%**	**2.0%**	**0.1%**	**0.2%**	**0.3%**
Steel, Non-Met. Minerals and Chem.	1	1	1	2	2	2	2	0.4%	-2.5%	7.1%	1.4%	-0.9%	-0.8%
Other Industry	3	3	3	4	4	4	4	2.1%	0.6%	1.4%	-0.3%	0.5%	0.9%
Non-Energy Use	1	2	1	2	2	2	2	10.3%	-5.2%	5.7%	1.4%	0.7%	0.3%
Residential	1	1	1	1	1	1	1	1.1%	0.7%	-0.2%	-0.3%	-0.1%	0.1%
Services	1	1	1	1	1	1	2	1.7%	1.8%	0.7%	0.7%	0.9%	0.9%
Agriculture	0	1	1	1	1	1	1	2.8%	0.5%	1.5%	0.9%	0.9%	0.8%
Road	3	3	4	5	4	4	4	3.2%	1.7%	1.2%	-0.9%	-0.2%	0.1%
Rail	0	0	0	0	0	0	0	10.4%	-4.8%	0.5%	0.4%	0.4%	0.5%
Aviation	0	0	0	0	0	0	0	2.4%	-1.6%	-1.0%	1.3%	0.2%	0.0%
Other Transport	0	0	0	0	0	0	0	4.7%	-3.9%	4.1%	1.6%	1.2%	1.0%

[1] Nuclear energy is accounted as primary electricity

New Zealand	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**2**	**3**	**3**	**1**	**1**	**1**	**2**	**4.4%**	**0.9%**	**-8.0%**	**-6.7%**	**3.3%**	**7.7%**
Coal	0	0	0	0	0	0	0	8.2%	2.7%	-14.8%	-36.8%	36.7%	30.0%
Oil	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gas	1	2	2	0	0	0	0	4.3%	-0.7%	-17.7%	-0.2%	2.9%	2.3%
Biomass & Waste	0	0	0	0	0	0	0	1.3%	0.2%	n.s.	n.s.	n.s.	n.s.
Other	0	0	1	1	0	1	1	3.2%	7.2%	6.0%	-8.3%	3.1%	7.6%
Gross Elec. Generation (TWh_e)	**32**	**39**	**45**	**45**	**46**	**52**	**60**	**2.0%**	**1.4%**	**0.0%**	**0.2%**	**1.2%**	**1.6%**
Coal	1	2	2	0	0	0	1	8.8%	2.9%	-15.1%	-37.8%	37.5%	30.6%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	0	0	0	0	0	0	0	n.s.	n.s.	27.9%	n.s.	n.s.	n.s.
Gas	6	10	10	1	1	2	2	5.3%	0.4%	-17.5%	-0.1%	2.9%	2.4%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	1	1	1	0	0	0	0	1.6%	0.2%	n.s.	n.s.	n.s.	n.s.
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	23	24	25	25	29	28	28	0.5%	0.1%	0.2%	1.4%	-0.2%	-0.2%
Wind	0	0	2	7	10	13	13	n.s.	29.8%	15.3%	4.0%	2.9%	-0.4%
Solar	0	0	0	0	1	2	3	n.s.	n.s.	n.s.	14.2%	7.4%	6.8%
Other	2	3	6	11	4	6	13	3.2%	7.2%	6.1%	-8.3%	3.2%	7.7%
Generation Capacity (GW_e)	**7**	**8**	**9**	**13**	**17**	**19**	**20**	**0.8%**	**1.7%**	**3.3%**	**2.6%**	**1.1%**	**0.4%**
Coal	1	1	1	0	0	0	0	-1.0%	-4.8%	-6.4%	-29.1%	33.1%	12.7%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	0	0	0	0	0	0	0	n.s.	n.s.	-5.0%	2.5%	5.1%	-0.2%
Gas	1	1	2	2	2	2	1	2.7%	3.4%	-2.7%	2.4%	-1.7%	-6.0%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	0	0	0	0	0	0	0.9%	9.0%	1.2%	-1.5%	-11.2%	-9.2%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	5	5	5	6	6	6	6	0.9%	0.1%	0.6%	1.4%	-0.2%	-0.2%
Wind	0	0	1	3	4	5	5	n.s.	30.8%	18.6%	3.7%	2.4%	-1.4%
Solar	0	0	0	0	1	2	4	n.s.	n.s.	44.6%	15.1%	8.0%	7.4%
Other	0	0	1	2	3	3	3	3.4%	7.1%	11.6%	3.6%	0.1%	-0.7%
Total Final Consumption[2] (Mtoe)	**10**	**13**	**13**	**16**	**16**	**17**	**17**	**2.9%**	**0.0%**	**2.0%**	**0.1%**	**0.2%**	**0.3%**
Coal	1	1	1	1	2	2	2	-2.3%	1.9%	4.3%	2.3%	0.0%	0.1%
Oil	4	5	6	7	6	6	5	2.8%	1.1%	1.0%	-1.0%	-0.5%	-0.5%
Gas	2	3	2	3	3	4	4	5.6%	-5.1%	6.3%	0.6%	0.6%	0.8%
Electricity	2	3	3	3	4	4	5	2.0%	1.3%	0.2%	0.3%	1.2%	1.5%
Heat	0	0	0	0	0	0	0	1.4%	1.6%	2.5%	0.0%	0.1%	0.5%
Biomass & Other	1	1	1	1	1	1	1	4.5%	0.7%	1.8%	1.2%	-0.9%	-1.1%
Industry (incl. non-energy use)	**4**	**6**	**5**	**8**	**8**	**8**	**8**	**3.2%**	**-1.4%**	**3.6%**	**0.5%**	**0.2%**	**0.3%**
Coal	1	1	1	1	2	2	2	-2.0%	2.1%	4.9%	2.5%	0.0%	0.2%
Oil	1	1	1	1	1	1	1	1.0%	1.8%	0.8%	0.2%	2.3%	2.2%
Gas	2	3	1	3	3	3	3	5.8%	-5.8%	7.0%	-0.1%	-0.6%	-0.6%
Electricity	1	1	1	1	2	2	2	2.3%	0.5%	0.8%	1.2%	1.8%	1.9%
Heat	0	0	0	0	0	0	0	2.1%	0.7%	3.2%	-0.2%	-0.3%	-0.2%
Biomass & Other	0	1	1	1	1	1	0	5.6%	0.9%	1.0%	-0.9%	-2.9%	-4.0%
Buildings	**2**	**2**	**3**	**3**	**3**	**3**	**3**	**1.4%**	**1.2%**	**0.2%**	**0.2%**	**0.4%**	**0.5%**
Coal	0	0	0	0	0	0	0	-5.8%	-4.0%	-2.2%	-2.8%	-3.0%	-3.0%
Oil	0	0	0	0	0	0	0	0.6%	1.7%	1.9%	2.7%	1.8%	0.5%
Gas	0	0	0	0	0	1	1	5.6%	-0.5%	2.1%	2.6%	1.3%	0.5%
Electricity	1	2	2	2	2	2	2	1.5%	1.7%	-0.4%	-1.4%	-0.2%	0.8%
Heat	0	0	0	0	0	0	0	-0.4%	3.8%	0.8%	0.6%	0.9%	1.9%
Biomass & Other	0	0	0	0	0	0	0	0.1%	-0.5%	2.4%	5.4%	0.7%	-1.0%
Agriculture	**0**	**1**	**1**	**1**	**1**	**1**	**1**	**2.8%**	**0.5%**	**1.5%**	**0.9%**	**0.9%**	**0.8%**
Coal	0	0	0	0	0	0	0	4.6%	12.4%	-3.7%	0.0%	0.0%	0.0%
Oil	0	0	0	0	0	1	1	2.3%	-1.4%	1.7%	0.9%	0.8%	0.8%
Gas	0	0	0	0	0	0	0	0.5%	-3.5%	0.9%	0.7%	0.6%	0.6%
Electricity	0	0	0	0	0	0	0	6.6%	5.1%	2.4%	1.2%	1.1%	1.1%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Transport	**3**	**4**	**5**	**5**	**5**	**5**	**5**	**3.3%**	**1.2%**	**1.1%**	**-0.7%**	**-0.1%**	**0.2%**
Coal	0	0	0	0	0	0	0	0.0%	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	3	4	5	5	4	4	3	3.3%	1.2%	0.9%	-1.6%	-1.4%	-1.7%
Gas	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	51.9%	13.0%	7.0%
Electricity	0	0	0	0	0	0	0	1.8%	-0.8%	13.2%	25.3%	6.1%	3.2%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	n.s.	n.s.	33.5%	10.6%	3.7%	4.0%
Other Energy Transformation & Losses[3]	**0**	**0**	**0**	**0**	**1**	**1**	**1**	**-2.3%**	**n.s.**	**n.s.**	**19.0%**	**0.3%**	**-1.7%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Rest Pacific	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	6	8	9	11	13	14	15	2.3%	2.2%	1.8%	1.4%	1.1%	0.7%
GDP per capita (ppp, k$'15)	2	3	3	4	5	8	13	1.2%	1.0%	3.1%	3.0%	4.2%	4.7%
Prices													
International/Regional ($'15/boe)													
Coal	3	1	3	4	4	5	5	-7.8%	10.3%	1.7%	1.4%	1.1%	0.9%
Oil	39	38	86	91	89	96	107	-0.2%	8.4%	0.5%	-0.2%	0.8%	1.0%
Gas	28	26	46	73	84	97	101	-0.7%	5.8%	4.7%	1.5%	1.5%	0.3%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**62**	**17**	**- 15**	**3**	**18**	**27**	**45**	**-12.4%**	**n.s.**	**n.s.**	**21.2%**	**4.5%**	**5.0%**
Total GHG (energy, industry, agriculture)	**7**	**10**	**12**	**16**	**20**	**32**	**44**	**2.6%**	**1.9%**	**3.2%**	**2.3%**	**4.6%**	**3.3%**
CO_2	3	5	6	10	14	25	36	4.1%	2.6%	5.1%	3.2%	5.9%	3.9%
CH_4	3	3	4	4	4	4	5	1.8%	0.9%	0.7%	0.4%	0.4%	0.4%
N_2O	1	2	2	2	2	2	3	0.4%	1.3%	0.4%	0.9%	2.0%	1.2%
F gases	0	0	0	0	0	1	1	n.s.	n.s.	6.0%	4.3%	4.6%	4.1%
Total GHG from Energy and Industry	**5**	**7**	**9**	**13**	**17**	**29**	**41**	**3.7%**	**2.4%**	**4.0%**	**2.7%**	**5.3%**	**3.6%**
CO_2 Emissions from Fuel Comb.	**3**	**4**	**6**	**10**	**13**	**23**	**33**	**3.4%**	**3.1%**	**5.3%**	**2.8%**	**5.8%**	**3.7%**
Power generation/District heating	1	1	2	3	5	12	17	8.0%	2.4%	4.9%	5.0%	8.9%	4.1%
Industry	1	1	2	3	3	5	8	6.7%	4.9%	5.4%	2.3%	4.5%	4.1%
Buildings	0	0	0	0	1	1	1	-4.1%	0.0%	6.3%	5.0%	3.8%	3.6%
Agriculture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Transport	1	2	2	3	3	4	4	2.1%	1.1%	6.2%	0.2%	1.4%	1.8%
Other	0	0	0	0	1	1	2	1.4%	36.0%	0.5%	3.7%	5.9%	3.7%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Energy Balance, by fuel (Mtoe)													
Primary Production	**13**	**13**	**17**	**18**	**14**	**13**	**13**	**0.2%**	**3.0%**	**0.2%**	**-2.0%**	**-1.0%**	**0.2%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	4	4	0	6	4	2	1	-2.1%	-21.0%	33.5%	-5.0%	-4.8%	-4.3%
Natural gas	6	7	15	7	5	5	5	1.4%	7.1%	-7.3%	-2.4%	-1.1%	-0.8%
Biomass	2	2	2	4	4	3	3	0.2%	-0.1%	8.9%	0.5%	-2.4%	-2.9%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	0	0	0	0	0	0	0	0.6%	0.4%	0.3%	0.7%	0.2%	0.2%
Other renewables	0	0	0	0	1	2	5	n.s.	n.s.	-0.6%	10.8%	11.8%	7.1%
Net Imports	**- 10**	**- 10**	**- 13**	**- 12**	**- 8**	**- 2**	**3**						
Coal	0	0	0	0	0	1	4						
Oil	- 3	- 2	2	- 3	0	3	3						
Natural gas	- 6	- 7	- 15	- 7	- 5	- 4	- 3						
Biomass	0	0	0	- 2	- 3	- 2	- 1						
Biofuels	0	0	0	0	0	0	0						
Electricity	0	0	0	0	0	0	0						
Primary Energy Demand[2]	**3**	**3**	**4**	**5**	**7**	**11**	**16**	1.5%	**2.1%**	**2.7%**	**2.3%**	**5.1%**	**3.7%**
Coal	0	0	0	0	0	1	4	n.s.	n.s.	18.6%	25.9%	16.0%	10.3%
Oil	1	1	2	3	3	5	5	3.0%	3.1%	4.5%	1.4%	3.6%	-0.4%
Natural gas	0	0	0	0	0	1	2	55.8%	0.9%	9.1%	7.8%	6.5%	5.0%
Biomass	2	2	2	2	2	2	1	0.2%	-0.1%	0.4%	-0.4%	-0.8%	-0.8%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	0	0	0	0	0	0	0	0.6%	0.4%	0.3%	0.7%	0.2%	0.2%
Other renewables	0	0	0	0	1	2	5	n.s.	n.s.	-0.6%	10.8%	11.8%	7.1%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**3**	**3**	**4**	**5**	**7**	**11**	**16**	**1.5%**	**2.1%**	**2.7%**	**2.3%**	**5.1%**	**3.7%**
Energy for Power Generation	**0**	**1**	**1**	**1**	**3**	**6**	**10**	**6.4%**	**5.6%**	**3.2%**	**5.8%**	**9.2%**	**5.0%**
Other Energy Transformation & Losses	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**n.s.**	**n.s.**	**4.3%**	**0.6%**	**-2.0%**	**-8.2%**
Final consumption	**3**	**3**	**3**	**4**	**5**	**7**	**9**	**0.9%**	**1.1%**	**2.7%**	**1.3%**	**3.2%**	**2.9%**
Steel, Non-Met. Minerals and Chem.	0	0	0	0	0	1	1	n.s.	n.s.	11.1%	3.7%	38.1%	5.5%
Other Industry	1	1	1	2	2	3	4	3.2%	2.2%	3.7%	2.2%	3.2%	3.1%
Non-Energy Use	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Residential	1	1	2	2	2	2	2	-0.1%	0.2%	0.5%	0.4%	0.7%	0.8%
Services	0	0	0	0	0	1	1	2.8%	3.5%	4.8%	3.7%	6.0%	6.3%
Agriculture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Road	0	1	1	1	1	1	1	2.2%	0.9%	5.0%	-0.4%	0.9%	1.8%
Rail	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Aviation	0	0	0	0	0	0	1	1.4%	2.1%	5.1%	6.5%	4.8%	3.3%
Other Transport	0	0	0	0	0	0	0	0.0%	0.0%	1.0%	3.4%	4.2%	4.2%

[1] Nuclear energy is accounted as primary electricity

Rest Pacific	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**0**	**1**	**1**	**1**	**2**	**4**	**5**	**8.4%**	**2.7%**	**4.9%**	**4.7%**	**8.4%**	**3.6%**
Coal	0	0	0	0	0	1	3	n.s.	n.s.	n.s.	36.3%	16.5%	11.1%
Oil	0	0	1	1	1	2	2	6.4%	2.6%	4.4%	3.0%	7.1%	-2.8%
Gas	0	0	0	0	0	0	1	n.s.	0.9%	7.4%	4.3%	4.4%	3.3%
Biomass & Waste	0	0	0	0	0	0	0	5.4%	-0.1%	8.1%	1.5%	-3.0%	6.2%
Other	0	0	0	0	0	0	0	n.s.	n.s.	-1.6%	10.2%	11.5%	6.6%
Gross Elec. Generation (TWh_e)	**2**	**3**	**5**	**7**	**11**	**25**	**40**	**3.3%**	**3.5%**	**3.9%**	**4.9%**	**8.5%**	**5.0%**
Coal	0	0	0	0	1	4	12	n.s.	n.s.	n.s.	36.7%	16.6%	11.2%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	1	2	2	4	5	10	8	3.8%	4.4%	4.6%	3.1%	7.2%	-2.8%
Gas	0	0	0	1	2	3	4	n.s.	3.5%	8.9%	4.3%	4.4%	3.1%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	0	0	0	0	0	0	-0.2%	1.2%	9.5%	2.1%	-0.1%	6.8%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	1	1	1	2	2	2	2	0.6%	0.4%	0.3%	0.7%	0.2%	0.2%
Wind	0	0	0	0	1	3	9	n.s.	n.s.	25.7%	27.1%	16.4%	10.4%
Solar	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	31.7%	16.9%	12.0%
Other	0	0	0	0	1	3	5	n.s.	n.s.	-1.5%	10.7%	12.0%	7.0%
Generation Capacity (GW_e)	**1**	**1**	**1**	**2**	**2**	**5**	**12**	**1.6%**	**3.5%**	**3.1%**	**4.8%**	**7.9%**	**8.0%**
Coal	0	0	0	0	0	1	2	n.s.	n.s.	n.s.	36.8%	16.5%	11.8%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	0	0	1	1	1	1	2	-0.3%	4.5%	0.7%	3.1%	4.9%	5.5%
Gas	0	0	0	0	0	1	1	7.4%	0.0%	16.2%	2.5%	3.2%	3.4%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	0	0	0	0	0	0	0.0%	9.4%	0.6%	-1.5%	-0.9%	7.3%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	0	0	0	0	0	0	0	3.2%	1.2%	1.4%	0.7%	0.2%	0.2%
Wind	0	0	0	0	0	1	3	n.s.	n.s.	7.4%	25.6%	15.5%	9.7%
Solar	0	0	0	0	0	1	2	n.s.	n.s.	n.s.	32.8%	18.0%	13.2%
Other	0	0	0	0	0	0	1	0.0%	28.4%	0.0%	10.2%	11.6%	6.8%
Total Final Consumption[2] (Mtoe)	**3**	**3**	**3**	**4**	**5**	**7**	**9**	**0.9%**	**1.1%**	**2.7%**	**1.3%**	**3.2%**	**2.9%**
Coal	0	0	0	0	0	0	1	n.s.	n.s.	11.0%	16.4%	16.6%	8.9%
Oil	1	1	1	2	2	2	3	1.9%	2.3%	4.9%	0.7%	1.4%	1.3%
Gas	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	19.4%	9.4%	6.6%
Electricity	0	0	0	1	1	2	3	3.8%	3.1%	3.9%	4.8%	8.4%	4.8%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	7.3%	4.9%	3.2%
Biomass & Other	2	2	2	2	2	2	2	0.2%	-0.1%	0.3%	-0.5%	-0.6%	-0.7%
Industry (incl. non-energy use)	**1**	**1**	**1**	**2**	**2**	**3**	**5**	**3.2%**	**2.2%**	**3.7%**	**2.2%**	**5.2%**	**3.6%**
Coal	0	0	0	0	0	0	1	n.s.	n.s.	11.0%	16.4%	16.6%	8.9%
Oil	0	0	1	1	1	1	1	8.1%	4.8%	5.3%	1.3%	1.7%	0.9%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	13.5%	8.6%
Electricity	0	0	0	0	0	1	2	3.7%	2.4%	3.1%	3.6%	10.4%	4.6%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	0.6%	-0.8%	1.3%	0.6%	-0.7%	-2.6%
Buildings	**2**	**2**	**2**	**2**	**2**	**2**	**3**	**0.0%**	**0.4%**	**0.9%**	**0.8%**	**1.6%**	**2.3%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	0	0	0	0	0	0	0	-4.0%	0.0%	4.3%	2.4%	2.8%	3.1%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	13.0%	5.4%	4.3%
Electricity	0	0	0	0	0	1	1	4.0%	4.4%	5.0%	4.6%	5.6%	5.4%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	7.3%	4.9%	3.2%
Biomass & Other	1	1	1	1	1	1	1	0.1%	0.1%	-0.2%	-0.9%	-0.7%	-0.5%
Agriculture	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Electricity	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Transport	**0**	**1**	**1**	**1**	**1**	**1**	**2**	**2.1%**	**1.0%**	**5.0%**	**0.9%**	**2.0%**	**2.3%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	0	1	1	1	1	1	1	2.1%	1.0%	4.6%	0.0%	0.9%	1.4%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	13.0%	6.7%
Electricity	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	34.0%	7.5%	4.4%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	2.9%	3.2%	4.7%
Other Energy Transformation & Losses[3]	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**n.s.**	**n.s.**	**4.3%**	**0.6%**	**-2.0%**	**-8.2%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

8 GECO 2018 Central 2°C scenario

World	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	5 329	6 142	6 954	7 788	8 489	9 047	9 461	1.4%	1.2%	1.1%	0.9%	0.6%	0.4%
GDP per capita (ppp, k$'15)	8	9	12	15	19	24	30	1.5%	2.2%	2.4%	2.6%	2.5%	2.3%
Prices													
International ($'15/boe)													
Coal	21	11	24	25	29	33	37	-5.9%	7.9%	0.2%	1.6%	1.3%	1.3%
Oil	39	38	86	89	89	88	90	-0.2%	8.4%	0.3%	0.0%	-0.1%	0.2%
Gas	25	32	37	52	63	72	75	2.4%	1.5%	3.3%	2.0%	1.4%	0.5%
GHG emissions ($MtCO_2$ eq.)													
Total GHG	**36 247**	**38 006**	**47 509**	**53 031**	**42 245**	**30 009**	**17 868**	**0.5%**	**2.3%**	**1.1%**	**-2.2%**	**-3.4%**	**-5.1%**
Total GHG (energy, industry, agriculture)	**33 343**	**36 023**	**46 183**	**52 338**	**44 209**	**33 232**	**21 310**	**0.8%**	**2.5%**	**1.3%**	**-1.7%**	**-2.8%**	**-4.3%**
CO_2	22 553	25 453	33 769	39 433	34 324	25 287	15 061	1.2%	2.9%	1.6%	-1.4%	-3.0%	-5.0%
CH_4	8 101	7 610	8 804	8 847	6 276	4 922	3 833	-0.6%	1.5%	0.0%	-3.4%	-2.4%	-2.5%
N_2O	2 345	2 439	2 744	2 912	2 602	2 340	2 154	0.4%	1.2%	0.6%	-1.1%	-1.1%	-0.8%
F gases	345	521	865	1 146	1 007	683	261	4.2%	5.2%	2.8%	-1.3%	-3.8%	-9.2%
Total GHG from Energy and Industry	**27 969**	**30 702**	**40 199**	**46 086**	**39 018**	**28 761**	**17 156**	**0.9%**	**2.7%**	**1.4%**	**-1.7%**	**-3.0%**	**-5.0%**
CO_2 Emissions from Fuel Comb.	**20 841**	**23 412**	**30 692**	**35 403**	**29 722**	**20 914**	**12 053**	**1.2%**	**2.7%**	**1.4%**	**-1.7%**	**-3.5%**	**-5.4%**
Power generation/District heating	6 783	8 474	11 614	13 484	9 397	5 001	1 963	2.3%	3.2%	1.5%	-3.5%	-6.1%	-8.9%
Industry	4 092	3 999	6 050	6 406	6 035	4 145	2 284	-0.2%	4.2%	0.6%	-0.6%	-3.7%	-5.8%
Buildings	2 920	2 728	2 947	2 909	2 377	1 960	1 435	-0.7%	0.8%	-0.1%	-2.0%	-1.9%	-3.1%
Agriculture	409	351	416	458	377	239	151	-1.5%	1.7%	1.0%	-1.9%	-4.5%	-4.5%
Transport	4 640	5 799	7 070	8 568	7 887	6 229	4 004	2.3%	2.0%	1.9%	-0.8%	-2.3%	-4.3%
Other	1 997	2 061	2 596	3 578	3 649	3 339	2 216	0.3%	2.3%	3.3%	0.2%	-0.9%	-4.0%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**2**	**136**	**1 203**	**0.0%**	**n.s.**	**n.s.**	**32.7%**	**53.1%**	**24.4%**
Coal	0	0	0	0	0	63	445	n.s.	n.s.	n.s.	-0.9%	n.s.	21.6%
Gas	0	0	0	0	0	44	230	n.s.	n.s.	n.s.	n.s.	n.s.	18.0%
Biomass	0	0	0	0	0	17	470	n.s.	n.s.	n.s.	n.s.	n.s.	39.7%
Direct Air Capture	0	0	0	0	2	13	59	n.s.	n.s.	n.s.	34.7%	20.8%	16.7%
Energy Balance, by fuel (Mtoe)													
Primary Production	**8 401**	**9 543**	**12 352**	**14 386**	**14 128**	**12 782**	**12 002**	**1.3%**	**2.6%**	**1.5%**	**-0.2%**	**-1.0%**	**-0.6%**
Coal	2 129	2 271	3 588	4 060	2 779	1 196	535	0.6%	4.7%	1.2%	-3.7%	-8.1%	-7.7%
Oil	3 271	3 682	4 180	4 842	4 487	3 675	2 435	1.2%	1.3%	1.5%	-0.8%	-2.0%	-4.0%
Natural gas	1 685	2 075	2 734	3 050	3 152	3 046	2 244	2.1%	2.8%	1.1%	0.3%	-0.3%	-3.0%
Biomass	924	1 015	1 211	1 478	2 158	2 309	2 601	0.9%	1.8%	2.0%	3.9%	0.7%	1.2%
Nuclear[1]	173	223	237	247	284	325	477	2.6%	0.6%	0.4%	1.4%	1.4%	3.9%
Hydro	184	225	296	398	478	535	570	2.0%	2.8%	3.0%	1.8%	1.1%	0.6%
Other renewables	34	53	107	311	790	1 696	3 140	4.3%	7.4%	11.3%	9.8%	7.9%	6.4%
International Bunkers	**237**	**323**	**425**	**563**	**563**	**575**	**572**	**3.2%**	**2.8%**	**2.9%**	**0.0%**	**0.2%**	**-0.1%**
Maritime Bunkers	151	206	273	365	310	311	317	3.1%	2.9%	2.9%	-1.6%	0.0%	0.2%
Oil	151	202	266	329	218	144	98	2.9%	2.8%	2.1%	-4.0%	-4.1%	-3.8%
Gas	0	4	7	36	68	60	46	n.s.	5.5%	17.7%	6.4%	-1.2%	-2.6%
Aviation Bunkers	86	117	152	198	253	264	255	3.2%	2.6%	2.7%	2.5%	0.4%	-0.4%
Oil	86	117	152	196	234	224	172	3.2%	2.6%	2.6%	1.8%	-0.4%	-2.6%
Regional Energy Demand (excl. bunkers)	**8 164**	**9 220**	**11 927**	**13 825**	**13 609**	**12 355**	**11 686**	**1.2%**	**2.6%**	**1.5%**	**-0.2%**	**-1.0%**	**-0.6%**
Coal	2 129	2 271	3 588	4 060	2 779	1 196	535	0.6%	4.7%	1.2%	-3.7%	-8.1%	-7.7%
Oil	3 034	3 363	3 762	4 318	4 036	3 307	2 165	1.0%	1.1%	1.4%	-0.7%	-2.0%	-4.1%
Natural gas	1 685	2 070	2 727	3 014	3 084	2 986	2 198	2.1%	2.8%	1.0%	0.2%	-0.3%	-3.0%
Biomass	924	1 015	1 211	1 478	2 158	2 309	2 601	0.9%	1.8%	2.0%	3.9%	0.7%	1.2%
Nuclear[1]	173	223	237	247	284	325	477	2.6%	0.6%	0.4%	1.4%	1.4%	3.9%
Hydro	184	225	296	398	478	535	570	2.0%	2.8%	3.0%	1.8%	1.1%	0.6%
Other renewables	34	53	107	311	790	1 696	3 140	4.3%	7.4%	11.3%	9.8%	7.9%	6.4%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**8 401**	**9 543**	**12 352**	**14 386**	**14 128**	**12 782**	**12 002**	**1.3%**	**2.6%**	**1.5%**	**-0.2%**	**-1.0%**	**-0.6%**
Energy for Power Generation	**2 416**	**3 009**	**4 144**	**5 023**	**4 599**	**4 481**	**5 611**	**2.2%**	**3.3%**	**1.9%**	**-0.9%**	**-0.3%**	**2.3%**
Other Energy Transformation & Losses	**791**	**741**	**1 132**	**1 493**	**2 118**	**2 184**	**1 773**	**-0.7%**	**4.3%**	**2.8%**	**3.6%**	**0.3%**	**-2.1%**
Final consumption (incl. bunkers)	**6 372**	**7 148**	**8 962**	**10 340**	**10 110**	**9 308**	**8 610**	**1.2%**	**2.3%**	**1.4%**	**-0.2%**	**-0.8%**	**-0.8%**
Steel, Non-Met. Minerals and Chem.	838	916	1 412	1 570	1 582	1 230	990	0.9%	4.4%	1.1%	0.1%	-2.5%	-2.1%
Other Industry	1 105	1 078	1 361	1 637	1 772	1 766	1 764	-0.3%	2.4%	1.9%	0.8%	0.0%	0.0%
Non-Energy Use	495	633	787	872	805	746	670	2.5%	2.2%	1.0%	-0.8%	-0.8%	-1.1%
Residential	1 630	1 795	1 979	2 134	1 942	1 765	1 640	1.0%	1.0%	0.8%	-0.9%	-1.0%	-0.7%
Services	579	621	816	925	844	848	963	0.7%	2.8%	1.3%	-0.9%	0.0%	1.3%
Agriculture	163	144	177	207	230	248	265	-1.2%	2.1%	1.6%	1.0%	0.8%	0.6%
Road	1 130	1 439	1 806	2 179	2 079	1 850	1 489	2.4%	2.3%	1.9%	-0.5%	-1.2%	-2.1%
Rail	59	47	51	60	68	74	80	-2.2%	0.8%	1.6%	1.2%	0.9%	0.7%
Aviation	182	227	252	323	399	404	379	2.2%	1.1%	2.5%	2.1%	0.1%	-0.6%
Other Transport	190	248	320	433	389	377	370	2.7%	2.6%	3.1%	-1.1%	-0.3%	-0.2%

[1] Nuclear energy is accounted as primary electricity

World	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**2 027**	**2 513**	**3 510**	**4 074**	**3 062**	**1 955**	**1 473**	**2.2%**	**3.4%**	**1.5%**	**-2.8%**	**-4.4%**	**-2.8%**
Coal	1 150	1 509	2 114	2 454	1 463	527	215	2.7%	3.4%	1.5%	-5.0%	-9.7%	-8.6%
Oil	342	300	249	386	390	318	198	-1.3%	-1.8%	4.5%	0.1%	-2.0%	-4.6%
Gas	479	650	1 031	1 065	1 000	856	589	3.1%	4.7%	0.3%	-0.6%	-1.5%	-3.7%
Biomass & Waste	53	51	110	162	193	225	421	-0.4%	8.0%	3.9%	1.8%	1.5%	6.5%
Other	3	4	6	7	15	29	50	3.6%	2.8%	1.7%	8.1%	6.8%	5.4%
Gross Elec. Generation (TWh_e)	**11 947**	**15 587**	**21 641**	**28 085**	**29 846**	**33 709**	**43 198**	**2.7%**	**3.3%**	**2.6%**	**0.6%**	**1.2%**	**2.5%**
Coal	4 424	6 002	8 659	10 570	6 417	2 360	1 019	3.1%	3.7%	2.0%	-4.9%	-9.5%	-8.1%
of which CCS	0	0	0	0	0	73	538	n.s.	n.s.	n.s.	-0.6%	n.s.	22.2%
Oil	1 339	1 225	945	1 605	1 680	1 407	889	-0.9%	-2.6%	5.4%	0.5%	-1.8%	-4.5%
Gas	1 754	2 753	4 835	5 240	5 126	4 456	3 208	4.6%	5.8%	0.8%	-0.2%	-1.4%	-3.2%
of which CCS	0	0	0	0	0	82	468	n.s.	n.s.	n.s.	n.s.	n.s.	19.0%
Biomass & Waste	130	164	366	525	700	931	2 002	2.4%	8.4%	3.7%	2.9%	2.9%	8.0%
of which CCS	0	0	0	0	0	16	396	n.s.	n.s.	n.s.	n.s.	n.s.	38.1%
Nuclear	2 013	2 591	2 756	2 870	3 300	3 767	5 505	2.6%	0.6%	0.4%	1.4%	1.3%	3.9%
Hydro	2 191	2 699	3 529	4 878	5 766	6 435	7 014	2.1%	2.7%	3.3%	1.7%	1.1%	0.9%
Wind	4	31	341	1 683	4 861	8 174	11 205	23.2%	27.0%	17.3%	11.2%	5.3%	3.2%
Solar	1	1	37	596	1 696	5 407	10 274	7.0%	39.3%	32.0%	11.0%	12.3%	6.6%
Other	91	120	171	118	299	771	2 081	2.8%	3.6%	-3.7%	9.8%	9.9%	10.4%
Generation Capacity (GW_e)	**2 814**	**3 585**	**5 286**	**7 247**	**9 671**	**13 648**	**17 832**	**2.5%**	**4.0%**	**3.2%**	**2.9%**	**3.5%**	**2.7%**
Coal	937	1 149	1 718	2 003	1 742	1 435	368	2.1%	4.1%	1.5%	-1.4%	-1.9%	-12.7%
of which CCS	0	0	0	0	0	10	78	n.s.	n.s.	n.s.	0.0%	n.s.	23.2%
Oil	415	417	403	449	556	693	848	0.1%	-0.3%	1.1%	2.1%	2.2%	2.0%
Gas	507	784	1 397	1 480	1 503	1 298	1 051	4.5%	6.0%	0.6%	0.2%	-1.5%	-2.1%
of which CCS	0	0	0	0	0	11	73	n.s.	n.s.	n.s.	n.s.	n.s.	20.4%
Biomass & Waste	48	36	82	101	121	165	342	-3.0%	8.7%	2.1%	1.8%	3.2%	7.5%
of which CCS	0	0	0	0	0	2	59	n.s.	n.s.	n.s.	n.s.	n.s.	39.2%
Nuclear	293	363	382	400	458	527	767	2.1%	0.5%	0.5%	1.4%	1.4%	3.8%
Hydro	605	810	1 070	1 461	1 709	1 897	2 140	3.0%	2.8%	3.2%	1.6%	1.0%	1.2%
Wind	2	17	184	762	2 143	3 452	4 558	24.4%	27.0%	15.2%	10.9%	4.9%	2.8%
Solar	0	1	38	571	1 392	4 093	7 586	9.4%	42.7%	31.2%	9.3%	11.4%	6.4%
Other	6	9	11	19	45	88	172	3.8%	2.8%	5.4%	9.0%	6.9%	6.9%
Total Final Consumption (Mtoe)	**6 372**	**7 148**	**8 962**	**10 340**	**10 110**	**9 308**	**8 610**	**1.2%**	**2.3%**	**1.4%**	**-0.2%**	**-0.8%**	**-0.8%**
Coal	849	659	1 204	1 220	1 026	519	244	-2.5%	6.2%	0.1%	-1.7%	-6.6%	-7.3%
Oil	2 654	3 182	3 653	4 205	3 829	3 050	1 988	1.8%	1.4%	1.4%	-0.9%	-2.2%	-4.2%
Gas	893	1 071	1 281	1 433	1 450	1 464	1 221	1.8%	1.8%	1.1%	0.1%	0.1%	-1.8%
Electricity	832	1 087	1 533	1 968	2 096	2 360	2 918	2.7%	3.5%	2.5%	0.6%	1.2%	2.1%
Heat	339	257	295	355	399	445	460	-2.7%	1.4%	1.9%	1.2%	1.1%	0.3%
Biomass & Other	804	892	995	1 161	1 311	1 470	1 779	1.0%	1.1%	1.6%	1.2%	1.1%	1.9%
Industry (incl. non-energy use)	**2 438**	**2 627**	**3 559**	**4 079**	**4 160**	**3 742**	**3 425**	**0.7%**	**3.1%**	**1.4%**	**0.2%**	**-1.1%**	**-0.9%**
Coal	589	540	1 047	1 083	970	507	240	-0.9%	6.9%	0.3%	-1.1%	-6.3%	-7.2%
Oil	715	825	914	991	942	848	654	1.4%	1.0%	0.8%	-0.5%	-1.0%	-2.6%
Gas	452	532	643	779	779	770	588	1.6%	1.9%	1.9%	0.0%	-0.1%	-2.7%
Electricity	388	462	639	859	1 038	1 127	1 271	1.8%	3.3%	3.0%	1.9%	0.8%	1.2%
Heat	163	106	127	130	140	149	152	-4.2%	1.8%	0.2%	0.8%	0.6%	0.2%
Biomass & Other	132	163	189	237	290	342	519	2.1%	1.5%	2.3%	2.0%	1.7%	4.3%
Buildings	**2 209**	**2 416**	**2 795**	**3 059**	**2 785**	**2 612**	**2 603**	**0.9%**	**1.5%**	**0.9%**	**-0.9%**	**-0.6%**	**0.0%**
Coal	233	107	141	120	45	7	1	-7.4%	2.7%	-1.5%	-9.4%	-16.9%	-16.8%
Oil	310	337	307	327	297	269	201	0.9%	-0.9%	0.6%	-1.0%	-1.0%	-2.9%
Gas	434	527	605	596	539	462	340	2.0%	1.4%	-0.1%	-1.0%	-1.5%	-3.0%
Electricity	397	580	834	1 024	865	909	1 199	3.9%	3.7%	2.1%	-1.7%	0.5%	2.8%
Heat	176	150	168	225	259	296	307	-1.6%	1.1%	3.0%	1.4%	1.4%	0.4%
Biomass & Other	659	714	740	766	781	669	554	0.8%	0.4%	0.3%	0.2%	-1.5%	-1.9%
Agriculture	**163**	**144**	**177**	**207**	**230**	**248**	**265**	**-1.2%**	**2.1%**	**1.6%**	**1.0%**	**0.8%**	**0.6%**
Coal	14	8	13	14	8	3	1	-6.1%	5.5%	0.4%	-4.9%	-8.5%	-8.5%
Oil	106	97	109	120	102	67	43	-0.9%	1.2%	1.0%	-1.6%	-4.2%	-4.4%
Gas	7	6	8	10	8	6	5	-2.1%	3.1%	1.8%	-1.3%	-2.9%	-3.0%
Electricity	30	29	39	54	74	100	124	-0.3%	3.1%	3.2%	3.2%	3.1%	2.2%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	6	5	8	10	37	72	92	-1.7%	5.3%	1.6%	14.4%	7.0%	2.5%
Transport (incl. bunkers)	**1 561**	**1 960**	**2 430**	**2 995**	**2 935**	**2 705**	**2 318**	**2.3%**	**2.2%**	**2.1%**	**-0.2%**	**-0.8%**	**-1.5%**
Coal	13	4	3	2	2	2	1	-10.1%	-2.7%	-2.9%	-2.0%	-2.0%	-1.9%
Oil	1 524	1 923	2 323	2 766	2 487	1 867	1 090	2.4%	1.9%	1.8%	-1.1%	-2.8%	-5.2%
Gas	0	6	25	48	123	226	289	31.5%	15.0%	6.6%	10.0%	6.2%	2.5%
Electricity	17	16	20	31	118	224	323	-0.7%	2.5%	4.3%	14.3%	6.6%	3.7%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	8	11	58	148	204	386	614	3.9%	18.1%	9.8%	3.3%	6.6%	4.8%
Other Energy Transformation & Losses [2]	**791**	**741**	**1 132**	**1 493**	**2 118**	**2 184**	**1 773**	**-0.7%**	**4.3%**	**2.8%**	**3.6%**	**0.3%**	**-2.1%**

[2] includes statistical differences

EU28	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	478	487	503	516	524	528	528	0.2%	0.3%	0.3%	0.2%	0.1%	0.0%
GDP per capita (ppp, k$'15)	24	30	33	37	42	47	55	2.0%	1.2%	1.1%	1.2%	1.2%	1.5%
Prices													
International/Regional ($'15/boe)													
Coal	4	2	3	3	4	5	6	-5.3%	3.6%	-1.5%	2.6%	2.6%	2.0%
Oil	39	38	86	89	89	88	90	-0.2%	8.4%	0.3%	0.0%	-0.1%	0.2%
Gas	24	28	33	47	55	65	70	1.5%	1.6%	3.5%	1.6%	1.8%	0.7%
GHG emissions ($MtCO_2$ eq.)													
Total GHG	**5 205**	**4 771**	**4 449**	**3 935**	**2 787**	**1 867**	**990**	**-0.9%**	**-0.7%**	**-1.2%**	**-3.4%**	**-3.9%**	**-6.1%**
Total GHG (energy, industry, agriculture)	**5 457**	**5 034**	**4 670**	**4 142**	**3 101**	**2 223**	**1 330**	**-0.8%**	**-0.7%**	**-1.2%**	**-2.9%**	**-3.3%**	**-5.0%**
CO_2	4 259	4 028	3 808	3 403	2 583	1 774	926	-0.6%	-0.6%	-1.1%	-2.7%	-3.7%	-6.3%
CH_4	736	614	498	396	272	234	197	-1.8%	-2.1%	-2.3%	-3.7%	-1.5%	-1.7%
N_2O	398	319	253	250	224	194	185	-2.2%	-2.3%	-0.1%	-1.1%	-1.4%	-0.5%
F gases	63	73	111	93	22	21	22	1.5%	4.2%	-1.7%	-13.3%	-0.5%	0.4%
Total GHG from Energy and Industry	**4 903**	**4 559**	**4 234**	**3 687**	**2 713**	**1 868**	**980**	**-0.7%**	**-0.7%**	**-1.4%**	**-3.0%**	**-3.7%**	**-6.2%**
CO_2 Emissions from Fuel Comb.	**3 974**	**3 752**	**3 568**	**3 180**	**2 379**	**1 620**	**837**	**-0.6%**	**-0.5%**	**-1.1%**	**-2.9%**	**-3.8%**	**-6.4%**
Power generation/District heating	1 415	1 284	1 234	1 015	591	312	103	-1.0%	-0.4%	-1.9%	-5.3%	-6.2%	-10.5%
Industry	748	604	456	426	386	287	166	-2.1%	-2.8%	-0.7%	-1.0%	-2.9%	-5.3%
Buildings	724	651	662	528	392	262	148	-1.1%	0.2%	-2.2%	-2.9%	-4.0%	-5.6%
Agriculture	84	74	62	57	46	29	19	-1.3%	-1.7%	-0.8%	-2.2%	-4.5%	-4.3%
Transport	764	900	920	896	713	496	275	1.7%	0.2%	-0.3%	-2.3%	-3.6%	-5.7%
Other	240	239	234	257	251	235	126	-0.1%	-0.2%	0.9%	-0.2%	-0.7%	-6.0%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**13**	**143**	**n.s.**	**n.s.**	**n.s.**	**25.6%**	**55.1%**	**26.8%**
Coal	0	0	0	0	0	7	45	n.s.	n.s.	n.s.	-0.9%	n.s.	20.3%
Gas	0	0	0	0	0	4	23	n.s.	n.s.	n.s.	n.s.	n.s.	19.0%
Biomass	0	0	0	0	0	1	71	n.s.	n.s.	n.s.	n.s.	n.s.	50.0%
Direct Air Capture	0	0	0	0	0	1	5	n.s.	n.s.	n.s.	n.s.	21.3%	16.6%
Energy Balance, by fuel (Mtoe)													
Primary Production	**735**	**752**	**661**	**568**	**572**	**591**	**692**	**0.2%**	**-1.3%**	**-1.5%**	**0.1%**	**0.3%**	**1.6%**
Coal	312	213	163	136	92	46	21	-3.7%	-2.6%	-1.8%	-3.8%	-6.7%	-7.6%
Oil	127	160	92	57	36	23	15	2.3%	-5.4%	-4.6%	-4.5%	-4.6%	-4.3%
Natural gas	152	195	149	85	92	90	80	2.5%	-2.7%	-5.4%	0.7%	-0.3%	-1.1%
Biomass	47	66	125	120	137	137	151	3.5%	6.6%	-0.4%	1.3%	0.0%	1.0%
Nuclear[1]	68	81	79	68	64	64	56	1.7%	-0.3%	-1.4%	-0.7%	0.1%	-1.4%
Hydro	25	31	32	32	35	35	36	1.9%	0.5%	0.0%	0.6%	0.2%	0.1%
Other renewables	3	6	21	69	117	196	334	7.9%	12.7%	12.4%	5.4%	5.3%	5.4%
Net Imports	**803**	**790**	**901**	**888**	**710**	**512**	**339**						
Coal	133	100	112	120	59	21	15						
Oil	481	465	478	462	389	285	174						
Natural gas	143	201	298	274	216	178	97						
Biomass	0	0	3	24	43	19	47						
Biofuels	0	0	2	3	2	2	1						
Electricity	46	24	8	5	1	7	6						
Primary Energy Demand[2]	**1 537**	**1 542**	**1 563**	**1 456**	**1 283**	**1 104**	**1 031**	0.0%	**0.1%**	**-0.7%**	**-1.3%**	**-1.5%**	**-0.7%**
Coal	444	313	275	255	151	68	36	-3.4%	-1.3%	-0.8%	-5.1%	-7.8%	-6.1%
Oil	608	624	569	519	425	308	188	0.3%	-0.9%	-0.9%	-2.0%	-3.2%	-4.8%
Natural gas	295	396	446	360	308	268	177	3.0%	1.2%	-2.1%	-1.6%	-1.4%	-4.0%
Biomass	47	67	128	144	180	156	198	3.5%	6.7%	1.2%	2.3%	-1.4%	2.4%
Nuclear[1]	68	81	79	68	64	64	56	1.7%	-0.3%	-1.4%	-0.7%	0.1%	-1.4%
Hydro	25	31	32	32	35	35	36	1.9%	0.5%	0.0%	0.6%	0.2%	0.1%
Other renewables	3	6	21	69	117	196	334	7.9%	12.7%	12.4%	5.4%	5.3%	5.4%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**1 537**	**1 542**	**1 563**	**1 456**	**1 283**	**1 104**	**1 031**	**0.0%**	**0.1%**	**-0.7%**	**-1.3%**	**-1.5%**	**-0.7%**
Energy for Power Generation	**490**	**503**	**547**	**506**	**430**	**435**	**564**	**0.3%**	**0.8%**	**-0.8%**	**-1.6%**	**0.1%**	**2.6%**
Other Energy Transformation & Losses	**136**	**102**	**105**	**117**	**124**	**126**	**88**	**-2.8%**	**0.3%**	**1.0%**	**0.6%**	**0.2%**	**-3.5%**
Final consumption	**1 152**	**1 201**	**1 224**	**1 153**	**1 060**	**902**	**781**	**0.4%**	**0.2%**	**-0.6%**	**-0.8%**	**-1.6%**	**-1.4%**
Steel, Non-Met. Minerals and Chem.	190	167	141	144	149	128	114	-1.3%	-1.7%	0.2%	0.4%	-1.6%	-1.1%
Other Industry	175	163	145	144	147	135	129	-0.8%	-1.1%	-0.1%	0.1%	-0.8%	-0.4%
Non-Energy Use	100	115	108	94	87	80	76	1.4%	-0.6%	-1.4%	-0.8%	-0.8%	-0.6%
Residential	276	290	319	279	242	193	153	0.5%	1.0%	-1.4%	-1.4%	-2.2%	-2.3%
Services	118	133	164	147	130	110	99	1.2%	2.1%	-1.1%	-1.2%	-1.7%	-1.1%
Agriculture	33	29	27	26	27	28	29	-1.1%	-1.0%	-0.4%	0.4%	0.4%	0.4%
Road	237	281	299	302	260	213	167	1.7%	0.6%	0.1%	-1.5%	-2.0%	-2.4%
Rail	10	10	8	8	8	8	9	0.1%	-1.7%	-0.6%	0.5%	0.3%	0.5%
Aviation	6	7	7	7	6	5	4	2.5%	-0.4%	-0.4%	-1.1%	-1.6%	-1.8%
Other Transport	7	6	6	4	4	3	2	-1.1%	-0.3%	-3.2%	-0.9%	-3.4%	-2.8%

[1] Nuclear energy is accounted as primary electricity

EU28	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**393**	**385**	**415**	**337**	**216**	**141**	**144**	**-0.2%**	**0.7%**	**-2.1%**	**-4.3%**	**-4.2%**	**0.2%**
Coal	282	234	208	188	89	31	18	-1.8%	-1.2%	-1.0%	-7.2%	-9.9%	-5.5%
Oil	55	41	24	16	13	11	8	-2.9%	-5.5%	-3.5%	-2.0%	-2.2%	-3.2%
Gas	50	95	142	92	83	70	56	6.7%	4.1%	-4.3%	-1.0%	-1.6%	-2.2%
Biomass & Waste	6	15	41	40	30	27	57	9.8%	10.9%	-0.3%	-2.8%	-1.1%	7.9%
Other	0	0	0	1	1	2	5	4.0%	1.6%	1.3%	0.3%	12.3%	9.8%
Gross Elec. Generation (TWh_e)	**2 610**	**3 047**	**3 379**	**3 421**	**3 412**	**3 571**	**4 022**	**1.6%**	**1.0%**	**0.1%**	**0.0%**	**0.5%**	**1.2%**
Coal	1 050	966	861	797	391	142	84	-0.8%	-1.1%	-0.8%	-6.9%	-9.7%	-5.1%
of which CCS	0	0	0	0	0	9	55	n.s.	n.s.	n.s.	-0.6%	n.s.	20.2%
Oil	224	181	87	71	60	50	37	-2.1%	-7.1%	-2.0%	-1.7%	-2.0%	-3.0%
Gas	193	480	765	495	439	386	325	9.5%	4.8%	-4.3%	-1.2%	-1.3%	-1.7%
of which CCS	0	0	0	0	0	11	62	n.s.	n.s.	n.s.	n.s.	n.s.	18.8%
Biomass & Waste	20	46	143	140	115	108	261	8.9%	12.0%	-0.2%	-2.0%	-0.6%	9.2%
of which CCS	0	0	0	0	0	1	75	n.s.	n.s.	n.s.	n.s.	n.s.	56.0%
Nuclear	795	945	917	796	739	743	642	1.7%	-0.3%	-1.4%	-0.7%	0.1%	-1.5%
Hydro	309	387	408	422	440	439	432	2.3%	0.5%	0.3%	0.4%	0.0%	-0.2%
Wind	1	22	149	474	783	963	1 143	39.8%	21.0%	12.2%	5.1%	2.1%	1.7%
Solar	0	0	26	207	407	655	900	24.1%	n.s.	23.2%	7.0%	4.9%	3.2%
Other	19	19	23	18	39	87	199	0.3%	1.7%	-2.4%	7.9%	8.4%	8.7%
Generation Capacity (GW_e)	**654**	**717**	**905**	**1 149**	**1 500**	**1 768**	**1 916**	**0.9%**	**2.4%**	**2.4%**	**2.7%**	**1.7%**	**0.8%**
Coal	223	201	192	157	99	61	20	-1.0%	-0.4%	-2.0%	-4.5%	-4.8%	-10.3%
of which CCS	0	0	0	0	0	1	9	n.s.	n.s.	n.s.	0.0%	n.s.	21.2%
Oil	94	81	65	50	57	63	79	-1.4%	-2.2%	-2.7%	1.4%	1.0%	2.3%
Gas	65	129	219	222	233	222	155	7.1%	5.4%	0.1%	0.5%	-0.5%	-3.5%
of which CCS	0	0	0	0	0	2	11	n.s.	n.s.	n.s.	n.s.	n.s.	20.2%
Biomass & Waste	7	10	28	33	35	36	60	3.0%	10.9%	1.7%	0.6%	0.3%	5.2%
of which CCS	0	0	0	0	0	0	12	n.s.	n.s.	n.s.	n.s.	n.s.	51.3%
Nuclear	126	137	131	114	105	103	87	0.9%	-0.4%	-1.4%	-0.8%	-0.2%	-1.6%
Hydro	138	146	153	166	166	162	156	0.5%	0.5%	0.8%	0.0%	-0.3%	-0.4%
Wind	1	12	85	230	398	470	480	36.9%	21.3%	10.4%	5.7%	1.7%	0.2%
Solar	0	0	31	174	395	632	834	36.9%	n.s.	19.0%	8.5%	4.8%	2.8%
Other	0	1	1	5	11	20	44	2.0%	2.3%	19.5%	9.3%	6.2%	8.2%
Total Final Consumption[2] (Mtoe)	**1 152**	**1 201**	**1 224**	**1 153**	**1 060**	**902**	**781**	**0.4%**	**0.2%**	**-0.6%**	**-0.8%**	**-1.6%**	**-1.4%**
Coal	141	74	59	56	47	23	15	-6.3%	-2.2%	-0.4%	-1.8%	-6.8%	-4.7%
Oil	503	543	505	464	378	268	161	0.8%	-0.7%	-0.9%	-2.0%	-3.4%	-5.0%
Gas	229	272	277	237	198	172	123	1.8%	0.2%	-1.5%	-1.8%	-1.4%	-3.3%
Electricity	186	217	244	244	244	255	284	1.6%	1.2%	0.0%	0.0%	0.4%	1.1%
Heat	55	46	55	54	61	76	81	-1.7%	1.9%	-0.3%	1.3%	2.2%	0.7%
Biomass & Other	39	49	83	98	132	107	117	2.3%	5.3%	1.8%	3.0%	-2.1%	0.9%
Industry (incl. non-energy use)	**466**	**444**	**395**	**383**	**383**	**343**	**319**	**-0.5%**	**-1.2%**	**-0.3%**	**0.0%**	**-1.1%**	**-0.7%**
Coal	93	61	44	47	44	23	14	-4.2%	-3.1%	0.5%	-0.6%	-6.3%	-4.5%
Oil	140	147	127	105	95	86	72	0.5%	-1.4%	-1.9%	-1.0%	-1.1%	-1.7%
Gas	113	117	96	94	84	78	52	0.3%	-1.9%	-0.2%	-1.1%	-0.8%	-3.8%
Electricity	85	91	88	94	108	119	129	0.7%	-0.3%	0.7%	1.4%	0.9%	0.8%
Heat	21	12	16	16	15	15	15	-5.6%	3.3%	-0.3%	-0.2%	-0.3%	-0.2%
Biomass & Other	14	17	22	26	35	23	37	1.9%	2.6%	2.0%	2.9%	-4.2%	4.8%
Buildings	**394**	**423**	**483**	**425**	**372**	**302**	**251**	**0.7%**	**1.3%**	**-1.3%**	**-1.3%**	**-2.1%**	**-1.8%**
Coal	46	12	13	9	3	0	0	-12.8%	1.1%	-4.1%	-11.3%	-18.4%	-23.0%
Oil	89	80	63	53	46	35	21	-1.1%	-2.4%	-1.6%	-1.4%	-2.7%	-5.2%
Gas	110	150	176	139	101	64	35	3.2%	1.6%	-2.3%	-3.2%	-4.4%	-5.8%
Electricity	90	116	146	138	112	96	98	2.5%	2.3%	-0.5%	-2.1%	-1.5%	0.2%
Heat	34	34	39	38	45	61	66	0.1%	1.4%	-0.4%	1.8%	3.0%	0.9%
Biomass & Other	24	30	46	48	65	46	31	2.3%	4.2%	0.5%	3.2%	-3.4%	-3.9%
Agriculture	**33**	**29**	**27**	**26**	**27**	**28**	**29**	**-1.1%**	**-1.0%**	**-0.4%**	**0.4%**	**0.4%**	**0.4%**
Coal	2	1	1	1	1	0	0	-4.9%	2.0%	-3.5%	-5.9%	-9.5%	-9.5%
Oil	21	19	15	14	11	7	5	-1.0%	-2.4%	-0.4%	-2.0%	-4.5%	-4.5%
Gas	5	4	4	4	3	2	2	-0.9%	-0.3%	-1.2%	-1.5%	-3.2%	-3.1%
Electricity	5	4	5	5	6	8	10	-1.6%	1.2%	0.6%	1.8%	3.3%	2.6%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	1	1	2	2	6	10	12	2.4%	4.4%	0.6%	11.4%	5.8%	2.1%
Transport	**259**	**304**	**320**	**320**	**278**	**229**	**182**	**1.6%**	**0.5%**	**0.0%**	**-1.4%**	**-1.9%**	**-2.3%**
Coal	0	0	0	0	0	0	0	-26.4%	1.7%	-2.9%	0.0%	0.0%	0.0%
Oil	253	297	300	291	225	140	64	1.6%	0.1%	-0.3%	-2.6%	-4.6%	-7.5%
Gas	0	0	0	0	10	28	34	5.0%	3.9%	-1.2%	39.1%	11.3%	1.9%
Electricity	5	6	5	6	18	33	47	1.3%	-1.4%	1.5%	11.3%	6.2%	3.7%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	1	13	22	26	28	37	n.s.	34.2%	5.2%	1.5%	0.8%	2.8%
Other Energy Transformation & Losses[3]	**136**	**102**	**105**	**117**	**124**	**126**	**88**	**-2.8%**	**0.3%**	**1.0%**	**0.6%**	**0.2%**	**-3.5%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

EFTA	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	11	12	13	14	15	16	17	0.7%	0.9%	1.0%	0.7%	0.5%	0.5%
GDP per capita (ppp, k$'15)	40	46	50	54	61	69	77	1.5%	0.7%	0.8%	1.1%	1.3%	1.2%
Prices													
International/Regional ($'15/boe)													
Coal	3	2	3	2	3	4	5	-3.4%	3.6%	-2.6%	2.9%	3.0%	2.2%
Oil	39	38	86	89	89	88	90	-0.2%	8.4%	0.3%	0.0%	-0.1%	0.2%
Gas	24	28	33	47	55	65	70	1.5%	1.6%	3.5%	1.6%	1.8%	0.7%
GHG emissions ($MtCO_2$ eq.)													
Total GHG	**106**	**96**	**89**	**88**	**84**	**77**	**47**	**-0.9%**	**-0.8%**	**-0.1%**	**-0.5%**	**-0.8%**	**-4.8%**
Total GHG (energy, industry, agriculture)	**109**	**110**	**113**	**110**	**103**	**97**	**63**	**0.1%**	**0.3%**	**-0.2%**	**-0.6%**	**-0.7%**	**-4.2%**
CO_2	80	85	90	90	85	79	44	0.6%	0.6%	0.0%	-0.5%	-0.7%	-5.7%
CH_4	15	14	14	12	12	12	13	-0.6%	-0.3%	-1.4%	-0.1%	0.2%	1.1%
N_2O	8	7	6	6	6	5	5	-0.7%	-2.1%	-0.7%	0.1%	-1.2%	-0.2%
F gases	7	4	3	3	1	1	1	-5.6%	-1.8%	-0.9%	-11.6%	-0.2%	0.2%
Total GHG from Energy and Industry	**94**	**96**	**99**	**96**	**88**	**81**	**45**	**0.2%**	**0.3%**	**-0.3%**	**-0.9%**	**-0.8%**	**-5.7%**
CO_2 Emissions from Fuel Comb.	**67**	**70**	**77**	**77**	**71**	**66**	**35**	**0.5%**	**0.9%**	**0.0%**	**-0.7%**	**-0.7%**	**-6.1%**
Power generation/District heating	1	1	3	3	3	3	1	-2.5%	13.3%	2.2%	0.5%	-1.2%	-9.2%
Industry	10	10	10	9	9	8	5	-0.4%	0.1%	-0.7%	-0.1%	-1.7%	-4.1%
Buildings	20	18	18	13	10	6	3	-1.1%	0.2%	-3.1%	-2.7%	-5.0%	-7.0%
Agriculture	2	3	3	2	2	1	1	2.1%	-0.7%	-1.6%	-2.0%	-4.3%	-4.3%
Transport	25	28	31	30	24	17	10	1.1%	1.0%	-0.1%	-2.3%	-3.7%	-5.4%
Other	8	11	13	19	23	32	16	3.0%	1.3%	3.8%	2.1%	3.3%	-6.7%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**1**	**3**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**13.7%**
Coal	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	18.9%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	-5.9%
Biomass	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	39.1%
Direct Air Capture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	27.7%	20.0%
Energy Balance, by fuel (Mtoe)													
Primary Production	**119**	**222**	**207**	**188**	**138**	**68**	**47**	**6.4%**	**-0.7%**	**-1.0%**	**-3.0%**	**-6.9%**	**-3.6%**
Coal	0	0	1	1	1	1	0	8.7%	12.1%	0.9%	-1.0%	-4.2%	-6.0%
Oil	79	157	91	70	41	25	15	7.1%	-5.3%	-2.7%	-5.1%	-4.9%	-4.7%
Natural gas	22	42	90	90	69	13	0	6.8%	8.0%	-0.1%	-2.6%	-15.2%	-31.5%
Biomass	3	3	4	3	3	5	5	2.4%	2.0%	-1.3%	-0.3%	3.2%	1.1%
Nuclear[1]	2	2	2	2	1	0	0	1.1%	0.0%	-2.4%	-8.7%	-29.7%	5.5%
Hydro	13	16	14	16	17	16	17	1.8%	-1.1%	1.3%	0.2%	-0.1%	0.1%
Other renewables	0	1	4	6	7	8	9	16.0%	13.1%	3.9%	1.2%	1.9%	1.4%
Net Imports	**- 94**	**- 197**	**- 139**	**- 145**	**- 97**	**- 25**	**- 14**						
Coal	1	1	0	0	1	0	0						
Oil	- 59	- 136	- 67	- 52	- 27	- 11	- 6						
Natural gas	- 18	- 35	- 80	- 74	- 53	1	6						
Biomass	0	0	0	1	2	1	2						
Biofuels	0	0	0	0	0	0	0						
Electricity	- 18	- 26	8	- 20	- 19	- 17	- 17						
Primary Energy Demand[2]	**26**	**25**	**68**	**43**	**41**	**42**	**32**	-0.3%	**10.7%**	**-4.6%**	**-0.3%**	**0.3%**	**-2.7%**
Coal	1	1	1	1	2	1	1	-0.9%	-2.2%	4.4%	3.0%	-4.4%	-4.2%
Oil	21	21	24	18	14	14	9	0.0%	1.5%	-3.0%	-2.3%	-0.3%	-3.9%
Natural gas	4	7	11	15	16	14	7	6.2%	5.0%	3.6%	0.4%	-1.0%	-7.3%
Biomass	3	3	4	4	5	6	7	2.4%	2.1%	0.2%	2.3%	1.6%	1.3%
Nuclear[1]	2	2	2	2	1	0	0	1.1%	0.0%	-2.4%	-8.7%	-29.7%	5.5%
Hydro	13	16	14	16	17	16	17	1.8%	-1.1%	1.3%	0.2%	-0.1%	0.1%
Other renewables	0	1	4	6	7	8	9	16.0%	13.1%	3.9%	1.2%	1.9%	1.4%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**26**	**25**	**68**	**43**	**41**	**42**	**32**	**-0.3%**	**10.7%**	**-4.6%**	**-0.3%**	**0.3%**	**-2.7%**
Energy for Power Generation	**17**	**21**	**23**	**26**	**26**	**26**	**28**	**2.1%**	**1.0%**	**1.4%**	**-0.1%**	**0.1%**	**0.6%**
Other Energy Transformation & Losses	**- 15**	**- 21**	**19**	**- 8**	**- 6**	**1**	**- 6**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**
Final consumption	**37**	**41**	**45**	**43**	**39**	**35**	**31**	**1.0%**	**0.9%**	**-0.4%**	**-0.9%**	**-1.2%**	**-1.1%**
Steel, Non-Met. Minerals and Chem.	4	4	4	4	5	4	4	1.6%	-0.5%	0.9%	0.5%	-0.9%	-1.0%
Other Industry	6	7	7	8	8	9	10	1.2%	0.2%	0.3%	1.0%	0.9%	0.9%
Non-Energy Use	2	3	3	3	2	2	1	1.3%	0.2%	0.4%	-2.8%	-2.8%	-5.0%
Residential	10	10	11	9	8	6	5	-0.1%	1.4%	-1.7%	-2.0%	-2.4%	-2.1%
Services	5	6	7	6	5	4	3	0.9%	1.9%	-1.3%	-1.8%	-2.1%	-1.8%
Agriculture	1	1	1	1	1	1	1	3.4%	-0.6%	-0.7%	0.8%	0.7%	0.6%
Road	8	9	10	10	8	7	6	1.4%	0.9%	0.4%	-1.6%	-1.9%	-2.2%
Rail	0	0	0	0	0	0	0	-0.3%	1.4%	0.0%	1.1%	1.1%	1.0%
Aviation	0	0	0	0	0	0	0	5.3%	1.4%	-0.1%	-1.7%	-2.1%	-2.2%
Other Transport	1	1	1	1	1	0	0	0.9%	1.3%	-3.5%	0.1%	-2.7%	-2.6%

[1] Nuclear energy is accounted as primary electricity

EFTA	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**1**	**1**	**3**	**3**	**3**	**3**	**3**	**2.8%**	**7.6%**	**0.7%**	**-0.1%**	**-0.9%**	**0.4%**
Coal	0	0	0	0	0	0	0	-5.0%	1.6%	24.2%	4.7%	-1.6%	2.4%
Oil	0	0	0	0	0	0	0	-9.4%	-7.2%	29.0%	-11.6%	-1.9%	-12.9%
Gas	0	0	1	1	1	1	1	2.2%	16.9%	-5.4%	2.1%	0.9%	-1.3%
Biomass & Waste	1	1	1	1	1	1	1	3.8%	3.4%	0.9%	-1.0%	-1.9%	2.6%
Other	0	0	0	0	0	0	0	16.0%	12.9%	1.5%	0.7%	-0.4%	-3.4%
Gross Elec. Generation (TWh_e)	**181**	**217**	**206**	**237**	**234**	**235**	**242**	**1.8%**	**-0.5%**	**1.4%**	**-0.2%**	**0.0%**	**0.3%**
Coal	0	0	0	1	2	1	2	-5.1%	3.8%	25.8%	5.0%	-1.6%	2.4%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	18.9%
Oil	0	0	0	1	0	0	0	-4.9%	-8.3%	27.5%	-9.7%	-1.9%	-12.9%
Gas	0	1	6	3	4	5	4	12.5%	18.6%	-5.4%	2.5%	1.0%	-1.4%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	19.4%
Biomass & Waste	1	2	3	3	4	4	5	6.9%	3.5%	-1.0%	4.7%	-0.7%	3.6%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	44.2%
Nuclear	24	26	26	21	8	0	0	1.1%	0.0%	-2.4%	-8.7%	-30.8%	0.0%
Hydro	157	187	168	189	192	191	193	1.8%	-1.1%	1.2%	0.2%	-0.1%	0.1%
Wind	0	0	1	12	15	25	29	n.s.	39.0%	29.7%	1.8%	5.3%	1.5%
Solar	0	0	0	2	2	3	4	n.s.	23.9%	35.1%	2.2%	2.6%	2.7%
Other	- 1	1	2	5	6	5	4	n.s.	16.0%	8.5%	0.7%	-0.3%	-2.8%
Generation Capacity (GW_e)	**46**	**51**	**56**	**73**	**76**	**79**	**78**	**1.0%**	**1.1%**	**2.6%**	**0.5%**	**0.4%**	**-0.2%**
Coal	0	0	0	0	0	0	1	5.5%	-4.3%	6.8%	7.9%	0.0%	1.3%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	23.5%
Oil	1	0	0	1	1	1	1	-4.8%	-3.7%	10.0%	4.1%	0.8%	-0.2%
Gas	0	0	2	4	5	5	2	7.7%	19.8%	9.0%	1.7%	0.5%	-7.6%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	32.7%
Biomass & Waste	0	0	1	0	1	1	1	6.5%	4.3%	-1.2%	6.1%	0.7%	3.3%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	54.8%
Nuclear	3	3	3	3	1	0	0	0.8%	0.2%	-0.1%	-8.9%	-30.9%	-0.2%
Hydro	42	46	49	56	56	55	54	0.9%	0.7%	1.2%	0.0%	-0.2%	0.0%
Wind	0	0	0	5	9	13	13	n.s.	40.6%	26.8%	5.3%	4.0%	-0.1%
Solar	0	0	0	2	3	3	4	25.9%	19.9%	32.7%	1.3%	1.8%	2.0%
Other	0	0	1	1	1	1	1	14.4%	12.8%	3.4%	1.9%	2.0%	0.2%
Total Final Consumption[2] (Mtoe)	**37**	**41**	**45**	**43**	**39**	**35**	**31**	**1.0%**	**0.9%**	**-0.4%**	**-0.9%**	**-1.2%**	**-1.1%**
Coal	1	1	1	1	1	1	0	0.2%	-3.1%	1.9%	0.9%	-5.1%	-7.3%
Oil	19	19	20	18	14	9	4	0.0%	0.3%	-1.1%	-2.6%	-4.4%	-6.4%
Gas	1	3	3	4	3	4	3	6.9%	2.2%	0.6%	-0.4%	0.4%	-2.1%
Electricity	13	15	16	16	15	16	17	1.4%	1.1%	-0.2%	-0.4%	0.2%	0.7%
Heat	1	1	2	2	2	3	3	2.3%	4.5%	1.5%	1.6%	1.7%	1.0%
Biomass & Other	2	2	3	2	3	3	4	1.9%	1.7%	-0.4%	2.4%	0.7%	1.1%
Industry (incl. non-energy use)	**12**	**14**	**14**	**15**	**15**	**15**	**15**	**1.3%**	**0.0%**	**0.5%**	**0.2%**	**-0.1%**	**-0.2%**
Coal	1	1	1	1	1	1	0	0.2%	-3.1%	1.9%	0.9%	-5.1%	-7.3%
Oil	4	4	4	4	3	2	1	-1.2%	0.0%	-0.8%	-2.0%	-2.9%	-5.0%
Gas	0	1	2	2	1	2	1	11.9%	1.7%	0.9%	-1.4%	0.5%	-2.5%
Electricity	6	6	7	7	8	9	10	1.3%	0.3%	1.2%	1.1%	1.1%	1.2%
Heat	0	0	0	0	0	0	0	7.7%	1.9%	0.9%	-0.2%	-0.3%	-0.2%
Biomass & Other	1	1	1	1	1	1	1	5.7%	-1.7%	-1.8%	3.0%	-0.2%	2.2%
Buildings	**15**	**15**	**18**	**16**	**13**	**10**	**8**	**0.2%**	**1.6%**	**-1.5%**	**-1.9%**	**-2.3%**	**-2.0%**
Coal	0	0	0	0	0	0	0	-5.5%	-1.2%	-3.0%	-11.9%	n.s.	n.s.
Oil	6	5	4	3	2	1	0	-1.8%	-0.5%	-4.4%	-3.4%	-6.1%	-7.5%
Gas	1	1	2	2	2	1	1	3.6%	3.1%	0.3%	-1.3%	-3.5%	-6.4%
Electricity	7	8	9	8	6	4	4	1.3%	1.8%	-1.3%	-3.1%	-2.8%	-1.7%
Heat	1	1	1	2	2	2	3	1.4%	5.1%	1.6%	1.8%	2.0%	1.1%
Biomass & Other	1	1	2	1	1	1	1	-0.9%	3.3%	-1.2%	0.7%	-2.0%	-3.0%
Agriculture	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**3.4%**	**-0.6%**	**-0.7%**	**0.8%**	**0.7%**	**0.6%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	1	1	1	1	1	0	0	1.9%	-0.3%	-1.5%	-2.0%	-4.3%	-4.4%
Gas	0	0	0	0	0	0	0	7.3%	-9.2%	-3.7%	-1.4%	-3.0%	-3.1%
Electricity	0	0	0	0	0	1	1	6.5%	0.4%	0.3%	2.5%	2.9%	2.1%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	41.3%	-3.4%	8.5%	13.5%	6.3%	2.3%
Transport	**9**	**10**	**11**	**11**	**10**	**8**	**7**	**1.4%**	**1.0%**	**0.1%**	**-1.4%**	**-1.8%**	**-2.1%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	8	10	11	11	8	5	2	1.5%	0.8%	-0.1%	-2.6%	-4.7%	-7.1%
Gas	0	0	0	0	0	1	1	n.s.	n.s.	-0.5%	40.4%	10.9%	2.1%
Electricity	0	0	0	0	1	1	2	0.1%	1.7%	0.9%	9.1%	5.1%	3.0%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	1	1	1	n.s.	n.s.	10.2%	4.2%	5.6%	3.8%
Other Energy Transformation & Losses[3]	**- 15**	**- 21**	**19**	**- 8**	**- 6**	**1**	**- 6**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Other Balkans	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	24	23	22	22	20	19	17	-0.4%	-0.3%	-0.4%	-0.6%	-0.8%	-0.9%
GDP per capita (ppp, k$'15)	6	5	8	10	15	23	30	-1.0%	4.2%	2.7%	4.1%	3.8%	3.0%
Prices													
International/Regional ($'15/boe)													
Coal	3	2	3	2	3	4	5	-3.4%	3.6%	-2.6%	2.9%	3.0%	2.2%
Oil	39	38	86	89	89	88	90	-0.2%	8.4%	0.3%	0.0%	-0.1%	0.2%
Gas	24	28	33	47	55	65	70	1.5%	1.6%	3.5%	1.6%	1.8%	0.7%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**133**	**90**	**124**	**128**	**100**	**60**	**26**	**-3.8%**	**3.2%**	**0.4%**	**-2.4%**	**-5.0%**	**-8.0%**
Total GHG (energy, industry, agriculture)	**133**	**99**	**122**	**128**	**102**	**64**	**31**	**-2.9%**	**2.1%**	**0.5%**	**-2.3%**	**-4.6%**	**-6.9%**
CO_2	103	73	88	93	70	41	20	-3.5%	1.9%	0.5%	-2.7%	-5.3%	-7.1%
CH_4	21	17	18	16	10	8	5	-2.1%	0.4%	-1.1%	-4.0%	-3.0%	-4.3%
N_2O	7	6	6	6	5	4	3	-2.2%	0.0%	0.3%	-1.4%	-2.5%	-1.3%
F gases	2	4	11	14	16	12	4	8.1%	11.4%	2.9%	1.4%	-3.2%	-11.1%
Total GHG from Energy and Industry	**117**	**86**	**110**	**117**	**91**	**56**	**24**	**-3.1%**	**2.5%**	**0.6%**	**-2.4%**	**-4.8%**	**-7.9%**
CO_2 Emissions from Fuel Comb.	**96**	**69**	**82**	**86**	**63**	**35**	**16**	**-3.2%**	**1.8%**	**0.5%**	**-3.1%**	**-5.9%**	**-7.6%**
Power generation/District heating	52	47	52	54	32	11	2	-1.0%	1.0%	0.4%	-5.0%	-10.6%	-16.4%
Industry	16	7	7	7	8	6	3	-7.5%	-1.0%	0.9%	0.8%	-2.3%	-6.1%
Buildings	14	5	6	5	4	3	2	-10.3%	1.4%	-1.7%	-1.8%	-2.7%	-5.7%
Agriculture	0	1	1	1	1	0	0	9.7%	-4.7%	3.3%	-1.3%	-4.1%	-4.4%
Transport	8	7	14	15	13	10	6	-0.9%	6.7%	0.5%	-1.4%	-2.7%	-4.4%
Other	5	2	4	5	6	4	2	-11.5%	9.0%	2.4%	1.7%	-2.3%	-6.5%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**18.0%**	**50.1%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	18.0%	12.5%
Energy Balance, by fuel (Mtoe)													
Primary Production	**20**	**18**	**21**	**12**	**14**	**14**	**15**	**-1.2%**	**1.5%**	**-5.2%**	**1.7%**	**-0.3%**	**1.0%**
Coal	14	12	14	5	4	2	1	-1.5%	1.2%	-10.5%	-1.9%	-8.5%	-7.3%
Oil	2	1	2	2	2	1	1	-5.0%	2.0%	2.4%	-0.7%	-2.7%	-2.3%
Natural gas	1	1	0	1	1	1	1	-1.5%	-6.4%	7.0%	2.4%	0.3%	0.4%
Biomass	2	2	2	2	4	4	5	-0.1%	2.2%	1.7%	4.2%	1.5%	1.5%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	12.7%
Hydro	1	2	3	2	3	3	3	3.5%	3.9%	-2.0%	1.4%	1.1%	-0.1%
Other renewables	0	0	0	0	2	3	5	n.s.	19.0%	30.9%	30.7%	6.4%	5.4%
Net Imports	**10**	**9**	**7**	**26**	**22**	**16**	**11**						
Coal	2	1	1	12	7	1	0						
Oil	7	3	7	6	6	5	2						
Natural gas	3	1	2	1	3	4	2						
Biomass	0	0	0	0	0	0	1						
Biofuels	0	0	0	0	0	0	0						
Electricity	- 2	3	- 3	7	7	7	7						
Primary Energy Demand[2]	**30**	**26**	**27**	**38**	**36**	**30**	**27**	-1.4%	**0.3%**	**3.3%**	**-0.5%**	**-1.7%**	**-1.2%**
Coal	16	13	15	17	10	2	1	-2.2%	1.5%	1.0%	-4.7%	-13.2%	-11.1%
Oil	9	5	8	8	7	6	3	-6.8%	6.0%	-0.8%	-0.3%	-2.2%	-5.9%
Natural gas	3	2	2	2	4	5	3	-6.0%	1.8%	-0.5%	6.7%	2.0%	-4.7%
Biomass	2	2	2	2	3	5	5	-0.2%	2.3%	1.0%	4.1%	2.7%	2.0%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	12.7%
Hydro	1	2	3	2	3	3	3	3.5%	3.9%	-2.0%	1.4%	1.1%	-0.1%
Other renewables	0	0	0	0	2	3	5	n.s.	19.0%	30.9%	30.7%	6.4%	5.4%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**30**	**26**	**27**	**38**	**36**	**30**	**27**	**-1.4%**	**0.3%**	**3.3%**	**-0.5%**	**-1.7%**	**-1.2%**
Energy for Power Generation	**15**	**14**	**16**	**16**	**13**	**9**	**9**	**-0.6%**	**1.5%**	**0.1%**	**-2.0%**	**-3.3%**	**-0.3%**
Other Energy Transformation & Losses	**0**	**4**	**- 2**	**9**	**10**	**10**	**10**	**n.s.**	**n.s.**	**n.s.**	**1.0%**	**0.4%**	**-0.5%**
Final consumption	**21**	**13**	**19**	**20**	**21**	**18**	**16**	**-4.3%**	**3.6%**	**0.5%**	**0.5%**	**-1.2%**	**-1.1%**
Steel, Non-Met. Minerals and Chem.	0	1	3	4	5	4	3	4.9%	14.3%	3.8%	3.5%	-3.7%	-3.6%
Other Industry	7	3	2	2	2	3	3	-8.2%	-3.5%	0.4%	1.2%	0.5%	0.4%
Non-Energy Use	2	0	1	1	1	1	1	-13.4%	10.4%	-3.6%	0.8%	0.5%	-0.5%
Residential	4	5	6	6	5	5	4	1.1%	1.8%	0.1%	-1.2%	-1.1%	-1.0%
Services	4	2	2	2	2	2	2	-9.8%	2.5%	-0.3%	-1.0%	0.6%	1.0%
Agriculture	0	0	0	0	0	0	0	11.2%	-3.1%	2.3%	1.2%	0.9%	0.7%
Road	3	2	5	5	5	4	4	-1.1%	7.5%	-0.1%	-0.3%	-1.0%	-1.8%
Rail	0	0	0	0	0	0	0	2.1%	-0.9%	1.0%	1.9%	1.5%	0.9%
Aviation	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	1.3%	-1.3%	n.s.
Other Transport	0	0	0	0	0	0	0	n.s.	2.3%	5.4%	1.6%	-1.6%	-2.2%

[1] Nuclear energy is accounted as primary electricity

Other Balkans	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**13**	**12**	**13**	**14**	**9**	**4**	**1**	**-1.1%**	**1.0%**	**0.4%**	**-4.2%**	**-8.7%**	**-8.8%**
Coal	12	11	13	13	7	1	0	-0.4%	1.0%	0.6%	-6.6%	-16.9%	-14.2%
Oil	1	0	0	0	1	1	0	-11.9%	-3.5%	-12.5%	28.1%	2.5%	-19.3%
Gas	0	0	0	0	1	2	1	-7.4%	7.7%	-9.6%	32.1%	1.6%	-7.4%
Biomass & Waste	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	6.9%	-1.5%	13.7%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**66**	**59**	**79**	**81**	**81**	**73**	**78**	**-1.0%**	**2.9%**	**0.2%**	**0.1%**	**-1.0%**	**0.7%**
Coal	44	35	45	52	28	4	1	-2.3%	2.6%	1.4%	-6.1%	-17.0%	-12.9%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	4	1	0	0	2	3	0	-11.8%	-13.2%	-3.5%	30.2%	2.7%	-18.7%
Gas	1	0	0	0	5	7	4	-11.4%	0.3%	-1.2%	31.2%	1.8%	-5.3%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	0	0	0	1	1	2	n.s.	n.s.	n.s.	7.4%	-1.5%	14.8%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	16	23	34	27	31	35	34	3.7%	3.9%	-2.0%	1.3%	1.1%	0.0%
Wind	0	0	0	0	7	9	13	n.s.	n.s.	n.s.	29.7%	3.3%	3.4%
Solar	0	0	0	0	8	15	23	n.s.	n.s.	n.s.	37.5%	6.9%	4.4%
Other	1	0	0	0	0	0	1	-22.1%	n.s.	n.s.	-16.2%	17.9%	40.0%
Generation Capacity (GW_e)	**28**	**16**	**18**	**20**	**29**	**36**	**41**	**-5.1%**	**0.8%**	**1.1%**	**3.8%**	**2.3%**	**1.4%**
Coal	25	8	8	8	8	8	4	-10.5%	0.3%	0.0%	-0.5%	-0.1%	-5.7%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	1	1	1	1	1	1	1	-0.6%	1.7%	2.8%	0.5%	0.4%	4.1%
Gas	0	0	0	1	1	1	2	-1.1%	2.2%	14.1%	3.4%	-0.7%	2.6%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	7.3%	-1.4%	15.9%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	2	7	8	9	10	11	12	13.6%	1.3%	0.9%	1.2%	1.0%	0.1%
Wind	0	0	0	0	3	3	5	n.s.	n.s.	n.s.	28.4%	3.1%	2.8%
Solar	0	0	0	0	6	11	18	n.s.	n.s.	n.s.	37.5%	7.2%	4.7%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	12.7%
Total Final Consumption[2] (Mtoe)	**21**	**13**	**19**	**20**	**21**	**18**	**16**	**-4.3%**	**3.6%**	**0.5%**	**0.5%**	**-1.2%**	**-1.1%**
Coal	4	2	2	3	3	1	0	-6.9%	1.0%	3.1%	0.3%	-9.4%	-9.0%
Oil	8	4	8	7	6	5	3	-6.1%	6.3%	-0.6%	-1.3%	-2.9%	-5.0%
Gas	3	1	1	1	2	2	2	-7.6%	0.0%	-0.9%	3.9%	3.0%	-2.4%
Electricity	4	4	5	6	6	5	6	-0.8%	2.5%	1.6%	0.2%	-0.8%	0.6%
Heat	1	1	1	1	1	2	2	-1.1%	5.2%	-0.2%	3.3%	2.0%	0.4%
Biomass & Other	2	2	2	2	3	3	4	-0.2%	2.2%	0.1%	2.9%	1.6%	1.6%
Industry (incl. non-energy use)	**9**	**4**	**6**	**7**	**9**	**7**	**6**	**-7.8%**	**3.7%**	**1.5%**	**2.5%**	**-1.9%**	**-1.6%**
Coal	1	1	1	2	3	1	0	-2.3%	1.1%	5.6%	1.7%	-9.0%	-8.9%
Oil	4	1	2	1	1	1	1	-15.1%	7.8%	-1.7%	0.0%	-1.4%	-3.4%
Gas	1	1	1	1	1	1	1	-2.4%	-0.6%	-3.1%	2.0%	3.7%	-3.4%
Electricity	2	1	1	2	3	3	3	-7.8%	5.3%	3.1%	4.6%	-0.4%	-0.3%
Heat	0	0	0	0	0	0	0	-6.1%	9.0%	-3.7%	-0.2%	-0.3%	-0.2%
Biomass & Other	0	0	0	0	0	0	1	n.s.	-3.4%	11.2%	7.1%	1.1%	6.0%
Buildings	**9**	**6**	**8**	**8**	**7**	**6**	**6**	**-3.0%**	**1.9%**	**0.0%**	**-1.2%**	**-0.6%**	**-0.4%**
Coal	2	1	1	0	0	0	0	-12.7%	2.1%	-3.8%	-10.6%	-18.0%	-18.2%
Oil	1	1	1	1	0	0	0	-1.0%	0.8%	-1.8%	-1.5%	-2.5%	-5.3%
Gas	2	0	0	1	1	1	0	-14.8%	1.1%	3.3%	4.5%	-0.5%	-5.7%
Electricity	2	3	3	4	2	2	2	3.1%	1.5%	0.9%	-4.3%	-2.7%	1.2%
Heat	0	0	1	1	1	1	2	1.4%	3.7%	1.3%	4.2%	2.5%	0.5%
Biomass & Other	2	2	2	2	2	2	2	-1.2%	2.8%	-1.0%	0.9%	0.5%	-0.2%
Agriculture	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**11.2%**	**-3.1%**	**2.3%**	**1.2%**	**0.9%**	**0.7%**
Coal	0	0	0	0	0	0	0	2.3%	-29.6%	-4.9%	n.s.	n.s.	n.s.
Oil	0	0	0	0	0	0	0	16.2%	-2.0%	3.5%	-1.3%	-4.1%	-4.4%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	1.5%	-0.8%	-2.8%	-3.1%
Electricity	0	0	0	0	0	0	0	5.0%	6.0%	-1.5%	4.3%	4.1%	2.8%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	n.s.	-13.8%	5.1%	13.2%	7.6%	2.7%
Transport	**3**	**2**	**5**	**5**	**5**	**4**	**4**	**-1.0%**	**7.3%**	**-0.1%**	**-0.2%**	**-1.0%**	**-1.8%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	3	2	5	5	4	3	2	-0.9%	7.3%	-0.3%	-1.7%	-3.5%	-5.7%
Gas	0	0	0	0	0	0	1	n.s.	n.s.	4.9%	53.6%	12.8%	3.2%
Electricity	0	0	0	0	0	0	1	-5.5%	3.9%	5.0%	17.5%	5.7%	3.2%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	16.9%	6.0%	2.8%
Other Energy Transformation & Losses[3]	**0**	**4**	**- 2**	**9**	**10**	**10**	**10**	**n.s.**	**n.s.**	**n.s.**	**1.0%**	**0.4%**	**-0.5%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Russia	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	148	146	143	144	141	138	136	-0.1%	-0.2%	0.1%	-0.2%	-0.2%	-0.1%
GDP per capita (ppp, k$'15)	15	10	17	19	24	29	31	-3.8%	5.1%	1.4%	2.1%	1.9%	0.6%
Prices													
International/Regional ($'15/boe)													
Coal	3	2	3	2	3	4	5	-3.4%	3.6%	-2.3%	2.6%	2.4%	2.4%
Oil	39	38	86	89	89	88	90	-0.2%	8.4%	0.3%	0.0%	-0.1%	0.2%
Gas	24	28	33	47	55	65	70	1.5%	1.6%	3.5%	1.6%	1.8%	0.7%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**3 787**	**1 693**	**1 501**	**1 630**	**885**	**463**	**13**	**-7.7%**	**-1.2%**	**0.8%**	**-5.9%**	**-6.3%**	**-30.2%**
Total GHG (energy, industry, agriculture)	**3 656**	**2 352**	**2 658**	**2 634**	**1 797**	**1 284**	**759**	**-4.3%**	**1.2%**	**-0.1%**	**-3.8%**	**-3.3%**	**-5.1%**
CO_2	2 447	1 547	1 685	1 732	1 265	882	498	-4.5%	0.9%	0.3%	-3.1%	-3.5%	-5.6%
CH_4	963	653	848	769	411	301	167	-3.8%	2.6%	-1.0%	-6.1%	-3.1%	-5.8%
N_2O	194	114	107	108	108	95	92	-5.2%	-0.7%	0.1%	0.0%	-1.3%	-0.3%
F gases	52	37	18	25	13	5	2	-3.3%	-7.1%	3.5%	-6.6%	-8.7%	-10.7%
Total GHG from Energy and Industry	**3 320**	**2 165**	**2 488**	**2 461**	**1 628**	**1 134**	**615**	**-4.2%**	**1.4%**	**-0.1%**	**-4.0%**	**-3.6%**	**-5.9%**
CO_2 Emissions from Fuel Comb.	**2 229**	**1 413**	**1 499**	**1 557**	**1 120**	**766**	**431**	**-4.5%**	**0.6%**	**0.4%**	**-3.2%**	**-3.7%**	**-5.6%**
Power generation/District heating	795	586	624	628	314	155	68	-3.0%	0.6%	0.1%	-6.7%	-6.8%	-7.9%
Industry	257	184	203	226	174	114	55	-3.3%	1.0%	1.1%	-2.6%	-4.2%	-7.0%
Buildings	336	170	137	130	87	63	42	-6.6%	-2.1%	-0.5%	-3.9%	-3.2%	-4.1%
Agriculture	49	21	14	17	14	9	6	-8.3%	-4.1%	2.4%	-1.8%	-4.3%	-4.5%
Transport	220	115	159	212	192	144	80	-6.3%	3.3%	2.9%	-1.0%	-2.8%	-5.7%
Other	571	338	363	343	339	282	181	-5.1%	0.7%	-0.6%	-0.1%	-1.8%	-4.3%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**4**	**18**	**n.s.**	**n.s.**	**n.s.**	**41.5%**	**48.8%**	**15.2%**
Coal	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	n.s.	25.0%
Gas	0	0	0	0	0	4	8	n.s.	n.s.	n.s.	n.s.	n.s.	8.2%
Biomass	0	0	0	0	0	0	6	n.s.	n.s.	n.s.	n.s.	n.s.	51.5%
Direct Air Capture	0	0	0	0	0	1	2	n.s.	n.s.	n.s.	41.5%	20.1%	15.2%
Energy Balance, by fuel (Mtoe)													
Primary Production	**1 212**	**913**	**1 181**	**1 281**	**1 162**	**961**	**652**	**-2.8%**	**2.6%**	**0.8%**	**-1.0%**	**-1.9%**	**-3.8%**
Coal	163	127	166	178	109	49	18	-2.4%	2.7%	0.7%	-4.8%	-7.6%	-9.5%
Oil	511	310	483	553	578	485	299	-4.9%	4.5%	1.4%	0.4%	-1.7%	-4.7%
Natural gas	500	444	496	477	378	301	152	-1.2%	1.1%	-0.4%	-2.3%	-2.3%	-6.6%
Biomass	12	7	7	38	50	61	85	-5.5%	0.1%	18.5%	2.8%	2.0%	3.4%
Nuclear[1]	10	11	15	17	18	13	14	1.0%	2.7%	1.4%	0.4%	-2.6%	0.0%
Hydro	14	14	14	16	21	25	28	-0.1%	0.1%	1.0%	2.6%	2.0%	1.2%
Other renewables	0	0	0	2	10	27	55	7.6%	24.1%	18.2%	15.8%	10.3%	7.6%
Net Imports	**- 377**	**- 348**	**- 559**	**- 638**	**- 641**	**- 505**	**- 264**						
Coal	12	- 14	- 78	- 54	- 30	- 21	- 15						
Oil	- 267	- 196	- 351	- 382	- 434	- 350	- 188						
Natural gas	- 114	- 125	- 113	- 161	- 142	- 125	- 43						
Biomass	0	0	0	- 22	- 17	6	- 3						
Biofuels	0	0	0	0	0	0	0						
Electricity	- 8	- 14	- 17	- 18	- 18	- 15	- 15						
Primary Energy Demand[2]	**835**	**565**	**622**	**643**	**521**	**457**	**387**	-3.8%	**1.0%**	**0.3%**	**-2.1%**	**-1.3%**	**-1.6%**
Coal	175	113	88	124	79	29	3	-4.3%	-2.5%	3.5%	-4.4%	-9.6%	-19.3%
Oil	244	114	131	171	144	135	112	-7.3%	1.4%	2.6%	-1.7%	-0.6%	-1.9%
Natural gas	386	319	384	316	236	176	109	-1.9%	1.9%	-1.9%	-2.9%	-2.9%	-4.7%
Biomass	12	7	7	16	32	67	82	-5.5%	0.1%	8.7%	7.3%	7.6%	2.0%
Nuclear[1]	10	11	15	17	18	13	14	1.0%	2.7%	1.4%	0.4%	-2.6%	0.0%
Hydro	14	14	14	16	21	25	28	-0.1%	0.1%	1.0%	2.6%	2.0%	1.2%
Other renewables	0	0	0	2	10	27	55	7.6%	24.1%	18.2%	15.8%	10.3%	7.6%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**835**	**565**	**622**	**643**	**521**	**457**	**387**	**-3.8%**	**1.0%**	**0.3%**	**-2.1%**	**-1.3%**	**-1.6%**
Energy for Power Generation	**304**	**229**	**255**	**254**	**159**	**123**	**125**	**-2.8%**	**1.1%**	**-0.1%**	**-4.5%**	**-2.5%**	**0.1%**
Other Energy Transformation & Losses	**200**	**123**	**116**	**101**	**114**	**124**	**97**	**-4.7%**	**-0.6%**	**-1.4%**	**1.2%**	**0.9%**	**-2.4%**
Final consumption	**602**	**400**	**426**	**466**	**408**	**358**	**310**	**-4.0%**	**0.6%**	**0.9%**	**-1.3%**	**-1.3%**	**-1.4%**
Steel, Non-Met. Minerals and Chem.	103	78	92	109	91	72	58	-2.7%	1.6%	1.8%	-1.8%	-2.4%	-2.1%
Other Industry	128	65	52	53	45	39	36	-6.5%	-2.2%	0.1%	-1.5%	-1.5%	-0.9%
Non-Energy Use	40	36	66	75	77	81	79	-1.0%	6.2%	1.2%	0.3%	0.5%	-0.2%
Residential	168	140	111	116	91	75	62	-1.8%	-2.3%	0.4%	-2.4%	-2.0%	-1.9%
Services	62	25	37	37	27	22	18	-8.7%	3.9%	0.1%	-3.1%	-1.9%	-2.0%
Agriculture	22	9	6	7	8	8	9	-8.3%	-4.4%	2.1%	0.8%	0.7%	0.5%
Road	51	34	48	54	52	45	35	-3.9%	3.4%	1.2%	-0.5%	-1.5%	-2.5%
Rail	12	5	7	7	8	7	7	-7.6%	2.1%	1.1%	0.2%	-0.1%	-0.6%
Aviation	9	5	5	6	8	7	6	-6.9%	1.5%	1.0%	3.1%	-0.5%	-1.9%
Other Transport	7	1	1	1	1	1	1	-14.7%	-1.4%	1.0%	-0.6%	-3.4%	-4.0%

[1] Nuclear energy is accounted as primary electricity

Russia	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**279**	**204**	**226**	**219**	**111**	**58**	**28**	**-3.1%**	**1.0%**	**-0.3%**	**-6.5%**	**-6.3%**	**-7.2%**
Coal	63	63	59	69	33	13	3	0.0%	-0.6%	1.5%	-7.2%	-8.7%	-12.7%
Oil	46	12	4	18	10	6	9	-12.6%	-10.2%	16.2%	-5.9%	-4.4%	3.8%
Gas	170	127	160	127	65	35	13	-2.9%	2.4%	-2.3%	-6.5%	-6.0%	-9.6%
Biomass & Waste	0	2	2	4	3	3	2	29.4%	1.7%	8.4%	-2.8%	-0.6%	-5.9%
Other	0	0	0	0	0	0	1	7.6%	24.2%	4.8%	12.8%	-0.7%	9.4%
Gross Elec. Generation (TWh_e)	**1 082**	**877**	**1 040**	**1 161**	**942**	**896**	**929**	**-2.1%**	**1.7%**	**1.1%**	**-2.1%**	**-0.5%**	**0.4%**
Coal	157	176	166	253	122	48	13	1.1%	-0.6%	4.3%	-7.0%	-8.8%	-12.0%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	41.2%
Oil	129	33	9	57	31	20	36	-12.7%	-11.9%	19.9%	-5.8%	-4.2%	5.8%
Gas	512	370	521	437	250	149	60	-3.2%	3.5%	-1.7%	-5.4%	-5.0%	-8.7%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	35.6%
Biomass & Waste	0	3	3	14	11	10	9	52.6%	0.9%	17.7%	-2.6%	-0.4%	-1.5%
of which CCS	0	0	0	0	0	0	4	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	118	131	170	197	204	157	156	1.0%	2.7%	1.4%	0.4%	-2.6%	-0.1%
Hydro	166	165	168	184	239	294	334	0.0%	0.2%	0.9%	2.6%	2.1%	1.3%
Wind	0	0	0	16	36	70	79	n.s.	7.2%	n.s.	8.6%	6.8%	1.2%
Solar	0	0	0	3	46	144	223	n.s.	n.s.	n.s.	31.8%	12.1%	4.4%
Other	0	- 1	2	1	3	3	20	n.s.	n.s.	-10.1%	13.0%	2.2%	19.2%
Generation Capacity (GW_e)	**144**	**211**	**233**	**222**	**228**	**310**	**333**	**3.9%**	**1.0%**	**-0.5%**	**0.2%**	**3.1%**	**0.7%**
Coal	42	42	42	37	24	23	2	0.0%	0.0%	-1.2%	-4.2%	-0.4%	-21.6%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	41.5%
Oil	16	16	16	12	6	4	7	0.0%	0.0%	-2.5%	-7.8%	-2.8%	6.0%
Gas	86	88	104	83	55	49	13	0.3%	1.7%	-2.2%	-4.0%	-1.2%	-12.6%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	35.8%
Biomass & Waste	0	1	1	2	1	1	1	26.7%	0.0%	11.0%	-2.6%	-0.2%	-1.4%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	20	23	26	27	20	20	n.s.	1.3%	1.5%	0.2%	-2.8%	-0.3%
Hydro	0	44	47	53	68	83	96	n.s.	0.6%	1.3%	2.5%	1.9%	1.5%
Wind	0	0	0	6	14	25	27	n.s.	19.6%	n.s.	8.6%	6.3%	0.6%
Solar	0	0	0	2	32	103	165	n.s.	n.s.	n.s.	31.7%	12.4%	4.8%
Other	0	0	0	0	1	1	2	n.s.	14.6%	8.6%	12.9%	-0.3%	9.6%
Total Final Consumption[2] (Mtoe)	**602**	**400**	**426**	**466**	**408**	**358**	**310**	**-4.0%**	**0.6%**	**0.9%**	**-1.3%**	**-1.3%**	**-1.4%**
Coal	69	29	28	42	31	14	8	-8.3%	-0.2%	3.9%	-2.9%	-7.4%	-6.3%
Oil	145	91	109	136	123	104	82	-4.6%	1.9%	2.2%	-1.0%	-1.7%	-2.3%
Gas	109	90	110	108	89	80	56	-1.9%	2.0%	-0.3%	-1.9%	-1.0%	-3.6%
Electricity	68	50	60	66	54	52	55	-2.9%	1.8%	1.0%	-2.0%	-0.4%	0.5%
Heat	203	137	115	111	103	91	80	-3.9%	-1.8%	-0.3%	-0.8%	-1.2%	-1.3%
Biomass & Other	8	3	2	4	8	17	30	-9.3%	-2.5%	4.5%	8.4%	7.2%	6.1%
Industry (incl. non-energy use)	**271**	**179**	**210**	**236**	**213**	**192**	**172**	**-4.0%**	**1.6%**	**1.2%**	**-1.0%**	**-1.0%**	**-1.1%**
Coal	28	19	25	39	30	14	8	-3.9%	2.6%	4.8%	-2.5%	-7.2%	-6.3%
Oil	44	36	43	57	55	56	56	-2.0%	1.9%	2.9%	-0.4%	0.1%	0.1%
Gas	52	43	66	70	61	55	37	-1.9%	4.5%	0.5%	-1.4%	-1.0%	-4.0%
Electricity	41	27	28	30	27	25	24	-4.2%	0.5%	0.7%	-0.9%	-0.9%	-0.5%
Heat	105	55	48	39	38	36	35	-6.4%	-1.4%	-2.0%	-0.3%	-0.4%	-0.3%
Biomass & Other	0	1	0	1	1	5	13	n.s.	-2.9%	8.8%	3.2%	13.4%	10.0%
Buildings	**231**	**166**	**148**	**154**	**119**	**97**	**80**	**-3.3%**	**-1.1%**	**0.3%**	**-2.5%**	**-2.0%**	**-1.9%**
Coal	40	10	4	2	1	0	0	-13.1%	-8.8%	-4.8%	-11.9%	-26.9%	-22.8%
Oil	14	7	6	11	8	7	5	-7.0%	-0.6%	5.6%	-3.2%	-2.1%	-3.1%
Gas	57	47	43	37	25	18	11	-1.9%	-0.8%	-1.7%	-3.6%	-3.3%	-4.5%
Electricity	15	18	26	29	16	14	14	1.7%	3.8%	1.1%	-5.4%	-1.8%	0.5%
Heat	98	82	67	73	65	55	45	-1.7%	-2.0%	0.8%	-1.0%	-1.7%	-1.9%
Biomass & Other	7	2	2	2	3	4	4	-10.8%	-2.6%	1.9%	2.7%	3.1%	1.5%
Agriculture	**22**	**9**	**6**	**7**	**8**	**8**	**9**	**-8.3%**	**-4.4%**	**2.1%**	**0.8%**	**0.7%**	**0.5%**
Coal	1	0	0	0	0	0	0	-7.1%	-11.5%	1.2%	-3.7%	-7.5%	-7.5%
Oil	14	6	4	5	4	2	2	-8.7%	-4.2%	2.2%	-1.8%	-4.5%	-4.7%
Gas	1	1	1	1	1	1	0	-0.8%	0.9%	4.3%	-1.3%	-3.2%	-3.4%
Electricity	6	3	1	1	2	3	4	-7.7%	-6.2%	0.8%	3.5%	3.6%	2.3%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	1	0	0	0	1	2	3	-15.8%	1.1%	1.6%	18.9%	8.3%	2.8%
Transport	**79**	**46**	**61**	**69**	**69**	**60**	**48**	**-5.3%**	**3.0%**	**1.2%**	**-0.1%**	**-1.3%**	**-2.2%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	73	42	56	62	56	39	19	-5.3%	2.8%	1.1%	-1.1%	-3.6%	-6.8%
Gas	0	0	0	0	2	6	7	n.s.	n.s.	-5.8%	41.0%	13.6%	1.4%
Electricity	6	3	5	6	8	10	13	-5.5%	4.5%	1.7%	2.9%	2.4%	2.1%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	3	5	10	n.s.	n.s.	n.s.	24.1%	6.1%	5.8%
Other Energy Transformation & Losses[3]	**200**	**123**	**116**	**101**	**114**	**124**	**97**	**-4.7%**	**-0.6%**	**-1.4%**	**1.2%**	**0.9%**	**-2.4%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Ukraine	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	51	49	46	44	42	40	38	-0.5%	-0.6%	-0.4%	-0.5%	-0.5%	-0.4%
GDP per capita (ppp, k$'15)	10	4	7	8	12	17	23	-7.5%	5.0%	0.8%	4.1%	3.6%	3.1%
Prices													
International/Regional ($'15/boe)													
Coal	3	2	3	2	3	4	5	-3.4%	3.6%	-2.3%	2.6%	2.4%	2.4%
Oil	39	38	86	89	89	88	90	-0.2%	8.4%	0.3%	0.0%	-0.1%	0.2%
Gas	24	28	33	47	55	65	70	1.5%	1.6%	3.5%	1.6%	1.8%	0.7%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**905**	**425**	**394**	**362**	**218**	**151**	**93**	**-7.3%**	**-0.8%**	**-0.8%**	**-5.0%**	**-3.6%**	**-4.7%**
Total GHG (energy, industry, agriculture)	**957**	**455**	**407**	**374**	**228**	**161**	**102**	**-7.2%**	**-1.1%**	**-0.8%**	**-4.8%**	**-3.4%**	**-4.4%**
CO_2	701	307	287	277	150	96	46	-7.9%	-0.7%	-0.3%	-6.0%	-4.3%	-7.2%
CH_4	191	119	88	57	38	29	22	-4.6%	-3.0%	-4.2%	-4.0%	-2.8%	-2.5%
N_2O	65	29	32	39	40	36	34	-7.8%	1.0%	2.0%	0.3%	-1.1%	-0.5%
F gases	0	0	1	1	0	0	0	-5.3%	19.1%	0.6%	-6.4%	-10.3%	-12.6%
Total GHG from Energy and Industry	**853**	**411**	**367**	**326**	**178**	**116**	**59**	**-7.0%**	**-1.1%**	**-1.2%**	**-5.9%**	**-4.2%**	**-6.5%**
CO_2 Emissions from Fuel Comb.	**659**	**286**	**265**	**261**	**133**	**82**	**38**	**-8.0%**	**-0.8%**	**-0.2%**	**-6.5%**	**-4.7%**	**-7.5%**
Power generation/District heating	209	77	93	123	13	5	0	-9.5%	1.9%	2.8%	-19.9%	-9.9%	-23.5%
Industry	186	77	64	61	55	32	14	-8.4%	-1.9%	-0.4%	-1.0%	-5.3%	-8.2%
Buildings	56	44	37	23	17	11	6	-2.5%	-1.8%	-4.8%	-2.7%	-4.4%	-6.3%
Agriculture	23	3	4	4	4	3	2	-17.2%	2.4%	-0.1%	-0.5%	-4.0%	-4.1%
Transport	67	17	29	22	21	17	10	-12.6%	5.3%	-2.9%	-0.5%	-2.2%	-4.9%
Other	118	67	38	28	22	15	6	-5.5%	-5.6%	-2.9%	-2.4%	-3.8%	-8.5%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**43.7%**	**15.1%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	8.8%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	9.7%
Biomass	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	23.7%	18.4%
Energy Balance, by fuel (Mtoe)													
Primary Production	**90**	**56**	**62**	**77**	**87**	**94**	**99**	**-4.7%**	**1.1%**	**2.1%**	**1.3%**	**0.8%**	**0.6%**
Coal	57	32	34	33	20	11	3	-5.6%	0.6%	-0.2%	-5.0%	-5.6%	-12.7%
Oil	4	3	3	2	2	3	5	-4.3%	0.0%	-1.6%	0.4%	3.7%	3.5%
Natural gas	22	14	16	30	47	54	58	-4.5%	1.4%	6.8%	4.6%	1.4%	0.7%
Biomass	0	0	2	3	7	10	10	-3.1%	20.0%	5.6%	9.1%	4.1%	0.3%
Nuclear[1]	7	7	8	7	7	8	14	0.2%	1.4%	-0.9%	0.5%	1.5%	4.8%
Hydro	1	1	1	1	1	1	1	0.8%	1.5%	-2.6%	1.9%	0.3%	-0.4%
Other renewables	0	0	0	0	2	6	9	n.s.	n.s.	55.3%	20.6%	9.0%	4.9%
Net Imports	**114**	**52**	**47**	**15**	**- 25**	**- 41**	**- 54**						
Coal	18	- 1	1	9	- 3	- 5	- 2						
Oil	54	9	11	9	9	7	1						
Natural gas	70	49	40	- 1	- 31	- 41	- 50						
Biomass	0	0	0	1	3	1	0						
Biofuels	0	0	0	0	0	0	0						
Electricity	- 28	- 4	- 4	- 4	- 4	- 3	- 3						
Primary Energy Demand[2]	**204**	**108**	**109**	**91**	**62**	**52**	**46**	-6.2%	**0.1%**	**-1.8%**	**-3.8%**	**-1.6%**	**-1.4%**
Coal	75	30	35	42	17	7	1	-8.6%	1.3%	2.0%	-8.6%	-9.2%	-16.2%
Oil	58	11	13	11	11	10	6	-15.2%	1.5%	-1.5%	0.0%	-1.4%	-4.9%
Natural gas	92	62	55	29	16	13	8	-3.8%	-1.2%	-6.1%	-5.7%	-2.0%	-4.9%
Biomass	0	0	2	4	10	11	10	-3.1%	19.8%	9.0%	10.0%	0.9%	-0.7%
Nuclear[1]	7	7	8	7	7	8	14	0.2%	1.4%	-0.9%	0.5%	1.5%	4.8%
Hydro	1	1	1	1	1	1	1	0.8%	1.5%	-2.6%	1.9%	0.3%	-0.4%
Other renewables	0	0	0	0	2	6	9	n.s.	n.s.	55.3%	20.6%	9.0%	4.9%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**204**	**108**	**109**	**91**	**62**	**52**	**46**	**-6.2%**	**0.1%**	**-1.8%**	**-3.8%**	**-1.6%**	**-1.4%**
Energy for Power Generation	**68**	**30**	**35**	**44**	**20**	**20**	**25**	**-7.7%**	**1.5%**	**2.2%**	**-7.4%**	**-0.2%**	**2.2%**
Other Energy Transformation & Losses	**25**	**26**	**23**	**8**	**6**	**6**	**3**	**0.5%**	**-1.5%**	**-9.6%**	**-3.2%**	**0.4%**	**-6.5%**
Final consumption	**160**	**74**	**75**	**62**	**54**	**47**	**41**	**-7.4%**	**0.2%**	**-1.9%**	**-1.3%**	**-1.4%**	**-1.3%**
Steel, Non-Met. Minerals and Chem.	27	13	22	19	17	12	9	-7.0%	5.5%	-1.6%	-1.0%	-3.3%	-3.6%
Other Industry	61	24	8	5	5	6	6	-8.8%	-10.9%	-3.8%	0.5%	0.5%	0.8%
Non-Energy Use	6	1	6	4	4	3	3	-15.4%	16.4%	-4.2%	0.0%	-0.5%	-0.7%
Residential	32	24	24	19	14	12	10	-2.8%	-0.1%	-2.3%	-3.0%	-1.9%	-1.7%
Services	3	2	5	6	4	4	4	-0.7%	6.6%	2.4%	-3.2%	0.1%	0.0%
Agriculture	9	2	2	2	2	2	2	-16.6%	1.2%	-0.1%	1.4%	1.0%	0.9%
Road	18	6	9	7	7	6	6	-9.6%	2.8%	-2.4%	0.1%	-0.4%	-1.3%
Rail	2	1	1	1	1	1	1	-6.9%	-0.5%	-1.8%	1.8%	1.3%	1.1%
Aviation	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Other Transport	1	0	0	0	0	0	0	n.s.	n.s.	-7.2%	1.4%	-1.6%	-2.0%

[1] Nuclear energy is accounted as primary electricity

Ukraine	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**60**	**23**	**26**	**36**	**10**	**5**	**1**	**-9.3%**	**1.5%**	**3.0%**	**-12.2%**	**-6.6%**	**-13.5%**
Coal	35	14	19	25	2	0	0	-8.5%	3.0%	2.6%	-21.9%	-21.6%	-11.4%
Oil	13	0	0	1	0	0	0	-30.9%	0.3%	10.4%	-6.9%	-1.7%	n.s.
Gas	12	8	6	8	2	1	0	-4.2%	-2.5%	3.0%	-15.8%	-1.7%	-19.8%
Biomass & Waste	0	0	0	1	6	3	1	n.s.	n.s.	11.9%	17.5%	-5.9%	-11.0%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**305**	**175**	**193**	**224**	**164**	**185**	**230**	**-5.4%**	**1.0%**	**1.5%**	**-3.1%**	**1.2%**	**2.2%**
Coal	114	52	70	91	8	1	0	-7.6%	3.0%	2.7%	-21.5%	-20.7%	-9.9%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	6.0%
Oil	48	1	1	3	2	1	0	-30.9%	-3.6%	13.0%	-5.5%	-1.4%	n.s.
Gas	50	30	16	25	6	5	1	-5.0%	-6.3%	4.7%	-13.0%	-2.0%	-16.5%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	5.7%
Biomass & Waste	0	0	0	4	23	12	4	n.s.	n.s.	36.2%	18.6%	-5.8%	-10.9%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	76	77	89	82	86	99	158	0.2%	1.4%	-0.9%	0.5%	1.5%	4.8%
Hydro	11	11	13	15	15	16	13	0.7%	1.4%	1.5%	-0.2%	0.5%	-1.9%
Wind	0	0	0	3	14	31	36	n.s.	23.6%	51.2%	16.5%	8.1%	1.4%
Solar	0	0	0	1	10	18	16	n.s.	n.s.	n.s.	25.2%	6.3%	-1.0%
Other	6	4	4	0	0	1	2	-4.3%	0.7%	-28.2%	9.9%	12.5%	4.3%
Generation Capacity (GW_e)	**45**	**56**	**56**	**48**	**62**	**78**	**79**	**2.1%**	**0.1%**	**-1.6%**	**2.6%**	**2.3%**	**0.1%**
Coal	23	22	22	14	14	14	2	-0.2%	0.0%	-4.5%	-0.3%	0.1%	-19.3%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	21.7%
Oil	7	1	1	1	1	1	2	-18.2%	0.0%	-4.1%	6.8%	-0.2%	2.6%
Gas	12	14	12	8	8	8	4	0.8%	-1.0%	-3.7%	-0.4%	0.3%	-6.5%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	20.8%
Biomass & Waste	0	0	0	1	3	3	2	n.s.	n.s.	25.3%	18.9%	-0.5%	-2.1%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	11	13	13	13	15	24	n.s.	1.6%	0.0%	0.3%	1.3%	4.6%
Hydro	3	8	8	9	9	9	8	9.5%	-0.2%	1.3%	0.6%	-0.3%	-0.8%
Wind	0	0	0	1	6	12	19	n.s.	17.3%	29.8%	15.5%	7.9%	4.8%
Solar	0	0	0	1	8	15	17	n.s.	n.s.	n.s.	20.1%	6.7%	1.3%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	13.1%	10.0%
Total Final Consumption[2] (Mtoe)	**160**	**74**	**75**	**62**	**54**	**47**	**41**	**-7.4%**	**0.2%**	**-1.9%**	**-1.3%**	**-1.4%**	**-1.3%**
Coal	35	15	13	14	12	6	2	-8.4%	-1.3%	1.1%	-1.3%	-7.2%	-9.1%
Oil	43	11	13	10	10	9	5	-13.0%	1.7%	-1.9%	0.1%	-1.7%	-4.8%
Gas	33	26	25	13	11	9	6	-2.6%	-0.2%	-6.1%	-2.3%	-2.0%	-3.7%
Electricity	18	10	11	13	9	11	14	-5.8%	1.7%	1.3%	-3.1%	1.3%	2.4%
Heat	31	13	12	9	9	9	8	-8.0%	-0.6%	-2.9%	-0.2%	0.2%	-1.0%
Biomass & Other	0	0	1	2	2	4	6	-2.2%	14.7%	5.6%	2.7%	5.3%	4.2%
Industry (incl. non-energy use)	**95**	**39**	**36**	**28**	**26**	**22**	**18**	**-8.6%**	**-0.8%**	**-2.4%**	**-0.5%**	**-2.0%**	**-1.8%**
Coal	27	12	12	14	12	6	2	-7.9%	0.2%	1.4%	-1.2%	-7.1%	-9.0%
Oil	15	2	2	2	3	3	2	-16.8%	-0.4%	0.5%	0.4%	0.6%	-3.1%
Gas	23	12	11	5	4	5	3	-6.5%	-1.2%	-8.1%	-0.5%	0.5%	-3.1%
Electricity	13	5	6	5	5	5	6	-8.4%	0.9%	-1.4%	0.1%	0.7%	1.1%
Heat	16	7	5	2	2	2	2	-8.0%	-3.6%	-8.7%	-0.2%	-0.3%	-0.2%
Biomass & Other	0	0	0	0	0	1	2	n.s.	n.s.	7.5%	13.1%	14.5%	8.3%
Buildings	**35**	**27**	**28**	**25**	**18**	**16**	**14**	**-2.6%**	**0.7%**	**-1.3%**	**-3.0%**	**-1.4%**	**-1.2%**
Coal	7	3	1	0	0	0	0	-9.0%	-13.4%	-6.2%	-7.9%	-17.1%	-18.2%
Oil	2	0	0	0	1	1	1	-13.8%	-7.5%	4.3%	11.8%	2.8%	-4.1%
Gas	10	14	14	9	6	3	2	3.2%	0.5%	-4.9%	-3.6%	-5.8%	-7.2%
Electricity	1	3	5	7	3	3	5	8.5%	3.7%	4.0%	-8.2%	0.8%	3.3%
Heat	14	6	8	7	7	7	7	-8.1%	2.1%	-0.4%	-0.2%	0.3%	-1.2%
Biomass & Other	0	0	1	1	1	1	1	-2.2%	14.0%	2.2%	0.4%	-1.7%	-2.2%
Agriculture	**9**	**2**	**2**	**2**	**2**	**2**	**2**	**-16.6%**	**1.2%**	**-0.1%**	**1.4%**	**1.0%**	**0.9%**
Coal	1	0	0	0	0	0	0	n.s.	n.s.	-7.0%	-2.7%	-7.5%	-7.5%
Oil	6	1	1	1	1	1	1	-15.7%	1.5%	0.2%	-0.5%	-4.0%	-4.2%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	-2.3%	-0.1%	-2.7%	-2.9%
Electricity	2	0	0	0	0	1	1	-15.9%	-4.2%	-0.4%	4.0%	5.2%	3.7%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	1	1	n.s.	n.s.	0.5%	27.5%	11.1%	3.1%
Transport	**21**	**7**	**10**	**7**	**8**	**8**	**7**	**-9.9%**	**2.6%**	**-2.4%**	**0.3%**	**-0.2%**	**-1.0%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	-13.4%	0.0%	0.0%	0.0%
Oil	20	7	9	6	6	4	2	-10.3%	2.7%	-3.1%	-0.7%	-3.1%	-6.3%
Gas	0	0	0	0	0	1	1	n.s.	n.s.	-11.8%	30.4%	14.6%	2.9%
Electricity	1	1	1	1	1	1	2	-4.7%	0.1%	-0.8%	4.7%	3.6%	3.9%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	1	1	2	n.s.	n.s.	n.s.	1.6%	6.9%	4.3%
Other Energy Transformation & Losses[3]	**25**	**26**	**23**	**8**	**6**	**6**	**3**	**0.5%**	**-1.5%**	**-9.6%**	**-3.2%**	**0.4%**	**-6.5%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Other CIS	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	77	81	89	99	106	110	113	0.6%	0.9%	1.1%	0.6%	0.4%	0.3%
GDP per capita (ppp, k$'15)	6	4	8	12	19	27	34	-4.1%	7.4%	4.6%	4.8%	3.5%	2.4%
Prices													
International/Regional ($'15/boe)													
Coal	3	2	3	2	3	4	5	-3.4%	3.6%	-2.3%	2.6%	2.4%	2.4%
Oil	39	38	86	89	89	88	90	-0.2%	8.4%	0.3%	0.0%	-0.1%	0.2%
Gas	24	28	33	47	55	65	70	1.5%	1.6%	3.5%	1.6%	1.8%	0.7%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**1 101**	**629**	**826**	**1 044**	**896**	**651**	**406**	**-5.4%**	**2.8%**	**2.4%**	**-1.5%**	**-3.1%**	**-4.6%**
Total GHG (energy, industry, agriculture)	**1 101**	**654**	**861**	**1 075**	**924**	**677**	**429**	**-5.1%**	**2.8%**	**2.2%**	**-1.5%**	**-3.1%**	**-4.5%**
CO_2	715	412	544	697	644	456	255	-5.4%	2.8%	2.5%	-0.8%	-3.4%	-5.6%
CH_4	310	186	251	303	204	154	109	-5.0%	3.0%	1.9%	-3.9%	-2.8%	-3.4%
N_2O	73	54	63	71	73	66	64	-3.0%	1.6%	1.2%	0.3%	-1.0%	-0.2%
F gases	4	1	3	5	3	1	1	-9.1%	9.9%	3.2%	-5.5%	-6.0%	-7.4%
Total GHG from Energy and Industry	**927**	**541**	**715**	**917**	**774**	**542**	**300**	**-5.2%**	**2.8%**	**2.5%**	**-1.7%**	**-3.5%**	**-5.7%**
CO_2 Emissions from Fuel Comb.	**660**	**375**	**497**	**630**	**576**	**398**	**218**	**-5.5%**	**2.9%**	**2.4%**	**-0.9%**	**-3.6%**	**-5.8%**
Power generation/District heating	248	152	165	252	207	119	53	-4.8%	0.8%	4.4%	-2.0%	-5.4%	-7.8%
Industry	128	49	78	83	86	56	32	-9.1%	4.7%	0.6%	0.4%	-4.2%	-5.5%
Buildings	156	83	103	109	84	57	37	-6.2%	2.2%	0.6%	-2.6%	-3.9%	-4.3%
Agriculture	13	8	8	8	8	5	3	-4.2%	-0.3%	0.7%	-0.8%	-3.8%	-4.1%
Transport	66	34	53	68	65	51	32	-6.5%	4.8%	2.4%	-0.4%	-2.4%	-4.6%
Other	51	49	90	109	126	110	62	-0.2%	6.2%	2.0%	1.4%	-1.4%	-5.6%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**0**	**30**	**n.s.**	**n.s.**	**n.s.**	**30.8%**	**24.9%**	**52.4%**
Coal	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	n.s.	33.8%
Gas	0	0	0	0	0	0	12	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass	0	0	0	0	0	0	15	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	30.8%	19.8%	14.1%
Energy Balance, by fuel (Mtoe)													
Primary Production	**215**	**196**	**310**	**407**	**434**	**355**	**258**	**-0.9%**	**4.7%**	**2.8%**	**0.6%**	**-2.0%**	**-3.1%**
Coal	52	35	51	104	83	32	8	-3.7%	3.6%	7.5%	-2.2%	-9.2%	-12.5%
Oil	46	65	142	163	195	158	99	3.5%	8.1%	1.4%	1.8%	-2.1%	-4.6%
Natural gas	112	90	109	130	135	122	82	-2.1%	2.0%	1.7%	0.4%	-1.0%	-3.9%
Biomass	1	2	2	4	9	16	22	6.7%	2.9%	6.1%	7.9%	6.3%	3.2%
Nuclear[1]	0	0	0	0	1	1	3	n.s.	2.2%	0.8%	14.8%	-1.4%	12.9%
Hydro	4	4	5	5	7	9	10	-0.6%	2.3%	-0.1%	2.4%	2.4%	1.4%
Other renewables	0	0	0	0	4	18	35	n.s.	n.s.	n.s.	54.7%	15.4%	6.6%
Net Imports	**41**	**- 39**	**- 124**	**- 166**	**- 191**	**- 150**	**- 79**						
Coal	0	- 13	- 14	- 48	- 47	- 15	0						
Oil	41	- 30	- 107	- 116	- 148	- 118	- 71						
Natural gas	- 15	- 6	- 1	0	5	- 20	- 18						
Biomass	0	0	0	2	2	5	11						
Biofuels	0	0	0	0	0	- 1	- 1						
Electricity	16	11	- 1	- 2	- 2	- 2	- 2						
Primary Energy Demand[2]	**256**	**158**	**186**	**241**	**243**	**206**	**179**	-4.7%	**1.7%**	**2.6%**	**0.1%**	**-1.6%**	**-1.4%**
Coal	52	22	37	56	36	17	9	-8.2%	5.2%	4.3%	-4.2%	-7.2%	-6.4%
Oil	87	35	35	47	47	40	28	-8.8%	-0.1%	3.2%	-0.1%	-1.6%	-3.5%
Natural gas	96	84	108	129	140	102	64	-1.4%	2.6%	1.8%	0.8%	-3.1%	-4.5%
Biomass	1	2	2	6	10	21	33	6.6%	2.8%	9.7%	6.2%	7.6%	4.4%
Nuclear[1]	0	0	0	0	1	1	3	n.s.	2.2%	0.8%	14.8%	-1.4%	12.9%
Hydro	4	4	5	5	7	9	10	-0.6%	2.3%	-0.1%	2.4%	2.4%	1.4%
Other renewables	0	0	0	0	4	18	35	n.s.	n.s.	n.s.	54.7%	15.4%	6.6%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**256**	**158**	**186**	**241**	**243**	**206**	**179**	**-4.7%**	**1.7%**	**2.6%**	**0.1%**	**-1.6%**	**-1.4%**
Energy for Power Generation	**84**	**56**	**62**	**91**	**89**	**73**	**74**	**-4.0%**	**1.1%**	**3.9%**	**-0.3%**	**-2.0%**	**0.2%**
Other Energy Transformation & Losses	**35**	**30**	**34**	**46**	**56**	**58**	**51**	**-1.4%**	**1.3%**	**3.1%**	**2.0%**	**0.3%**	**-1.3%**
Final consumption	**189**	**100**	**121**	**145**	**146**	**130**	**117**	**-6.2%**	**1.9%**	**1.8%**	**0.1%**	**-1.2%**	**-1.0%**
Steel, Non-Met. Minerals and Chem.	8	5	13	23	26	21	17	-3.6%	8.9%	5.8%	1.4%	-2.2%	-2.2%
Other Industry	51	22	25	23	25	22	20	-8.0%	1.1%	-0.8%	1.0%	-1.6%	-0.8%
Non-Energy Use	15	7	6	7	7	7	5	-7.6%	-1.8%	2.1%	0.6%	-1.0%	-1.8%
Residential	14	27	31	35	33	29	26	7.0%	1.1%	1.5%	-0.7%	-1.4%	-0.9%
Services	71	22	25	30	25	22	20	-11.0%	1.3%	1.9%	-1.7%	-1.4%	-0.8%
Agriculture	8	5	5	6	7	8	9	-5.1%	-0.3%	1.6%	2.1%	1.5%	1.2%
Road	19	10	16	19	20	19	16	-6.5%	4.7%	2.2%	0.3%	-0.5%	-1.5%
Rail	2	1	1	1	1	2	2	-7.4%	1.2%	0.1%	2.1%	1.2%	0.6%
Aviation	1	0	0	1	1	1	1	-1.0%	-1.0%	3.5%	7.3%	1.6%	-1.0%
Other Transport	0	0	0	0	0	0	0	-7.8%	4.9%	-2.1%	2.9%	-1.3%	-1.9%

[1] Nuclear energy is accounted as primary electricity

Other CIS	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**80**	**51**	**57**	**86**	**77**	**45**	**27**	**-4.3%**	**1.0%**	**4.2%**	**-1.1%**	**-5.2%**	**-5.0%**
Coal	28	16	19	32	18	7	3	-5.5%	2.0%	5.2%	-5.7%	-8.5%	-9.1%
Oil	19	7	1	5	6	6	4	-9.8%	-19.6%	21.6%	0.1%	1.2%	-4.5%
Gas	32	29	37	46	51	30	17	-1.2%	2.5%	2.3%	1.0%	-5.1%	-5.6%
Biomass & Waste	0	0	0	2	3	1	3	n.s.	n.s.	36.7%	2.0%	-6.4%	8.9%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**295**	**201**	**256**	**383**	**458**	**497**	**604**	**-3.8%**	**2.4%**	**4.1%**	**1.8%**	**0.8%**	**2.0%**
Coal	73	38	69	113	70	29	12	-6.3%	6.1%	5.0%	-4.7%	-8.3%	-8.4%
of which CCS	0	0	0	0	0	0	3	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	53	23	2	24	25	28	18	-8.1%	-19.9%	25.5%	0.2%	1.2%	-4.3%
Gas	116	88	119	176	228	141	83	-2.7%	3.0%	4.0%	2.6%	-4.7%	-5.2%
of which CCS	0	0	0	0	0	0	18	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	0	0	4	7	4	16	n.s.	n.s.	47.3%	5.1%	-5.3%	13.7%
of which CCS	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	2	2	3	11	9	31	n.s.	2.2%	0.8%	14.8%	-1.4%	12.8%
Hydro	52	49	62	62	78	99	120	-0.6%	2.3%	-0.1%	2.4%	2.4%	1.9%
Wind	0	0	0	0	20	77	136	n.s.	n.s.	43.6%	50.2%	14.6%	5.9%
Solar	0	0	0	0	20	100	168	n.s.	n.s.	n.s.	n.s.	17.6%	5.3%
Other	0	0	0	1	0	9	21	n.s.	n.s.	n.s.	-14.5%	52.8%	8.9%
Generation Capacity (GW_e)	**50**	**66**	**72**	**67**	**100**	**175**	**246**	**2.8%**	**0.9%**	**-0.7%**	**4.1%**	**5.7%**	**3.4%**
Coal	15	15	15	15	13	12	2	-0.2%	0.3%	0.1%	-1.7%	-0.9%	-14.6%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	14	7	7	8	7	7	11	-6.2%	-0.4%	1.5%	-1.2%	-0.2%	4.7%
Gas	22	29	32	24	34	30	25	2.9%	1.2%	-2.9%	3.4%	-1.1%	-2.0%
of which CCS	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	0	1	1	1	1	2	n.s.	n.s.	2.2%	4.2%	-5.4%	14.9%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	2	1	5	n.s.	0.0%	0.6%	14.5%	-1.6%	12.6%
Hydro	0	15	17	19	24	30	37	n.s.	1.1%	1.0%	2.4%	2.4%	2.1%
Wind	0	0	0	0	7	27	45	n.s.	n.s.	36.8%	48.7%	14.0%	5.4%
Solar	0	0	0	0	13	68	119	n.s.	n.s.	n.s.	n.s.	17.8%	5.7%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	9.6%
Total Final Consumption[2] (Mtoe)	**189**	**100**	**121**	**145**	**146**	**130**	**117**	**-6.2%**	**1.9%**	**1.8%**	**0.1%**	**-1.2%**	**-1.0%**
Coal	23	7	17	17	14	5	2	-11.6%	9.6%	0.0%	-2.3%	-9.1%	-8.9%
Oil	60	24	30	36	34	25	16	-8.8%	2.2%	1.9%	-0.5%	-3.0%	-4.6%
Gas	53	39	41	49	47	38	26	-2.9%	0.4%	1.8%	-0.4%	-2.1%	-3.6%
Electricity	23	13	16	26	31	33	39	-5.0%	2.0%	4.5%	1.8%	0.8%	1.7%
Heat	29	15	15	15	16	18	18	-6.4%	0.0%	-0.1%	0.6%	1.1%	0.4%
Biomass & Other	1	1	2	2	5	11	15	5.2%	0.7%	3.6%	9.1%	7.2%	3.9%
Industry (incl. non-energy use)	**74**	**34**	**43**	**53**	**59**	**49**	**42**	**-7.4%**	**2.3%**	**1.9%**	**1.1%**	**-1.8%**	**-1.5%**
Coal	19	6	12	13	12	5	2	-10.9%	7.3%	0.7%	-0.9%	-8.4%	-8.7%
Oil	22	6	6	8	9	6	5	-11.8%	-1.3%	3.4%	1.1%	-2.9%	-3.3%
Gas	12	11	13	17	19	17	11	-0.9%	1.3%	2.8%	1.1%	-1.3%	-3.8%
Electricity	13	6	8	11	15	16	16	-8.1%	3.4%	3.8%	3.1%	0.2%	0.3%
Heat	8	5	5	4	4	4	3	-3.8%	-0.2%	-3.6%	-0.2%	-0.3%	-0.2%
Biomass & Other	0	0	0	0	0	2	5	n.s.	-2.0%	11.5%	11.9%	15.6%	9.2%
Buildings	**85**	**49**	**55**	**65**	**58**	**51**	**47**	**-5.2%**	**1.2%**	**1.7%**	**-1.1%**	**-1.4%**	**-0.8%**
Coal	5	1	5	4	2	0	0	-15.0%	18.3%	-1.9%	-8.5%	-16.3%	-16.3%
Oil	15	4	6	6	5	4	3	-11.5%	3.2%	0.7%	-2.7%	-1.4%	-1.9%
Gas	39	28	28	31	27	18	11	-3.3%	-0.1%	1.3%	-1.6%	-3.7%	-5.0%
Electricity	4	5	6	11	10	10	14	1.8%	1.0%	6.4%	-0.7%	0.1%	2.8%
Heat	21	10	10	11	12	14	15	-7.6%	0.2%	1.4%	0.9%	1.4%	0.5%
Biomass & Other	1	1	1	2	3	4	4	4.7%	0.3%	0.7%	5.3%	3.4%	0.3%
Agriculture	**8**	**5**	**5**	**6**	**7**	**8**	**9**	**-5.1%**	**-0.3%**	**1.6%**	**2.1%**	**1.5%**	**1.2%**
Coal	0	0	0	0	0	0	0	-26.7%	43.6%	-3.3%	-3.7%	-7.5%	-7.5%
Oil	3	2	2	2	2	1	1	-1.8%	-1.7%	1.1%	-0.7%	-3.8%	-4.2%
Gas	1	0	0	0	0	0	0	-17.0%	3.6%	1.1%	-0.2%	-2.5%	-2.8%
Electricity	4	2	2	3	4	5	6	-5.6%	-0.4%	2.3%	3.2%	2.8%	2.1%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	1	1	2	8.3%	18.2%	2.2%	20.9%	9.1%	3.2%
Transport	**22**	**11**	**17**	**21**	**23**	**22**	**19**	**-6.4%**	**4.2%**	**2.1%**	**0.7%**	**-0.3%**	**-1.3%**
Coal	0	0	0	0	0	0	0	-9.9%	3.8%	-2.6%	0.0%	0.0%	0.0%
Oil	21	11	16	20	19	13	7	-6.2%	4.0%	1.9%	-0.5%	-3.4%	-6.4%
Gas	0	0	0	0	1	3	4	-7.0%	29.6%	1.5%	9.1%	13.4%	3.4%
Electricity	1	0	1	1	1	2	3	-10.7%	6.5%	0.8%	7.6%	4.7%	3.7%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	2	4	5	n.s.	n.s.	44.5%	14.3%	8.1%	3.6%
Other Energy Transformation & Losses[3]	**35**	**30**	**34**	**46**	**56**	**58**	**51**	**-1.4%**	**1.3%**	**3.1%**	**2.0%**	**0.3%**	**-1.3%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Argentina	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	33	37	41	45	49	52	55	1.2%	1.1%	1.0%	0.8%	0.6%	0.5%
GDP per capita (ppp, k$'15)	9	12	16	17	22	26	31	3.3%	2.7%	0.7%	2.3%	1.9%	1.7%
Prices													
International/Regional ($'15/boe)													
Coal	2	1	2	2	3	4	5	-4.2%	5.6%	0.9%	2.2%	2.9%	2.2%
Oil	39	38	86	89	89	88	90	-0.2%	8.4%	0.3%	0.0%	-0.1%	0.2%
Gas	26	40	34	33	41	45	47	4.6%	-1.6%	-0.3%	2.1%	1.0%	0.4%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**352**	**354**	**416**	**457**	**330**	**246**	**160**	**0.1%**	**1.6%**	**1.0%**	**-3.2%**	**-2.9%**	**-4.2%**
Total GHG (energy, industry, agriculture)	**287**	**307**	**357**	**396**	**334**	**258**	**174**	**0.7%**	**1.5%**	**1.0%**	**-1.7%**	**-2.6%**	**-3.8%**
CO_2	114	152	190	233	212	155	81	2.9%	2.3%	2.1%	-1.0%	-3.1%	-6.3%
CH_4	137	118	116	112	80	64	56	-1.5%	-0.2%	-0.4%	-3.3%	-2.3%	-1.3%
N_2O	33	37	51	50	41	38	37	1.3%	3.1%	-0.1%	-2.1%	-0.6%	-0.2%
F gases	3	0	1	1	1	1	0	-16.7%	9.9%	-0.3%	-2.0%	-2.6%	-7.5%
Total GHG from Energy and Industry	**163**	**188**	**227**	**268**	**236**	**171**	**93**	**1.4%**	**1.9%**	**1.7%**	**-1.3%**	**-3.2%**	**-6.0%**
CO_2 Emissions from Fuel Comb.	**102**	**144**	**178**	**220**	**198**	**143**	**73**	**3.6%**	**2.1%**	**2.1%**	**-1.0%**	**-3.2%**	**-6.5%**
Power generation/District heating	19	30	45	60	43	24	10	4.6%	4.2%	3.0%	-3.4%	-5.7%	-8.2%
Industry	16	27	31	40	41	31	20	5.4%	1.5%	2.5%	0.1%	-2.7%	-4.5%
Buildings	18	20	27	30	28	20	11	1.0%	3.0%	1.0%	-0.6%	-3.4%	-5.8%
Agriculture	5	8	11	13	12	8	5	5.1%	3.3%	2.4%	-1.4%	-4.1%	-4.2%
Transport	29	41	43	50	47	32	19	3.7%	0.4%	1.4%	-0.6%	-3.8%	-5.1%
Other	15	18	21	26	28	29	8	1.9%	1.6%	2.1%	0.6%	0.4%	-11.6%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**1**	**12**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**45.8%**	**32.9%**
Coal	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	19.5%
Gas	0	0	0	0	0	0	4	n.s.	n.s.	n.s.	n.s.	n.s.	24.5%
Biomass	0	0	0	0	0	0	7	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	21.5%	16.5%
Energy Balance, by fuel (Mtoe)													
Primary Production	**44**	**76**	**72**	**90**	**174**	**71**	**86**	**5.7%**	**-0.6%**	**2.2%**	**6.9%**	**-8.5%**	**1.9%**
Coal	0	0	0	0	0	0	0	0.3%	-12.3%	9.5%	-0.6%	-0.7%	-3.1%
Oil	24	38	30	29	25	20	19	4.8%	-2.2%	-0.3%	-1.6%	-2.2%	-0.6%
Natural gas	16	32	34	30	95	3	0	7.2%	0.5%	-1.3%	12.3%	-30.0%	-19.4%
Biomass	2	3	4	24	44	31	41	5.5%	3.1%	19.7%	6.2%	-3.4%	2.6%
Nuclear[1]	1	1	1	1	1	3	5	-1.6%	1.5%	5.2%	3.4%	5.8%	6.2%
Hydro	2	2	3	4	4	4	4	4.9%	1.5%	2.1%	1.1%	0.8%	0.1%
Other renewables	0	0	0	2	4	10	18	n.s.	-3.3%	n.s.	10.1%	9.3%	5.4%
Net Imports	**0**	**- 15**	**11**	**21**	**- 67**	**27**	**3**						
Coal	1	0	1	3	2	2	1						
Oil	- 5	- 15	1	3	3	- 1	- 7						
Natural gas	3	- 2	2	17	- 53	30	17						
Biomass	0	0	0	- 18	- 37	- 20	- 25						
Biofuels	0	0	- 1	- 1	- 1	- 1	- 1						
Electricity	1	1	9	18	18	18	18						
Primary Energy Demand[2]	**44**	**61**	**83**	**111**	**107**	**98**	**90**	3.5%	**3.0%**	**2.9%**	**-0.4%**	**-0.8%**	**-0.9%**
Coal	1	0	1	3	2	2	1	-10.3%	8.6%	14.8%	-2.1%	-2.8%	-6.2%
Oil	19	23	31	33	28	19	12	2.0%	3.0%	0.4%	-1.6%	-3.9%	-4.1%
Natural gas	19	30	36	46	42	32	17	4.9%	1.6%	2.6%	-0.9%	-2.6%	-6.2%
Biomass	2	3	4	6	8	11	16	5.5%	3.1%	4.3%	2.0%	4.0%	3.5%
Nuclear[1]	1	1	1	1	1	3	5	-1.6%	1.5%	5.2%	3.4%	5.8%	6.2%
Hydro	2	2	3	4	4	4	4	4.9%	1.5%	2.1%	1.1%	0.8%	0.1%
Other renewables	0	0	0	2	4	10	18	n.s.	-3.3%	n.s.	10.1%	9.3%	5.4%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**44**	**61**	**83**	**111**	**107**	**98**	**90**	**3.5%**	**3.0%**	**2.9%**	**-0.4%**	**-0.8%**	**-0.9%**
Energy for Power Generation	**10**	**15**	**21**	**31**	**27**	**27**	**32**	**4.8%**	**3.5%**	**3.8%**	**-1.2%**	**-0.1%**	**1.7%**
Other Energy Transformation & Losses	**7**	**6**	**18**	**27**	**29**	**32**	**28**	**-1.4%**	**11.4%**	**4.4%**	**0.6%**	**0.8%**	**-1.2%**
Final consumption	**31**	**47**	**54**	**67**	**66**	**60**	**55**	**4.3%**	**1.4%**	**2.3%**	**-0.1%**	**-1.0%**	**-0.9%**
Steel, Non-Met. Minerals and Chem.	1	3	3	5	5	4	3	13.4%	1.7%	5.4%	-0.8%	-2.9%	-3.2%
Other Industry	8	12	14	15	17	16	16	4.2%	0.8%	1.3%	1.0%	-0.5%	-0.3%
Non-Energy Use	2	4	5	5	3	3	3	9.2%	0.8%	0.6%	-5.3%	0.3%	0.3%
Residential	6	9	13	16	15	13	11	3.9%	3.0%	2.3%	-0.6%	-1.4%	-1.4%
Services	3	3	4	5	5	5	5	0.2%	4.2%	2.9%	0.1%	-0.2%	0.7%
Agriculture	2	3	4	4	5	5	6	5.3%	3.5%	2.0%	1.1%	0.8%	0.7%
Road	9	12	12	16	16	13	11	3.4%	-0.4%	2.9%	0.2%	-1.8%	-2.2%
Rail	0	0	0	0	0	0	0	5.2%	2.5%	-0.2%	2.1%	1.7%	1.4%
Aviation	1	0	0	1	1	0	0	-3.3%	-3.0%	3.5%	0.5%	-0.9%	-1.2%
Other Transport	0	0	0	0	0	0	0	24.0%	14.7%	1.1%	1.6%	-1.6%	-1.7%

[1] Nuclear energy is accounted as primary electricity

Argentina	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**7**	**12**	**18**	**25**	**18**	**10**	**6**	**5.2%**	**3.9%**	**3.3%**	**-3.3%**	**-5.7%**	**-5.4%**
Coal	0	0	1	2	1	1	0	3.2%	5.4%	10.8%	-4.0%	-2.3%	-10.6%
Oil	2	1	4	3	2	1	1	-6.1%	15.7%	-3.7%	-4.8%	-4.4%	2.0%
Gas	5	11	13	19	14	7	3	7.4%	1.7%	4.0%	-3.1%	-6.4%	-7.3%
Biomass & Waste	0	0	1	2	1	1	1	6.6%	13.5%	7.8%	-3.1%	-4.6%	0.8%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**51**	**89**	**126**	**178**	**189**	**227**	**291**	**5.8%**	**3.5%**	**3.6%**	**0.6%**	**1.8%**	**2.5%**
Coal	1	2	3	9	6	5	2	10.4%	5.4%	11.2%	-3.5%	-2.2%	-9.7%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	17.8%
Oil	5	3	17	12	7	5	6	-5.3%	19.2%	-3.4%	-4.5%	-4.1%	2.1%
Gas	20	49	63	81	60	31	17	9.4%	2.6%	2.6%	-3.0%	-6.3%	-5.7%
of which CCS	0	0	0	0	0	1	5	n.s.	n.s.	n.s.	n.s.	n.s.	15.8%
Biomass & Waste	0	1	2	4	3	2	3	20.2%	12.5%	6.0%	-3.1%	-4.6%	5.6%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	7	6	7	12	17	29	53	-1.6%	1.5%	5.2%	3.4%	5.7%	6.2%
Hydro	18	29	34	42	46	51	51	4.7%	1.6%	2.1%	1.0%	0.9%	0.2%
Wind	0	0	0	19	40	73	86	n.s.	-3.3%	n.s.	8.0%	6.3%	1.6%
Solar	0	0	0	1	10	31	72	n.s.	n.s.	n.s.	33.0%	12.2%	8.8%
Other	0	0	0	0	0	0	1	n.s.	-36.5%	33.8%	-1.3%	26.5%	10.9%
Generation Capacity (GW_e)	**18**	**24**	**33**	**43**	**58**	**82**	**130**	**2.8%**	**3.5%**	**2.6%**	**2.9%**	**3.6%**	**4.7%**
Coal	1	1	1	1	1	1	0	-1.9%	0.0%	5.1%	-2.4%	0.9%	-10.9%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	21.5%
Oil	2	1	2	2	2	3	3	-3.8%	4.9%	0.6%	-1.4%	2.2%	3.2%
Gas	7	11	17	18	16	8	4	4.8%	4.7%	0.6%	-1.2%	-6.8%	-6.4%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	19.7%
Biomass & Waste	0	0	1	1	0	0	1	19.6%	14.3%	-0.9%	-3.4%	-4.1%	8.0%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	1	1	1	2	2	4	7	0.0%	0.0%	5.8%	3.2%	5.5%	6.0%
Hydro	8	10	12	12	13	14	18	2.7%	2.0%	0.1%	0.9%	0.7%	2.4%
Wind	0	0	0	7	15	26	30	n.s.	13.6%	n.s.	7.8%	5.9%	1.2%
Solar	0	0	0	0	8	26	67	n.s.	n.s.	n.s.	32.7%	12.7%	10.0%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	13.9%	11.2%
Total Final Consumption[2] (Mtoe)	**31**	**47**	**54**	**67**	**66**	**60**	**55**	**4.3%**	**1.4%**	**2.3%**	**-0.1%**	**-1.0%**	**-0.9%**
Coal	1	1	1	1	1	1	1	0.1%	1.0%	3.8%	1.0%	-3.5%	-1.4%
Oil	16	22	25	29	25	17	10	3.6%	1.1%	1.5%	-1.3%	-3.8%	-4.8%
Gas	10	15	17	21	21	17	11	4.4%	1.3%	2.4%	-0.1%	-2.0%	-4.0%
Electricity	4	6	10	13	14	17	21	6.4%	4.1%	3.3%	0.6%	1.7%	2.4%
Heat	0	0	0	0	0	1	2	n.s.	n.s.	n.s.	n.s.	n.s.	6.2%
Biomass & Other	1	3	2	3	5	7	9	6.4%	-3.2%	4.9%	5.1%	3.8%	2.4%
Industry (incl. non-energy use)	**11**	**19**	**21**	**25**	**24**	**23**	**21**	**6.0%**	**1.0%**	**1.8%**	**-0.4%**	**-0.8%**	**-0.6%**
Coal	1	1	1	1	1	1	1	0.1%	1.0%	3.8%	1.0%	-3.5%	-1.4%
Oil	3	7	7	8	6	5	3	9.3%	0.6%	0.6%	-2.0%	-3.1%	-3.1%
Gas	4	7	8	11	11	9	7	4.3%	2.1%	3.2%	-0.4%	-1.2%	-3.6%
Electricity	2	3	4	5	5	6	8	4.8%	3.3%	0.8%	1.6%	1.9%	2.0%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	1	2	1	1	1	1	3	7.0%	-8.1%	0.8%	1.1%	2.3%	7.2%
Buildings	**9**	**12**	**16**	**21**	**20**	**18**	**17**	**2.9%**	**3.3%**	**2.5%**	**-0.5%**	**-1.1%**	**-0.7%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	2	1	2	2	1	1	1	-3.5%	4.1%	-0.9%	-3.0%	-2.5%	-3.3%
Gas	5	7	9	10	10	7	4	2.8%	2.7%	1.5%	-0.1%	-3.6%	-6.5%
Electricity	2	3	5	9	8	8	9	8.1%	4.7%	4.8%	-1.1%	-0.2%	1.9%
Heat	0	0	0	0	0	1	2	n.s.	n.s.	n.s.	n.s.	n.s.	6.2%
Biomass & Other	0	0	0	0	1	1	1	2.8%	-3.7%	-0.6%	12.2%	5.0%	-0.1%
Agriculture	**2**	**3**	**4**	**4**	**5**	**5**	**6**	**5.3%**	**3.5%**	**2.0%**	**1.1%**	**0.8%**	**0.7%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	1	2	3	4	4	2	2	5.1%	3.3%	2.4%	-1.4%	-4.1%	-4.2%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Electricity	0	0	0	0	0	1	2	2.5%	5.2%	3.5%	16.0%	8.9%	4.7%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	1	2	2	n.s.	10.4%	-22.4%	52.9%	9.5%	2.9%
Transport	**10**	**13**	**13**	**17**	**17**	**14**	**12**	**3.1%**	**-0.3%**	**2.8%**	**0.3%**	**-1.8%**	**-2.1%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	9	11	12	15	14	9	5	2.1%	0.4%	2.1%	-0.8%	-4.2%	-6.2%
Gas	0	1	0	0	0	1	1	22.7%	n.s.	n.s.	35.3%	7.0%	4.2%
Electricity	0	0	0	0	1	2	3	5.2%	2.5%	5.0%	22.6%	9.6%	4.1%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	1	2	2	3	3	n.s.	n.s.	12.4%	2.8%	1.7%	0.0%
Other Energy Transformation & Losses[3]	**7**	**6**	**18**	**27**	**29**	**32**	**28**	**-1.4%**	**11.4%**	**4.4%**	**0.6%**	**0.8%**	**-1.2%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Brazil	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	149	175	197	214	227	234	236	1.6%	1.2%	0.9%	0.6%	0.3%	0.1%
GDP per capita (ppp, k$'15)	9	9	12	12	15	18	22	0.9%	2.4%	0.2%	1.8%	2.2%	2.1%
Prices													
International/Regional ($'15/boe)													
Coal	2	1	2	2	3	4	5	-4.2%	5.6%	0.9%	2.2%	2.9%	2.2%
Oil	39	38	86	89	89	88	90	-0.2%	8.4%	0.3%	0.0%	-0.1%	0.2%
Gas	26	40	34	33	41	45	47	4.6%	-1.6%	-0.3%	2.1%	1.0%	0.4%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**1 509**	**2 264**	**2 545**	**1 743**	**898**	**550**	**173**	**4.1%**	**1.2%**	**-3.7%**	**-6.4%**	**-4.8%**	**-10.9%**
Total GHG (energy, industry, agriculture)	**630**	**919**	**1 164**	**1 222**	**942**	**799**	**645**	**3.8%**	**2.4%**	**0.5%**	**-2.6%**	**-1.6%**	**-2.1%**
CO_2	198	312	398	436	422	386	282	4.6%	2.5%	0.9%	-0.3%	-0.9%	-3.1%
CH_4	312	380	431	426	294	243	206	2.0%	1.3%	-0.1%	-3.6%	-1.9%	-1.6%
N_2O	115	148	173	195	168	154	143	2.6%	1.6%	1.2%	-1.5%	-0.8%	-0.8%
F gases	5	79	161	165	58	16	14	32.9%	7.4%	0.2%	-10.0%	-12.0%	-1.1%
Total GHG from Energy and Industry	**271**	**478**	**670**	**711**	**559**	**459**	**336**	**5.8%**	**3.4%**	**0.6%**	**-2.4%**	**-2.0%**	**-3.1%**
CO_2 Emissions from Fuel Comb.	**187**	**296**	**376**	**427**	**413**	**379**	**276**	**4.7%**	**2.4%**	**1.3%**	**-0.3%**	**-0.9%**	**-3.1%**
Power generation/District heating	10	27	40	25	7	5	2	10.5%	4.0%	-4.6%	-12.0%	-3.6%	-10.2%
Industry	52	85	100	101	112	114	108	5.0%	1.6%	0.0%	1.1%	0.1%	-0.5%
Buildings	20	25	23	28	33	30	20	2.2%	-0.6%	1.7%	1.8%	-1.0%	-4.1%
Agriculture	10	14	19	19	16	10	6	3.5%	2.5%	0.3%	-1.8%	-4.4%	-4.5%
Transport	81	125	168	228	206	163	88	4.5%	3.0%	3.1%	-1.0%	-2.3%	-6.0%
Other	14	19	26	27	39	57	52	3.3%	3.4%	0.4%	3.7%	3.9%	-0.9%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**1**	**12**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**41.5%**	**28.8%**
Coal	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	n.s.	16.8%
Gas	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	n.s.	19.8%
Biomass	0	0	0	0	0	0	7	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	24.7%	21.0%
Energy Balance, by fuel (Mtoe)													
Primary Production	**101**	**144**	**236**	**275**	**371**	**325**	**371**	**3.6%**	**5.1%**	**1.6%**	**3.0%**	**-1.3%**	**1.3%**
Coal	1	3	2	2	1	1	1	6.5%	-2.1%	0.7%	-4.8%	-5.9%	-1.9%
Oil	31	61	102	97	85	54	20	7.0%	5.2%	-0.5%	-1.3%	-4.5%	-9.5%
Natural gas	3	6	12	29	24	25	20	9.3%	6.9%	9.1%	-2.1%	0.5%	-2.0%
Biomass	48	47	83	100	203	164	214	-0.1%	5.9%	1.9%	7.3%	-2.1%	2.7%
Nuclear[1]	0	1	1	1	1	4	9	10.5%	9.2%	0.6%	0.5%	12.3%	7.2%
Hydro	18	26	35	38	43	44	44	3.9%	2.9%	0.8%	1.4%	0.2%	0.0%
Other renewables	0	0	1	7	13	32	63	n.s.	33.7%	29.5%	5.8%	9.5%	6.9%
Net Imports	**62**	**81**	**56**	**35**	**- 30**	**3**	**- 35**						
Coal	7	8	11	11	8	4	2						
Oil	27	27	3	26	29	44	46						
Natural gas	1	2	9	- 9	9	24	32						
Biomass	0	0	0	- 17	- 101	- 68	- 114						
Biofuels	1	0	- 1	- 3	- 3	- 3	- 4						
Electricity	27	44	35	27	27	1	1						
Primary Energy Demand[2]	**162**	**225**	**292**	**310**	**341**	**328**	**335**	3.3%	**2.6%**	**0.6%**	**1.0%**	**-0.4%**	**0.2%**
Coal	8	11	13	13	10	5	3	3.2%	1.5%	0.4%	-3.0%	-6.9%	-4.6%
Oil	58	88	105	124	114	98	66	4.2%	1.7%	1.7%	-0.8%	-1.5%	-3.9%
Natural gas	3	8	21	20	33	49	53	9.2%	10.4%	-0.5%	5.0%	4.0%	0.7%
Biomass	48	47	83	83	102	97	100	-0.1%	5.9%	0.0%	2.1%	-0.6%	0.3%
Nuclear[1]	0	1	1	1	1	4	9	10.5%	9.2%	0.6%	0.5%	12.3%	7.2%
Hydro	18	26	35	38	43	44	44	3.9%	2.9%	0.8%	1.4%	0.2%	0.0%
Other renewables	0	0	1	7	13	32	63	n.s.	33.7%	29.5%	5.8%	9.5%	6.9%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**162**	**225**	**292**	**310**	**341**	**328**	**335**	**3.3%**	**2.6%**	**0.6%**	**1.0%**	**-0.4%**	**0.2%**
Energy for Power Generation	**21**	**36**	**56**	**59**	**68**	**84**	**123**	**5.3%**	**4.4%**	**0.6%**	**1.4%**	**2.2%**	**3.8%**
Other Energy Transformation & Losses	**52**	**66**	**76**	**69**	**88**	**68**	**62**	**2.5%**	**1.4%**	**-0.9%**	**2.4%**	**-2.5%**	**-1.0%**
Final consumption	**114**	**156**	**213**	**236**	**257**	**262**	**257**	**3.3%**	**3.1%**	**1.0%**	**0.9%**	**0.2%**	**-0.2%**
Steel, Non-Met. Minerals and Chem.	21	28	32	32	34	31	28	2.9%	1.6%	0.0%	0.5%	-1.0%	-0.8%
Other Industry	21	32	51	54	65	76	87	4.0%	4.9%	0.5%	1.9%	1.7%	1.3%
Non-Energy Use	9	14	17	15	16	18	17	3.7%	2.2%	-0.9%	0.4%	0.9%	-0.3%
Residential	18	21	24	26	27	26	24	1.4%	1.4%	0.8%	0.4%	-0.4%	-0.6%
Services	5	8	11	13	16	20	24	5.2%	2.7%	2.1%	2.0%	2.0%	1.8%
Agriculture	6	7	10	12	12	13	14	2.0%	3.1%	1.5%	0.6%	0.6%	0.5%
Road	29	43	63	78	81	73	58	3.9%	3.9%	2.1%	0.4%	-1.0%	-2.3%
Rail	1	1	1	1	1	1	1	-2.0%	7.6%	0.4%	0.6%	0.3%	0.3%
Aviation	2	3	3	4	4	4	4	5.1%	0.2%	1.4%	1.7%	-0.6%	-1.3%
Other Transport	1	1	1	1	1	1	1	-1.6%	4.1%	-0.8%	0.3%	-1.9%	-1.7%

[1] Nuclear energy is accounted as primary electricity

Brazil	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**4**	**9**	**19**	**13**	**10**	**4**	**7**	**10.4%**	**7.4%**	**-4.0%**	**-2.0%**	**-10.2%**	**6.2%**
Coal	1	3	3	3	1	0	0	8.3%	-0.2%	-0.3%	-16.3%	-9.3%	9.4%
Oil	1	4	4	3	0	0	0	11.7%	-0.4%	-3.4%	-24.5%	n.s.	n.s.
Gas	0	1	7	2	2	2	2	28.1%	22.8%	-12.1%	0.1%	0.8%	2.0%
Biomass & Waste	1	2	6	5	8	1	4	7.7%	14.0%	-0.8%	4.1%	-16.1%	10.1%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**223**	**349**	**515**	**595**	**720**	**928**	**1 261**	**4.6%**	**4.0%**	**1.4%**	**1.9%**	**2.6%**	**3.1%**
Coal	5	11	11	12	2	1	2	8.8%	0.3%	0.8%	-16.4%	-7.3%	9.5%
of which CCS	0	0	0	0	0	1	2	n.s.	n.s.	n.s.	n.s.	n.s.	14.3%
Oil	5	15	16	14	1	0	0	11.9%	0.6%	-1.4%	-24.8%	-42.9%	n.s.
Gas	0	4	36	10	11	12	15	28.7%	24.5%	-11.7%	0.1%	1.0%	2.3%
of which CCS	0	0	0	0	0	1	3	n.s.	n.s.	n.s.	n.s.	n.s.	14.3%
Biomass & Waste	4	8	31	29	43	7	18	7.4%	14.9%	-0.8%	3.9%	-16.2%	9.2%
of which CCS	0	0	0	0	0	0	4	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	2	6	15	15	16	52	103	10.5%	9.2%	0.6%	0.5%	12.3%	7.1%
Hydro	207	304	403	437	503	515	520	3.9%	2.9%	0.8%	1.4%	0.2%	0.1%
Wind	0	0	2	74	120	235	374	n.s.	n.s.	42.2%	5.0%	7.0%	4.8%
Solar	0	0	0	3	24	106	224	n.s.	n.s.	n.s.	25.3%	16.1%	7.7%
Other	0	0	0	0	0	1	6	n.s.	n.s.	n.s.	-8.8%	13.9%	24.0%
Generation Capacity (GW_e)	**54**	**75**	**114**	**172**	**214**	**304**	**429**	**3.3%**	**4.3%**	**4.2%**	**2.2%**	**3.6%**	**3.5%**
Coal	2	3	4	5	4	3	1	4.3%	0.7%	3.4%	-2.5%	-2.0%	-7.7%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	18.3%
Oil	4	5	7	5	5	4	4	2.9%	3.3%	-3.6%	0.3%	-2.8%	1.2%
Gas	0	1	11	12	13	14	9	12.0%	23.2%	0.7%	0.6%	0.7%	-4.1%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	18.3%
Biomass & Waste	1	2	8	13	12	6	6	5.1%	16.0%	5.6%	-1.5%	-6.4%	-0.2%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	1	2	2	2	2	6	13	11.8%	0.0%	-0.2%	0.3%	12.1%	7.1%
Hydro	46	61	81	108	124	127	130	3.0%	2.8%	2.9%	1.4%	0.2%	0.2%
Wind	0	0	1	25	39	74	114	n.s.	46.8%	38.7%	4.7%	6.6%	4.4%
Solar	0	0	0	2	15	70	151	n.s.	n.s.	n.s.	25.7%	16.4%	8.1%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	20.9%	11.6%	10.0%
Total Final Consumption[2] (Mtoe)	**114**	**156**	**213**	**236**	**257**	**262**	**257**	**3.3%**	**3.1%**	**1.0%**	**0.9%**	**0.2%**	**-0.2%**
Coal	6	9	11	11	10	6	4	3.9%	2.4%	-0.2%	-0.8%	-5.1%	-3.7%
Oil	53	80	94	113	105	87	55	4.2%	1.6%	1.9%	-0.7%	-1.9%	-4.4%
Gas	2	5	11	12	21	33	36	7.2%	8.2%	1.1%	5.9%	4.5%	1.0%
Electricity	18	28	38	43	52	64	82	4.3%	3.1%	1.2%	1.9%	2.2%	2.5%
Heat	0	0	0	1	1	2	3	n.s.	28.4%	12.7%	-1.6%	7.8%	3.2%
Biomass & Other	34	35	60	56	68	71	76	0.4%	5.4%	-0.7%	2.1%	0.3%	0.8%
Industry (incl. non-energy use)	**52**	**73**	**100**	**102**	**115**	**125**	**132**	**3.5%**	**3.3%**	**0.1%**	**1.2%**	**0.8%**	**0.6%**
Coal	6	9	11	11	10	6	4	3.9%	2.4%	-0.2%	-0.8%	-5.1%	-3.7%
Oil	17	27	27	26	28	30	27	4.6%	0.3%	-0.3%	0.8%	0.4%	-0.9%
Gas	2	4	10	10	14	22	25	7.0%	8.8%	-0.1%	3.5%	4.2%	1.5%
Electricity	10	13	17	18	23	29	33	2.7%	3.3%	0.3%	2.6%	2.1%	1.3%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	17	20	34	36	39	39	44	2.0%	5.3%	0.5%	0.7%	0.0%	1.2%
Buildings	**23**	**29**	**34**	**39**	**43**	**45**	**48**	**2.3%**	**1.8%**	**1.2%**	**1.0%**	**0.6%**	**0.5%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	6	8	7	8	6	4	3	2.2%	-0.9%	0.6%	-1.7%	-3.4%	-4.6%
Gas	0	0	0	2	6	7	5	1.9%	7.3%	13.7%	12.5%	1.9%	-3.6%
Electricity	8	14	19	22	24	26	32	5.9%	3.0%	1.6%	0.9%	1.0%	2.0%
Heat	0	0	0	1	1	2	3	n.s.	28.4%	12.7%	-1.6%	7.8%	3.2%
Biomass & Other	9	7	8	7	6	6	5	-2.1%	1.1%	-1.9%	-0.9%	-0.8%	-0.8%
Agriculture	**6**	**7**	**10**	**12**	**12**	**13**	**14**	**2.0%**	**3.1%**	**1.5%**	**0.6%**	**0.6%**	**0.5%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	3	5	6	6	5	3	2	3.5%	2.5%	0.3%	-1.8%	-4.4%	-4.5%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Electricity	1	1	2	3	3	4	5	6.8%	3.2%	5.7%	2.1%	2.7%	2.2%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	2	2	3	3	4	6	6	-2.8%	4.4%	1.1%	3.5%	3.3%	1.4%
Transport	**33**	**47**	**68**	**84**	**88**	**79**	**64**	**3.7%**	**3.7%**	**2.0%**	**0.4%**	**-1.0%**	**-2.2%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	27	41	54	73	65	49	23	4.5%	2.7%	3.2%	-1.1%	-2.8%	-7.1%
Gas	0	0	0	0	1	4	7	n.s.	n.s.	n.s.	33.1%	14.8%	4.2%
Electricity	0	0	0	0	1	5	13	0.5%	2.9%	5.5%	18.2%	14.3%	9.7%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	6	6	15	10	20	21	21	-0.3%	9.3%	-3.6%	6.9%	0.5%	0.2%
Other Energy Transformation & Losses[3]	**52**	**66**	**76**	**69**	**88**	**68**	**62**	**2.5%**	**1.4%**	**-0.9%**	**2.4%**	**-2.5%**	**-1.0%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Canada	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	28	31	34	37	40	42	44	1.0%	1.1%	0.9%	0.7%	0.5%	0.5%
GDP per capita (ppp, k$'15)	32	39	42	48	53	61	70	1.9%	0.8%	1.3%	1.1%	1.4%	1.4%
Prices													
International/Regional ($'15/boe)													
Coal	2	1	2	2	3	4	5	-4.2%	5.6%	0.8%	1.2%	3.4%	3.5%
Oil	39	38	86	89	89	88	90	-0.2%	8.4%	0.3%	0.0%	-0.1%	0.2%
Gas	26	40	34	33	41	45	47	4.6%	-1.6%	-0.3%	2.1%	1.0%	0.4%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**496**	**647**	**656**	**683**	**546**	**405**	**258**	**2.7%**	**0.1%**	**0.4%**	**-2.2%**	**-2.9%**	**-4.4%**
Total GHG (energy, industry, agriculture)	**597**	**732**	**727**	**729**	**596**	**447**	**284**	**2.1%**	**-0.1%**	**0.0%**	**-2.0%**	**-2.8%**	**-4.4%**
CO_2	448	562	579	588	495	368	218	2.3%	0.3%	0.2%	-1.7%	-2.9%	-5.1%
CH_4	95	119	101	90	59	44	36	2.3%	-1.7%	-1.1%	-4.2%	-2.7%	-2.0%
N_2O	43	40	38	39	36	32	29	-0.6%	-0.6%	0.4%	-0.8%	-1.1%	-0.9%
F gases	12	11	10	12	6	2	1	-1.0%	-0.5%	2.1%	-6.3%	-9.6%	-11.0%
Total GHG from Energy and Industry	**548**	**674**	**671**	**672**	**545**	**398**	**235**	**2.1%**	**0.0%**	**0.0%**	**-2.1%**	**-3.1%**	**-5.1%**
CO_2 Emissions from Fuel Comb.	**412**	**516**	**536**	**545**	**455**	**337**	**198**	**2.3%**	**0.4%**	**0.2%**	**-1.8%**	**-3.0%**	**-5.2%**
Power generation/District heating	96	135	108	58	13	3	1	3.5%	-2.1%	-6.0%	-14.1%	-12.8%	-13.3%
Industry	75	82	58	70	59	49	32	0.9%	-3.4%	1.9%	-1.7%	-1.7%	-4.2%
Buildings	74	85	72	68	52	32	14	1.5%	-1.7%	-0.5%	-2.7%	-4.8%	-7.7%
Agriculture	8	10	15	18	14	9	6	3.1%	3.6%	2.2%	-2.7%	-4.0%	-4.1%
Transport	110	135	163	169	138	96	52	2.1%	1.9%	0.4%	-2.0%	-3.6%	-6.0%
Other	50	69	121	162	180	147	93	3.2%	5.8%	3.0%	1.1%	-2.0%	-4.5%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**0**	**11**	**n.s.**	**n.s.**	**n.s.**	**25.6%**	**28.8%**	**40.0%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gas	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass	0	0	0	0	0	0	7	n.s.	n.s.	n.s.	n.s.	n.s.	54.1%
Direct Air Capture	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	25.6%	25.7%	22.8%
Energy Balance, by fuel (Mtoe)													
Primary Production	**241**	**332**	**352**	**475**	**476**	**418**	**367**	**3.2%**	**0.6%**	**3.0%**	**0.0%**	**-1.3%**	**-1.3%**
Coal	36	36	34	14	20	15	8	0.0%	-0.8%	-8.2%	3.2%	-2.7%	-6.5%
Oil	78	103	145	220	203	148	96	2.8%	3.4%	4.3%	-0.8%	-3.1%	-4.2%
Natural gas	84	141	122	159	161	156	136	5.3%	-1.4%	2.7%	0.1%	-0.3%	-1.4%
Biomass	11	14	13	34	38	31	43	2.5%	-0.8%	10.2%	1.1%	-1.9%	3.4%
Nuclear[1]	6	6	8	9	8	10	14	0.0%	2.2%	1.2%	-0.9%	2.1%	3.5%
Hydro	26	31	30	35	37	37	37	1.9%	-0.2%	1.4%	0.6%	0.0%	0.1%
Other renewables	0	0	1	5	11	21	33	n.s.	41.9%	19.0%	9.4%	6.6%	4.5%
Net Imports	**- 40**	**- 124**	**- 127**	**- 260**	**- 281**	**- 244**	**- 225**						
Coal	- 12	- 5	- 11	0	- 15	- 12	- 5						
Oil	2	- 16	- 47	- 126	- 127	- 95	- 67						
Natural gas	- 29	- 67	- 43	- 63	- 64	- 79	- 87						
Biomass	0	0	0	- 15	- 20	- 10	- 18						
Biofuels	0	0	0	0	0	0	0						
Electricity	0	- 36	- 26	- 57	- 56	- 49	- 48						
Primary Energy Demand[2]	**201**	**208**	**225**	**215**	**196**	**174**	**142**	0.3%	**0.8%**	**-0.4%**	**-0.9%**	**-1.2%**	**-2.0%**
Coal	24	31	22	15	5	3	2	2.5%	-3.2%	-4.2%	-10.3%	-5.5%	-1.5%
Oil	80	87	98	94	76	53	29	0.8%	1.2%	-0.4%	-2.2%	-3.5%	-5.7%
Natural gas	55	74	79	96	97	77	49	3.1%	0.6%	2.0%	0.1%	-2.2%	-4.4%
Biomass	11	14	12	19	18	21	25	2.4%	-1.1%	4.3%	-0.6%	1.8%	1.6%
Nuclear[1]	6	6	8	9	8	10	14	0.0%	2.2%	1.2%	-0.9%	2.1%	3.5%
Hydro	26	31	30	35	37	37	37	1.9%	-0.2%	1.4%	0.6%	0.0%	0.1%
Other renewables	0	0	1	5	11	21	33	n.s.	41.9%	19.0%	9.4%	6.6%	4.5%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**201**	**208**	**225**	**215**	**196**	**174**	**142**	**0.3%**	**0.8%**	**-0.4%**	**-0.9%**	**-1.2%**	**-2.0%**
Energy for Power Generation	**58**	**77**	**73**	**68**	**61**	**69**	**86**	**2.8%**	**-0.5%**	**-0.6%**	**-1.1%**	**1.3%**	**2.2%**
Other Energy Transformation & Losses	**20**	**- 14**	**9**	**- 8**	**2**	**0**	**- 18**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**
Final consumption	**160**	**187**	**186**	**199**	**180**	**162**	**140**	**1.6%**	**-0.1%**	**0.7%**	**-1.0%**	**-1.0%**	**-1.5%**
Steel, Non-Met. Minerals and Chem.	11	12	12	16	14	12	10	0.8%	-0.1%	2.6%	-1.2%	-1.6%	-1.5%
Other Industry	37	44	31	36	35	37	37	1.7%	-3.5%	1.8%	-0.3%	0.4%	0.0%
Non-Energy Use	15	20	23	23	23	22	20	2.9%	1.4%	0.2%	-0.2%	-0.2%	-1.1%
Residential	31	33	32	31	27	23	18	0.4%	-0.2%	-0.3%	-1.4%	-1.5%	-2.4%
Services	22	27	25	24	20	15	12	2.2%	-0.7%	-0.4%	-2.0%	-2.6%	-2.7%
Agriculture	3	4	6	7	7	8	8	2.6%	2.8%	2.3%	0.7%	0.6%	0.6%
Road	33	39	49	52	45	38	29	1.7%	2.2%	0.6%	-1.3%	-1.7%	-2.6%
Rail	2	2	2	2	2	2	2	-0.7%	0.2%	1.6%	-0.3%	-0.8%	-0.9%
Aviation	3	4	4	5	4	3	3	2.4%	-0.7%	1.7%	-1.9%	-2.1%	-2.5%
Other Transport	1	1	2	1	1	1	1	0.1%	3.5%	-3.9%	-0.4%	-2.8%	-2.5%

[1] Nuclear energy is accounted as primary electricity

Canada	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**27**	**39**	**34**	**20**	**5**	**1**	**2**	**4.0%**	**-1.6%**	**-5.1%**	**-12.7%**	**-12.3%**	**1.6%**
Coal	20	27	19	10	1	0	0	3.1%	-3.4%	-6.4%	-18.8%	n.s.	n.s.
Oil	4	3	2	2	0	0	0	-1.8%	-5.1%	-0.8%	-16.8%	n.s.	n.s.
Gas	2	7	11	6	3	1	1	14.7%	4.4%	-6.4%	-6.4%	-7.4%	-2.6%
Biomass & Waste	1	2	1	3	1	0	1	7.8%	-3.1%	6.3%	-12.9%	n.s.	n.s.
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**482**	**606**	**596**	**642**	**666**	**764**	**907**	**2.3%**	**-0.2%**	**0.7%**	**0.4%**	**1.4%**	**1.7%**
Coal	82	118	80	39	5	0	0	3.6%	-3.8%	-6.9%	-18.3%	n.s.	n.s.
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	16	15	8	7	1	0	0	-1.1%	-6.1%	-0.6%	-16.1%	n.s.	n.s.
Gas	10	33	52	30	18	8	6	13.2%	4.4%	-5.4%	-5.1%	-7.5%	-2.4%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	4	8	6	11	3	0	3	7.6%	-3.2%	6.3%	-12.9%	n.s.	n.s.
of which CCS	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	73	73	91	102	94	115	163	0.0%	2.2%	1.2%	-0.9%	2.1%	3.5%
Hydro	297	359	351	402	425	427	432	1.9%	-0.2%	1.4%	0.6%	0.0%	0.1%
Wind	0	0	9	48	117	209	295	n.s.	41.9%	18.5%	9.4%	6.0%	3.5%
Solar	0	0	0	2	3	4	7	n.s.	22.0%	35.5%	0.4%	5.0%	5.1%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	21.8%	12.4%	9.3%
Generation Capacity (GW_e)	**103**	**111**	**131**	**143**	**160**	**186**	**229**	**0.7%**	**1.7%**	**0.9%**	**1.2%**	**1.5%**	**2.1%**
Coal	19	18	14	7	1	0	0	-0.8%	-2.3%	-6.6%	-17.3%	-16.6%	3.9%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	19.8%
Oil	7	8	5	2	2	3	2	0.5%	-3.7%	-9.5%	1.9%	1.2%	-3.3%
Gas	4	7	15	14	11	4	5	5.9%	8.4%	-0.7%	-1.7%	-9.1%	1.0%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	27.0%
Biomass & Waste	1	1	5	3	2	2	2	2.2%	15.1%	-5.6%	-2.5%	0.8%	-1.3%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	31.7%
Nuclear	13	10	13	13	12	14	20	-2.2%	2.3%	0.5%	-1.1%	1.9%	3.4%
Hydro	59	67	75	83	88	88	95	1.3%	1.1%	1.0%	0.5%	0.0%	0.7%
Wind	0	0	4	18	41	70	100	n.s.	39.9%	16.2%	8.7%	5.4%	3.5%
Solar	0	0	0	3	3	4	6	n.s.	40.9%	29.8%	-1.2%	3.2%	4.5%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	11.8%	8.8%
Total Final Consumption[2] (Mtoe)	**160**	**187**	**186**	**199**	**180**	**162**	**140**	**1.6%**	**-0.1%**	**0.7%**	**-1.0%**	**-1.0%**	**-1.5%**
Coal	4	5	4	5	3	3	3	0.8%	-1.1%	1.1%	-2.7%	-2.3%	-0.9%
Oil	69	80	89	91	76	55	34	1.6%	1.0%	0.2%	-1.8%	-3.2%	-4.7%
Gas	40	49	40	45	39	33	22	1.9%	-2.0%	1.3%	-1.5%	-1.6%	-3.8%
Electricity	36	41	41	40	42	48	54	1.4%	0.0%	-0.2%	0.5%	1.4%	1.1%
Heat	1	1	1	1	2	3	4	2.5%	-4.7%	6.2%	5.8%	5.6%	2.9%
Biomass & Other	10	12	11	17	18	20	24	1.8%	-0.6%	4.0%	0.7%	1.2%	1.7%
Industry (incl. non-energy use)	**63**	**76**	**66**	**76**	**72**	**71**	**67**	**1.9%**	**-1.4%**	**1.4%**	**-0.5%**	**-0.2%**	**-0.6%**
Coal	4	5	4	5	3	3	3	0.9%	-1.1%	1.2%	-2.7%	-2.3%	-0.9%
Oil	18	22	24	24	23	21	18	2.0%	0.9%	0.1%	-0.7%	-0.8%	-1.6%
Gas	20	23	16	21	19	18	12	1.5%	-3.9%	2.9%	-0.8%	-0.9%	-3.5%
Electricity	14	17	15	16	18	22	25	1.9%	-1.5%	0.3%	1.7%	1.8%	1.4%
Heat	1	1	0	1	1	1	1	2.5%	-5.3%	2.7%	-0.2%	-0.3%	-0.2%
Biomass & Other	6	8	6	10	8	7	9	3.3%	-2.0%	4.6%	-2.1%	-1.2%	2.1%
Buildings	**53**	**60**	**57**	**55**	**47**	**39**	**30**	**1.2%**	**-0.5%**	**-0.3%**	**-1.7%**	**-1.9%**	**-2.5%**
Coal	0	0	0	0	0	0	0	-3.0%	-1.3%	-16.1%	-11.7%	n.s.	n.s.
Oil	9	9	5	4	4	3	1	0.0%	-5.0%	-1.7%	-1.9%	-3.3%	-6.5%
Gas	20	25	24	23	17	10	4	2.3%	-0.5%	-0.2%	-2.9%	-5.3%	-8.1%
Electricity	20	23	25	24	20	19	18	1.0%	0.9%	-0.6%	-1.6%	-0.5%	-0.8%
Heat	0	0	0	0	1	2	3	4.4%	17.5%	23.6%	12.5%	8.1%	3.6%
Biomass & Other	4	4	4	4	5	5	4	-1.0%	-0.8%	1.2%	2.0%	-0.4%	-2.5%
Agriculture	**3**	**4**	**6**	**7**	**7**	**8**	**8**	**2.6%**	**2.8%**	**2.3%**	**0.7%**	**0.6%**	**0.6%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	2	3	4	5	4	2	1	3.3%	4.1%	1.3%	-2.8%	-4.3%	-4.3%
Gas	0	1	1	1	1	1	1	1.6%	-0.3%	8.8%	-1.9%	-3.0%	-3.0%
Electricity	1	1	1	1	2	3	4	1.1%	-0.2%	0.2%	7.4%	5.3%	3.3%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	1	2	2	n.s.	n.s.	n.s.	35.5%	6.2%	2.1%
Transport	**40**	**47**	**57**	**60**	**53**	**44**	**34**	**1.6%**	**1.9%**	**0.6%**	**-1.3%**	**-1.8%**	**-2.5%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	40	47	56	58	46	29	13	1.6%	1.7%	0.3%	-2.2%	-4.5%	-7.4%
Gas	0	0	0	0	2	5	5	3.6%	22.8%	-0.4%	45.9%	12.3%	0.9%
Electricity	0	0	0	0	2	4	7	n.s.	n.s.	n.s.	29.7%	9.6%	4.8%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	1	2	4	6	9	n.s.	24.2%	7.4%	4.1%	5.5%	3.5%
Other Energy Transformation & Losses[3]	**20**	**- 14**	**9**	**- 8**	**2**	**0**	**- 18**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Chile	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	13	15	17	18	19	20	20	1.4%	1.1%	0.8%	0.5%	0.2%	0.0%
GDP per capita (ppp, k$'15)	8	13	17	22	28	36	45	4.9%	2.7%	2.4%	2.6%	2.5%	2.2%
Prices													
International/Regional ($'15/boe)													
Coal	2	1	2	2	3	4	5	-4.2%	5.6%	0.9%	2.2%	2.9%	2.2%
Oil	39	38	86	89	89	88	90	-0.2%	8.4%	0.3%	0.0%	-0.1%	0.2%
Gas	26	40	34	33	41	45	47	4.6%	-1.6%	-0.3%	2.1%	1.0%	0.4%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**43**	**90**	**141**	**157**	**130**	**93**	**50**	**7.7%**	**4.6%**	**1.1%**	**-1.9%**	**-3.2%**	**-6.0%**
Total GHG (energy, industry, agriculture)	**55**	**82**	**108**	**131**	**133**	**101**	**60**	**4.0%**	**2.7%**	**1.9%**	**0.2%**	**-2.7%**	**-5.1%**
CO_2	33	55	79	99	107	82	44	5.1%	3.7%	2.3%	0.8%	-2.7%	-6.1%
CH_4	17	21	21	24	19	13	11	1.8%	0.3%	1.2%	-2.3%	-3.5%	-2.2%
N_2O	5	7	8	8	7	6	6	3.6%	1.4%	0.3%	-1.9%	-1.2%	-0.6%
F gases	0	0	0	0	0	0	0	-8.4%	1.9%	-3.2%	n.s.	n.s.	n.s.
Total GHG from Energy and Industry	**45**	**69**	**95**	**118**	**122**	**92**	**51**	**4.5%**	**3.2%**	**2.2%**	**0.4%**	**-2.8%**	**-5.8%**
CO_2 Emissions from Fuel Comb.	**30**	**50**	**73**	**92**	**97**	**74**	**39**	**5.2%**	**3.9%**	**2.3%**	**0.6%**	**-2.7%**	**-6.3%**
Power generation/District heating	8	14	25	31	21	13	5	5.2%	6.4%	2.0%	-4.0%	-4.4%	-9.2%
Industry	7	11	14	18	33	26	13	4.9%	2.3%	2.6%	6.4%	-2.6%	-6.9%
Buildings	3	5	6	5	4	3	2	3.7%	1.7%	-1.3%	-1.9%	-3.7%	-4.5%
Agriculture	0	1	1	1	1	0	0	3.7%	4.6%	-2.5%	-2.6%	-4.2%	-4.3%
Transport	9	17	21	27	28	22	14	6.4%	2.3%	2.3%	0.3%	-2.3%	-4.7%
Other	2	3	6	10	11	10	5	2.7%	8.4%	5.0%	0.4%	-0.9%	-5.6%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**1**	**9**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**25.4%**
Coal	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	n.s.	19.9%
Gas	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	n.s.	18.0%
Biomass	0	0	0	0	0	0	4	n.s.	n.s.	n.s.	n.s.	n.s.	48.2%
Direct Air Capture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	25.1%	16.8%
Energy Balance, by fuel (Mtoe)													
Primary Production	**7**	**8**	**9**	**13**	**18**	**21**	**28**	**1.2%**	**0.5%**	**3.7%**	**3.3%**	**1.6%**	**3.2%**
Coal	1	0	0	2	2	1	1	-15.7%	0.5%	23.4%	0.2%	-3.5%	-2.0%
Oil	1	0	0	1	0	1	1	-11.2%	-2.1%	11.0%	-1.7%	0.8%	0.5%
Natural gas	1	2	2	1	1	1	1	1.1%	-0.2%	-7.4%	3.9%	1.9%	0.6%
Biomass	3	5	5	6	8	7	10	4.2%	0.4%	2.4%	2.6%	-0.8%	2.6%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	19.0%
Hydro	1	2	2	2	3	4	5	7.6%	1.6%	2.3%	3.3%	2.8%	1.8%
Other renewables	0	0	0	1	3	6	10	n.s.	n.s.	39.8%	12.8%	7.5%	6.4%
Net Imports	**7**	**18**	**23**	**26**	**26**	**22**	**12**						
Coal	1	3	4	5	7	3	1						
Oil	6	10	15	18	18	14	7						
Natural gas	0	4	3	3	4	6	5						
Biomass	0	0	0	0	- 2	- 1	- 1						
Biofuels	0	0	0	0	0	0	0						
Electricity	0	1	1	0	0	0	0						
Primary Energy Demand[2]	**14**	**26**	**32**	**39**	**43**	**42**	**40**	6.4%	**1.9%**	**2.0%**	**1.2%**	**-0.3%**	**-0.5%**
Coal	2	3	4	7	9	5	3	1.9%	4.1%	4.9%	2.3%	-6.6%	-5.1%
Oil	6	10	15	19	18	14	8	4.9%	3.7%	2.3%	-0.5%	-2.4%	-5.8%
Natural gas	1	5	4	4	5	7	6	15.9%	-1.5%	-2.4%	3.6%	3.6%	-1.8%
Biomass	3	5	5	6	6	7	8	4.2%	0.4%	2.1%	-0.6%	1.4%	2.4%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	19.0%
Hydro	1	2	2	2	3	4	5	7.6%	1.6%	2.3%	3.3%	2.8%	1.8%
Other renewables	0	0	0	1	3	6	10	n.s.	n.s.	39.8%	12.8%	7.5%	6.4%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**14**	**26**	**32**	**39**	**43**	**42**	**40**	**6.4%**	**1.9%**	**2.0%**	**1.2%**	**-0.3%**	**-0.5%**
Energy for Power Generation	**3**	**6**	**10**	**14**	**13**	**16**	**22**	**7.2%**	**4.7%**	**3.8%**	**-0.5%**	**1.8%**	**3.3%**
Other Energy Transformation & Losses	**1**	**3**	**3**	**4**	**5**	**5**	**3**	**9.6%**	**0.7%**	**2.6%**	**3.4%**	**0.2%**	**-5.7%**
Final consumption	**11**	**21**	**24**	**28**	**34**	**33**	**30**	**6.2%**	**1.5%**	**1.5%**	**2.0%**	**-0.3%**	**-1.1%**
Steel, Non-Met. Minerals and Chem.	0	1	1	1	8	7	6	4.1%	-0.3%	4.4%	22.2%	-0.7%	-2.3%
Other Industry	3	6	8	11	9	10	10	7.1%	2.8%	3.1%	-1.5%	0.8%	0.1%
Non-Energy Use	1	2	1	1	0	0	0	10.1%	-8.2%	-4.5%	-4.0%	-0.4%	-1.3%
Residential	3	5	5	4	4	3	3	4.5%	0.9%	-3.4%	-0.7%	-1.2%	-1.1%
Services	0	1	1	2	2	2	2	2.7%	8.2%	2.8%	1.8%	0.6%	0.8%
Agriculture	0	0	0	0	0	0	0	4.3%	4.2%	-2.1%	1.0%	0.7%	0.6%
Road	3	5	6	8	9	8	6	6.8%	2.2%	2.7%	1.0%	-1.1%	-2.3%
Rail	0	0	0	0	0	0	0	0.2%	8.1%	10.4%	1.5%	1.3%	1.0%
Aviation	0	0	0	0	1	0	0	7.4%	4.8%	1.7%	2.2%	-1.4%	-1.7%
Other Transport	0	0	0	0	0	0	0	2.0%	2.2%	-0.3%	1.9%	-1.5%	-1.7%

[1] Nuclear energy is accounted as primary electricity

Chile	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**2**	**5**	**8**	**11**	**7**	**6**	**7**	**7.1%**	**5.6%**	**3.5%**	**-3.8%**	**-1.8%**	**0.8%**
Coal	2	2	4	6	3	1	1	2.4%	6.5%	3.7%	-6.8%	-9.5%	-0.7%
Oil	0	0	2	1	1	1	1	-0.4%	14.4%	-1.5%	-1.3%	-0.9%	-3.0%
Gas	0	2	2	2	2	3	3	38.7%	0.6%	-1.2%	3.6%	1.5%	0.0%
Biomass & Waste	0	0	0	2	1	1	2	13.5%	1.0%	19.9%	-6.7%	2.0%	5.1%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**18**	**40**	**60**	**85**	**105**	**141**	**176**	**8.5%**	**4.2%**	**3.5%**	**2.2%**	**2.9%**	**2.3%**
Coal	7	8	17	25	13	5	5	2.6%	7.1%	4.1%	-6.8%	-9.2%	0.0%
of which CCS	0	0	0	0	0	0	3	n.s.	n.s.	n.s.	n.s.	n.s.	19.3%
Oil	2	2	8	8	7	6	5	-0.4%	17.4%	-0.4%	-1.3%	-1.2%	-3.2%
Gas	0	10	11	11	15	17	16	49.4%	0.2%	-0.2%	3.7%	1.2%	-0.5%
of which CCS	0	0	0	0	0	1	6	n.s.	n.s.	n.s.	n.s.	n.s.	18.0%
Biomass & Waste	0	1	2	6	3	5	10	13.4%	9.1%	10.2%	-6.2%	4.3%	8.0%
of which CCS	0	0	0	0	0	0	4	n.s.	n.s.	n.s.	n.s.	n.s.	50.8%
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	9	19	22	27	38	51	62	7.6%	1.6%	2.3%	3.3%	3.0%	2.0%
Wind	0	0	0	4	10	18	22	n.s.	n.s.	26.7%	11.4%	5.4%	2.1%
Solar	0	0	0	4	19	37	53	n.s.	n.s.	n.s.	15.2%	7.1%	3.7%
Other	0	0	0	0	1	3	4	2.8%	4.0%	2.7%	22.3%	14.0%	5.1%
Generation Capacity (GW_e)	**5**	**10**	**16**	**25**	**39**	**59**	**74**	**8.0%**	**4.9%**	**4.1%**	**4.9%**	**4.0%**	**2.4%**
Coal	1	2	2	5	4	3	1	6.5%	0.9%	6.5%	-1.0%	-3.4%	-13.7%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	18.9%
Oil	1	1	3	3	3	3	3	-0.9%	13.9%	0.5%	-0.8%	1.0%	-1.3%
Gas	0	3	4	3	4	4	3	43.0%	4.8%	-2.1%	1.2%	0.3%	-3.7%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	17.6%
Biomass & Waste	0	0	1	1	0	1	1	4.3%	12.3%	-1.0%	-7.6%	5.7%	5.9%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	50.2%
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	2	4	5	8	11	15	20	5.7%	2.8%	3.5%	3.3%	3.1%	3.1%
Wind	0	0	0	2	5	7	8	n.s.	n.s.	25.9%	10.4%	4.7%	1.4%
Solar	0	0	0	3	13	26	39	n.s.	n.s.	n.s.	15.8%	7.3%	4.2%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	12.0%	14.1%
Total Final Consumption[2] (Mtoe)	**11**	**21**	**24**	**28**	**34**	**33**	**30**	**6.2%**	**1.5%**	**1.5%**	**2.0%**	**-0.3%**	**-1.1%**
Coal	1	1	0	1	5	3	1	1.0%	-5.6%	5.3%	20.0%	-6.1%	-9.1%
Oil	5	9	12	15	14	11	6	5.3%	2.8%	2.1%	-0.4%	-2.7%	-6.2%
Gas	1	3	2	2	2	4	3	13.4%	-3.4%	-3.2%	3.4%	5.4%	-1.5%
Electricity	1	3	5	7	8	11	12	9.0%	4.1%	3.3%	2.2%	2.7%	1.7%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	5.2%	6.9%	1.5%
Biomass & Other	3	4	4	4	4	5	6	4.1%	0.4%	-1.3%	1.3%	0.7%	3.5%
Industry (incl. non-energy use)	**4**	**9**	**10**	**13**	**18**	**18**	**17**	**7.5%**	**0.6%**	**2.6%**	**3.4%**	**0.1%**	**-0.8%**
Coal	1	1	0	1	5	3	1	1.7%	-5.5%	5.3%	20.1%	-6.1%	-9.1%
Oil	2	2	3	5	4	3	1	3.5%	4.6%	3.3%	-1.0%	-2.3%	-7.7%
Gas	1	3	2	1	2	3	2	14.9%	-4.8%	-5.6%	4.0%	7.0%	-2.7%
Electricity	1	2	3	4	5	7	8	9.7%	3.4%	3.2%	2.2%	3.0%	1.6%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	-0.2%	-0.3%	-0.2%
Biomass & Other	1	1	1	2	2	2	4	5.3%	-0.3%	6.6%	0.1%	0.3%	5.3%
Buildings	**4**	**5**	**7**	**6**	**6**	**5**	**5**	**4.3%**	**2.0%**	**-1.8%**	**0.2%**	**-0.5%**	**-0.3%**
Coal	0	0	0	0	0	0	0	-15.5%	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	1	1	1	1	1	0	0	3.6%	1.1%	-2.7%	-3.4%	-5.4%	-5.2%
Gas	0	0	1	1	1	1	0	5.4%	4.5%	2.6%	0.8%	-1.7%	-3.9%
Electricity	0	1	2	2	2	2	3	7.8%	5.6%	3.0%	1.3%	0.3%	0.8%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	5.3%	6.9%	1.5%
Biomass & Other	2	3	3	2	2	1	1	3.7%	0.7%	-6.7%	-0.1%	-0.7%	-0.4%
Agriculture	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4.3%**	**4.2%**	**-2.1%**	**1.0%**	**0.7%**	**0.6%**
Coal	0	0	0	0	0	0	0	-13.4%	-8.8%	-4.4%	-5.3%	n.s.	n.s.
Oil	0	0	0	0	0	0	0	8.3%	5.0%	-2.5%	-2.5%	-4.1%	-4.3%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Electricity	0	0	0	0	0	0	0	5.7%	-6.8%	4.6%	10.9%	6.5%	3.9%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	27.1%	6.4%	2.4%
Transport	**3**	**6**	**7**	**9**	**10**	**9**	**7**	**6.4%**	**2.3%**	**2.6%**	**1.1%**	**-1.1%**	**-2.1%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	3	6	7	9	9	7	4	6.4%	2.3%	2.3%	0.2%	-2.7%	-5.7%
Gas	0	0	0	0	0	0	1	3.5%	4.7%	1.8%	33.7%	11.3%	5.6%
Electricity	0	0	0	0	0	1	1	0.4%	7.0%	16.4%	10.2%	8.1%	3.7%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	1	1	1	n.s.	n.s.	n.s.	18.6%	4.5%	4.6%
Other Energy Transformation & Losses[3]	**1**	**3**	**3**	**4**	**5**	**5**	**3**	**9.6%**	**0.7%**	**2.6%**	**3.4%**	**0.2%**	**-5.7%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Mexico	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	85	102	117	133	146	155	161	1.8%	1.4%	1.3%	0.9%	0.6%	0.4%
GDP per capita (ppp, k$'15)	12	14	15	17	21	28	38	1.8%	0.3%	1.5%	2.1%	2.9%	2.9%
Prices													
International/Regional ($'15/boe)													
Coal	2	1	2	2	2	3	5	-4.2%	5.6%	-1.1%	1.5%	3.1%	4.5%
Oil	39	38	86	89	89	88	90	-0.2%	8.4%	0.3%	0.0%	-0.1%	0.2%
Gas	26	40	34	33	41	45	47	4.6%	-1.6%	-0.3%	2.1%	1.0%	0.4%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**461**	**622**	**752**	**787**	**605**	**452**	**298**	**3.1%**	**1.9%**	**0.5%**	**-2.6%**	**-2.9%**	**-4.1%**
Total GHG (energy, industry, agriculture)	**444**	**602**	**733**	**764**	**635**	**481**	**307**	**3.1%**	**2.0%**	**0.4%**	**-1.8%**	**-2.7%**	**-4.4%**
CO_2	292	399	479	529	485	357	208	3.2%	1.9%	1.0%	-0.9%	-3.0%	-5.3%
CH_4	113	121	134	120	84	67	57	0.6%	1.1%	-1.1%	-3.4%	-2.2%	-1.6%
N_2O	37	78	110	101	50	45	38	7.9%	3.5%	-0.8%	-6.9%	-1.1%	-1.5%
F gases	2	4	10	14	17	12	3	8.0%	10.2%	3.5%	1.6%	-3.3%	-11.7%
Total GHG from Energy and Industry	**353**	**511**	**637**	**657**	**548**	**404**	**238**	**3.8%**	**2.2%**	**0.3%**	**-1.8%**	**-3.0%**	**-5.2%**
CO_2 Emissions from Fuel Comb.	**263**	**365**	**444**	**475**	**428**	**306**	**173**	**3.4%**	**2.0%**	**0.7%**	**-1.0%**	**-3.3%**	**-5.6%**
Power generation/District heating	63	117	133	166	152	92	38	6.5%	1.3%	2.2%	-0.9%	-4.9%	-8.4%
Industry	55	56	64	61	63	49	34	0.1%	1.4%	-0.6%	0.3%	-2.4%	-3.7%
Buildings	24	31	28	19	18	18	13	2.4%	-1.1%	-3.8%	-0.4%	-0.4%	-2.7%
Agriculture	5	7	9	9	8	5	4	2.6%	2.6%	0.6%	-1.4%	-3.9%	-4.0%
Transport	84	107	153	153	119	83	52	2.4%	3.7%	0.0%	-2.5%	-3.5%	-4.7%
Other	31	48	57	67	68	58	32	4.5%	1.9%	1.6%	0.1%	-1.6%	-5.9%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**8**	**43**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**18.2%**
Coal	0	0	0	0	0	2	8	n.s.	n.s.	n.s.	n.s.	n.s.	14.0%
Gas	0	0	0	0	0	6	20	n.s.	n.s.	n.s.	n.s.	n.s.	13.5%
Biomass	0	0	0	0	0	0	14	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	21.0%	17.6%
Energy Balance, by fuel (Mtoe)													
Primary Production	**179**	**211**	**206**	**142**	**156**	**187**	**213**	**1.6%**	**-0.2%**	**-3.6%**	**0.9%**	**1.8%**	**1.3%**
Coal	3	5	6	9	8	5	3	6.1%	2.0%	3.7%	-0.7%	-4.7%	-4.6%
Oil	138	156	133	68	41	26	17	1.2%	-1.5%	-6.5%	-4.9%	-4.5%	-3.9%
Natural gas	23	32	49	36	47	48	44	3.4%	4.2%	-3.0%	2.7%	0.2%	-0.9%
Biomass	9	9	8	17	22	21	27	0.4%	-1.0%	7.7%	2.4%	-0.5%	2.8%
Nuclear[1]	0	1	1	1	1	6	11	10.8%	-3.3%	6.0%	3.3%	16.2%	6.9%
Hydro	2	3	3	3	3	4	4	3.5%	1.1%	-0.6%	1.1%	0.5%	0.2%
Other renewables	4	5	6	9	34	79	107	1.5%	1.5%	4.3%	14.2%	8.8%	3.0%
Net Imports	**- 66**	**- 61**	**- 31**	**51**	**52**	**41**	**20**						
Coal	1	1	7	9	8	3	1						
Oil	- 66	- 67	- 43	31	38	28	15						
Natural gas	0	3	6	18	16	12	3						
Biomass	0	0	0	- 7	- 10	- 2	1						
Biofuels	0	0	0	0	0	0	0						
Electricity	- 1	1	- 1	0	0	0	0						
Primary Energy Demand[2]	**113**	**149**	**175**	**193**	**209**	**228**	**233**	2.9%	**1.6%**	**1.0%**	**0.8%**	**0.9%**	**0.2%**
Coal	4	6	13	18	16	8	4	4.7%	7.6%	3.5%	-1.2%	-6.5%	-6.5%
Oil	72	89	91	99	79	54	32	2.2%	0.2%	0.9%	-2.2%	-3.8%	-4.9%
Natural gas	23	35	54	54	63	60	46	4.5%	4.3%	-0.1%	1.6%	-0.5%	-2.5%
Biomass	9	9	8	10	12	18	29	0.4%	-1.0%	1.7%	2.1%	4.5%	4.6%
Nuclear[1]	0	1	1	1	1	6	11	10.8%	-3.3%	6.0%	3.3%	16.2%	6.9%
Hydro	2	3	3	3	3	4	4	3.5%	1.1%	-0.6%	1.1%	0.5%	0.2%
Other renewables	4	5	6	9	34	79	107	1.5%	1.5%	4.3%	14.2%	8.8%	3.0%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**113**	**149**	**175**	**193**	**209**	**228**	**233**	**2.9%**	**1.6%**	**1.0%**	**0.8%**	**0.9%**	**0.2%**
Energy for Power Generation	**27**	**49**	**59**	**71**	**95**	**133**	**158**	**5.9%**	**1.9%**	**1.9%**	**2.9%**	**3.4%**	**1.7%**
Other Energy Transformation & Losses	**10**	**17**	**16**	**27**	**31**	**27**	**24**	**5.8%**	**-0.5%**	**5.3%**	**1.2%**	**-1.2%**	**-1.4%**
Final consumption	**84**	**96**	**118**	**122**	**123**	**123**	**127**	**1.3%**	**2.1%**	**0.3%**	**0.1%**	**0.0%**	**0.3%**
Steel, Non-Met. Minerals and Chem.	15	16	14	15	16	14	13	0.4%	-1.2%	0.9%	0.7%	-1.5%	-0.7%
Other Industry	11	13	20	22	26	30	35	1.3%	4.3%	1.1%	1.6%	1.5%	1.6%
Non-Energy Use	9	7	7	6	6	6	4	-2.2%	0.1%	-2.1%	-0.2%	-0.2%	-3.9%
Residential	16	18	18	17	16	16	17	1.4%	-0.1%	-0.7%	-0.5%	0.0%	0.7%
Services	2	3	5	6	8	12	18	4.6%	3.3%	3.2%	2.0%	4.1%	4.2%
Agriculture	2	3	4	4	5	5	6	2.4%	2.2%	1.3%	1.3%	1.3%	1.1%
Road	27	34	50	50	45	39	33	2.2%	3.9%	0.1%	-1.1%	-1.4%	-1.7%
Rail	1	1	1	1	1	1	1	-1.0%	0.5%	1.2%	1.1%	1.4%	1.7%
Aviation	0	0	0	0	0	0	0	n.s.	1.1%	-2.7%	1.9%	0.6%	0.0%
Other Transport	0	1	1	1	1	1	1	11.4%	-5.6%	0.5%	0.8%	-1.4%	-1.2%

[1] Nuclear energy is accounted as primary electricity

Mexico	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**21**	**40**	**49**	**58**	**56**	**45**	**36**	**6.8%**	**2.1%**	**1.7%**	**-0.4%**	**-2.2%**	**-2.1%**
Coal	2	5	8	14	12	6	3	10.6%	5.2%	6.1%	-1.6%	-6.9%	-7.0%
Oil	15	23	11	15	12	6	3	4.4%	-7.6%	3.4%	-2.1%	-6.4%	-6.4%
Gas	3	11	29	27	28	24	20	12.1%	10.6%	-1.0%	0.6%	-1.5%	-2.2%
Biomass & Waste	0	1	1	2	2	3	6	n.s.	3.1%	8.9%	-3.7%	7.3%	5.9%
Other	0	1	1	0	2	5	5	1.4%	1.2%	-4.0%	17.7%	9.6%	-0.2%
Gross Elec. Generation (TWh_e)	**116**	**206**	**276**	**375**	**493**	**679**	**980**	**5.9%**	**3.0%**	**3.1%**	**2.8%**	**3.3%**	**3.7%**
Coal	8	19	32	56	50	25	14	9.3%	5.4%	5.7%	-1.3%	-6.5%	-6.0%
of which CCS	0	0	0	0	0	3	9	n.s.	n.s.	n.s.	n.s.	n.s.	13.5%
Oil	62	94	45	62	52	28	14	4.2%	-7.1%	3.3%	-1.6%	-6.2%	-6.3%
Gas	14	44	147	151	161	139	116	11.8%	12.8%	0.2%	0.6%	-1.4%	-1.8%
of which CCS	0	0	0	0	0	16	47	n.s.	n.s.	n.s.	n.s.	n.s.	11.4%
Biomass & Waste	0	2	1	4	4	15	29	n.s.	-7.4%	18.6%	-1.6%	14.9%	7.3%
of which CCS	0	0	0	0	0	0	6	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	3	8	6	11	15	65	127	10.8%	-3.3%	6.0%	3.3%	16.2%	6.9%
Hydro	23	33	37	35	39	41	43	3.5%	1.1%	-0.6%	1.1%	0.5%	0.4%
Wind	0	0	1	49	135	234	334	34.2%	51.9%	44.6%	10.6%	5.6%	3.6%
Solar	0	0	0	1	15	75	213	21.5%	16.0%	42.5%	30.2%	17.5%	11.0%
Other	5	6	7	6	23	57	90	1.4%	1.2%	-1.5%	14.9%	9.6%	4.7%
Generation Capacity (GW_e)	**27**	**41**	**62**	**84**	**136**	**230**	**378**	**4.4%**	**4.0%**	**3.1%**	**4.9%**	**5.4%**	**5.1%**
Coal	1	5	6	8	9	5	2	15.6%	1.4%	3.5%	0.3%	-5.2%	-6.8%
of which CCS	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	n.s.	16.6%
Oil	12	15	13	14	21	22	28	2.3%	-1.1%	0.8%	3.9%	0.5%	2.4%
Gas	5	9	27	27	29	35	30	7.1%	11.5%	-0.2%	0.8%	1.8%	-1.5%
of which CCS	0	0	0	0	0	2	8	n.s.	n.s.	n.s.	n.s.	n.s.	14.3%
Biomass & Waste	0	0	1	1	0	2	5	n.s.	5.5%	-1.9%	-1.9%	16.4%	9.1%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	1	1	1	2	2	9	17	7.7%	0.0%	1.2%	3.1%	16.0%	6.7%
Hydro	8	10	12	13	14	15	16	2.1%	1.8%	1.0%	1.1%	0.5%	0.7%
Wind	0	0	1	18	47	79	110	n.s.	n.s.	42.4%	10.2%	5.3%	3.3%
Solar	0	0	0	1	9	52	156	19.9%	8.0%	43.3%	24.0%	18.6%	11.6%
Other	1	1	1	1	4	11	14	2.0%	1.2%	-1.7%	17.7%	10.4%	2.4%
Total Final Consumption[2] (Mtoe)	**84**	**96**	**118**	**122**	**123**	**123**	**127**	**1.3%**	**2.1%**	**0.3%**	**0.1%**	**0.0%**	**0.3%**
Coal	2	2	5	3	4	2	1	-0.7%	11.1%	-3.4%	0.2%	-5.2%	-5.6%
Oil	51	61	75	69	55	38	22	1.8%	2.0%	-0.7%	-2.3%	-3.6%	-5.3%
Gas	14	13	13	15	19	21	18	-1.0%	0.3%	1.7%	2.3%	1.0%	-1.4%
Electricity	9	13	19	26	35	48	66	3.8%	4.0%	3.5%	2.8%	3.3%	3.3%
Heat	0	0	0	1	2	3	3	9.6%	10.3%	24.1%	7.9%	2.4%	1.6%
Biomass & Other	9	8	7	7	9	11	17	-0.4%	-1.4%	-0.4%	2.4%	3.0%	3.7%
Industry (incl. non-energy use)	**36**	**36**	**41**	**43**	**48**	**50**	**52**	**0.1%**	**1.3%**	**0.5%**	**1.1%**	**0.3%**	**0.4%**
Coal	2	2	5	3	4	2	1	-0.7%	11.1%	-3.4%	0.2%	-5.2%	-5.6%
Oil	14	14	13	11	10	9	6	-0.2%	-0.9%	-1.7%	-0.2%	-1.1%	-3.7%
Gas	13	12	12	14	15	13	9	-0.9%	0.0%	1.4%	0.6%	-1.4%	-3.2%
Electricity	5	7	11	14	18	23	29	4.5%	4.0%	3.0%	2.4%	2.3%	2.4%
Heat	0	0	0	0	0	0	0	n.s.	9.9%	14.4%	-0.2%	-0.3%	-0.2%
Biomass & Other	2	1	1	1	1	3	6	-3.4%	-4.2%	1.2%	2.3%	8.4%	8.5%
Buildings	**18**	**21**	**23**	**23**	**24**	**28**	**35**	**1.8%**	**0.5%**	**0.3%**	**0.3%**	**1.5%**	**2.3%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	7	9	8	5	4	3	2	2.8%	-1.5%	-5.0%	-3.0%	-2.9%	-3.4%
Gas	1	1	1	2	3	4	3	-3.0%	5.1%	4.5%	6.8%	2.8%	-2.1%
Electricity	3	5	7	11	11	16	24	3.2%	4.5%	4.0%	0.6%	3.3%	4.5%
Heat	0	0	0	1	2	3	3	9.6%	10.3%	24.4%	8.0%	2.4%	1.6%
Biomass & Other	7	7	6	5	4	3	2	0.3%	-0.9%	-1.8%	-2.9%	-2.9%	-1.5%
Agriculture	**2**	**3**	**4**	**4**	**5**	**5**	**6**	**2.4%**	**2.2%**	**1.3%**	**1.3%**	**1.3%**	**1.1%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	2	2	3	3	3	2	1	2.6%	2.6%	0.6%	-1.4%	-3.9%	-4.0%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Electricity	1	1	1	1	1	2	3	1.7%	0.9%	3.6%	3.4%	3.9%	3.0%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	1	1	2	n.s.	n.s.	n.s.	51.1%	9.3%	3.0%
Transport	**28**	**36**	**51**	**52**	**47**	**41**	**35**	**2.4%**	**3.6%**	**0.2%**	**-1.1%**	**-1.4%**	**-1.6%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	28	36	51	51	38	24	12	2.4%	3.6%	0.0%	-2.8%	-4.5%	-6.4%
Gas	0	0	0	0	2	5	6	n.s.	1.0%	22.9%	49.1%	10.5%	2.7%
Electricity	0	0	0	0	4	7	10	3.2%	0.8%	13.4%	26.5%	7.0%	3.4%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	1	3	5	6	n.s.	n.s.	n.s.	17.5%	4.4%	2.7%
Other Energy Transformation & Losses[3]	**10**	**17**	**16**	**27**	**31**	**27**	**24**	**5.8%**	**-0.5%**	**5.3%**	**1.2%**	**-1.2%**	**-1.4%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

United States	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	253	282	309	331	354	375	392	1.1%	0.9%	0.7%	0.7%	0.6%	0.5%
GDP per capita (ppp, k$'15)	39	49	53	61	68	78	88	2.3%	0.7%	1.5%	1.0%	1.5%	1.2%
Prices													
International/Regional ($'15/boe)													
Coal	2	1	2	2	3	4	5	-4.2%	5.6%	0.8%	1.2%	3.4%	3.5%
Oil	39	38	86	89	89	88	90	-0.2%	8.4%	0.3%	0.0%	-0.1%	0.2%
Gas	26	40	34	33	41	45	47	4.6%	-1.6%	-0.3%	2.1%	1.0%	0.4%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**5 403**	**6 470**	**6 483**	**6 002**	**3 900**	**2 750**	**1 644**	**1.8%**	**0.0%**	**-0.8%**	**-4.2%**	**-3.4%**	**-5.0%**
Total GHG (energy, industry, agriculture)	**6 234**	**7 006**	**6 737**	**6 230**	**4 242**	**3 135**	**2 004**	**1.2%**	**-0.4%**	**-0.8%**	**-3.8%**	**-3.0%**	**-4.4%**
CO_2	4 983	5 777	5 508	5 131	3 485	2 507	1 462	1.5%	-0.5%	-0.7%	-3.8%	-3.2%	-5.3%
CH_4	788	716	699	584	381	334	279	-0.9%	-0.2%	-1.8%	-4.2%	-1.3%	-1.8%
N_2O	363	371	376	340	285	262	255	0.2%	0.1%	-1.0%	-1.7%	-0.8%	-0.3%
F gases	99	142	154	175	91	32	9	3.6%	0.9%	1.3%	-6.3%	-10.0%	-11.6%
Total GHG from Energy and Industry	**5 735**	**6 476**	**6 177**	**5 720**	**3 804**	**2 717**	**1 589**	**1.2%**	**-0.5%**	**-0.8%**	**-4.0%**	**-3.3%**	**-5.2%**
CO_2 Emissions from Fuel Comb.	**4 824**	**5 604**	**5 347**	**4 957**	**3 332**	**2 390**	**1 393**	**1.5%**	**-0.5%**	**-0.8%**	**-3.9%**	**-3.3%**	**-5.3%**
Power generation/District heating	1 866	2 372	2 332	1 887	783	452	223	2.4%	-0.2%	-2.1%	-8.4%	-5.3%	-6.8%
Industry	596	542	454	453	397	312	196	-1.0%	-1.7%	0.0%	-1.3%	-2.4%	-4.6%
Buildings	544	602	545	504	401	283	159	1.0%	-1.0%	-0.8%	-2.3%	-3.4%	-5.6%
Agriculture	46	45	53	52	42	27	17	-0.2%	1.8%	-0.2%	-2.2%	-4.4%	-4.5%
Transport	1 424	1 713	1 641	1 587	1 235	800	420	1.9%	-0.4%	-0.3%	-2.5%	-4.2%	-6.2%
Other	349	331	322	473	474	516	379	-0.5%	-0.3%	3.9%	0.0%	0.8%	-3.0%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**6**	**86**	**n.s.**	**n.s.**	**n.s.**	**23.9%**	**37.0%**	**30.7%**
Coal	0	0	0	0	0	1	6	n.s.	n.s.	n.s.	n.s.	n.s.	24.6%
Gas	0	0	0	0	0	1	13	n.s.	n.s.	n.s.	n.s.	n.s.	25.7%
Biomass	0	0	0	0	0	2	58	n.s.	n.s.	n.s.	n.s.	n.s.	39.3%
Direct Air Capture	0	0	0	0	0	2	8	n.s.	n.s.	n.s.	23.9%	21.4%	16.9%
Energy Balance, by fuel (Mtoe)													
Primary Production	**1 452**	**1 466**	**1 525**	**1 871**	**1 534**	**1 270**	**1 086**	**0.1%**	**0.4%**	**2.1%**	**-2.0%**	**-1.9%**	**-1.6%**
Coal	487	532	530	413	154	35	1	0.9%	0.0%	-2.5%	-9.4%	-13.7%	-29.4%
Oil	364	299	276	554	497	389	268	-2.0%	-0.8%	7.2%	-1.1%	-2.4%	-3.6%
Natural gas	428	456	509	614	523	412	218	0.6%	1.1%	1.9%	-1.6%	-2.4%	-6.2%
Biomass	82	73	90	134	127	149	176	-1.1%	2.0%	4.1%	-0.5%	1.6%	1.7%
Nuclear[1]	53	69	72	71	72	46	49	2.7%	0.5%	-0.2%	0.2%	-4.4%	0.7%
Hydro	23	22	23	23	25	27	29	-0.8%	0.4%	0.2%	0.8%	0.7%	0.6%
Other renewables	14	15	26	63	135	213	344	0.3%	5.8%	9.4%	7.9%	4.7%	4.9%
Net Imports	**392**	**693**	**570**	**308**	**210**	**257**	**243**						
Coal	- 31	- 5	- 31	- 44	- 30	17	27						
Oil	408	572	529	234	142	59	19						
Natural gas	13	92	47	39	41	100	130						
Biomass	0	0	0	13	- 7	17	7						
Biofuels	0	0	- 1	5	3	2	0						
Electricity	2	34	26	61	61	61	61						
Primary Energy Demand[2]	**1 844**	**2 159**	**2 095**	**2 179**	**1 743**	**1 527**	**1 329**	1.6%	**-0.3%**	**0.4%**	**-2.2%**	**-1.3%**	**-1.4%**
Coal	456	528	499	369	124	52	28	1.5%	-0.6%	-3.0%	-10.3%	-8.2%	-6.1%
Oil	772	871	805	788	639	448	287	1.2%	-0.8%	-0.2%	-2.1%	-3.5%	-4.4%
Natural gas	441	547	556	653	563	512	348	2.2%	0.2%	1.6%	-1.5%	-0.9%	-3.8%
Biomass	82	73	90	147	120	166	184	-1.1%	2.0%	5.1%	-2.0%	3.3%	1.0%
Nuclear[1]	53	69	72	71	72	46	49	2.7%	0.5%	-0.2%	0.2%	-4.4%	0.7%
Hydro	23	22	23	23	25	27	29	-0.8%	0.4%	0.2%	0.8%	0.7%	0.6%
Other renewables	14	15	26	63	135	213	344	0.3%	5.8%	9.4%	7.9%	4.7%	4.9%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**1 844**	**2 159**	**2 095**	**2 179**	**1 743**	**1 527**	**1 329**	**1.6%**	**-0.3%**	**0.4%**	**-2.2%**	**-1.3%**	**-1.4%**
Energy for Power Generation	**644**	**786**	**806**	**753**	**514**	**474**	**547**	**2.0%**	**0.3%**	**-0.7%**	**-3.7%**	**-0.8%**	**1.4%**
Other Energy Transformation & Losses	**129**	**147**	**148**	**309**	**281**	**335**	**287**	**1.3%**	**0.1%**	**7.7%**	**-0.9%**	**1.8%**	**-1.6%**
Final consumption	**1 300**	**1 538**	**1 500**	**1 542**	**1 290**	**1 052**	**839**	**1.7%**	**-0.2%**	**0.3%**	**-1.8%**	**-2.0%**	**-2.2%**
Steel, Non-Met. Minerals and Chem.	127	152	108	100	83	63	47	1.8%	-3.4%	-0.8%	-1.8%	-2.8%	-2.8%
Other Industry	181	185	166	180	169	156	141	0.2%	-1.1%	0.8%	-0.6%	-0.8%	-1.0%
Non-Energy Use	119	153	135	132	133	125	116	2.5%	-1.2%	-0.3%	0.1%	-0.7%	-0.8%
Residential	224	265	270	272	225	183	144	1.7%	0.2%	0.1%	-1.9%	-2.0%	-2.4%
Services	157	193	218	223	164	115	88	2.1%	1.2%	0.2%	-3.0%	-3.5%	-2.7%
Agriculture	14	14	19	19	19	20	21	-0.2%	2.8%	0.0%	0.4%	0.4%	0.3%
Road	397	493	522	544	429	335	236	2.2%	0.6%	0.4%	-2.4%	-2.4%	-3.5%
Rail	11	10	9	13	13	13	12	-0.5%	-1.3%	3.5%	0.4%	-0.2%	-0.5%
Aviation	64	68	49	52	45	36	29	0.7%	-3.2%	0.5%	-1.3%	-2.3%	-2.0%
Other Transport	6	4	4	9	9	7	6	-4.3%	0.5%	7.0%	0.3%	-2.2%	-2.2%

[1] Nuclear energy is accounted as primary electricity

United States	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**554**	**681**	**686**	**596**	**282**	**188**	**125**	**2.1%**	**0.1%**	**-1.4%**	**-7.2%**	**-4.0%**	**-4.0%**
Coal	392	492	469	327	94	30	9	2.3%	-0.5%	-3.5%	-11.7%	-10.9%	-11.1%
Oil	27	30	11	20	14	12	23	0.8%	-9.5%	6.5%	-3.8%	-1.3%	6.7%
Gas	93	137	185	223	156	128	68	3.9%	3.1%	1.9%	-3.5%	-2.0%	-6.1%
Biomass & Waste	40	21	20	25	15	13	13	-6.0%	-0.8%	2.2%	-4.7%	-1.7%	0.0%
Other	1	1	2	2	3	6	12	-0.9%	1.9%	0.4%	5.8%	8.1%	7.1%
Gross Elec. Generation (TWh_e)	**3 236**	**4 064**	**4 391**	**4 632**	**3 799**	**3 310**	**3 170**	**2.3%**	**0.8%**	**0.5%**	**-2.0%**	**-1.4%**	**-0.4%**
Coal	1 700	2 129	1 994	1 482	423	133	43	2.3%	-0.7%	-2.9%	-11.8%	-10.9%	-10.8%
of which CCS	0	0	0	0	0	1	5	n.s.	n.s.	n.s.	n.s.	n.s.	21.5%
Oil	131	118	48	86	62	56	102	-1.0%	-8.6%	6.0%	-3.3%	-1.0%	6.2%
Gas	382	634	1 018	1 315	974	774	368	5.2%	4.8%	2.6%	-3.0%	-2.3%	-7.2%
of which CCS	0	0	0	0	0	4	24	n.s.	n.s.	n.s.	n.s.	n.s.	20.5%
Biomass & Waste	86	72	73	90	56	49	60	-1.8%	0.1%	2.2%	-4.7%	-1.3%	2.1%
of which CCS	0	0	0	0	0	1	41	n.s.	n.s.	n.s.	n.s.	n.s.	39.4%
Nuclear	612	798	839	825	842	534	568	2.7%	0.5%	-0.2%	0.2%	-4.5%	0.6%
Hydro	289	280	286	319	300	312	331	-0.3%	0.2%	1.1%	-0.6%	0.4%	0.6%
Wind	3	6	95	388	961	1 123	1 014	6.3%	32.6%	15.1%	9.5%	1.6%	-1.0%
Solar	1	1	5	104	144	258	542	0.6%	20.9%	36.3%	3.3%	6.0%	7.7%
Other	34	26	33	23	36	71	142	-2.5%	2.5%	-3.6%	4.5%	7.0%	7.2%
Generation Capacity (GW_e)	**792**	**870**	**1 139**	**1 106**	**1 158**	**1 053**	**1 051**	**1.0%**	**2.7%**	**-0.3%**	**0.5%**	**-0.9%**	**0.0%**
Coal	317	327	333	232	99	90	9	0.3%	0.2%	-3.5%	-8.2%	-0.9%	-21.0%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	23.7%
Oil	50	53	49	52	53	57	65	0.6%	-0.8%	0.5%	0.3%	0.6%	1.4%
Gas	182	262	489	421	391	198	91	3.7%	6.4%	-1.5%	-0.7%	-6.6%	-7.5%
of which CCS	0	0	0	0	0	0	4	n.s.	n.s.	n.s.	n.s.	n.s.	23.0%
Biomass & Waste	35	13	15	11	7	7	9	-9.6%	1.3%	-2.6%	-4.7%	-0.6%	3.0%
of which CCS	0	0	0	0	0	0	6	n.s.	n.s.	n.s.	n.s.	n.s.	40.3%
Nuclear	106	108	108	102	103	66	70	0.2%	0.0%	-0.6%	0.1%	-4.5%	0.6%
Hydro	98	101	101	105	108	111	113	0.3%	0.0%	0.4%	0.3%	0.2%	0.2%
Wind	1	2	40	137	319	365	319	7.3%	32.6%	13.2%	8.8%	1.3%	-1.3%
Solar	0	0	1	41	70	143	340	0.0%	8.5%	46.5%	5.4%	7.4%	9.0%
Other	3	3	3	4	7	17	36	1.1%	1.1%	1.4%	5.8%	9.1%	8.1%
Total Final Consumption[2] (Mtoe)	**1 300**	**1 538**	**1 500**	**1 542**	**1 290**	**1 052**	**839**	**1.7%**	**-0.2%**	**0.3%**	**-1.8%**	**-2.0%**	**-2.2%**
Coal	58	39	31	22	19	15	13	-3.8%	-2.4%	-3.2%	-1.3%	-2.8%	-1.4%
Oil	683	793	761	733	591	399	240	1.5%	-0.4%	-0.4%	-2.1%	-3.8%	-5.0%
Gas	288	345	306	309	270	229	155	1.8%	-1.2%	0.1%	-1.3%	-1.6%	-3.8%
Electricity	226	301	326	338	283	250	240	2.9%	0.8%	0.4%	-1.8%	-1.2%	-0.4%
Heat	2	7	9	13	20	31	40	11.3%	2.0%	3.7%	4.8%	4.5%	2.6%
Biomass & Other	43	52	69	127	107	128	151	2.1%	2.8%	6.3%	-1.7%	1.8%	1.7%
Industry (incl. non-energy use)	**427**	**490**	**409**	**411**	**386**	**343**	**304**	**1.4%**	**-1.8%**	**0.1%**	**-0.6%**	**-1.2%**	**-1.2%**
Coal	53	37	29	22	19	15	13	-3.6%	-2.3%	-2.9%	-1.2%	-2.7%	-1.4%
Oil	147	160	150	138	135	122	107	0.8%	-0.6%	-0.8%	-0.2%	-1.0%	-1.3%
Gas	124	155	122	144	129	107	71	2.3%	-2.4%	1.7%	-1.1%	-1.9%	-4.0%
Electricity	75	98	74	72	70	66	62	2.8%	-2.7%	-0.3%	-0.3%	-0.6%	-0.7%
Heat	0	4	5	5	5	4	4	n.s.	2.0%	-1.1%	-0.2%	-0.3%	-0.2%
Biomass & Other	29	36	29	31	28	29	48	2.2%	-2.2%	0.8%	-1.1%	0.6%	5.0%
Buildings	**381**	**458**	**489**	**495**	**389**	**298**	**232**	**1.8%**	**0.7%**	**0.1%**	**-2.4%**	**-2.6%**	**-2.5%**
Coal	5	2	2	0	0	0	0	-7.0%	-3.8%	-11.6%	-9.8%	-15.9%	-16.8%
Oil	45	48	36	38	36	30	19	0.5%	-2.8%	0.5%	-0.6%	-1.7%	-4.8%
Gas	164	189	182	164	123	80	43	1.5%	-0.4%	-1.1%	-2.8%	-4.2%	-6.1%
Electricity	152	202	251	264	180	125	104	2.9%	2.2%	0.5%	-3.8%	-3.6%	-1.8%
Heat	2	3	4	8	16	27	36	1.7%	1.8%	8.4%	6.9%	5.6%	3.0%
Biomass & Other	14	13	15	21	35	36	30	-0.3%	1.1%	3.5%	5.5%	0.3%	-2.0%
Agriculture	**14**	**14**	**19**	**19**	**19**	**20**	**21**	**-0.2%**	**2.8%**	**0.0%**	**0.4%**	**0.4%**	**0.3%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	14	14	16	15	12	8	5	-0.2%	1.1%	-0.2%	-2.2%	-4.5%	-4.6%
Gas	0	0	1	1	1	1	1	n.s.	n.s.	-0.5%	-1.4%	-3.0%	-3.1%
Electricity	0	0	0	0	1	3	5	n.s.	n.s.	n.s.	38.1%	10.6%	4.4%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	1	2	5	8	11	n.s.	n.s.	2.1%	10.8%	6.0%	2.3%
Transport	**477**	**576**	**584**	**618**	**496**	**391**	**283**	**1.9%**	**0.1%**	**0.6%**	**-2.2%**	**-2.4%**	**-3.2%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	477	572	559	542	408	240	110	1.8%	-0.2%	-0.3%	-2.8%	-5.2%	-7.5%
Gas	0	0	1	0	17	41	41	n.s.	n.s.	-4.8%	46.3%	9.5%	0.0%
Electricity	0	0	1	2	32	57	69	0.7%	3.6%	14.4%	31.4%	5.8%	2.1%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	3	24	73	39	53	63	n.s.	22.5%	11.8%	-6.1%	3.1%	1.7%
Other Energy Transformation & Losses[3]	**129**	**147**	**148**	**309**	**281**	**335**	**287**	**1.3%**	**0.1%**	**7.7%**	**-0.9%**	**1.8%**	**-1.6%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Rest Central America	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	63	74	84	93	101	107	110	1.6%	1.3%	1.1%	0.8%	0.5%	0.3%
GDP per capita (ppp, k$'15)	3	4	6	7	9	12	16	3.1%	2.6%	2.0%	2.9%	3.0%	2.9%
Prices													
International/Regional ($'15/boe)													
Coal	2	1	2	2	2	3	5	-4.2%	5.6%	-1.1%	1.5%	3.1%	4.5%
Oil	39	38	86	89	89	88	90	-0.2%	8.4%	0.3%	0.0%	-0.1%	0.2%
Gas	26	40	34	33	41	45	47	4.6%	-1.6%	-0.3%	2.1%	1.0%	0.4%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**240**	**281**	**402**	**419**	**294**	**200**	**104**	**1.6%**	**3.6%**	**0.4%**	**-3.5%**	**-3.8%**	**-6.3%**
Total GHG (energy, industry, agriculture)	**180**	**216**	**277**	**319**	**316**	**250**	**163**	**1.8%**	**2.5%**	**1.4%**	**-0.1%**	**-2.3%**	**-4.2%**
CO_2	94	127	165	200	203	166	96	3.0%	2.7%	1.9%	0.2%	-2.0%	-5.3%
CH_4	63	65	85	89	82	61	48	0.4%	2.7%	0.4%	-0.8%	-3.0%	-2.4%
N_2O	23	24	25	28	28	22	18	0.2%	0.6%	1.1%	0.0%	-2.6%	-1.7%
F gases	0	0	2	2	2	2	1	n.s.	17.1%	2.4%	2.3%	-3.3%	-11.8%
Total GHG from Energy and Industry	**123**	**162**	**215**	**251**	**253**	**202**	**122**	**2.8%**	**2.9%**	**1.6%**	**0.1%**	**-2.2%**	**-4.9%**
CO_2 Emissions from Fuel Comb.	**84**	**111**	**139**	**171**	**168**	**136**	**78**	**2.8%**	**2.2%**	**2.1%**	**-0.1%**	**-2.1%**	**-5.3%**
Power generation/District heating	23	40	50	54	34	20	6	5.5%	2.3%	0.9%	-4.7%	-5.2%	-11.2%
Industry	22	23	27	43	52	41	24	0.3%	1.7%	4.7%	1.9%	-2.2%	-5.4%
Buildings	8	8	11	13	15	14	9	0.4%	2.4%	2.0%	1.6%	-0.8%	-4.4%
Agriculture	2	1	1	1	1	1	0	-2.6%	-2.7%	0.6%	-0.2%	-3.7%	-3.9%
Transport	19	31	37	46	50	42	27	4.8%	2.0%	2.1%	0.8%	-1.7%	-4.4%
Other	10	8	13	13	17	18	12	-1.5%	4.2%	0.6%	2.2%	0.6%	-3.5%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**0**	**7**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**57.0%**	**34.3%**
Coal	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	n.s.	26.8%
Gas	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	28.5%
Biomass	0	0	0	0	0	0	3	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	32.6%	23.7%
Energy Balance, by fuel (Mtoe)													
Primary Production	**32**	**41**	**69**	**60**	**80**	**92**	**114**	**2.7%**	**5.3%**	**-1.4%**	**2.9%**	**1.4%**	**2.1%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	8	9	8	8	14	16	12	1.1%	-1.3%	-0.5%	6.0%	1.6%	-2.8%
Natural gas	4	14	39	18	22	22	12	11.7%	11.1%	-7.5%	2.0%	0.2%	-6.0%
Biomass	17	15	17	28	33	28	33	-1.1%	1.2%	4.9%	1.6%	-1.3%	1.6%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	11.1%	23.1%
Hydro	1	1	2	2	4	5	6	3.1%	3.2%	1.9%	3.9%	3.3%	1.8%
Other renewables	1	2	3	4	8	20	50	9.2%	5.9%	3.4%	7.2%	9.3%	9.5%
Net Imports	**18**	**21**	**13**	**36**	**24**	**10**	**5**						
Coal	0	0	1	3	5	3	2						
Oil	18	25	30	35	23	10	4						
Natural gas	0	- 4	- 19	5	7	2	5						
Biomass	0	0	0	- 9	- 11	- 6	- 6						
Biofuels	0	0	0	0	0	0	0						
Electricity	0	0	1	1	1	1	1						
Primary Energy Demand[2]	**50**	**62**	**82**	**95**	**104**	**103**	**119**	2.2%	**2.8%**	**1.5%**	**0.9%**	**-0.2%**	**1.5%**
Coal	0	0	1	3	5	3	2	5.5%	13.0%	10.2%	4.4%	-4.2%	-6.6%
Oil	26	34	38	43	37	26	16	2.8%	1.1%	1.2%	-1.5%	-3.4%	-4.8%
Natural gas	5	9	20	23	28	24	17	6.6%	8.2%	1.4%	2.2%	-1.5%	-3.7%
Biomass	17	15	17	19	21	23	27	-1.1%	1.2%	1.1%	1.0%	0.7%	1.9%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	11.1%	23.1%
Hydro	1	1	2	2	4	5	6	3.1%	3.2%	1.9%	3.9%	3.3%	1.8%
Other renewables	1	2	3	4	8	20	50	9.2%	5.9%	3.4%	7.2%	9.3%	9.5%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**50**	**62**	**82**	**95**	**104**	**103**	**119**	**2.2%**	**2.8%**	**1.5%**	**0.9%**	**-0.2%**	**1.5%**
Energy for Power Generation	**11**	**17**	**24**	**26**	**25**	**36**	**65**	**4.8%**	**3.2%**	**0.8%**	**-0.2%**	**3.6%**	**6.2%**
Other Energy Transformation & Losses	**5**	**5**	**7**	**9**	**12**	**13**	**12**	**-0.4%**	**3.5%**	**2.5%**	**2.6%**	**0.7%**	**-0.9%**
Final consumption	**38**	**46**	**58**	**70**	**80**	**73**	**68**	**1.9%**	**2.4%**	**1.9%**	**1.3%**	**-1.0%**	**-0.6%**
Steel, Non-Met. Minerals and Chem.	0	1	1	3	4	3	2	6.4%	4.9%	9.3%	3.6%	-3.9%	-5.0%
Other Industry	14	12	12	17	20	19	18	-0.8%	-0.3%	3.4%	1.5%	-0.2%	-0.9%
Non-Energy Use	3	6	11	12	13	6	5	7.5%	6.6%	0.4%	0.8%	-7.8%	-1.7%
Residential	11	12	16	17	18	19	19	1.4%	2.5%	1.0%	0.6%	0.3%	0.2%
Services	2	2	4	5	6	7	9	2.9%	5.0%	2.7%	2.4%	2.0%	1.7%
Agriculture	1	1	1	1	1	1	1	-0.2%	-1.8%	1.5%	1.6%	1.3%	1.1%
Road	8	11	13	16	18	17	15	4.0%	1.6%	1.7%	1.4%	-0.4%	-1.4%
Rail	0	0	0	0	0	0	0	-8.6%	11.1%	3.7%	2.1%	1.9%	1.6%
Aviation	0	0	0	0	0	0	0	4.7%	9.3%	1.2%	3.9%	0.9%	-0.9%
Other Transport	1	0	0	0	0	0	0	-14.1%	-6.2%	3.8%	2.6%	-0.5%	-0.9%

[1] Nuclear energy is accounted as primary electricity

Rest Central America	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**9**	**14**	**19**	**19**	**13**	**10**	**8**	**4.6%**	**2.8%**	**0.1%**	**-3.6%**	**-2.4%**	**-2.0%**
Coal	0	0	1	2	1	1	1	28.9%	19.1%	8.3%	-1.5%	-3.2%	-4.3%
Oil	7	11	12	12	5	2	1	5.3%	1.0%	0.0%	-7.9%	-11.7%	-2.2%
Gas	1	2	4	4	5	5	2	5.6%	6.8%	1.0%	1.7%	-0.1%	-8.1%
Biomass & Waste	1	1	2	1	1	2	2	-2.0%	5.8%	-7.2%	4.3%	4.1%	-3.2%
Other	0	0	0	0	0	1	3	9.1%	5.5%	-0.1%	-0.4%	13.5%	12.1%
Gross Elec. Generation (TWh_e)	**43**	**73**	**95**	**123**	**154**	**206**	**298**	**5.4%**	**2.7%**	**2.6%**	**2.3%**	**3.0%**	**3.7%**
Coal	0	1	3	6	6	4	3	28.8%	18.9%	7.7%	-1.5%	-2.7%	-2.0%
of which CCS	0	0	0	0	0	0	3	n.s.	n.s.	n.s.	n.s.	n.s.	25.9%
Oil	24	44	47	56	25	7	6	6.4%	0.7%	1.8%	-7.9%	-11.8%	-2.1%
Gas	4	7	14	16	20	20	11	6.6%	7.4%	1.6%	1.9%	0.3%	-6.0%
of which CCS	0	0	0	0	0	0	3	n.s.	n.s.	n.s.	n.s.	n.s.	27.2%
Biomass & Waste	2	2	3	1	2	4	7	-0.4%	4.8%	-8.1%	6.0%	4.4%	6.4%
of which CCS	0	0	0	0	0	0	3	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	13	17	23	28	42	58	72	3.0%	3.2%	1.9%	3.9%	3.4%	2.2%
Wind	0	0	1	7	22	39	50	n.s.	12.4%	27.7%	12.1%	5.6%	2.6%
Solar	0	0	0	4	34	59	100	n.s.	8.4%	40.9%	25.6%	5.6%	5.4%
Other	1	2	3	4	4	16	49	9.8%	5.5%	0.7%	1.7%	14.2%	12.2%
Generation Capacity (GW_e)	**13**	**18**	**25**	**33**	**57**	**81**	**117**	**3.6%**	**3.0%**	**2.8%**	**5.7%**	**3.6%**	**3.7%**
Coal	0	0	0	1	1	1	1	5.6%	1.1%	9.5%	-2.4%	-1.6%	-4.0%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	27.6%
Oil	8	11	15	13	12	10	9	3.6%	2.7%	-0.8%	-1.2%	-1.5%	-1.8%
Gas	1	2	3	4	4	4	2	4.3%	3.6%	3.2%	0.0%	0.0%	-5.1%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	29.4%
Biomass & Waste	0	1	1	1	1	1	1	6.1%	5.1%	2.6%	1.0%	-4.9%	3.3%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	3	4	5	8	12	16	21	2.3%	3.2%	4.3%	3.9%	3.4%	2.6%
Wind	0	0	0	2	6	10	13	n.s.	14.9%	23.4%	11.4%	5.4%	2.4%
Solar	0	0	0	2	20	36	63	n.s.	-11.5%	n.s.	24.2%	6.0%	5.6%
Other	0	0	1	1	1	2	7	9.0%	2.6%	2.1%	-0.3%	13.9%	12.5%
Total Final Consumption[2] (Mtoe)	**38**	**46**	**58**	**70**	**80**	**73**	**68**	**1.9%**	**2.4%**	**1.9%**	**1.3%**	**-1.0%**	**-0.6%**
Coal	0	0	1	2	3	2	1	1.4%	8.1%	12.2%	7.6%	-4.5%	-6.7%
Oil	17	21	24	29	30	22	13	1.9%	1.7%	1.8%	0.3%	-2.9%	-5.6%
Gas	3	6	12	15	19	15	13	8.1%	7.1%	2.1%	2.2%	-2.2%	-1.7%
Electricity	3	5	7	9	11	15	20	5.5%	2.8%	2.6%	2.5%	2.9%	3.2%
Heat	0	0	0	0	1	2	3	n.s.	n.s.	n.s.	6.1%	8.5%	3.7%
Biomass & Other	15	14	14	15	16	16	19	-1.0%	0.4%	0.8%	0.5%	0.1%	1.6%
Industry (incl. non-energy use)	**17**	**19**	**25**	**32**	**37**	**28**	**24**	**1.3%**	**2.5%**	**2.5%**	**1.5%**	**-2.7%**	**-1.4%**
Coal	0	0	1	2	3	2	1	1.4%	8.1%	12.2%	7.6%	-4.5%	-6.7%
Oil	7	7	7	10	10	7	4	0.1%	0.7%	2.9%	0.5%	-4.0%	-6.3%
Gas	3	6	12	14	16	11	9	8.0%	7.3%	1.5%	1.0%	-3.8%	-2.1%
Electricity	1	2	2	3	4	5	6	5.6%	1.6%	2.7%	2.8%	2.6%	2.1%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	6	4	2	3	3	3	5	-3.7%	-5.8%	3.0%	1.0%	-0.8%	4.4%
Buildings	**12**	**15**	**19**	**22**	**24**	**26**	**28**	**1.6%**	**2.9%**	**1.4%**	**1.0%**	**0.7%**	**0.6%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	3	3	3	3	3	2	1	0.0%	2.6%	0.2%	-2.4%	-3.5%	-4.7%
Gas	0	0	0	1	3	4	2	12.6%	-2.6%	22.2%	11.0%	1.8%	-4.2%
Electricity	2	3	4	6	7	8	11	5.2%	3.7%	2.5%	1.5%	1.7%	3.3%
Heat	0	0	0	0	1	2	3	n.s.	n.s.	n.s.	6.1%	8.5%	3.7%
Biomass & Other	8	9	12	12	12	11	11	0.9%	2.8%	0.1%	-0.2%	-0.2%	-0.1%
Agriculture	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**-0.2%**	**-1.8%**	**1.5%**	**1.6%**	**1.3%**	**1.1%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	1	0	0	0	0	0	0	-2.6%	-2.7%	0.6%	-0.2%	-3.7%	-3.9%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Electricity	0	0	0	0	0	0	0	10.2%	-1.3%	1.7%	3.0%	3.6%	2.9%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	4.0%	4.2%	5.6%	4.5%	5.9%	2.3%
Transport	**8**	**12**	**14**	**16**	**19**	**18**	**15**	**3.3%**	**1.7%**	**1.7%**	**1.4%**	**-0.4%**	**-1.4%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	7	11	13	16	17	13	8	4.3%	2.3%	1.5%	0.7%	-2.1%	-5.5%
Gas	0	0	0	0	0	1	2	n.s.	n.s.	n.s.	53.3%	12.8%	6.2%
Electricity	0	0	0	0	1	2	3	-0.7%	11.1%	8.7%	26.4%	12.1%	5.6%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	1	1	0	1	1	2	3	-3.8%	-10.8%	6.8%	7.5%	4.1%	5.9%
Other Energy Transformation & Losses[3]	**5**	**5**	**7**	**9**	**12**	**13**	**12**	**-0.4%**	**3.5%**	**2.5%**	**2.6%**	**0.7%**	**-0.9%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Rest South America	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	102	122	140	157	172	183	189	1.8%	1.4%	1.2%	0.9%	0.6%	0.4%
GDP per capita (ppp, k$'15)	7	8	10	13	19	26	36	0.9%	2.6%	2.8%	3.5%	3.4%	3.2%
Prices													
International/Regional ($'15/boe)													
Coal	2	1	2	2	3	4	5	-4.2%	5.6%	0.9%	2.2%	2.9%	2.2%
Oil	39	38	86	89	89	88	90	-0.2%	8.4%	0.3%	0.0%	-0.1%	0.2%
Gas	26	40	34	33	41	45	47	4.6%	-1.6%	-0.3%	2.1%	1.0%	0.4%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**953**	**1 099**	**1 321**	**1 468**	**1 070**	**648**	**280**	**1.4%**	**1.9%**	**1.1%**	**-3.1%**	**-4.9%**	**-8.0%**
Total GHG (energy, industry, agriculture)	**469**	**554**	**710**	**823**	**1 119**	**771**	**435**	**1.7%**	**2.5%**	**1.5%**	**3.1%**	**-3.6%**	**-5.6%**
CO_2	211	268	378	492	874	573	266	2.4%	3.5%	2.7%	5.9%	-4.1%	-7.4%
CH_4	206	229	262	256	181	141	117	1.1%	1.3%	-0.2%	-3.4%	-2.5%	-1.8%
N_2O	49	55	67	70	58	53	51	1.3%	1.9%	0.5%	-1.9%	-0.9%	-0.4%
F gases	4	2	3	5	6	4	1	-9.8%	8.8%	3.1%	2.2%	-3.1%	-10.5%
Total GHG from Energy and Industry	**303**	**368**	**492**	**607**	**956**	**628**	**301**	**2.0%**	**3.0%**	**2.1%**	**4.6%**	**-4.1%**	**-7.1%**
CO_2 Emissions from Fuel Comb.	**189**	**237**	**344**	**447**	**770**	**497**	**224**	**2.3%**	**3.8%**	**2.6%**	**5.6%**	**-4.3%**	**-7.7%**
Power generation/District heating	29	31	62	96	136	75	34	0.6%	7.2%	4.5%	3.5%	-5.8%	-7.6%
Industry	44	57	85	101	373	234	87	2.5%	4.1%	1.7%	14.0%	-4.6%	-9.4%
Buildings	17	19	22	28	28	23	16	1.6%	1.3%	2.5%	-0.2%	-1.8%	-3.7%
Agriculture	2	5	6	8	7	5	3	6.7%	2.6%	3.5%	-1.0%	-3.7%	-3.9%
Transport	65	80	116	153	155	109	65	2.0%	3.9%	2.8%	0.1%	-3.4%	-5.1%
Other	31	46	53	60	70	50	19	4.0%	1.4%	1.2%	1.6%	-3.2%	-9.3%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**8**	**57**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**21.1%**
Coal	0	0	0	0	0	2	16	n.s.	n.s.	n.s.	n.s.	n.s.	22.1%
Gas	0	0	0	0	0	6	26	n.s.	n.s.	n.s.	n.s.	n.s.	15.7%
Biomass	0	0	0	0	0	0	15	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	20.4%	13.6%
Energy Balance, by fuel (Mtoe)													
Primary Production	**212**	**305**	**347**	**467**	**497**	**513**	**476**	**3.7%**	**1.3%**	**3.0%**	**0.6%**	**0.3%**	**-0.7%**
Coal	15	30	50	97	119	70	27	7.4%	5.1%	6.9%	2.0%	-5.2%	-8.9%
Oil	149	217	212	210	147	89	55	3.8%	-0.2%	-0.1%	-3.5%	-4.9%	-4.7%
Natural gas	25	32	54	67	92	196	142	2.4%	5.5%	2.3%	3.1%	7.9%	-3.2%
Biomass	14	11	13	69	101	80	109	-2.2%	2.0%	17.9%	3.9%	-2.3%	3.1%
Nuclear[1]	0	0	0	0	1	3	9	n.s.	n.s.	n.s.	45.8%	18.3%	10.7%
Hydro	10	16	18	23	30	35	39	4.6%	1.5%	2.5%	2.6%	1.5%	1.0%
Other renewables	0	0	0	1	7	38	94	n.s.	-11.6%	44.3%	28.0%	18.3%	9.4%
Net Imports	**- 148**	**- 237**	**- 237**	**- 308**	**- 193**	**- 241**	**- 214**						
Coal	- 11	- 27	- 46	- 88	- 74	- 54	- 19						
Oil	- 105	- 161	- 131	- 115	- 49	- 32	- 20						
Natural gas	- 5	- 1	- 16	- 10	39	- 77	- 81						
Biomass	0	0	0	- 51	- 67	- 41	- 57						
Biofuels	0	0	0	0	0	0	0						
Electricity	- 27	- 47	- 44	- 43	- 42	- 37	- 37						
Primary Energy Demand[2]	**64**	**69**	**111**	**160**	**304**	**272**	**262**	0.7%	**4.9%**	**3.7%**	**6.7%**	**-1.1%**	**-0.4%**
Coal	4	3	4	9	46	16	8	-1.1%	2.5%	8.0%	17.5%	-10.1%	-6.2%
Oil	44	55	81	94	99	58	35	2.3%	3.9%	1.5%	0.4%	-5.2%	-4.8%
Natural gas	20	30	37	58	130	119	61	4.0%	2.2%	4.5%	8.5%	-0.9%	-6.4%
Biomass	14	11	13	18	34	39	52	-2.2%	2.0%	3.0%	6.8%	1.4%	2.9%
Nuclear[1]	0	0	0	0	1	3	9	n.s.	n.s.	n.s.	45.8%	18.3%	10.7%
Hydro	10	16	18	23	30	35	39	4.6%	1.5%	2.5%	2.6%	1.5%	1.0%
Other renewables	0	0	0	1	7	38	94	n.s.	-11.6%	44.3%	28.0%	18.3%	9.4%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**64**	**69**	**111**	**160**	**304**	**272**	**262**	**0.7%**	**4.9%**	**3.7%**	**6.7%**	**-1.1%**	**-0.4%**
Energy for Power Generation	**21**	**27**	**42**	**60**	**90**	**110**	**176**	**2.8%**	**4.4%**	**3.7%**	**4.2%**	**1.9%**	**4.8%**
Other Energy Transformation & Losses	**- 15**	**- 29**	**- 24**	**- 14**	**1**	**3**	**- 23**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**9.6%**	**n.s.**
Final consumption	**67**	**82**	**110**	**139**	**257**	**226**	**200**	**2.0%**	**3.0%**	**2.3%**	**6.4%**	**-1.3%**	**-1.2%**
Steel, Non-Met. Minerals and Chem.	9	12	17	22	125	94	68	3.0%	3.3%	2.7%	18.7%	-2.8%	-3.2%
Other Industry	13	15	24	29	35	38	41	1.7%	4.7%	1.8%	1.8%	0.9%	0.8%
Non-Energy Use	2	5	3	3	2	2	2	10.1%	-4.8%	-1.4%	-0.8%	-1.7%	-2.2%
Residential	16	16	18	20	21	21	21	-0.3%	1.5%	0.9%	0.4%	0.1%	0.2%
Services	3	4	6	9	12	17	24	3.6%	4.6%	3.2%	3.4%	3.5%	3.3%
Agriculture	2	2	3	4	4	5	5	2.2%	1.8%	2.8%	1.2%	0.9%	0.8%
Road	22	27	38	51	56	47	38	2.1%	3.6%	3.0%	0.9%	-1.7%	-2.2%
Rail	0	0	0	0	0	0	0	-2.7%	1.3%	4.1%	1.6%	1.3%	1.2%
Aviation	0	0	0	0	0	1	1	-1.3%	-0.3%	4.3%	7.3%	2.9%	-0.1%
Other Transport	1	0	1	1	1	1	1	-5.1%	2.7%	6.6%	2.7%	-0.4%	-0.4%

[1] Nuclear energy is accounted as primary electricity

Rest South America	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**11**	**12**	**24**	**36**	**52**	**33**	**34**	**0.8%**	**7.4%**	**4.3%**	**3.9%**	**-4.6%**	**0.3%**
Coal	1	1	1	3	4	4	5	-4.2%	7.9%	7.4%	3.5%	-1.5%	2.8%
Oil	3	4	9	16	16	6	3	1.6%	8.1%	6.3%	0.1%	-10.0%	-5.9%
Gas	6	7	12	14	29	20	17	0.9%	6.2%	1.6%	7.4%	-3.6%	-1.6%
Biomass & Waste	0	0	1	2	3	3	9	1.7%	17.7%	7.4%	1.9%	1.8%	10.2%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**154**	**226**	**303**	**422**	**660**	**998**	**1 451**	**3.9%**	**3.0%**	**3.4%**	**4.6%**	**4.2%**	**3.8%**
Coal	4	3	5	12	19	17	24	-3.7%	6.9%	9.1%	5.0%	-1.1%	3.3%
of which CCS	0	0	0	0	0	3	18	n.s.	n.s.	n.s.	n.s.	n.s.	21.1%
Oil	13	15	32	60	62	24	13	1.8%	7.8%	6.5%	0.4%	-9.3%	-5.6%
Gas	21	25	50	63	138	102	94	1.8%	7.0%	2.3%	8.2%	-3.0%	-0.8%
of which CCS	0	0	0	0	0	5	31	n.s.	n.s.	n.s.	n.s.	n.s.	20.9%
Biomass & Waste	1	1	4	9	11	15	45	3.6%	19.3%	7.3%	2.5%	2.7%	11.7%
of which CCS	0	0	0	0	0	0	12	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	7	38	102	n.s.	n.s.	n.s.	45.7%	18.2%	10.5%
Hydro	116	182	212	272	351	412	468	4.6%	1.5%	2.5%	2.6%	1.6%	1.3%
Wind	0	0	0	4	31	88	145	n.s.	n.s.	43.1%	22.8%	10.9%	5.1%
Solar	0	0	0	2	39	284	490	n.s.	n.s.	n.s.	33.9%	22.1%	5.6%
Other	0	0	0	0	0	20	70	n.s.	n.s.	27.6%	24.6%	n.s.	13.5%
Generation Capacity (GW_e)	**43**	**55**	**66**	**84**	**137**	**334**	**528**	**2.5%**	**1.7%**	**2.5%**	**5.0%**	**9.3%**	**4.7%**
Coal	1	1	1	2	2	3	3	4.7%	-0.2%	6.4%	4.3%	1.2%	1.5%
of which CCS	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	n.s.	20.3%
Oil	6	9	8	9	9	11	12	3.3%	-0.6%	1.5%	-0.5%	1.8%	1.3%
Gas	8	10	16	20	21	23	19	1.8%	5.3%	2.2%	0.5%	1.2%	-2.1%
of which CCS	0	0	0	0	0	1	4	n.s.	n.s.	n.s.	n.s.	n.s.	20.4%
Biomass & Waste	0	0	1	1	1	2	6	1.9%	14.0%	6.5%	1.8%	4.8%	10.2%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	1	6	16	n.s.	n.s.	n.s.	45.4%	18.0%	10.3%
Hydro	28	36	40	48	62	72	89	2.4%	1.1%	1.8%	2.5%	1.6%	2.1%
Wind	0	0	0	2	16	41	64	n.s.	n.s.	44.8%	20.6%	9.9%	4.4%
Solar	0	0	0	2	25	176	320	n.s.	n.s.	n.s.	30.9%	21.7%	6.2%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	23.9%	14.4%	13.4%
Total Final Consumption[2] (Mtoe)	**67**	**82**	**110**	**139**	**257**	**226**	**200**	**2.0%**	**3.0%**	**2.3%**	**6.4%**	**-1.3%**	**-1.2%**
Coal	2	3	2	6	41	12	3	2.6%	-2.2%	9.6%	21.2%	-11.7%	-12.7%
Oil	36	46	60	74	79	57	29	2.6%	2.7%	2.1%	0.8%	-3.2%	-6.7%
Gas	8	11	19	21	73	67	32	3.2%	5.8%	1.0%	13.3%	-0.9%	-7.0%
Electricity	8	12	17	24	39	59	82	3.4%	4.0%	3.2%	5.0%	4.4%	3.3%
Heat	0	0	0	0	1	2	2	n.s.	-17.4%	29.1%	27.0%	6.1%	1.2%
Biomass & Other	13	10	12	14	24	29	52	-2.3%	1.3%	1.9%	5.2%	2.0%	6.1%
Industry (incl. non-energy use)	**24**	**33**	**44**	**54**	**162**	**134**	**111**	**3.1%**	**3.1%**	**2.0%**	**11.6%**	**-1.9%**	**-1.9%**
Coal	2	3	2	6	41	12	3	3.0%	-2.2%	9.7%	21.3%	-11.7%	-12.7%
Oil	8	13	15	15	23	19	8	4.9%	2.1%	-0.2%	4.3%	-1.7%	-7.9%
Gas	7	9	16	16	65	57	23	2.3%	5.5%	0.6%	14.8%	-1.3%	-8.8%
Electricity	4	5	7	10	20	30	40	2.2%	3.9%	4.0%	6.7%	4.2%	2.7%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	3	3	4	6	13	15	37	0.9%	2.1%	4.4%	7.5%	2.1%	9.1%
Buildings	**19**	**20**	**24**	**29**	**33**	**38**	**45**	**0.4%**	**2.2%**	**1.6%**	**1.4%**	**1.5%**	**1.7%**
Coal	0	0	0	0	0	0	0	-5.9%	-3.0%	4.2%	-8.3%	-16.0%	n.s.
Oil	5	5	5	6	4	3	2	0.4%	0.6%	1.2%	-3.4%	-4.0%	-3.6%
Gas	1	2	2	4	6	6	4	10.0%	4.1%	5.3%	4.2%	-0.1%	-3.8%
Electricity	4	7	10	13	16	21	31	4.2%	4.1%	2.5%	2.2%	3.1%	3.7%
Heat	0	0	0	0	1	2	2	n.s.	-17.4%	29.1%	27.0%	6.1%	1.2%
Biomass & Other	9	6	7	6	6	6	6	-3.4%	0.7%	-1.7%	-0.4%	0.1%	0.1%
Agriculture	**2**	**2**	**3**	**4**	**4**	**5**	**5**	**2.2%**	**1.8%**	**2.8%**	**1.2%**	**0.9%**	**0.8%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	1	1	2	3	2	2	1	6.6%	2.6%	3.4%	-1.0%	-3.8%	-3.9%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	19.1%	-0.5%	-2.4%	-2.6%
Electricity	0	0	0	0	1	1	1	8.9%	1.7%	3.2%	5.6%	5.6%	3.8%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	1	1	1	1	1	2	3	-3.4%	0.2%	0.7%	4.6%	4.5%	2.0%
Transport	**22**	**27**	**39**	**52**	**58**	**49**	**39**	**1.9%**	**3.6%**	**3.0%**	**1.0%**	**-1.6%**	**-2.1%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	22	27	38	50	50	34	17	1.9%	3.3%	2.9%	0.0%	-3.9%	-6.4%
Gas	0	0	1	0	1	3	5	28.3%	54.1%	-12.2%	16.1%	10.3%	5.3%
Electricity	0	0	0	0	2	7	10	0.7%	1.3%	15.9%	32.5%	11.8%	4.3%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	2	4	6	7	-22.0%	n.s.	22.9%	10.4%	3.1%	2.0%
Other Energy Transformation & Losses[3]	**- 15**	**- 29**	**- 24**	**- 14**	**1**	**3**	**- 23**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**9.6%**	**n.s.**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Egypt	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	57	70	84	103	117	131	143	2.0%	1.9%	2.0%	1.4%	1.1%	0.9%
GDP per capita (ppp, k$'15)	4	5	6	8	12	17	23	2.3%	2.9%	1.9%	4.4%	3.8%	3.0%
Prices													
International/Regional ($'15/boe)													
Coal	3	2	3	2	3	4	5	-3.4%	3.6%	-3.2%	2.5%	3.4%	2.8%
Oil	39	38	86	89	89	88	90	-0.2%	8.4%	0.3%	0.0%	-0.1%	0.2%
Gas	24	28	33	47	55	65	70	1.5%	1.6%	3.5%	1.6%	1.8%	0.7%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**145**	**186**	**294**	**307**	**320**	**280**	**187**	**2.5%**	**4.7%**	**0.4%**	**0.4%**	**-1.3%**	**-4.0%**
Total GHG (energy, industry, agriculture)	**145**	**186**	**294**	**307**	**320**	**280**	**187**	**2.5%**	**4.7%**	**0.4%**	**0.4%**	**-1.3%**	**-4.0%**
CO_2	94	122	206	225	253	224	141	2.7%	5.4%	0.9%	1.2%	-1.2%	-4.5%
CH_4	38	42	57	51	42	33	23	1.0%	3.0%	-1.1%	-2.0%	-2.5%	-3.3%
N_2O	11	17	25	26	21	20	21	4.4%	3.7%	0.5%	-2.1%	-0.7%	0.3%
F gases	2	4	6	5	3	3	2	6.9%	3.0%	-1.0%	-4.5%	-1.7%	-4.3%
Total GHG from Energy and Industry	**125**	**158**	**262**	**271**	**283**	**246**	**153**	**2.4%**	**5.2%**	**0.3%**	**0.4%**	**-1.4%**	**-4.6%**
CO_2 Emissions from Fuel Comb.	**81**	**100**	**174**	**174**	**185**	**149**	**88**	**2.2%**	**5.6%**	**0.0%**	**0.6%**	**-2.1%**	**-5.2%**
Power generation/District heating	22	27	62	60	55	36	16	2.0%	8.7%	-0.3%	-0.9%	-4.0%	-7.8%
Industry	26	24	31	36	38	33	21	-0.6%	2.4%	1.5%	0.7%	-1.5%	-4.3%
Buildings	11	12	18	16	14	12	9	1.6%	3.7%	-1.1%	-1.1%	-1.8%	-3.3%
Agriculture	0	0	7	7	7	5	4	n.s.	40.6%	-0.3%	0.4%	-3.3%	-3.7%
Transport	16	29	40	42	55	47	27	6.1%	3.3%	0.6%	2.8%	-1.7%	-5.3%
Other	6	8	16	13	15	16	11	2.1%	7.2%	-1.8%	1.3%	0.5%	-3.5%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**2**	**22**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**24.7%**
Coal	0	0	0	0	0	1	7	n.s.	n.s.	n.s.	n.s.	n.s.	25.2%
Gas	0	0	0	0	0	1	9	n.s.	n.s.	n.s.	n.s.	n.s.	19.8%
Biomass	0	0	0	0	0	0	5	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	26.6%	17.2%
Energy Balance, by fuel (Mtoe)													
Primary Production	**53**	**54**	**87**	**81**	**78**	**91**	**101**	**0.2%**	**4.9%**	**-0.8%**	**-0.3%**	**1.6%**	**1.1%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	44	34	33	18	12	8	5	-2.5%	-0.4%	-5.7%	-4.3%	-4.3%	-4.8%
Natural gas	7	18	52	58	59	63	61	9.9%	11.4%	1.2%	0.1%	0.7%	-0.3%
Biomass	2	1	2	0	1	0	0	-1.7%	1.8%	-12.3%	1.8%	-0.3%	-1.2%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	18.6%
Hydro	1	1	1	1	1	2	2	3.4%	-0.5%	1.1%	1.2%	0.7%	0.6%
Other renewables	0	0	0	3	5	18	33	11.4%	26.4%	22.5%	7.8%	13.1%	6.2%
Net Imports	**- 21**	**- 14**	**- 16**	**- 5**	**2**	**- 7**	**- 11**						
Coal	1	1	0	2	2	2	3						
Oil	- 22	- 11	1	13	23	20	12						
Natural gas	0	- 3	- 16	- 21	- 24	- 34	- 39						
Biomass	0	0	0	1	1	6	14						
Biofuels	0	0	0	0	0	0	0						
Electricity	0	0	- 1	- 1	- 1	- 1	- 1						
Primary Energy Demand[2]	**32**	**40**	**71**	**75**	**80**	**84**	**90**	2.3%	**5.8%**	**0.6%**	**0.6%**	**0.5%**	**0.7%**
Coal	1	1	0	2	2	2	3	0.8%	-5.6%	17.2%	1.6%	-1.0%	4.0%
Oil	22	23	34	31	35	27	16	0.3%	3.9%	-0.7%	1.0%	-2.4%	-5.0%
Natural gas	7	14	36	37	35	29	22	7.9%	9.5%	0.4%	-0.7%	-1.6%	-2.7%
Biomass	2	1	2	2	2	6	14	-1.9%	1.8%	-0.3%	2.6%	12.4%	8.4%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	18.6%
Hydro	1	1	1	1	1	2	2	3.4%	-0.5%	1.1%	1.2%	0.7%	0.6%
Other renewables	0	0	0	3	5	18	33	11.4%	26.4%	22.5%	7.8%	13.1%	6.2%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**32**	**40**	**71**	**75**	**80**	**84**	**90**	**2.3%**	**5.8%**	**0.6%**	**0.6%**	**0.5%**	**0.7%**
Energy for Power Generation	**9**	**12**	**26**	**28**	**28**	**35**	**51**	**3.1%**	**8.1%**	**0.6%**	**0.2%**	**2.3%**	**3.7%**
Other Energy Transformation & Losses	**2**	**2**	**3**	**4**	**5**	**8**	**9**	**-0.5%**	**2.6%**	**4.5%**	**2.1%**	**4.5%**	**0.7%**
Final consumption	**24**	**32**	**53**	**56**	**61**	**65**	**66**	**2.8%**	**5.2%**	**0.6%**	**0.9%**	**0.6%**	**0.1%**
Steel, Non-Met. Minerals and Chem.	1	1	0	2	2	2	1	1.0%	-5.3%	15.1%	-0.8%	-0.2%	-0.9%
Other Industry	10	9	14	15	17	19	19	-0.3%	4.1%	0.8%	1.2%	0.8%	0.2%
Non-Energy Use	2	3	7	8	5	4	4	4.0%	7.7%	1.1%	-3.3%	-2.5%	-0.9%
Residential	6	7	12	13	11	12	13	2.8%	4.9%	0.6%	-1.1%	0.5%	0.7%
Services	0	1	2	2	3	5	8	11.3%	6.9%	0.5%	1.6%	6.2%	4.3%
Agriculture	0	0	3	3	4	4	5	10.1%	24.9%	0.8%	2.3%	1.8%	1.4%
Road	5	8	14	13	18	19	15	4.9%	5.0%	-0.3%	3.4%	0.1%	-2.0%
Rail	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	4.6%	4.0%	3.1%
Aviation	0	0	1	0	0	0	0	8.0%	2.5%	-5.0%	1.6%	-0.3%	-2.3%
Other Transport	0	1	1	0	0	0	0	n.s.	-3.5%	-7.0%	3.9%	0.2%	-0.8%

[1] Nuclear energy is accounted as primary electricity

Egypt	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**8**	**11**	**25**	**24**	**22**	**16**	**16**	**3.0%**	**8.6%**	**-0.3%**	**-1.1%**	**-3.2%**	**0.2%**
Coal	0	0	0	0	0	1	2	n.s.	n.s.	n.s.	14.4%	9.3%	11.6%
Oil	4	2	5	5	5	3	2	-6.9%	10.1%	-0.8%	0.1%	-5.6%	-4.0%
Gas	4	9	20	19	16	12	9	8.3%	8.3%	-0.3%	-1.5%	-3.3%	-2.1%
Biomass & Waste	0	0	0	0	0	1	3	n.s.	n.s.	n.s.	29.6%	30.4%	16.9%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**42**	**78**	**147**	**172**	**192**	**292**	**425**	**6.4%**	**6.5%**	**1.6%**	**1.1%**	**4.3%**	**3.8%**
Coal	0	0	0	0	2	4	11	n.s.	n.s.	n.s.	14.8%	9.5%	11.4%
of which CCS	0	0	0	0	0	1	9	n.s.	n.s.	n.s.	n.s.	n.s.	25.3%
Oil	13	22	20	21	21	12	8	5.2%	-1.2%	0.5%	0.2%	-5.4%	-3.9%
Gas	19	42	112	111	95	68	58	8.3%	10.3%	-0.1%	-1.6%	-3.2%	-1.7%
of which CCS	0	0	0	0	0	4	25	n.s.	n.s.	n.s.	n.s.	n.s.	19.9%
Biomass & Waste	0	0	0	0	0	3	13	n.s.	n.s.	n.s.	30.8%	31.0%	17.3%
of which CCS	0	0	0	0	0	0	5	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	10	14	13	15	16	18	19	3.3%	-0.5%	1.1%	1.2%	0.7%	0.9%
Wind	0	0	1	24	42	109	156	n.s.	27.0%	32.1%	5.8%	9.9%	3.7%
Solar	0	0	0	1	13	72	141	n.s.	n.s.	14.0%	32.4%	19.1%	6.9%
Other	0	0	0	0	2	6	18	n.s.	n.s.	n.s.	22.0%	10.9%	11.8%
Generation Capacity (GW_e)	**12**	**19**	**26**	**42**	**53**	**115**	**168**	**4.9%**	**3.5%**	**4.7%**	**2.5%**	**8.0%**	**3.9%**
Coal	0	0	0	0	0	1	2	n.s.	n.s.	n.s.	15.1%	10.5%	12.4%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	26.9%
Oil	4	6	5	5	6	6	7	3.1%	-2.1%	-0.6%	2.2%	0.5%	1.3%
Gas	5	10	18	24	20	21	13	8.3%	6.2%	2.8%	-1.7%	0.2%	-4.7%
of which CCS	0	0	0	0	0	1	4	n.s.	n.s.	n.s.	n.s.	n.s.	21.9%
Biomass & Waste	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	31.0%	32.2%	18.3%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	3	3	3	3	3	3	4	0.3%	0.2%	0.2%	1.2%	0.7%	1.3%
Wind	0	0	1	10	17	43	58	n.s.	30.0%	33.3%	5.7%	9.7%	3.2%
Solar	0	0	0	0	7	41	82	n.s.	n.s.	39.5%	32.5%	19.4%	7.1%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	17.3%	15.3%
Total Final Consumption[2] (Mtoe)	**24**	**32**	**53**	**56**	**61**	**65**	**66**	**2.8%**	**5.2%**	**0.6%**	**0.9%**	**0.6%**	**0.1%**
Coal	1	1	0	2	2	1	1	1.0%	-5.3%	15.0%	-0.1%	-4.6%	-4.1%
Oil	16	20	30	26	29	23	13	2.2%	3.8%	-1.3%	1.2%	-2.3%	-5.3%
Gas	2	4	11	14	14	14	12	5.0%	10.5%	2.9%	0.0%	-0.2%	-1.9%
Electricity	3	6	11	13	14	22	30	5.9%	6.8%	1.6%	1.1%	4.4%	3.5%
Heat	0	0	0	0	1	2	2	n.s.	n.s.	n.s.	4.9%	11.5%	3.1%
Biomass & Other	2	1	2	1	2	4	8	-1.9%	1.8%	-0.7%	1.5%	8.7%	7.0%
Industry (incl. non-energy use)	**13**	**13**	**21**	**25**	**24**	**24**	**24**	**0.6%**	**4.8%**	**1.4%**	**-0.1%**	**0.1%**	**0.0%**
Coal	1	1	0	2	2	1	1	1.0%	-5.3%	15.0%	-0.1%	-4.6%	-4.1%
Oil	8	7	8	6	6	5	4	-0.9%	1.0%	-2.1%	0.1%	-1.5%	-3.6%
Gas	2	4	10	13	11	10	7	4.4%	10.4%	2.6%	-1.0%	-1.3%	-2.9%
Electricity	1	2	4	4	5	7	9	3.8%	5.2%	1.3%	1.8%	4.0%	2.9%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	1	0	0	0	0	1	3	n.s.	n.s.	n.s.	33.1%	19.4%	12.3%
Buildings	**6**	**9**	**14**	**15**	**14**	**17**	**21**	**3.6%**	**5.2%**	**0.6%**	**-0.6%**	**1.9%**	**1.9%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	3	4	5	4	3	2	1	1.1%	3.1%	-2.7%	-3.7%	-4.0%	-3.8%
Gas	0	0	1	2	3	3	2	16.9%	9.7%	7.1%	4.4%	0.6%	-2.8%
Electricity	2	3	7	8	7	10	14	7.5%	7.7%	1.4%	-0.6%	3.2%	3.6%
Heat	0	0	0	0	1	2	2	n.s.	n.s.	n.s.	4.9%	11.5%	3.1%
Biomass & Other	1	1	2	1	1	1	1	2.1%	1.8%	-1.5%	-3.7%	-2.8%	0.3%
Agriculture	**0**	**0**	**3**	**3**	**4**	**4**	**5**	**10.1%**	**24.9%**	**0.8%**	**2.3%**	**1.8%**	**1.4%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	0	0	2	2	2	2	1	n.s.	40.6%	-0.3%	0.4%	-3.3%	-3.7%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Electricity	0	0	0	1	1	2	3	6.9%	6.9%	5.6%	4.3%	4.9%	3.4%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	n.s.	13.0%	3.7%
Transport	**5**	**10**	**15**	**14**	**19**	**19**	**16**	**6.0%**	**4.4%**	**-0.6%**	**3.3%**	**0.1%**	**-1.9%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	5	10	15	14	18	14	7	6.0%	4.3%	-0.7%	2.7%	-2.1%	-6.5%
Gas	0	0	0	0	0	1	2	n.s.	n.s.	-5.9%	15.1%	13.2%	4.9%
Electricity	0	0	0	0	1	3	4	n.s.	n.s.	n.s.	24.5%	12.9%	4.9%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	1	2	n.s.	n.s.	n.s.	12.1%	14.8%	6.9%
Other Energy Transformation & Losses[3]	**2**	**2**	**3**	**4**	**5**	**8**	**9**	**-0.5%**	**2.6%**	**4.5%**	**2.1%**	**4.5%**	**0.7%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Algeria & Libya	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	30	37	42	50	55	59	62	1.9%	1.5%	1.6%	1.0%	0.7%	0.6%
GDP per capita (ppp, k$'15)	6	8	8	10	15	20	26	3.0%	-0.6%	2.5%	4.2%	3.2%	2.5%
Prices													
International/Regional ($'15/boe)													
Coal	3	2	3	2	3	4	5	-3.4%	3.6%	-3.2%	2.5%	3.4%	2.8%
Oil	39	38	86	89	89	88	90	-0.2%	8.4%	0.3%	0.0%	-0.1%	0.2%
Gas	24	28	33	47	55	65	70	1.5%	1.6%	3.5%	1.6%	1.8%	0.7%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**240**	**260**	**300**	**375**	**306**	**240**	**160**	**0.8%**	**1.4%**	**2.3%**	**-2.0%**	**-2.4%**	**-4.0%**
Total GHG (energy, industry, agriculture)	**239**	**254**	**298**	**374**	**306**	**240**	**160**	**0.6%**	**1.6%**	**2.3%**	**-2.0%**	**-2.4%**	**-4.0%**
CO_2	112	142	187	279	247	201	134	2.4%	2.8%	4.1%	-1.2%	-2.0%	-4.0%
CH_4	122	106	102	84	50	31	19	-1.3%	-0.4%	-1.9%	-5.1%	-4.5%	-4.9%
N_2O	5	5	7	9	7	6	6	1.3%	3.3%	1.4%	-2.1%	-0.7%	-0.1%
F gases	1	1	1	1	1	1	0	-0.8%	7.2%	2.7%	-2.6%	-2.4%	-6.4%
Total GHG from Energy and Industry	**230**	**245**	**286**	**360**	**293**	**228**	**148**	**0.6%**	**1.5%**	**2.3%**	**-2.1%**	**-2.5%**	**-4.2%**
CO_2 Emissions from Fuel Comb.	**84**	**106**	**153**	**238**	**211**	**168**	**109**	**2.3%**	**3.7%**	**4.5%**	**-1.2%**	**-2.2%**	**-4.3%**
Power generation/District heating	18	32	47	84	62	45	27	5.7%	4.2%	5.9%	-3.0%	-3.1%	-5.2%
Industry	8	10	15	18	11	8	5	2.0%	4.2%	1.8%	-4.6%	-3.2%	-3.8%
Buildings	10	14	20	27	28	24	21	3.6%	3.7%	3.3%	0.1%	-1.4%	-1.2%
Agriculture	0	0	0	0	0	0	0	0.9%	17.6%	2.8%	-0.4%	-3.1%	-3.3%
Transport	22	27	53	81	81	65	43	2.2%	7.1%	4.2%	0.0%	-2.1%	-4.2%
Other	27	25	18	28	29	25	13	-0.9%	-3.1%	4.5%	0.3%	-1.3%	-6.4%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**3**	**18**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**19.5%**
Coal	0	0	0	0	0	1	8	n.s.	n.s.	n.s.	n.s.	n.s.	27.7%
Gas	0	0	0	0	0	2	8	n.s.	n.s.	n.s.	n.s.	n.s.	12.7%
Biomass	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	20.0%	13.6%
Energy Balance, by fuel (Mtoe)													
Primary Production	**150**	**189**	**225**	**175**	**152**	**135**	**117**	**2.3%**	**1.7%**	**-2.5%**	**-1.4%**	**-1.1%**	**-1.5%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	103	110	143	79	59	37	22	0.7%	2.6%	-5.7%	-3.0%	-4.5%	-5.0%
Natural gas	47	79	82	94	89	89	73	5.3%	0.4%	1.4%	-0.5%	0.0%	-1.9%
Biomass	0	0	0	1	3	3	3	3.6%	0.8%	14.8%	13.5%	0.9%	-1.1%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	34.1%
Hydro	0	0	0	0	0	0	0	-8.8%	12.4%	8.5%	3.9%	3.0%	2.0%
Other renewables	0	0	0	0	1	6	18	n.s.	n.s.	n.s.	52.9%	18.8%	11.0%
Net Imports	**- 116**	**- 147**	**- 165**	**- 81**	**- 68**	**- 59**	**- 44**						
Coal	0	0	0	0	1	1	3						
Oil	- 86	- 90	- 112	- 44	- 27	- 7	- 3						
Natural gas	- 31	- 58	- 53	- 37	- 42	- 58	- 51						
Biomass	0	0	0	0	0	4	7						
Biofuels	0	0	0	0	0	0	0						
Electricity	0	0	0	0	0	0	0						
Primary Energy Demand[2]	**34**	**42**	**60**	**93**	**84**	**76**	**73**	2.3%	**3.5%**	**4.5%**	**-1.1%**	**-1.0%**	**-0.4%**
Coal	0	0	0	0	1	1	3	0.5%	-5.1%	0.9%	8.8%	4.3%	10.9%
Oil	17	21	31	35	32	30	19	1.9%	3.9%	1.5%	-1.0%	-0.6%	-4.4%
Natural gas	16	21	29	58	47	32	22	2.6%	3.3%	7.1%	-2.0%	-4.0%	-3.3%
Biomass	0	0	0	0	3	7	10	3.6%	0.8%	6.6%	23.2%	8.3%	3.9%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	34.1%
Hydro	0	0	0	0	0	0	0	-8.8%	12.4%	8.5%	3.9%	3.0%	2.0%
Other renewables	0	0	0	0	1	6	18	n.s.	n.s.	n.s.	52.9%	18.8%	11.0%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**34**	**42**	**60**	**93**	**84**	**76**	**73**	**2.3%**	**3.5%**	**4.5%**	**-1.1%**	**-1.0%**	**-0.4%**
Energy for Power Generation	**7**	**12**	**19**	**33**	**26**	**25**	**32**	**5.8%**	**4.6%**	**6.0%**	**-2.6%**	**-0.4%**	**2.8%**
Other Energy Transformation & Losses	**11**	**9**	**7**	**11**	**14**	**14**	**11**	**-2.1%**	**-2.5%**	**5.3%**	**2.2%**	**-0.2%**	**-1.9%**
Final consumption	**18**	**24**	**39**	**56**	**53**	**48**	**45**	**3.0%**	**4.9%**	**3.7%**	**-0.7%**	**-0.8%**	**-0.8%**
Steel, Non-Met. Minerals and Chem.	1	1	2	4	2	2	1	-1.6%	12.1%	5.6%	-5.0%	-2.8%	-2.3%
Other Industry	3	4	5	5	4	4	4	3.3%	2.0%	1.5%	-2.6%	-1.0%	-0.2%
Non-Energy Use	3	5	5	5	3	2	2	3.5%	1.5%	-0.6%	-6.2%	-1.5%	-0.4%
Residential	4	6	8	12	11	11	11	4.5%	3.0%	4.3%	-0.7%	-0.3%	0.2%
Services	0	1	2	3	3	4	4	4.3%	15.6%	3.4%	-1.4%	1.8%	2.1%
Agriculture	0	0	0	0	0	1	1	0.9%	10.0%	0.0%	2.4%	1.9%	1.6%
Road	7	8	16	25	28	25	20	2.2%	6.5%	4.9%	0.9%	-1.2%	-1.9%
Rail	0	0	0	1	1	1	1	1.2%	9.6%	5.4%	0.4%	-0.2%	-0.4%
Aviation	0	0	0	0	0	0	0	7.2%	26.5%	-1.7%	1.4%	-1.3%	-2.3%
Other Transport	0	0	0	0	0	0	0	0.9%	9.8%	2.7%	1.7%	-1.1%	-1.4%

[1] Nuclear energy is accounted as primary electricity

Algeria & Libya	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**7**	**12**	**19**	**33**	**24**	**18**	**14**	**5.8%**	**4.6%**	**6.0%**	**-3.0%**	**-2.9%**	**-2.4%**
Coal	0	0	0	0	0	1	2	n.s.	n.s.	n.s.	24.9%	7.3%	16.4%
Oil	3	5	5	8	6	4	4	5.0%	0.6%	4.7%	-3.0%	-2.4%	-0.9%
Gas	4	7	14	26	19	13	7	6.3%	6.5%	6.4%	-3.2%	-3.5%	-6.6%
Biomass & Waste	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	23.0%	40.2%	14.2%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**27**	**43**	**81**	**164**	**137**	**158**	**208**	**4.6%**	**6.5%**	**7.4%**	**-1.8%**	**1.4%**	**2.8%**
Coal	0	0	0	0	1	3	12	n.s.	n.s.	n.s.	25.4%	7.3%	16.4%
of which CCS	0	0	0	0	0	1	10	n.s.	n.s.	n.s.	n.s.	n.s.	27.9%
Oil	11	13	18	32	24	20	18	1.5%	3.5%	5.9%	-2.9%	-2.1%	-0.7%
Gas	16	30	62	131	98	71	35	6.4%	7.6%	7.7%	-2.9%	-3.2%	-6.8%
of which CCS	0	0	0	0	0	1	3	n.s.	n.s.	n.s.	n.s.	n.s.	11.7%
Biomass & Waste	0	0	0	0	0	2	7	n.s.	n.s.	n.s.	24.2%	40.7%	14.5%
of which CCS	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	0	0	0	0	1	1	1	-8.8%	12.4%	8.5%	3.9%	3.0%	3.2%
Wind	0	0	0	0	6	25	49	n.s.	n.s.	n.s.	48.0%	15.4%	6.8%
Solar	0	0	0	0	6	34	76	n.s.	n.s.	n.s.	56.1%	19.3%	8.4%
Other	0	0	0	0	1	3	10	n.s.	n.s.	n.s.	16.5%	9.0%	11.6%
Generation Capacity (GW_e)	**8**	**11**	**20**	**32**	**37**	**61**	**95**	**2.7%**	**6.2%**	**5.1%**	**1.4%**	**5.1%**	**4.6%**
Coal	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	25.4%	7.4%	17.9%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	29.7%
Oil	4	4	4	5	6	6	9	-0.5%	-0.1%	3.2%	0.5%	0.8%	3.8%
Gas	4	6	15	26	25	20	8	5.8%	9.1%	5.4%	-0.6%	-2.1%	-8.5%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	13.5%
Biomass & Waste	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	41.0%	15.7%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	0	0	0	0	0	1	1	-0.4%	0.0%	0.8%	3.9%	3.0%	2.8%
Wind	0	0	0	0	2	9	17	n.s.	n.s.	n.s.	46.2%	14.6%	6.7%
Solar	0	0	0	0	4	25	57	n.s.	n.s.	43.7%	32.8%	20.4%	8.8%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	22.2%	13.5%
Total Final Consumption[2] (Mtoe)	**18**	**24**	**39**	**56**	**53**	**48**	**45**	**3.0%**	**4.9%**	**3.7%**	**-0.7%**	**-0.8%**	**-0.8%**
Coal	0	0	0	0	0	0	0	-3.2%	-0.9%	-2.9%	3.5%	-0.6%	-0.7%
Oil	12	15	24	32	31	24	15	2.3%	4.9%	3.2%	-0.5%	-2.4%	-4.4%
Gas	4	7	11	16	13	11	11	4.6%	4.7%	4.2%	-2.4%	-1.0%	-0.2%
Electricity	2	2	5	8	6	7	9	4.7%	6.4%	5.1%	-1.9%	1.5%	2.7%
Heat	0	0	0	0	0	1	2	n.s.	n.s.	n.s.	n.s.	25.6%	5.7%
Biomass & Other	0	0	0	0	2	4	6	3.6%	0.8%	3.3%	23.9%	5.1%	4.8%
Industry (incl. non-energy use)	**7**	**9**	**12**	**14**	**9**	**8**	**7**	**2.9%**	**3.0%**	**1.6%**	**-4.4%**	**-1.6%**	**-0.7%**
Coal	0	0	0	0	0	0	0	-3.2%	-0.9%	-2.9%	3.5%	-0.6%	-0.7%
Oil	2	3	4	4	2	2	2	2.6%	2.8%	-1.7%	-4.2%	-2.8%	-1.5%
Gas	3	5	6	8	4	3	3	3.7%	3.2%	2.3%	-6.4%	-2.5%	-2.6%
Electricity	1	1	1	2	2	2	2	2.7%	4.0%	6.6%	-0.6%	0.0%	0.9%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	17.3%	18.1%	8.8%
Buildings	**4**	**7**	**10**	**16**	**14**	**15**	**16**	**4.5%**	**4.9%**	**4.1%**	**-0.8%**	**0.2%**	**0.7%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	2	3	3	3	3	3	3	2.3%	1.0%	-1.1%	0.4%	-0.1%	-0.6%
Gas	1	2	4	8	8	6	5	6.9%	7.5%	6.6%	0.0%	-2.1%	-1.6%
Electricity	1	1	3	5	3	3	4	6.6%	7.4%	4.8%	-4.7%	0.0%	3.1%
Heat	0	0	0	0	0	1	2	n.s.	n.s.	n.s.	n.s.	25.6%	5.7%
Biomass & Other	0	0	0	0	1	1	2	3.6%	0.8%	0.3%	11.0%	8.8%	2.9%
Agriculture	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0.9%**	**10.0%**	**0.0%**	**2.4%**	**1.9%**	**1.6%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	0	0	0	0	0	0	0	0.9%	12.0%	1.4%	-0.7%	-3.7%	-4.0%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	4.7%	-0.1%	-2.4%	-2.7%
Electricity	0	0	0	0	0	0	1	1.0%	8.8%	-0.7%	2.8%	2.3%	1.9%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	10.3%	3.7%
Transport	**7**	**9**	**16**	**26**	**29**	**25**	**21**	**2.2%**	**6.6%**	**4.9%**	**0.9%**	**-1.2%**	**-1.9%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	7	9	16	26	26	20	11	2.2%	6.6%	4.8%	-0.1%	-2.6%	-5.5%
Gas	0	0	0	0	0	2	3	n.s.	n.s.	n.s.	n.s.	14.1%	6.3%
Electricity	0	0	0	0	1	2	2	3.0%	7.5%	10.4%	18.6%	8.6%	4.3%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	2	2	4	n.s.	n.s.	n.s.	39.2%	2.9%	5.5%
Other Energy Transformation & Losses[3]	**11**	**9**	**7**	**11**	**14**	**14**	**11**	**-2.1%**	**-2.5%**	**5.3%**	**2.2%**	**-0.2%**	**-1.9%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Morocco & Tunisia	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	33	39	44	49	53	55	57	1.5%	1.1%	1.2%	0.8%	0.4%	0.2%
GDP per capita (ppp, k$'15)	4	4	6	8	13	20	28	1.7%	3.6%	3.1%	4.4%	4.2%	3.5%
Prices													
International/Regional ($'15/boe)													
Coal	3	2	3	2	3	4	5	-3.4%	3.6%	-3.2%	2.5%	3.4%	2.8%
Oil	39	38	86	89	89	88	90	-0.2%	8.4%	0.3%	0.0%	-0.1%	0.2%
Gas	24	28	33	47	55	65	70	1.5%	1.6%	3.5%	1.6%	1.8%	0.7%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**53**	**79**	**120**	**140**	**149**	**127**	**88**	**4.1%**	**4.3%**	**1.6%**	**0.7%**	**-1.6%**	**-3.7%**
Total GHG (energy, industry, agriculture)	**62**	**85**	**112**	**138**	**148**	**128**	**89**	**3.1%**	**2.8%**	**2.1%**	**0.7%**	**-1.4%**	**-3.6%**
CO_2	39	57	81	105	116	101	67	3.8%	3.5%	2.5%	1.1%	-1.4%	-4.1%
CH_4	16	19	22	24	23	19	14	1.9%	1.3%	0.9%	-0.4%	-1.9%	-2.9%
N_2O	7	8	8	9	8	7	8	1.1%	0.9%	0.4%	-0.8%	-1.0%	0.7%
F gases	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Total GHG from Energy and Industry	**49**	**70**	**96**	**121**	**131**	**113**	**73**	**3.7%**	**3.3%**	**2.3%**	**0.8%**	**-1.5%**	**-4.2%**
CO_2 Emissions from Fuel Comb.	**32**	**49**	**72**	**93**	**102**	**87**	**56**	**4.2%**	**4.0%**	**2.6%**	**0.9%**	**-1.6%**	**-4.3%**
Power generation/District heating	12	17	24	31	32	24	11	3.9%	3.7%	2.5%	0.3%	-2.8%	-7.7%
Industry	9	9	11	13	14	10	7	0.2%	2.2%	2.0%	0.4%	-2.7%	-4.0%
Buildings	3	6	9	12	13	12	9	6.2%	3.8%	3.1%	0.9%	-1.0%	-2.4%
Agriculture	1	2	3	3	3	2	2	5.8%	3.9%	2.6%	-0.6%	-3.5%	-3.9%
Transport	7	14	22	30	35	32	22	6.9%	4.9%	3.1%	1.6%	-1.1%	-3.8%
Other	1	1	3	3	5	7	6	5.2%	9.9%	-0.3%	4.0%	3.5%	-1.0%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**1**	**11**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**22.9%**
Coal	0	0	0	0	0	0	4	n.s.	n.s.	n.s.	n.s.	n.s.	22.4%
Gas	0	0	0	0	0	1	5	n.s.	n.s.	n.s.	n.s.	n.s.	19.5%
Biomass	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	23.3%	16.0%
Energy Balance, by fuel (Mtoe)													
Primary Production	**7**	**8**	**10**	**11**	**20**	**28**	**37**	**1.0%**	**2.5%**	**1.0%**	**6.1%**	**3.6%**	**2.6%**
Coal	0	0	0	0	0	0	0	-22.8%	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	5	4	4	4	7	9	8	-2.1%	0.2%	0.0%	6.8%	2.3%	-1.5%
Natural gas	0	2	3	3	6	7	8	17.5%	6.1%	1.0%	5.0%	2.6%	1.4%
Biomass	2	2	3	3	4	4	5	2.8%	1.8%	1.0%	3.3%	1.0%	0.7%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	20.2%
Hydro	0	0	0	0	0	0	0	-4.7%	16.2%	-2.8%	1.2%	0.8%	0.2%
Other renewables	0	0	0	1	3	7	16	n.s.	29.0%	20.3%	15.9%	10.5%	7.9%
Net Imports	**6**	**13**	**21**	**29**	**27**	**22**	**17**						
Coal	1	3	3	3	3	2	2						
Oil	4	7	12	15	12	7	3						
Natural gas	1	1	3	5	6	5	3						
Biomass	0	0	0	0	0	2	4						
Biofuels	0	0	0	0	0	0	0						
Electricity	0	2	4	6	6	6	6						
Primary Energy Demand[2]	**13**	**20**	**31**	**40**	**47**	**50**	**54**	5.0%	**4.2%**	**2.6%**	**1.6%**	**0.7%**	**0.7%**
Coal	1	3	3	3	3	2	2	8.3%	0.3%	1.8%	-1.2%	-4.3%	-2.3%
Oil	8	10	16	19	20	16	10	2.4%	4.1%	2.1%	0.4%	-2.0%	-4.3%
Natural gas	1	3	6	8	12	12	11	8.2%	7.4%	3.7%	3.5%	0.5%	-1.0%
Biomass	2	2	3	2	4	6	9	2.8%	1.8%	-0.8%	4.2%	5.8%	3.9%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	20.2%
Hydro	0	0	0	0	0	0	0	-4.7%	16.2%	-2.8%	1.2%	0.8%	0.2%
Other renewables	0	0	0	1	3	7	16	n.s.	29.0%	20.3%	15.9%	10.5%	7.9%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**13**	**20**	**31**	**40**	**47**	**50**	**54**	**5.0%**	**4.2%**	**2.6%**	**1.6%**	**0.7%**	**0.7%**
Energy for Power Generation	**4**	**5**	**8**	**11**	**14**	**17**	**25**	**3.7%**	**4.4%**	**3.0%**	**2.3%**	**1.8%**	**3.8%**
Other Energy Transformation & Losses	**1**	**3**	**5**	**7**	**9**	**12**	**13**	**18.0%**	**7.0%**	**2.9%**	**2.5%**	**2.6%**	**0.8%**
Final consumption	**9**	**14**	**20**	**26**	**31**	**32**	**33**	**4.2%**	**3.7%**	**2.5%**	**1.8%**	**0.5%**	**0.2%**
Steel, Non-Met. Minerals and Chem.	0	0	2	3	4	3	3	0.1%	21.0%	3.7%	0.6%	-1.1%	-0.9%
Other Industry	3	3	3	3	4	4	4	1.4%	-2.4%	1.1%	2.2%	1.0%	1.0%
Non-Energy Use	0	0	1	1	1	1	0	8.5%	4.7%	0.5%	-1.0%	-3.1%	-3.6%
Residential	2	4	5	6	6	6	6	4.7%	3.6%	1.5%	0.3%	-0.4%	0.3%
Services	1	1	2	2	3	4	6	3.7%	4.6%	2.8%	3.7%	3.2%	2.8%
Agriculture	0	1	1	2	2	2	2	5.8%	5.3%	3.0%	2.0%	1.5%	1.1%
Road	2	4	6	8	10	11	10	6.1%	3.6%	3.3%	2.7%	0.4%	-1.1%
Rail	0	0	0	0	0	0	0	5.7%	3.4%	2.0%	0.9%	0.4%	0.2%
Aviation	0	0	0	0	0	0	0	n.s.	n.s.	6.8%	6.9%	2.0%	-0.5%
Other Transport	0	0	1	1	1	1	1	9.9%	5.3%	3.3%	2.6%	-0.3%	-0.8%

[1] Nuclear energy is accounted as primary electricity

Morocco & Tunisia	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**4**	**5**	**8**	**10**	**11**	**9**	**9**	**3.8%**	**4.1%**	**2.7%**	**0.8%**	**-1.7%**	**-0.7%**
Coal	1	2	3	3	3	2	1	10.9%	2.7%	1.8%	-2.0%	-5.3%	-2.4%
Oil	2	1	1	2	2	2	1	-5.9%	1.7%	1.8%	0.7%	-1.0%	-6.1%
Gas	1	2	4	6	7	6	6	9.2%	6.2%	3.6%	2.1%	-1.1%	-0.5%
Biomass & Waste	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	41.6%	19.9%	14.2%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**15**	**23**	**40**	**59**	**88**	**126**	**191**	**4.3%**	**5.4%**	**4.1%**	**4.0%**	**3.6%**	**4.3%**
Coal	2	9	11	13	11	7	6	14.8%	2.2%	1.9%	-1.6%	-4.7%	-1.1%
of which CCS	0	0	0	0	0	1	5	n.s.	n.s.	n.s.	n.s.	n.s.	22.5%
Oil	8	5	6	8	8	7	4	-5.8%	2.4%	2.9%	0.4%	-0.9%	-6.0%
Gas	4	9	19	28	36	34	35	9.6%	7.2%	4.3%	2.5%	-0.6%	0.1%
of which CCS	0	0	0	0	0	2	15	n.s.	n.s.	n.s.	n.s.	n.s.	19.6%
Biomass & Waste	0	0	0	0	0	1	5	n.s.	n.s.	n.s.	42.9%	20.4%	14.4%
of which CCS	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	1	1	4	4	4	4	4	-4.7%	16.8%	0.0%	1.6%	0.0%	-0.2%
Wind	0	0	1	6	25	52	79	n.s.	24.8%	23.2%	14.6%	7.6%	4.3%
Solar	0	0	0	0	2	18	51	n.s.	n.s.	n.s.	29.2%	22.0%	10.8%
Other	0	0	0	0	1	2	8	n.s.	n.s.	n.s.	25.9%	9.4%	16.4%
Generation Capacity (GW_e)	**4**	**7**	**10**	**15**	**26**	**49**	**90**	**6.8%**	**3.5%**	**4.2%**	**5.4%**	**6.7%**	**6.2%**
Coal	0	1	2	3	3	1	1	12.1%	2.1%	3.6%	-0.1%	-5.0%	-4.2%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	23.7%
Oil	2	2	2	2	3	3	4	3.4%	-0.6%	0.0%	4.3%	0.9%	2.2%
Gas	1	2	4	5	7	8	10	10.7%	7.7%	2.9%	1.9%	1.8%	2.4%
of which CCS	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	n.s.	21.1%
Biomass & Waste	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	22.1%	15.2%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	1	2	2	2	3	3	3	4.3%	1.4%	3.0%	1.0%	0.7%	0.2%
Wind	0	0	0	2	9	18	27	n.s.	18.7%	21.7%	13.7%	7.6%	4.1%
Solar	0	0	0	0	2	15	44	n.s.	n.s.	25.4%	19.9%	21.6%	11.3%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	17.8%	13.8%
Total Final Consumption[2] (Mtoe)	**9**	**14**	**20**	**26**	**31**	**32**	**33**	**4.2%**	**3.7%**	**2.5%**	**1.8%**	**0.5%**	**0.2%**
Coal	0	1	0	0	0	0	0	2.8%	-30.6%	7.2%	21.2%	4.0%	-2.6%
Oil	6	9	14	17	17	13	8	4.3%	4.1%	2.3%	0.2%	-2.5%	-4.7%
Gas	0	1	1	2	4	5	5	6.1%	6.1%	6.8%	6.0%	2.4%	0.1%
Electricity	1	2	3	4	6	9	13	5.2%	5.5%	3.3%	3.7%	3.6%	4.0%
Heat	0	0	0	0	0	1	1	n.s.	n.s.	9.0%	17.7%	8.5%	2.4%
Biomass & Other	1	2	2	2	3	4	5	2.7%	2.0%	-1.3%	2.6%	3.3%	3.0%
Industry (incl. non-energy use)	**3**	**4**	**6**	**7**	**8**	**8**	**8**	**1.8%**	**3.2%**	**2.2%**	**1.1%**	**-0.3%**	**0.0%**
Coal	0	1	0	0	0	0	0	2.8%	-30.6%	7.2%	21.2%	4.0%	-2.6%
Oil	2	2	4	4	4	2	1	-0.1%	5.2%	1.7%	-0.7%	-4.9%	-6.6%
Gas	0	0	1	1	1	1	1	5.1%	5.7%	1.4%	1.7%	2.0%	-0.1%
Electricity	1	1	1	2	3	3	4	4.3%	3.0%	3.7%	3.9%	2.7%	2.5%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	1	n.s.	4.4%	2.9%	-3.2%	12.3%	7.5%
Buildings	**3**	**5**	**7**	**8**	**9**	**10**	**12**	**4.5%**	**3.8%**	**1.9%**	**1.3%**	**1.0%**	**1.4%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	1	2	3	3	2	2	1	6.0%	3.5%	1.1%	-2.9%	-3.5%	-2.5%
Gas	0	0	0	1	3	3	2	10.1%	6.9%	15.0%	8.1%	1.3%	-2.3%
Electricity	0	1	2	2	3	4	6	6.4%	7.1%	3.0%	2.8%	3.0%	4.9%
Heat	0	0	0	0	0	1	1	n.s.	n.s.	9.0%	17.7%	8.5%	2.4%
Biomass & Other	1	2	2	2	1	1	1	2.3%	1.9%	-2.3%	-3.2%	-1.4%	-0.7%
Agriculture	**0**	**1**	**1**	**2**	**2**	**2**	**2**	**5.8%**	**5.3%**	**3.0%**	**2.0%**	**1.5%**	**1.1%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	0	1	1	1	1	1	0	5.8%	3.8%	2.5%	-0.6%	-3.5%	-3.9%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	13.8%	-0.1%	-2.2%	-2.6%
Electricity	0	0	0	0	1	1	1	6.1%	11.3%	3.6%	3.5%	3.6%	3.0%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	39.9%	9.5%	3.1%
Transport	**2**	**5**	**7**	**9**	**12**	**12**	**11**	**6.3%**	**3.8%**	**3.2%**	**2.7%**	**0.3%**	**-1.1%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	2	5	7	9	10	9	5	6.4%	3.8%	3.1%	1.5%	-1.4%	-4.8%
Gas	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	n.s.	15.3%	8.2%
Electricity	0	0	0	0	0	1	2	2.8%	-1.8%	7.8%	18.3%	11.5%	5.7%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	1	2	2	n.s.	n.s.	n.s.	23.5%	4.8%	4.0%
Other Energy Transformation & Losses[3]	**1**	**3**	**5**	**7**	**9**	**12**	**13**	**18.0%**	**7.0%**	**2.9%**	**2.5%**	**2.6%**	**0.8%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

South Africa	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	38	46	52	59	64	68	71	2.0%	1.2%	1.3%	0.9%	0.6%	0.4%
GDP per capita (ppp, k$'15)	9	9	11	12	14	19	23	-0.2%	2.3%	0.5%	1.8%	2.9%	2.0%
Prices													
International/Regional ($'15/boe)													
Coal	3	2	3	2	3	3	4	-3.4%	3.6%	-2.8%	2.7%	1.8%	0.6%
Oil	39	38	86	89	89	88	90	-0.2%	8.4%	0.3%	0.0%	-0.1%	0.2%
Gas	24	28	33	47	55	65	70	1.5%	1.6%	3.5%	1.6%	1.8%	0.7%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**386**	**446**	**582**	**673**	**519**	**343**	**225**	**1.5%**	**2.7%**	**1.5%**	**-2.6%**	**-4.1%**	**-4.1%**
Total GHG (energy, industry, agriculture)	**385**	**441**	**572**	**670**	**517**	**334**	**209**	**1.4%**	**2.6%**	**1.6%**	**-2.6%**	**-4.3%**	**-4.6%**
CO_2	304	349	471	569	443	278	164	1.4%	3.0%	1.9%	-2.5%	-4.5%	-5.2%
CH_4	62	70	78	77	52	37	29	1.2%	1.0%	-0.1%	-3.8%	-3.3%	-2.5%
N_2O	18	20	20	21	19	16	15	1.0%	0.0%	0.5%	-0.9%	-1.5%	-0.9%
F gases	2	2	4	3	2	2	1	4.6%	5.1%	-1.7%	-4.2%	-1.8%	-4.8%
Total GHG from Energy and Industry	**349**	**405**	**534**	**631**	**481**	**303**	**180**	**1.5%**	**2.8%**	**1.7%**	**-2.7%**	**-4.5%**	**-5.1%**
CO_2 Emissions from Fuel Comb.	**278**	**321**	**426**	**526**	**393**	**221**	**124**	**1.4%**	**2.9%**	**2.1%**	**-2.9%**	**-5.6%**	**-5.6%**
Power generation/District heating	144	190	244	241	162	62	17	2.8%	2.5%	-0.1%	-3.9%	-9.2%	-12.1%
Industry	53	40	53	61	55	28	10	-2.7%	2.7%	1.6%	-1.0%	-6.5%	-9.6%
Buildings	12	9	17	29	21	15	11	-2.2%	6.3%	5.6%	-3.2%	-3.2%	-3.6%
Agriculture	3	4	3	6	5	3	2	2.0%	-1.1%	5.4%	-1.9%	-4.4%	-4.5%
Transport	29	36	48	54	53	44	28	2.0%	2.9%	1.2%	-0.2%	-1.8%	-4.4%
Other	37	41	61	135	96	69	56	1.0%	4.1%	8.2%	-3.3%	-3.3%	-2.0%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**1**	**4**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**40.2%**	**19.6%**
Coal	0	0	0	0	0	1	2	n.s.	n.s.	n.s.	n.s.	n.s.	14.7%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	25.0%
Biomass	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	18.1%	16.1%
Energy Balance, by fuel (Mtoe)													
Primary Production	**109**	**151**	**164**	**223**	**203**	**137**	**174**	**3.4%**	**0.8%**	**3.1%**	**-0.9%**	**-3.8%**	**2.4%**
Coal	91	126	143	183	154	84	103	3.3%	1.3%	2.5%	-1.7%	-5.9%	2.1%
Oil	5	10	4	0	0	0	0	6.8%	-8.2%	n.s.	n.s.	8.4%	8.3%
Natural gas	2	1	1	7	9	9	9	-0.8%	-1.0%	19.1%	2.4%	-0.5%	-0.4%
Biomass	10	13	15	30	32	27	29	2.0%	1.4%	7.5%	0.5%	-1.6%	0.9%
Nuclear[1]	1	1	1	1	3	5	8	4.4%	-0.7%	2.3%	7.6%	5.6%	5.9%
Hydro	0	0	0	0	0	0	0	0.9%	6.7%	2.4%	2.3%	1.3%	-0.1%
Other renewables	0	0	0	1	5	13	24	n.s.	n.s.	31.9%	15.7%	10.2%	6.7%
Net Imports	**- 22**	**- 34**	**- 29**	**- 67**	**- 70**	**- 36**	**- 88**						
Coal	- 23	- 45	- 44	- 64	- 76	- 49	- 81						
Oil	3	- 1	15	14	17	12	2						
Natural gas	- 1	0	3	- 3	1	9	2						
Biomass	0	0	0	- 12	- 10	- 7	- 9						
Biofuels	0	0	0	0	0	0	0						
Electricity	- 1	12	- 2	- 1	- 1	- 1	- 1						
Primary Energy Demand[2]	**87**	**117**	**136**	**156**	**134**	**101**	**86**	3.1%	**1.5%**	**1.4%**	**-1.5%**	**-2.8%**	**-1.6%**
Coal	68	81	99	119	79	35	22	1.8%	2.0%	1.8%	-4.0%	-7.8%	-4.5%
Oil	9	9	20	14	17	12	2	0.2%	8.5%	-3.6%	2.3%	-3.6%	-16.3%
Natural gas	0	1	4	5	10	18	10	10.9%	10.7%	1.5%	8.8%	5.4%	-5.2%
Biomass	10	13	15	18	21	20	20	2.0%	1.4%	2.3%	1.5%	-0.5%	0.0%
Nuclear[1]	1	1	1	1	3	5	8	4.4%	-0.7%	2.3%	7.6%	5.6%	5.9%
Hydro	0	0	0	0	0	0	0	0.9%	6.7%	2.4%	2.3%	1.3%	-0.1%
Other renewables	0	0	0	1	5	13	24	n.s.	n.s.	31.9%	15.7%	10.2%	6.7%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**87**	**117**	**136**	**156**	**134**	**101**	**86**	**3.1%**	**1.5%**	**1.4%**	**-1.5%**	**-2.8%**	**-1.6%**
Energy for Power Generation	**37**	**49**	**63**	**64**	**51**	**38**	**41**	**2.9%**	**2.5%**	**0.2%**	**-2.3%**	**-2.9%**	**0.9%**
Other Energy Transformation & Losses	**10**	**27**	**22**	**33**	**27**	**18**	**13**	**10.4%**	**-2.0%**	**4.2%**	**-2.0%**	**-3.7%**	**-3.2%**
Final consumption	**52**	**57**	**69**	**77**	**75**	**66**	**60**	**0.9%**	**2.0%**	**1.1%**	**-0.2%**	**-1.2%**	**-1.1%**
Steel, Non-Met. Minerals and Chem.	10	7	9	12	12	8	6	-3.5%	2.4%	2.5%	0.6%	-3.7%	-3.1%
Other Industry	13	14	18	18	16	13	12	0.9%	2.6%	-0.1%	-1.2%	-2.0%	-0.3%
Non-Energy Use	4	6	4	3	3	2	2	2.8%	-2.6%	-4.3%	-0.5%	-1.7%	-3.4%
Residential	10	12	15	17	15	14	12	1.5%	2.2%	1.3%	-1.1%	-1.1%	-1.0%
Services	3	4	5	6	6	6	7	2.5%	1.8%	2.5%	-1.0%	0.8%	1.0%
Agriculture	1	2	2	2	2	3	3	1.7%	0.3%	3.5%	1.1%	1.2%	0.9%
Road	9	11	15	18	20	19	16	1.8%	3.0%	2.0%	0.8%	-0.6%	-1.8%
Rail	0	1	0	0	0	1	1	5.2%	-6.5%	2.0%	1.3%	1.8%	1.1%
Aviation	0	1	1	1	1	1	1	5.7%	5.0%	-1.2%	1.7%	0.7%	-0.5%
Other Transport	0	0	0	0	0	0	0	n.s.	4.5%	19.2%	0.7%	-1.1%	-2.0%

[1] Nuclear energy is accounted as primary electricity

South Africa	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**36**	**48**	**61**	**61**	**43**	**20**	**8**	**2.9%**	**2.5%**	**-0.1%**	**-3.5%**	**-7.3%**	**-8.3%**
Coal	36	48	61	60	38	10	2	2.8%	2.5%	-0.2%	-4.5%	-12.6%	-14.6%
Oil	0	0	0	0	1	1	1	n.s.	n.s.	23.8%	11.2%	0.3%	-3.9%
Gas	0	0	0	0	3	8	4	n.s.	n.s.	n.s.	n.s.	9.4%	-7.0%
Biomass & Waste	0	0	0	0	1	1	2	n.s.	-0.7%	14.2%	3.5%	4.7%	7.4%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**168**	**211**	**262**	**256**	**253**	**271**	**344**	**2.3%**	**2.2%**	**-0.2%**	**-0.1%**	**0.7%**	**2.4%**
Coal	156	193	242	221	142	38	9	2.2%	2.3%	-0.9%	-4.3%	-12.4%	-13.6%
of which CCS	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	n.s.	21.7%
Oil	0	0	0	1	3	4	3	n.s.	n.s.	12.0%	17.6%	3.8%	-2.7%
Gas	0	0	0	0	15	37	20	n.s.	n.s.	n.s.	56.1%	9.6%	-6.1%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	24.4%
Biomass & Waste	0	0	0	1	2	4	9	n.s.	-0.7%	14.2%	6.1%	6.7%	8.7%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	8	13	12	15	31	54	95	4.4%	-0.7%	2.3%	7.6%	5.6%	5.8%
Hydro	3	4	5	7	8	8	5	3.3%	2.6%	3.9%	0.5%	0.0%	-3.5%
Wind	0	0	0	5	31	74	114	n.s.	n.s.	n.s.	19.2%	9.1%	4.5%
Solar	0	0	0	5	20	48	77	n.s.	n.s.	n.s.	14.1%	9.1%	4.9%
Other	1	0	2	0	1	4	12	-19.8%	36.8%	-22.3%	18.7%	16.0%	10.7%
Generation Capacity (GW_e)	**36**	**43**	**47**	**50**	**66**	**98**	**146**	**1.6%**	**1.0%**	**0.7%**	**2.8%**	**4.0%**	**4.0%**
Coal	31	37	38	33	21	7	2	1.8%	0.2%	-1.3%	-4.3%	-10.2%	-12.8%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	24.0%
Oil	0	0	0	0	0	1	1	29.8%	0.0%	-1.4%	3.3%	5.6%	3.5%
Gas	0	0	2	3	5	7	8	n.s.	n.s.	2.7%	6.2%	4.1%	1.0%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	26.7%
Biomass & Waste	0	0	0	0	0	0	1	n.s.	0.0%	10.8%	3.5%	7.4%	11.0%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	2	2	2	2	4	7	12	0.0%	0.0%	0.3%	7.6%	5.6%	5.8%
Hydro	4	4	5	5	5	5	4	0.2%	3.3%	-0.3%	0.0%	-0.4%	-1.3%
Wind	0	0	0	3	14	31	49	n.s.	n.s.	n.s.	17.9%	8.5%	4.9%
Solar	0	0	0	5	17	40	68	n.s.	n.s.	n.s.	13.5%	8.9%	5.3%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	18.0%	12.0%
Total Final Consumption[2] (Mtoe)	**52**	**57**	**69**	**77**	**75**	**66**	**60**	**0.9%**	**2.0%**	**1.1%**	**-0.2%**	**-1.2%**	**-1.1%**
Coal	17	16	15	18	13	4	1	-0.8%	-0.1%	1.8%	-3.1%	-11.2%	-13.2%
Oil	15	16	23	27	25	21	12	0.7%	3.6%	1.5%	-0.4%	-2.1%	-5.1%
Gas	0	1	3	4	6	9	7	5.6%	11.8%	3.9%	5.4%	3.2%	-2.7%
Electricity	12	15	17	17	17	18	23	2.3%	1.5%	-0.3%	-0.1%	0.7%	2.4%
Heat	0	0	0	0	0	1	2	n.s.	n.s.	13.9%	5.6%	8.3%	5.5%
Biomass & Other	8	9	11	11	13	14	15	1.8%	1.5%	0.4%	1.4%	0.8%	1.0%
Industry (incl. non-energy use)	**27**	**27**	**31**	**32**	**31**	**23**	**20**	**-0.2%**	**1.7%**	**0.3%**	**-0.5%**	**-2.6%**	**-1.5%**
Coal	14	14	12	12	11	4	1	-0.3%	-1.5%	0.0%	-1.2%	-10.4%	-13.2%
Oil	4	2	4	5	4	4	2	-6.6%	9.4%	1.0%	-1.0%	-1.9%	-5.2%
Gas	0	1	3	3	4	4	2	5.5%	12.2%	2.6%	0.5%	1.6%	-6.5%
Electricity	7	8	10	10	10	9	11	1.6%	2.2%	-0.4%	-0.1%	-0.4%	1.4%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	1	2	2	2	2	3	4	1.3%	1.6%	0.1%	1.8%	2.0%	4.6%
Buildings	**14**	**16**	**20**	**23**	**21**	**20**	**19**	**1.7%**	**2.1%**	**1.6%**	**-1.1%**	**-0.5%**	**-0.4%**
Coal	2	1	3	6	3	0	0	-4.6%	8.3%	6.2%	-8.3%	-16.1%	-16.0%
Oil	1	1	1	1	2	2	1	5.0%	1.6%	0.7%	1.8%	0.6%	-2.5%
Gas	0	0	0	0	3	4	3	8.2%	-4.6%	35.6%	18.4%	3.2%	-2.9%
Electricity	4	6	6	6	5	5	7	3.4%	0.7%	-0.3%	-1.4%	0.2%	3.0%
Heat	0	0	0	0	0	1	2	n.s.	n.s.	13.9%	5.6%	8.3%	5.5%
Biomass & Other	6	8	9	9	8	8	6	1.9%	1.4%	0.1%	-0.8%	-0.8%	-2.2%
Agriculture	**1**	**2**	**2**	**2**	**2**	**3**	**3**	**1.7%**	**0.3%**	**3.5%**	**1.1%**	**1.2%**	**0.9%**
Coal	0	0	0	0	0	0	0	3.3%	-0.3%	23.2%	-3.7%	-7.5%	-7.5%
Oil	1	1	1	1	1	1	1	2.0%	-1.2%	3.0%	-1.3%	-3.7%	-4.1%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Electricity	0	0	1	0	1	1	1	0.8%	4.1%	-0.3%	3.3%	3.5%	2.6%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	52.4%	9.4%	3.0%
Transport	**10**	**12**	**16**	**20**	**21**	**20**	**17**	**2.1%**	**2.8%**	**1.8%**	**0.9%**	**-0.4%**	**-1.6%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	10	12	16	19	18	15	8	2.1%	3.0%	1.6%	-0.4%	-2.2%	-5.5%
Gas	0	0	0	0	0	1	2	n.s.	n.s.	n.s.	56.5%	13.7%	5.5%
Electricity	0	0	0	0	1	2	3	2.9%	-4.1%	1.3%	10.8%	8.8%	4.6%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	2	3	4	n.s.	n.s.	n.s.	19.5%	3.2%	3.8%
Other Energy Transformation & Losses[3]	**10**	**27**	**22**	**33**	**27**	**18**	**13**	**10.4%**	**-2.0%**	**4.2%**	**-2.0%**	**-3.7%**	**-3.2%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Rest Sub Saharan Africa	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	475	626	827	1 085	1 361	1 648	1 921	2.8%	2.8%	2.8%	2.3%	1.9%	1.5%
GDP per capita (ppp, k$'15)	1	1	2	2	4	6	9	-0.3%	3.6%	3.0%	4.1%	4.4%	4.5%
Prices													
International/Regional ($'15/boe)													
Coal	3	2	3	2	3	3	4	-3.4%	3.6%	-2.8%	2.7%	1.8%	0.6%
Oil	39	38	86	89	89	88	90	-0.2%	8.4%	0.3%	0.0%	-0.1%	0.2%
Gas	24	28	33	47	55	65	70	1.5%	1.6%	3.5%	1.6%	1.8%	0.7%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**2 499**	**2 050**	**1 480**	**2 117**	**2 038**	**1 798**	**1 417**	**-2.0%**	**-3.2%**	**3.6%**	**-0.4%**	**-1.2%**	**-2.4%**
Total GHG (energy, industry, agriculture)	**896**	**1 012**	**1 218**	**1 657**	**2 036**	**2 143**	**1 801**	**1.2%**	**1.9%**	**3.1%**	**2.1%**	**0.5%**	**-1.7%**
CO_2	164	225	270	519	1 032	1 299	1 136	3.2%	1.8%	6.8%	7.1%	2.3%	-1.3%
CH_4	602	624	733	896	761	608	439	0.4%	1.6%	2.0%	-1.6%	-2.2%	-3.2%
N_2O	128	161	212	238	237	230	223	2.3%	2.8%	1.2%	0.0%	-0.3%	-0.3%
F gases	2	2	3	5	6	5	4	-0.1%	4.3%	4.7%	1.9%	-0.6%	-4.3%
Total GHG from Energy and Industry	**561**	**600**	**672**	**1 073**	**1 512**	**1 676**	**1 371**	**0.7%**	**1.1%**	**4.8%**	**3.5%**	**1.0%**	**-2.0%**
CO_2 Emissions from Fuel Comb.	**96**	**131**	**198**	**415**	**770**	**929**	**745**	**3.2%**	**4.2%**	**7.7%**	**6.4%**	**1.9%**	**-2.2%**
Power generation/District heating	20	27	42	139	212	256	135	3.0%	4.3%	12.8%	4.3%	1.9%	-6.2%
Industry	19	19	27	44	196	163	73	-0.2%	3.8%	5.0%	16.1%	-1.8%	-7.7%
Buildings	12	17	23	48	89	165	216	3.5%	3.0%	7.5%	6.4%	6.4%	2.7%
Agriculture	2	4	3	4	5	4	3	6.3%	-1.5%	1.1%	1.9%	-2.1%	-2.5%
Transport	38	54	90	149	205	239	215	3.6%	5.2%	5.3%	3.2%	1.6%	-1.1%
Other	5	10	13	31	64	101	103	8.4%	2.3%	9.1%	7.6%	4.6%	0.2%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**16**	**223**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**29.9%**
Coal	0	0	0	0	0	10	135	n.s.	n.s.	n.s.	n.s.	n.s.	29.9%
Gas	0	0	0	0	0	6	33	n.s.	n.s.	n.s.	n.s.	n.s.	18.7%
Biomass	0	0	0	0	0	0	51	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	3	n.s.	n.s.	n.s.	n.s.	27.8%	23.2%
Energy Balance, by fuel (Mtoe)													
Primary Production	**324**	**445**	**643**	**715**	**1 001**	**1 140**	**1 096**	**3.2%**	**3.7%**	**1.1%**	**3.4%**	**1.3%**	**-0.4%**
Coal	4	4	3	33	19	13	19	-0.8%	-4.0%	29.0%	-5.4%	-3.6%	3.5%
Oil	139	197	285	279	191	118	65	3.5%	3.8%	-0.2%	-3.7%	-4.7%	-5.7%
Natural gas	5	16	47	62	119	197	186	12.2%	11.6%	2.9%	6.6%	5.2%	-0.5%
Biomass	172	223	300	324	609	689	584	2.6%	3.0%	0.8%	6.5%	1.2%	-1.6%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	35.5%	24.0%
Hydro	4	5	8	9	10	10	11	3.1%	4.4%	1.5%	0.6%	0.8%	0.9%
Other renewables	0	0	1	8	54	113	229	2.9%	13.0%	19.6%	21.6%	7.7%	7.3%
Net Imports	**- 116**	**- 172**	**- 259**	**- 187**	**142**	**- 51**	**- 15**						
Coal	1	0	1	- 23	26	18	25						
Oil	- 115	- 163	- 231	- 175	- 52	39	71						
Natural gas	- 1	- 8	- 33	- 29	- 34	- 39	- 24						
Biomass	0	0	0	39	202	- 66	- 87						
Biofuels	0	0	0	- 2	- 3	- 5	- 3						
Electricity	0	- 1	4	3	3	3	3						
Primary Energy Demand[2]	**208**	**273**	**384**	**528**	**1 143**	**1 089**	**1 080**	2.7%	**3.5%**	**3.2%**	**8.0%**	**-0.5%**	**-0.1%**
Coal	5	4	3	10	45	31	44	-2.0%	-1.5%	11.9%	15.9%	-3.6%	3.4%
Oil	24	34	54	103	139	157	136	3.6%	4.7%	6.7%	3.0%	1.3%	-1.4%
Natural gas	4	8	14	34	85	158	163	7.2%	6.1%	9.4%	9.6%	6.4%	0.3%
Biomass	172	223	300	363	811	622	497	2.6%	3.0%	1.9%	8.4%	-2.6%	-2.2%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	35.5%	24.0%
Hydro	4	5	8	9	10	10	11	3.1%	4.4%	1.5%	0.6%	0.8%	0.9%
Other renewables	0	0	1	8	54	113	229	2.9%	13.0%	19.6%	21.6%	7.7%	7.3%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**208**	**273**	**384**	**528**	**1 143**	**1 089**	**1 080**	**2.7%**	**3.5%**	**3.2%**	**8.0%**	**-0.5%**	**-0.1%**
Energy for Power Generation	**11**	**15**	**24**	**63**	**140**	**231**	**399**	**3.4%**	**5.0%**	**10.1%**	**8.2%**	**5.1%**	**5.6%**
Other Energy Transformation & Losses	**29**	**40**	**63**	**88**	**516**	**365**	**219**	**3.2%**	**4.7%**	**3.3%**	**19.4%**	**-3.4%**	**-5.0%**
Final consumption	**173**	**224**	**307**	**399**	**532**	**583**	**633**	**2.6%**	**3.2%**	**2.7%**	**2.9%**	**0.9%**	**0.8%**
Steel, Non-Met. Minerals and Chem.	1	1	1	3	47	40	26	0.3%	0.5%	10.6%	30.3%	-1.5%	-4.3%
Other Industry	14	17	31	41	55	59	62	2.4%	6.1%	2.7%	3.0%	0.8%	0.5%
Non-Energy Use	1	1	2	4	5	5	6	0.6%	3.8%	7.9%	2.7%	1.1%	0.8%
Residential	138	177	228	281	323	343	369	2.5%	2.6%	2.1%	1.4%	0.6%	0.7%
Services	5	7	10	14	19	29	53	3.6%	3.7%	3.6%	3.1%	4.4%	6.0%
Agriculture	1	2	2	3	3	4	5	4.7%	0.4%	1.9%	2.2%	1.9%	1.6%
Road	12	18	31	51	73	90	96	4.0%	5.4%	5.1%	3.8%	2.0%	0.7%
Rail	0	0	0	0	0	1	1	-5.7%	-1.1%	7.9%	1.7%	2.0%	2.4%
Aviation	0	0	1	2	5	10	15	4.6%	8.2%	7.1%	12.2%	7.2%	3.7%
Other Transport	0	0	0	1	1	1	1	-1.2%	2.2%	9.6%	4.8%	1.8%	1.4%

[1] Nuclear energy is accounted as primary electricity

Rest Sub Saharan Africa	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**7**	**9**	**15**	**47**	**77**	**108**	**158**	**3.7%**	**4.8%**	**11.9%**	**5.1%**	**3.5%**	**3.9%**
Coal	2	2	2	7	11	13	38	-1.2%	-0.6%	14.9%	3.7%	1.7%	11.8%
Oil	2	3	6	27	38	37	19	4.1%	5.5%	16.3%	3.6%	-0.3%	-6.2%
Gas	2	4	7	11	21	44	51	7.1%	6.1%	4.8%	7.0%	7.5%	1.6%
Biomass & Waste	0	0	1	1	2	8	41	4.1%	5.8%	9.1%	5.4%	14.6%	17.5%
Other	0	0	0	1	5	7	8	2.9%	13.0%	19.2%	20.3%	4.0%	1.4%
Gross Elec. Generation (TWh_e)	**66**	**90**	**147**	**304**	**575**	**1 153**	**2 351**	**3.1%**	**5.0%**	**7.5%**	**6.6%**	**7.2%**	**7.4%**
Coal	6	5	4	23	46	57	193	-1.1%	-1.9%	17.7%	7.2%	2.2%	12.9%
of which CCS	0	0	0	0	0	12	173	n.s.	n.s.	n.s.	n.s.	n.s.	30.1%
Oil	8	12	20	110	168	168	90	3.7%	5.5%	18.4%	4.3%	0.0%	-6.1%
Gas	7	12	29	49	101	225	281	5.3%	8.9%	5.4%	7.4%	8.4%	2.2%
of which CCS	0	0	0	0	0	6	59	n.s.	n.s.	n.s.	n.s.	n.s.	26.4%
Biomass & Waste	0	1	1	3	8	39	213	3.8%	5.5%	11.0%	9.0%	17.5%	18.4%
of which CCS	0	0	0	0	0	0	57	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	44	59	90	105	111	121	201	3.1%	4.4%	1.5%	0.6%	0.8%	5.2%
Wind	0	0	0	3	53	172	364	21.5%	11.2%	n.s.	32.8%	12.6%	7.8%
Solar	0	0	0	1	32	263	758	n.s.	19.0%	47.0%	44.5%	23.5%	11.2%
Other	0	0	1	9	57	106	250	2.9%	13.0%	20.0%	20.1%	6.4%	8.9%
Generation Capacity (GW_e)	**24**	**27**	**41**	**67**	**150**	**479**	**1 110**	**1.3%**	**4.2%**	**5.0%**	**8.4%**	**12.3%**	**8.8%**
Coal	2	2	2	3	6	8	24	-0.5%	1.1%	4.4%	7.3%	2.4%	12.1%
of which CCS	0	0	0	0	0	2	21	n.s.	n.s.	n.s.	n.s.	n.s.	30.0%
Oil	4	5	8	18	47	102	110	1.2%	5.3%	8.2%	10.2%	8.1%	0.8%
Gas	3	6	11	17	19	43	58	8.2%	6.6%	4.7%	1.5%	8.3%	3.0%
of which CCS	0	0	0	0	0	1	7	n.s.	n.s.	n.s.	n.s.	n.s.	26.5%
Biomass & Waste	0	0	0	0	1	5	27	1.0%	8.8%	1.5%	8.0%	17.8%	17.9%
of which CCS	0	0	0	0	0	0	7	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	15	15	20	25	27	29	62	-0.2%	2.9%	2.5%	0.7%	0.8%	7.8%
Wind	0	0	0	1	20	60	120	7.4%	13.2%	n.s.	31.2%	11.9%	7.1%
Solar	0	0	0	1	21	219	692	n.s.	39.0%	31.8%	38.0%	26.2%	12.2%
Other	0	0	0	1	9	13	16	4.1%	12.0%	20.5%	20.4%	4.2%	2.0%
Total Final Consumption[2] (Mtoe)	**173**	**224**	**307**	**399**	**532**	**583**	**633**	**2.6%**	**3.2%**	**2.7%**	**2.9%**	**0.9%**	**0.8%**
Coal	3	2	1	3	33	17	4	-2.6%	-4.2%	7.7%	28.5%	-6.2%	-12.9%
Oil	21	29	46	75	102	125	108	3.4%	4.9%	4.9%	3.2%	2.0%	-1.4%
Gas	1	2	4	10	34	64	79	5.3%	6.1%	11.1%	12.9%	6.5%	2.1%
Electricity	4	6	10	21	40	79	148	3.3%	5.7%	7.3%	6.4%	7.1%	6.5%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	7.4%	-1.6%	-2.8%	-0.7%
Biomass & Other	144	185	245	290	323	298	294	2.6%	2.8%	1.7%	1.1%	-0.8%	-0.1%
Industry (incl. non-energy use)	**16**	**19**	**34**	**47**	**106**	**105**	**94**	**2.1%**	**5.7%**	**3.4%**	**8.4%**	**-0.1%**	**-1.1%**
Coal	2	1	1	3	33	17	4	-3.6%	-4.1%	11.3%	29.2%	-6.2%	-12.9%
Oil	4	4	6	9	12	16	10	1.0%	3.9%	3.2%	3.5%	2.9%	-4.9%
Gas	1	1	4	7	19	25	18	2.3%	9.2%	7.1%	10.5%	2.9%	-3.7%
Electricity	2	3	4	8	13	20	28	2.0%	4.2%	6.7%	5.0%	4.2%	3.4%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	7	10	19	21	29	25	34	3.9%	7.1%	1.0%	3.0%	-1.1%	3.0%
Buildings	**142**	**184**	**238**	**295**	**343**	**373**	**422**	**2.6%**	**2.6%**	**2.2%**	**1.5%**	**0.8%**	**1.2%**
Coal	0	0	0	0	0	0	0	-2.8%	-4.3%	-2.9%	-5.4%	-15.5%	-15.8%
Oil	3	5	7	13	17	27	32	3.3%	4.1%	5.9%	3.3%	4.4%	1.8%
Gas	0	0	0	3	14	34	49	n.s.	n.s.	n.s.	16.4%	9.2%	3.6%
Electricity	2	3	6	13	24	52	106	4.7%	7.3%	7.7%	6.7%	7.9%	7.4%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	7.4%	-1.6%	-2.8%	-0.7%
Biomass & Other	137	175	225	267	287	259	234	2.5%	2.5%	1.7%	0.7%	-1.0%	-1.0%
Agriculture	**1**	**2**	**2**	**3**	**3**	**4**	**5**	**4.7%**	**0.4%**	**1.9%**	**2.2%**	**1.9%**	**1.6%**
Coal	0	0	0	0	0	0	0	6.1%	-4.6%	-24.4%	-2.5%	-7.5%	-7.5%
Oil	0	1	1	1	1	1	1	6.4%	0.1%	4.5%	2.0%	-2.0%	-2.5%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Electricity	0	0	0	0	1	1	2	3.2%	-0.6%	5.9%	5.7%	6.4%	4.5%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	1	1	1	1	1	2	2	3.2%	2.5%	1.3%	1.4%	3.0%	1.9%
Transport	**13**	**19**	**32**	**53**	**80**	**102**	**113**	**3.8%**	**5.4%**	**5.2%**	**4.1%**	**2.4%**	**1.1%**
Coal	0	0	0	0	0	0	0	-22.1%	-3.5%	6.9%	0.0%	0.0%	0.0%
Oil	13	19	32	53	71	81	65	3.9%	5.4%	5.1%	3.1%	1.2%	-2.1%
Gas	0	0	0	0	1	4	12	n.s.	n.s.	n.s.	n.s.	17.8%	11.6%
Electricity	0	0	0	0	1	6	12	n.s.	4.7%	39.7%	35.4%	15.4%	7.4%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	1	7	11	24	n.s.	n.s.	n.s.	24.4%	5.3%	7.8%
Other Energy Transformation & Losses[3]	**29**	**40**	**63**	**88**	**516**	**365**	**219**	**3.2%**	**4.7%**	**3.3%**	**19.4%**	**-3.4%**	**-5.0%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Iran	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	56	66	75	84	92	97	100	1.6%	1.2%	1.2%	0.9%	0.5%	0.4%
GDP per capita (ppp, k$'15)	7	9	13	15	20	29	37	2.1%	4.0%	1.2%	3.3%	3.5%	2.5%
Prices													
International/Regional ($'15/boe)													
Coal	3	2	3	2	3	4	5	-3.4%	3.6%	-3.7%	4.0%	3.0%	1.7%
Oil	39	38	86	89	89	88	90	-0.2%	8.4%	0.3%	0.0%	-0.1%	0.2%
Gas	28	26	46	73	88	95	96	-0.7%	5.8%	4.7%	1.8%	0.9%	0.0%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**387**	**515**	**792**	**929**	**766**	**572**	**392**	**2.9%**	**4.4%**	**1.6%**	**-1.9%**	**-2.9%**	**-3.7%**
Total GHG (energy, industry, agriculture)	**388**	**508**	**781**	**923**	**764**	**573**	**394**	**2.7%**	**4.4%**	**1.7%**	**-1.9%**	**-2.8%**	**-3.7%**
CO_2	216	358	583	743	638	475	318	5.2%	5.0%	2.5%	-1.5%	-2.9%	-3.9%
CH_4	148	122	164	144	96	70	48	-1.9%	3.0%	-1.3%	-4.0%	-3.0%	-3.7%
N_2O	21	26	31	32	29	26	25	2.5%	1.7%	0.5%	-1.1%	-1.2%	-0.2%
F gases	3	2	3	3	1	1	2	-2.5%	4.9%	0.7%	-9.7%	1.0%	1.3%
Total GHG from Energy and Industry	**352**	**466**	**738**	**879**	**722**	**533**	**353**	**2.8%**	**4.7%**	**1.8%**	**-1.9%**	**-3.0%**	**-4.0%**
CO_2 Emissions from Fuel Comb.	**184**	**319**	**512**	**654**	**543**	**386**	**259**	**5.7%**	**4.9%**	**2.5%**	**-1.8%**	**-3.4%**	**-3.9%**
Power generation/District heating	36	69	131	214	162	74	36	6.8%	6.6%	5.0%	-2.7%	-7.5%	-7.1%
Industry	38	45	86	113	94	91	78	1.8%	6.7%	2.7%	-1.8%	-0.3%	-1.5%
Buildings	43	92	122	123	107	87	59	8.0%	2.8%	0.1%	-1.4%	-2.1%	-3.8%
Agriculture	12	11	14	12	11	8	5	-0.8%	1.8%	-1.1%	-1.1%	-3.6%	-3.8%
Transport	39	75	122	130	108	72	41	6.7%	5.1%	0.6%	-1.9%	-3.9%	-5.5%
Other	16	26	37	61	61	53	39	4.9%	3.4%	5.2%	0.0%	-1.4%	-3.0%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**1**	**7**	**n.s.**	**n.s.**	**n.s.**	**42.6%**	**41.0%**	**18.9%**
Coal	0	0	0	0	0	1	3	n.s.	n.s.	n.s.	n.s.	n.s.	18.3%
Gas	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	12.3%
Biomass	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	42.6%	20.5%	19.0%
Energy Balance, by fuel (Mtoe)													
Primary Production	**184**	**243**	**325**	**354**	**310**	**289**	**245**	**2.8%**	**2.9%**	**0.9%**	**-1.3%**	**-0.7%**	**-1.6%**
Coal	0	1	1	1	1	1	1	7.9%	-0.3%	2.7%	3.2%	-0.5%	-1.0%
Oil	161	192	194	185	162	138	100	1.8%	0.1%	-0.5%	-1.4%	-1.6%	-3.2%
Natural gas	22	50	128	163	133	111	73	8.5%	9.9%	2.4%	-2.0%	-1.8%	-4.2%
Biomass	0	0	1	2	5	6	6	-3.5%	15.0%	13.5%	7.7%	2.4%	0.9%
Nuclear[1]	0	0	0	1	3	10	17	n.s.	n.s.	n.s.	17.5%	13.2%	5.6%
Hydro	1	0	1	2	4	4	4	-5.0%	10.1%	8.6%	7.2%	1.7%	0.0%
Other renewables	0	0	0	0	4	19	44	n.s.	17.9%	20.9%	41.9%	18.2%	8.7%
Net Imports	**- 114**	**- 121**	**- 126**	**- 93**	**- 91**	**- 92**	**- 56**						
Coal	0	1	1	0	1	2	2						
Oil	- 110	- 123	- 115	- 90	- 85	- 87	- 63						
Natural gas	- 5	3	- 8	3	- 2	- 13	- 8						
Biomass	0	0	0	- 1	0	12	18						
Biofuels	0	0	0	0	0	0	0						
Electricity	0	- 1	- 4	- 6	- 6	- 5	- 5						
Primary Energy Demand[2]	**70**	**122**	**199**	**260**	**219**	**198**	**190**	5.7%	**5.0%**	**2.7%**	**-1.7%**	**-1.0%**	**-0.4%**
Coal	1	1	1	1	2	3	3	8.7%	-0.1%	1.0%	4.6%	2.9%	0.6%
Oil	51	69	80	96	77	51	37	2.9%	1.5%	1.8%	-2.1%	-4.1%	-3.1%
Natural gas	17	53	120	166	131	98	64	11.6%	8.6%	3.3%	-2.4%	-2.8%	-4.2%
Biomass	0	0	1	1	5	17	25	-3.5%	15.0%	3.4%	18.5%	13.9%	3.5%
Nuclear[1]	0	0	0	1	3	10	17	n.s.	n.s.	n.s.	17.5%	13.2%	5.6%
Hydro	1	0	1	2	4	4	4	-5.0%	10.1%	8.6%	7.2%	1.7%	0.0%
Other renewables	0	0	0	0	4	19	44	n.s.	17.9%	20.9%	41.9%	18.2%	8.7%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**70**	**122**	**199**	**260**	**219**	**198**	**190**	**5.7%**	**5.0%**	**2.7%**	**-1.7%**	**-1.0%**	**-0.4%**
Energy for Power Generation	**14**	**27**	**52**	**85**	**72**	**63**	**82**	**7.2%**	**6.8%**	**5.0%**	**-1.6%**	**-1.3%**	**2.5%**
Other Energy Transformation & Losses	**6**	**8**	**8**	**14**	**16**	**20**	**16**	**3.9%**	**-1.0%**	**6.3%**	**1.1%**	**2.2%**	**-2.1%**
Final consumption	**55**	**95**	**155**	**189**	**161**	**157**	**153**	**5.6%**	**5.1%**	**2.0%**	**-1.6%**	**-0.3%**	**-0.2%**
Steel, Non-Met. Minerals and Chem.	1	3	9	11	8	8	8	17.6%	12.1%	1.4%	-2.5%	-0.1%	-0.1%
Other Industry	14	16	30	44	38	40	43	1.7%	6.4%	3.8%	-1.3%	0.4%	0.6%
Non-Energy Use	6	8	14	21	10	9	9	1.9%	6.0%	4.2%	-7.0%	-0.6%	-0.4%
Residential	13	30	47	55	48	46	42	8.9%	4.6%	1.6%	-1.4%	-0.4%	-0.7%
Services	4	9	11	13	12	15	18	7.4%	2.3%	1.0%	-0.5%	2.1%	2.1%
Agriculture	4	4	6	8	9	11	12	0.4%	4.0%	2.0%	1.7%	1.5%	1.2%
Road	13	24	38	37	34	26	19	6.3%	4.5%	-0.2%	-1.0%	-2.6%	-3.0%
Rail	0	0	0	0	0	0	0	n.s.	36.8%	4.2%	3.0%	2.8%	1.9%
Aviation	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Other Transport	0	1	0	2	2	2	2	n.s.	-30.1%	n.s.	-0.2%	-1.3%	-1.8%

[1] Nuclear energy is accounted as primary electricity

Iran	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**13**	**27**	**51**	**82**	**62**	**30**	**16**	**7.5%**	**6.7%**	**4.9%**	**-2.8%**	**-7.0%**	**-6.1%**
Coal	0	0	0	1	1	1	1	22.3%	-3.1%	21.1%	5.8%	-0.4%	0.5%
Oil	6	7	13	25	19	5	4	1.5%	6.1%	6.5%	-2.5%	-12.8%	-1.7%
Gas	7	19	38	57	41	24	10	11.2%	7.0%	4.1%	-3.2%	-5.4%	-8.6%
Biomass & Waste	0	0	0	0	0	0	1	n.s.	n.s.	25.9%	9.1%	11.9%	15.0%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**59**	**121**	**233**	**386**	**396**	**505**	**776**	**7.5%**	**6.7%**	**5.2%**	**0.3%**	**2.4%**	**4.4%**
Coal	0	0	0	3	6	6	6	22.2%	-3.1%	21.8%	8.3%	0.1%	1.1%
of which CCS	0	0	0	0	0	1	4	n.s.	n.s.	n.s.	n.s.	n.s.	18.0%
Oil	22	25	46	87	70	19	17	1.5%	6.1%	6.6%	-2.2%	-12.2%	-1.0%
Gas	31	92	177	264	199	119	51	11.5%	6.8%	4.1%	-2.8%	-5.0%	-8.1%
of which CCS	0	0	0	0	0	1	4	n.s.	n.s.	n.s.	n.s.	n.s.	11.9%
Biomass & Waste	0	0	0	0	0	1	4	n.s.	n.s.	26.0%	11.0%	13.3%	15.9%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	7	33	114	196	n.s.	n.s.	n.s.	17.5%	13.2%	5.6%
Hydro	6	4	10	24	46	55	55	-5.0%	10.1%	9.7%	6.6%	1.8%	0.0%
Wind	0	0	0	1	18	65	156	n.s.	16.0%	19.1%	34.3%	13.8%	9.2%
Solar	0	0	0	0	24	118	245	n.s.	n.s.	28.0%	52.8%	17.3%	7.5%
Other	0	0	0	0	1	8	46	n.s.	n.s.	n.s.	19.4%	20.2%	18.8%
Generation Capacity (GW_e)	**18**	**34**	**61**	**83**	**120**	**195**	**301**	**6.5%**	**6.2%**	**3.1%**	**3.7%**	**5.0%**	**4.5%**
Coal	0	0	0	0	1	1	1	22.4%	-3.2%	4.8%	7.3%	0.3%	3.2%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	20.5%
Oil	6	8	13	16	16	16	16	3.5%	4.1%	2.3%	0.3%	0.0%	-0.2%
Gas	10	23	40	49	45	29	14	8.6%	5.8%	2.0%	-0.9%	-4.3%	-6.8%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	14.4%
Biomass & Waste	0	0	0	0	0	0	1	n.s.	n.s.	5.1%	10.9%	13.8%	18.2%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	1	5	18	30	n.s.	n.s.	n.s.	17.3%	13.0%	5.4%
Hydro	2	2	8	17	32	38	38	0.2%	15.6%	6.9%	6.8%	1.6%	0.2%
Wind	0	0	0	0	7	23	53	n.s.	18.8%	15.6%	32.8%	13.0%	8.6%
Solar	0	0	0	0	14	70	148	n.s.	n.s.	28.0%	52.9%	17.5%	7.8%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	21.9%	12.7%
Total Final Consumption[2] (Mtoe)	**55**	**95**	**155**	**189**	**161**	**157**	**153**	**5.6%**	**5.1%**	**2.0%**	**-1.6%**	**-0.3%**	**-0.2%**
Coal	0	1	1	1	1	2	2	7.4%	-0.8%	4.6%	1.0%	2.4%	1.9%
Oil	41	56	64	63	51	41	29	3.3%	1.3%	-0.2%	-2.1%	-2.2%	-3.4%
Gas	9	29	73	96	75	62	46	12.0%	9.7%	2.7%	-2.5%	-1.9%	-2.8%
Electricity	4	8	16	28	29	37	54	6.7%	7.0%	5.8%	0.3%	2.5%	3.8%
Heat	0	0	0	0	0	3	5	n.s.	n.s.	n.s.	n.s.	55.1%	4.1%
Biomass & Other	0	0	1	1	5	12	17	-1.8%	16.3%	2.0%	20.7%	9.3%	3.8%
Industry (incl. non-energy use)	**21**	**27**	**53**	**75**	**56**	**58**	**60**	**2.7%**	**7.0%**	**3.5%**	**-2.7%**	**0.2%**	**0.4%**
Coal	0	1	1	1	1	2	2	7.2%	-0.7%	4.7%	1.1%	2.5%	1.9%
Oil	12	12	16	15	9	10	10	0.3%	2.6%	-0.8%	-4.4%	0.8%	0.2%
Gas	7	11	31	50	37	33	27	4.6%	11.2%	5.2%	-3.0%	-1.0%	-2.1%
Electricity	1	3	5	8	9	10	14	8.6%	6.7%	4.1%	0.5%	2.0%	2.8%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	2	7	n.s.	n.s.	n.s.	36.8%	32.6%	13.4%
Buildings	**17**	**39**	**58**	**67**	**60**	**60**	**60**	**8.6%**	**4.1%**	**1.5%**	**-1.2%**	**0.1%**	**0.0%**
Coal	0	0	0	0	0	0	0	n.s.	-7.3%	-0.8%	-9.7%	n.s.	n.s.
Oil	12	15	9	6	7	8	7	3.0%	-5.0%	-3.8%	1.5%	1.6%	-2.5%
Gas	3	19	40	44	36	26	17	21.7%	7.9%	1.1%	-2.0%	-3.3%	-4.4%
Electricity	3	5	8	16	13	16	27	5.3%	6.5%	6.6%	-1.9%	2.0%	5.1%
Heat	0	0	0	0	0	3	5	n.s.	n.s.	n.s.	n.s.	55.1%	4.1%
Biomass & Other	0	0	1	1	3	6	6	-1.8%	16.3%	0.4%	16.2%	8.5%	-1.0%
Agriculture	**4**	**4**	**6**	**8**	**9**	**11**	**12**	**0.4%**	**4.0%**	**2.0%**	**1.7%**	**1.5%**	**1.2%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	4	4	4	3	3	2	1	-0.8%	1.1%	-3.2%	-1.3%	-4.0%	-4.3%
Gas	0	0	0	1	1	1	1	n.s.	n.s.	12.6%	-0.5%	-2.5%	-2.8%
Electricity	0	1	2	4	5	7	8	9.4%	10.2%	5.9%	2.9%	2.8%	2.3%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	1	2	2	n.s.	n.s.	n.s.	n.s.	10.1%	3.1%
Transport	**13**	**25**	**38**	**40**	**36**	**28**	**21**	**6.6%**	**4.3%**	**0.4%**	**-0.9%**	**-2.5%**	**-2.9%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	13	25	35	39	32	21	11	6.6%	3.4%	1.1%	-2.0%	-4.3%	-6.2%
Gas	0	0	3	0	1	2	2	n.s.	n.s.	-24.5%	12.0%	11.7%	2.7%
Electricity	0	0	0	0	2	4	5	n.s.	36.8%	21.4%	28.2%	5.8%	3.2%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	1	2	3	n.s.	n.s.	n.s.	29.3%	4.5%	3.4%
Other Energy Transformation & Losses[3]	**6**	**8**	**8**	**14**	**16**	**20**	**16**	**3.9%**	**-1.0%**	**6.3%**	**1.1%**	**2.2%**	**-2.1%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Saudi Arabia	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	16	21	27	35	40	45	48	2.4%	2.8%	2.4%	1.5%	1.1%	0.8%
GDP per capita (ppp, k$'15)	23	23	30	32	36	42	46	0.3%	2.5%	0.8%	1.2%	1.6%	0.9%
Prices													
International/Regional ($'15/boe)													
Coal	3	2	3	2	3	4	5	-3.4%	3.6%	-3.7%	4.0%	3.0%	1.7%
Oil	39	38	86	89	89	88	90	-0.2%	8.4%	0.3%	0.0%	-0.1%	0.2%
Gas	28	26	46	73	88	95	96	-0.7%	5.8%	4.7%	1.8%	0.9%	0.0%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**251**	**341**	**578**	**699**	**584**	**506**	**360**	**3.1%**	**5.4%**	**1.9%**	**-1.8%**	**-1.4%**	**-3.4%**
Total GHG (energy, industry, agriculture)	**251**	**340**	**577**	**699**	**584**	**506**	**360**	**3.1%**	**5.4%**	**1.9%**	**-1.8%**	**-1.4%**	**-3.4%**
CO_2	177	269	487	597	514	459	332	4.3%	6.1%	2.1%	-1.5%	-1.1%	-3.2%
CH_4	66	63	80	90	62	41	23	-0.4%	2.3%	1.2%	-3.6%	-4.1%	-5.7%
N_2O	6	7	7	9	7	5	5	1.3%	0.8%	2.1%	-3.2%	-1.9%	-1.4%
F gases	2	1	3	3	1	1	1	-5.7%	8.1%	-1.1%	-7.6%	-1.2%	-6.1%
Total GHG from Energy and Industry	**246**	**335**	**571**	**692**	**578**	**501**	**354**	**3.1%**	**5.5%**	**1.9%**	**-1.8%**	**-1.4%**	**-3.4%**
CO_2 Emissions from Fuel Comb.	**156**	**240**	**427**	**497**	**405**	**354**	**262**	**4.4%**	**5.9%**	**1.5%**	**-2.0%**	**-1.3%**	**-3.0%**
Power generation/District heating	59	104	181	162	96	55	31	5.9%	5.7%	-1.1%	-5.0%	-5.5%	-5.7%
Industry	28	53	112	152	128	123	105	6.5%	7.8%	3.1%	-1.7%	-0.4%	-1.6%
Buildings	3	4	5	5	6	6	5	3.0%	2.8%	0.3%	1.3%	-0.3%	-0.7%
Agriculture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Transport	49	61	105	125	83	63	41	2.1%	5.6%	1.7%	-4.0%	-2.7%	-4.3%
Other	17	19	24	53	91	107	81	1.1%	2.4%	8.0%	5.6%	1.6%	-2.8%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**1**	**7**	**n.s.**	**n.s.**	**n.s.**	**28.4%**	**38.5%**	**25.8%**
Coal	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	n.s.	22.3%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	25.9%
Biomass	0	0	0	0	0	0	3	n.s.	n.s.	n.s.	n.s.	n.s.	38.5%
Direct Air Capture	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	28.4%	22.3%	14.7%
Energy Balance, by fuel (Mtoe)													
Primary Production	**344**	**441**	**476**	**662**	**607**	**476**	**318**	**2.5%**	**0.8%**	**3.3%**	**-0.9%**	**-2.4%**	**-4.0%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	316	399	403	584	534	401	245	2.4%	0.1%	3.8%	-0.9%	-2.8%	-4.8%
Natural gas	28	42	74	77	68	66	58	3.9%	5.9%	0.4%	-1.1%	-0.3%	-1.4%
Biomass	0	0	0	0	3	4	3	-9.3%	2.9%	54.4%	21.9%	1.7%	-2.2%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	31.7%
Hydro	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Other renewables	0	0	0	0	1	5	12	n.s.	n.s.	n.s.	26.5%	16.6%	8.3%
Net Imports	**- 282**	**- 343**	**- 291**	**- 458**	**- 439**	**- 315**	**- 174**						
Coal	0	0	0	0	1	3	4						
Oil	- 273	- 332	- 277	- 450	- 445	- 332	- 199						
Natural gas	- 9	- 11	- 14	- 7	5	7	5						
Biomass	0	0	0	0	1	7	16						
Biofuels	0	0	0	0	0	0	0						
Electricity	0	0	0	0	0	0	0						
Primary Energy Demand[2]	**62**	**98**	**186**	**204**	**168**	**161**	**144**	4.6%	**6.6%**	**1.0%**	**-1.9%**	**-0.4%**	**-1.1%**
Coal	0	0	0	0	1	3	4	n.s.	n.s.	n.s.	17.1%	15.6%	4.1%
Oil	43	67	126	134	89	69	47	4.6%	6.5%	0.7%	-4.0%	-2.5%	-3.8%
Natural gas	19	31	60	70	74	74	62	4.7%	6.9%	1.5%	0.6%	0.0%	-1.6%
Biomass	0	0	0	0	4	11	19	-9.5%	2.9%	53.0%	25.7%	10.1%	5.7%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	31.7%
Hydro	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Other renewables	0	0	0	0	1	5	12	n.s.	n.s.	n.s.	26.5%	16.6%	8.3%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**62**	**98**	**186**	**204**	**168**	**161**	**144**	**4.6%**	**6.6%**	**1.0%**	**-1.9%**	**-0.4%**	**-1.1%**
Energy for Power Generation	**22**	**37**	**65**	**58**	**36**	**25**	**25**	**5.6%**	**5.7%**	**-1.0%**	**-4.7%**	**-3.4%**	**0.0%**
Other Energy Transformation & Losses	**6**	**5**	**17**	**20**	**40**	**52**	**44**	**-0.4%**	**12.3%**	**1.4%**	**7.3%**	**2.6%**	**-1.6%**
Final consumption	**39**	**64**	**121**	**143**	**105**	**97**	**90**	**4.9%**	**6.6%**	**1.7%**	**-3.0%**	**-0.8%**	**-0.8%**
Steel, Non-Met. Minerals and Chem.	0	0	1	1	1	1	1	n.s.	n.s.	0.3%	-0.2%	-0.2%	-0.2%
Other Industry	11	20	42	57	48	48	47	6.3%	7.7%	3.0%	-1.6%	-0.1%	-0.2%
Non-Energy Use	7	14	25	27	15	14	13	7.1%	5.7%	0.8%	-5.6%	-1.2%	-0.4%
Residential	3	6	11	12	8	7	6	5.9%	6.1%	0.8%	-3.6%	-2.0%	-1.1%
Services	1	2	5	3	1	1	1	5.3%	8.2%	-5.2%	-14.7%	4.1%	3.1%
Agriculture	0	0	0	1	1	1	1	9.2%	4.8%	5.6%	1.9%	1.8%	1.5%
Road	16	20	35	41	29	25	20	2.2%	5.8%	1.7%	-3.3%	-1.7%	-2.4%
Rail	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Aviation	1	1	1	1	1	1	1	2.0%	0.5%	2.3%	0.0%	-1.9%	-1.9%
Other Transport	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.

[1] Nuclear energy is accounted as primary electricity

Saudi Arabia	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**22**	**37**	**65**	**58**	**35**	**20**	**14**	**5.6%**	**5.7%**	**-1.1%**	**-5.0%**	**-5.4%**	**-3.9%**
Coal	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	0.0%	15.7%	12.9%
Oil	9	19	35	31	17	10	5	7.7%	6.0%	-1.2%	-5.5%	-5.5%	-6.2%
Gas	12	18	30	28	18	10	7	3.7%	5.3%	-0.9%	-4.4%	-5.6%	-3.8%
Biomass & Waste	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	-0.4%	40.6%	23.4%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**69**	**126**	**240**	**230**	**154**	**141**	**156**	**6.2%**	**6.6%**	**-0.4%**	**-3.9%**	**-0.8%**	**1.0%**
Coal	0	0	0	0	0	1	4	n.s.	n.s.	n.s.	0.1%	16.2%	12.8%
of which CCS	0	0	0	0	0	0	3	n.s.	n.s.	n.s.	n.s.	n.s.	21.7%
Oil	34	68	129	114	67	40	22	7.2%	6.6%	-1.2%	-5.1%	-5.1%	-5.7%
Gas	35	58	111	114	71	43	30	5.1%	6.7%	0.3%	-4.5%	-4.9%	-3.6%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	21.8%
Biomass & Waste	0	0	0	0	0	1	4	n.s.	n.s.	n.s.	0.1%	41.7%	23.8%
of which CCS	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	n.s.	37.7%
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Wind	0	0	0	1	4	20	43	n.s.	n.s.	n.s.	13.1%	18.4%	7.6%
Solar	0	0	0	0	9	33	44	n.s.	n.s.	n.s.	48.5%	13.6%	3.0%
Other	0	0	0	1	2	3	8	n.s.	n.s.	n.s.	11.5%	7.1%	8.3%
Generation Capacity (GW_e)	**24**	**31**	**60**	**72**	**57**	**68**	**82**	**2.6%**	**6.8%**	**1.9%**	**-2.4%**	**1.9%**	**1.8%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	0.0%	16.3%	13.5%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	22.5%
Oil	13	18	33	43	33	31	32	3.2%	6.4%	2.7%	-2.6%	-0.5%	0.3%
Gas	11	13	27	29	17	11	8	1.9%	7.2%	0.7%	-5.2%	-4.6%	-3.3%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	22.5%
Biomass & Waste	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	0.0%	42.0%	24.1%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	37.9%
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Wind	0	0	0	0	1	7	14	n.s.	n.s.	n.s.	12.9%	17.7%	7.2%
Solar	0	0	0	0	5	19	26	n.s.	n.s.	n.s.	48.9%	13.8%	3.1%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	18.8%
Total Final Consumption[2] (Mtoe)	**39**	**64**	**121**	**143**	**105**	**97**	**90**	**4.9%**	**6.6%**	**1.7%**	**-3.0%**	**-0.8%**	**-0.8%**
Coal	0	0	0	0	0	2	3	n.s.	n.s.	n.s.	22.0%	15.5%	2.9%
Oil	29	43	76	94	64	50	34	4.3%	5.7%	2.1%	-3.7%	-2.4%	-3.8%
Gas	6	12	27	32	27	30	32	6.4%	9.0%	1.6%	-1.8%	1.1%	0.6%
Electricity	5	9	17	17	11	10	11	6.1%	7.4%	-0.2%	-4.0%	-0.9%	0.4%
Heat	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	n.s.	33.2%	3.6%
Biomass & Other	0	0	0	0	2	4	10	-9.6%	2.9%	19.9%	46.8%	8.8%	9.3%
Industry (incl. non-energy use)	**18**	**34**	**69**	**86**	**65**	**63**	**61**	**6.6%**	**7.2%**	**2.2%**	**-2.7%**	**-0.3%**	**-0.3%**
Coal	0	0	0	0	0	2	3	n.s.	n.s.	n.s.	22.0%	15.5%	2.9%
Oil	11	22	39	50	36	29	22	6.9%	6.0%	2.6%	-3.4%	-1.9%	-2.9%
Gas	6	12	27	32	25	27	28	6.4%	9.0%	1.5%	-2.2%	0.7%	0.2%
Electricity	1	1	2	3	3	3	4	4.2%	8.7%	3.0%	0.0%	0.5%	0.8%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	1	5	n.s.	n.s.	n.s.	n.s.	21.6%	16.9%
Buildings	**5**	**8**	**16**	**15**	**9**	**8**	**7**	**5.7%**	**6.8%**	**-0.8%**	**-5.1%**	**-1.4%**	**-0.5%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	1	1	2	2	1	1	1	3.0%	2.8%	-0.6%	-2.5%	-3.0%	-1.7%
Gas	0	0	0	0	1	1	1	n.s.	n.s.	n.s.	17.8%	3.1%	0.2%
Electricity	4	7	15	13	7	5	4	6.3%	7.3%	-1.0%	-6.8%	-3.4%	-1.4%
Heat	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	n.s.	33.2%	3.6%
Biomass & Other	0	0	0	0	0	0	0	-9.6%	2.9%	7.3%	22.5%	7.8%	4.3%
Agriculture	**0**	**0**	**0**	**1**	**1**	**1**	**1**	**9.2%**	**4.8%**	**5.6%**	**1.9%**	**1.8%**	**1.5%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Electricity	0	0	0	1	1	1	1	9.2%	4.8%	5.6%	1.9%	1.8%	1.5%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Transport	**16**	**20**	**35**	**42**	**30**	**26**	**20**	**2.2%**	**5.6%**	**1.8%**	**-3.2%**	**-1.7%**	**-2.3%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	16	20	35	42	28	20	12	2.2%	5.6%	1.7%	-4.1%	-3.1%	-5.3%
Gas	0	0	0	0	0	1	3	n.s.	n.s.	n.s.	n.s.	13.0%	6.0%
Electricity	0	0	0	0	1	2	2	n.s.	n.s.	n.s.	34.1%	5.4%	3.4%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	1	3	4	n.s.	n.s.	n.s.	50.4%	6.2%	4.0%
Other Energy Transformation & Losses[3]	**6**	**5**	**17**	**20**	**40**	**52**	**44**	**-0.4%**	**12.3%**	**1.4%**	**7.3%**	**2.6%**	**-1.6%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Turkey	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	54	63	72	82	89	94	96	1.6%	1.4%	1.3%	0.8%	0.5%	0.3%
GDP per capita (ppp, k$'15)	10	12	15	23	31	39	47	2.0%	2.5%	4.4%	2.8%	2.5%	1.9%
Prices													
International/Regional ($'15/boe)													
Coal	3	2	3	2	3	4	5	-3.4%	3.6%	-2.6%	2.9%	3.0%	2.2%
Oil	39	38	86	89	89	88	90	-0.2%	8.4%	0.3%	0.0%	-0.1%	0.2%
Gas	24	28	33	47	55	65	70	1.5%	1.6%	3.5%	1.6%	1.8%	0.7%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**178**	**280**	**395**	**518**	**499**	**378**	**222**	**4.7%**	**3.5%**	**2.8%**	**-0.4%**	**-2.7%**	**-5.2%**
Total GHG (energy, industry, agriculture)	**208**	**292**	**392**	**506**	**497**	**377**	**219**	**3.4%**	**3.0%**	**2.6%**	**-0.2%**	**-2.7%**	**-5.3%**
CO_2	142	223	307	412	422	317	171	4.6%	3.2%	3.0%	0.2%	-2.8%	-6.0%
CH_4	41	42	51	51	37	29	23	0.3%	1.9%	0.0%	-3.2%	-2.5%	-2.3%
N_2O	24	25	29	35	30	25	22	0.5%	1.4%	1.9%	-1.5%	-1.8%	-1.2%
F gases	1	1	5	8	8	7	3	7.1%	13.2%	5.1%	0.7%	-2.4%	-7.3%
Total GHG from Energy and Industry	**164**	**250**	**347**	**447**	**449**	**335**	**180**	**4.3%**	**3.3%**	**2.6%**	**0.0%**	**-2.9%**	**-6.1%**
CO_2 Emissions from Fuel Comb.	**125**	**201**	**267**	**358**	**356**	**257**	**134**	**4.8%**	**2.9%**	**3.0%**	**-0.1%**	**-3.2%**	**-6.3%**
Power generation/District heating	31	68	96	104	96	55	21	8.1%	3.6%	0.7%	-0.8%	-5.4%	-9.1%
Industry	33	58	54	64	77	62	32	5.8%	-0.7%	1.6%	1.9%	-2.3%	-6.4%
Buildings	23	27	49	54	39	23	12	1.6%	6.2%	1.1%	-3.2%	-5.1%	-6.5%
Agriculture	6	8	14	15	13	9	6	3.4%	5.4%	0.5%	-1.4%	-4.0%	-4.3%
Transport	27	34	43	88	93	75	45	2.6%	2.2%	7.5%	0.6%	-2.1%	-5.0%
Other	5	5	11	34	38	34	18	-0.8%	7.9%	11.9%	1.1%	-1.1%	-6.0%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**4**	**22**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**19.8%**
Coal	0	0	0	0	0	1	3	n.s.	n.s.	n.s.	n.s.	n.s.	19.0%
Gas	0	0	0	0	0	2	9	n.s.	n.s.	n.s.	n.s.	n.s.	14.3%
Biomass	0	0	0	0	0	1	9	n.s.	n.s.	n.s.	n.s.	n.s.	31.4%
Direct Air Capture	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	20.2%	19.8%
Energy Balance, by fuel (Mtoe)													
Primary Production	**23**	**25**	**31**	**46**	**60**	**98**	**127**	**0.8%**	**2.0%**	**4.1%**	**2.7%**	**5.1%**	**2.6%**
Coal	10	13	17	15	11	6	3	2.1%	3.4%	-1.3%	-3.6%	-6.1%	-7.6%
Oil	4	3	2	2	1	1	0	-2.9%	-1.0%	-2.7%	-5.0%	-4.9%	-3.8%
Natural gas	0	1	1	1	2	3	3	11.5%	0.7%	8.6%	5.0%	1.8%	0.9%
Biomass	7	7	5	11	12	13	19	-1.0%	-3.5%	9.1%	0.7%	1.2%	3.9%
Nuclear[1]	0	0	0	0	0	2	5	n.s.	n.s.	n.s.	54.3%	24.9%	11.5%
Hydro	2	3	4	8	13	14	14	2.9%	5.3%	5.9%	4.8%	0.9%	0.0%
Other renewables	0	0	1	9	22	61	83	12.2%	14.3%	21.1%	9.7%	10.9%	3.1%
Net Imports	**26**	**52**	**73**	**100**	**113**	**95**	**62**						
Coal	4	9	14	21	17	8	3						
Oil	20	28	29	45	50	44	28						
Natural gas	3	12	31	36	44	35	23						
Biomass	0	0	0	- 6	- 3	3	5						
Biofuels	0	0	0	0	0	0	0						
Electricity	- 1	3	- 1	4	4	4	4						
Primary Energy Demand[2]	**49**	**78**	**104**	**146**	**173**	**193**	**189**	4.6%	**3.0%**	**3.4%**	**1.7%**	**1.1%**	**-0.2%**
Coal	15	22	32	36	28	14	5	4.2%	3.8%	1.3%	-2.6%	-6.7%	-9.3%
Oil	23	30	31	47	51	44	28	2.6%	0.4%	4.1%	0.9%	-1.4%	-4.5%
Natural gas	3	13	31	37	46	38	26	16.0%	9.5%	1.8%	2.2%	-2.0%	-3.8%
Biomass	7	7	5	4	9	17	24	-1.0%	-3.5%	-0.1%	7.2%	6.2%	3.7%
Nuclear[1]	0	0	0	0	0	2	5	n.s.	n.s.	n.s.	54.3%	24.9%	11.5%
Hydro	2	3	4	8	13	14	14	2.9%	5.3%	5.9%	4.8%	0.9%	0.0%
Other renewables	0	0	1	9	22	61	83	12.2%	14.3%	21.1%	9.7%	10.9%	3.1%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**49**	**78**	**104**	**146**	**173**	**193**	**189**	**4.6%**	**3.0%**	**3.4%**	**1.7%**	**1.1%**	**-0.2%**
Energy for Power Generation	**11**	**24**	**37**	**50**	**70**	**102**	**123**	**7.9%**	**4.6%**	**2.9%**	**3.4%**	**3.9%**	**1.9%**
Other Energy Transformation & Losses	**1**	**5**	**4**	**15**	**18**	**19**	**14**	**11.9%**	**-0.2%**	**13.0%**	**1.7%**	**0.4%**	**-3.0%**
Final consumption	**41**	**59**	**80**	**109**	**126**	**126**	**118**	**3.7%**	**3.1%**	**3.2%**	**1.5%**	**0.0%**	**-0.6%**
Steel, Non-Met. Minerals and Chem.	5	6	9	17	24	24	24	2.1%	4.6%	6.1%	3.4%	0.2%	-0.1%
Other Industry	7	15	15	17	19	22	23	8.1%	0.3%	0.8%	1.6%	1.2%	0.5%
Non-Energy Use	3	4	7	8	9	8	7	2.3%	7.3%	1.3%	0.7%	-0.3%	-2.1%
Residential	15	18	23	21	21	19	17	1.8%	2.7%	-0.6%	0.0%	-1.0%	-1.3%
Services	1	2	6	13	15	15	15	13.4%	9.7%	8.4%	1.1%	0.0%	0.3%
Agriculture	2	3	5	5	6	6	7	4.1%	5.5%	0.6%	1.2%	0.8%	0.5%
Road	8	11	13	25	30	28	23	2.3%	2.3%	6.8%	1.5%	-0.4%	-1.9%
Rail	0	0	0	0	0	0	0	0.4%	-3.6%	4.1%	1.1%	0.7%	0.4%
Aviation	0	1	0	1	2	2	1	9.5%	-5.7%	13.6%	2.5%	-1.1%	-2.3%
Other Transport	0	0	1	1	1	1	1	-2.6%	11.9%	0.0%	2.1%	-1.5%	-2.2%

[1] Nuclear energy is accounted as primary electricity

Turkey	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**9**	**21**	**32**	**33**	**35**	**26**	**22**	**8.7%**	**4.3%**	**0.5%**	**0.6%**	**-3.0%**	**-1.8%**
Coal	6	11	14	17	10	4	1	6.4%	2.6%	2.1%	-5.4%	-8.2%	-12.0%
Oil	1	3	1	1	2	2	1	8.9%	-14.3%	2.5%	10.3%	-0.1%	-4.0%
Gas	2	7	17	15	22	15	13	13.3%	8.7%	-1.6%	4.2%	-3.5%	-1.7%
Biomass & Waste	0	0	0	1	1	1	3	n.s.	7.3%	18.3%	-0.5%	6.0%	9.9%
Other	0	0	0	0	1	3	3	-0.5%	24.3%	19.3%	11.9%	12.6%	0.0%
Gross Elec. Generation (TWh_e)	**58**	**125**	**211**	**304**	**450**	**595**	**742**	**8.1%**	**5.4%**	**3.7%**	**4.0%**	**2.8%**	**2.2%**
Coal	20	38	55	68	40	18	6	6.6%	3.7%	2.1%	-5.1%	-7.8%	-11.0%
of which CCS	0	0	0	0	0	1	4	n.s.	n.s.	n.s.	n.s.	n.s.	17.3%
Oil	4	9	2	3	8	8	6	9.0%	-13.5%	3.0%	10.8%	0.2%	-3.7%
Gas	10	46	98	90	133	90	79	16.3%	7.8%	-0.8%	4.0%	-3.9%	-1.2%
of which CCS	0	0	0	0	0	6	24	n.s.	n.s.	n.s.	n.s.	n.s.	14.3%
Biomass & Waste	0	0	0	2	2	5	14	n.s.	7.6%	18.5%	-0.4%	7.6%	10.8%
of which CCS	0	0	0	0	0	1	8	n.s.	n.s.	n.s.	n.s.	n.s.	29.9%
Nuclear	0	0	0	0	2	20	59	n.s.	n.s.	n.s.	54.3%	24.8%	11.5%
Hydro	23	31	52	92	146	161	162	2.9%	5.3%	5.9%	4.8%	0.9%	0.1%
Wind	0	0	3	43	87	167	219	n.s.	56.5%	30.9%	7.3%	6.7%	2.7%
Solar	0	0	0	1	17	82	150	n.s.	n.s.	n.s.	30.1%	16.8%	6.1%
Other	0	0	1	4	13	44	49	-0.5%	24.3%	20.9%	11.6%	12.6%	1.0%
Generation Capacity (GW_e)	**17**	**27**	**49**	**99**	**155**	**254**	**323**	**5.1%**	**6.1%**	**7.3%**	**4.5%**	**5.1%**	**2.4%**
Coal	6	7	12	14	10	9	1	2.9%	5.1%	1.5%	-3.1%	-1.4%	-18.6%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	20.3%
Oil	2	2	2	2	3	4	6	-2.7%	-0.4%	0.0%	5.2%	4.1%	4.6%
Gas	2	7	18	25	30	41	36	12.3%	10.0%	3.2%	2.1%	2.9%	-1.1%
of which CCS	0	0	0	0	0	1	5	n.s.	n.s.	n.s.	n.s.	n.s.	17.5%
Biomass & Waste	0	0	0	0	0	1	3	n.s.	10.2%	12.9%	-1.4%	9.8%	12.8%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	34.5%
Nuclear	0	0	0	0	0	3	9	n.s.	n.s.	n.s.	54.0%	24.6%	11.2%
Hydro	7	11	16	40	63	69	71	5.1%	3.5%	9.7%	4.6%	0.9%	0.3%
Wind	0	0	1	17	32	62	79	n.s.	53.0%	28.7%	7.0%	6.6%	2.6%
Solar	0	0	0	1	13	58	105	n.s.	n.s.	n.s.	25.2%	15.8%	6.1%
Other	0	0	0	1	3	9	13	0.0%	20.2%	23.7%	12.3%	13.7%	3.3%
Total Final Consumption[2] (Mtoe)	**41**	**59**	**80**	**109**	**126**	**126**	**118**	**3.7%**	**3.1%**	**3.2%**	**1.5%**	**0.0%**	**-0.6%**
Coal	8	12	17	16	14	7	3	3.5%	3.3%	-0.6%	-0.8%	-6.3%	-8.6%
Oil	20	26	28	41	43	36	22	2.5%	0.8%	3.8%	0.4%	-1.9%	-4.9%
Gas	1	5	13	22	23	21	14	21.0%	10.3%	5.3%	0.5%	-0.7%	-3.8%
Electricity	4	8	15	22	32	42	52	7.9%	5.9%	4.0%	4.0%	2.8%	2.2%
Heat	0	1	3	5	6	7	8	12.4%	9.2%	5.2%	1.5%	2.0%	1.5%
Biomass & Other	7	6	4	4	8	12	18	-1.1%	-3.7%	-1.5%	7.5%	4.3%	4.2%
Industry (incl. non-energy use)	**15**	**24**	**32**	**42**	**52**	**54**	**54**	**5.3%**	**2.7%**	**2.7%**	**2.2%**	**0.5%**	**-0.1%**
Coal	5	10	9	10	12	7	3	6.5%	-0.8%	0.3%	2.3%	-5.1%	-8.3%
Oil	6	8	8	9	10	10	8	2.9%	-0.2%	1.1%	0.9%	0.0%	-2.5%
Gas	1	2	7	10	12	12	7	10.1%	14.0%	4.7%	1.3%	0.6%	-5.1%
Electricity	2	4	7	11	15	21	27	5.4%	5.3%	4.7%	3.8%	3.2%	2.6%
Heat	0	0	1	2	2	2	2	50.7%	10.9%	4.4%	-0.2%	-0.3%	-0.2%
Biomass & Other	0	0	0	0	1	2	6	n.s.	n.s.	n.s.	29.8%	8.4%	12.2%
Buildings	**15**	**20**	**29**	**35**	**36**	**34**	**32**	**2.6%**	**3.7%**	**1.9%**	**0.4%**	**-0.6%**	**-0.6%**
Coal	3	2	7	6	2	0	0	-4.5%	13.9%	-2.0%	-8.8%	-16.2%	-16.4%
Oil	3	4	1	1	2	2	1	1.4%	-8.7%	-1.7%	2.5%	-0.2%	-4.0%
Gas	0	3	6	11	11	7	4	50.4%	7.5%	5.8%	-0.7%	-3.8%	-6.8%
Electricity	1	4	7	10	14	16	18	10.7%	6.5%	3.4%	3.1%	1.2%	1.1%
Heat	0	1	2	3	4	5	6	7.4%	8.0%	5.9%	2.5%	3.1%	2.1%
Biomass & Other	7	6	4	3	4	4	3	-1.1%	-3.7%	-5.1%	3.4%	0.4%	-1.4%
Agriculture	**2**	**3**	**5**	**5**	**6**	**6**	**7**	**4.1%**	**5.5%**	**0.6%**	**1.2%**	**0.8%**	**0.5%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	2	3	4	5	4	3	2	3.4%	5.3%	0.4%	-1.4%	-4.0%	-4.3%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	10.2%	-0.8%	-2.7%	-3.0%
Electricity	0	0	0	1	1	2	2	18.2%	6.2%	0.9%	5.5%	5.5%	3.4%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	1	2	3	n.s.	n.s.	n.s.	46.6%	9.0%	2.9%
Transport	**9**	**12**	**14**	**28**	**33**	**31**	**26**	**2.4%**	**2.1%**	**6.8%**	**1.6%**	**-0.5%**	**-1.9%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	9	12	14	27	28	22	11	2.4%	2.1%	6.3%	0.5%	-2.5%	-6.3%
Gas	0	0	0	0	0	2	4	n.s.	n.s.	-2.0%	34.5%	12.5%	8.1%
Electricity	0	0	0	0	2	4	6	8.3%	-6.5%	20.4%	25.0%	7.1%	3.4%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	1	2	4	5	n.s.	n.s.	n.s.	7.9%	5.4%	3.1%
Other Energy Transformation & Losses[3]	**1**	**5**	**4**	**15**	**18**	**19**	**14**	**11.9%**	**-0.2%**	**13.0%**	**1.7%**	**0.4%**	**-3.0%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Mediterranean Middle East	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	25	34	44	51	59	66	73	3.0%	2.6%	1.4%	1.5%	1.2%	0.9%
GDP per capita (ppp, k$'15)	7	9	10	13	16	21	26	2.6%	1.4%	2.2%	2.4%	2.5%	2.4%
Prices													
International/Regional ($'15/boe)													
Coal	3	2	3	2	3	4	5	-3.4%	3.6%	-3.7%	4.0%	3.0%	1.7%
Oil	39	38	86	89	89	88	90	-0.2%	8.4%	0.3%	0.0%	-0.1%	0.2%
Gas	28	26	46	73	88	95	96	-0.7%	5.8%	4.7%	1.8%	0.9%	0.0%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**122**	**176**	**213**	**210**	**202**	**161**	**110**	**3.7%**	**1.9%**	**-0.1%**	**-0.4%**	**-2.2%**	**-3.8%**
Total GHG (energy, industry, agriculture)	**123**	**176**	**212**	**209**	**202**	**161**	**110**	**3.6%**	**1.9%**	**-0.1%**	**-0.3%**	**-2.2%**	**-3.8%**
CO_2	86	133	169	165	161	124	80	4.5%	2.4%	-0.3%	-0.2%	-2.6%	-4.3%
CH_4	29	32	29	30	26	25	20	1.0%	-1.0%	0.2%	-1.4%	-0.4%	-2.1%
N_2O	7	9	10	10	9	8	8	2.0%	1.1%	0.3%	-0.9%	-1.3%	-0.5%
F gases	1	2	3	5	6	4	2	6.3%	5.8%	3.7%	1.6%	-2.6%	-7.2%
Total GHG from Energy and Industry	**115**	**166**	**201**	**197**	**190**	**150**	**98**	**3.8%**	**1.9%**	**-0.2%**	**-0.3%**	**-2.4%**	**-4.1%**
CO_2 Emissions from Fuel Comb.	**77**	**118**	**157**	**150**	**145**	**107**	**67**	**4.4%**	**2.9%**	**-0.4%**	**-0.4%**	**-3.0%**	**-4.6%**
Power generation/District heating	29	59	88	83	72	43	22	7.3%	4.1%	-0.6%	-1.4%	-5.0%	-6.4%
Industry	8	10	13	12	14	13	11	2.4%	2.3%	-0.7%	1.5%	-0.5%	-1.8%
Buildings	12	13	14	9	9	7	5	1.0%	0.4%	-3.8%	-0.8%	-1.6%	-4.2%
Agriculture	1	1	2	1	1	1	0	4.0%	2.5%	-4.4%	-1.0%	-3.7%	-3.9%
Transport	18	26	35	39	41	34	22	3.7%	2.8%	1.0%	0.6%	-1.9%	-4.3%
Other	8	8	6	6	9	9	7	-0.8%	-3.1%	1.0%	3.4%	0.6%	-2.8%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**2**	**9**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**16.5%**
Coal	0	0	0	0	0	1	4	n.s.	n.s.	n.s.	n.s.	n.s.	16.9%
Gas	0	0	0	0	0	1	4	n.s.	n.s.	n.s.	n.s.	n.s.	13.7%
Biomass	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	22.2%	16.7%
Energy Balance, by fuel (Mtoe)													
Primary Production	**23**	**33**	**31**	**18**	**31**	**48**	**68**	**3.8%**	**-0.5%**	**-5.1%**	**5.4%**	**4.3%**	**3.6%**
Coal	0	0	0	0	0	0	0	5.1%	0.1%	n.s.	n.s.	n.s.	n.s.
Oil	20	27	19	3	1	1	0	2.9%	-3.2%	-16.3%	-8.5%	-7.8%	-6.8%
Natural gas	1	5	10	12	23	32	38	12.1%	7.8%	2.5%	6.3%	3.3%	2.0%
Biomass	0	0	0	1	1	1	1	3.1%	1.2%	12.1%	8.8%	1.6%	-1.3%
Nuclear[1]	0	0	0	0	0	1	3	n.s.	n.s.	n.s.	n.s.	20.5%	8.6%
Hydro	0	0	0	0	0	0	0	1.5%	-0.6%	-0.1%	1.2%	0.9%	0.6%
Other renewables	1	1	1	2	5	12	24	2.3%	6.7%	3.6%	11.0%	9.1%	7.1%
Net Imports	**4**	**11**	**25**	**33**	**25**	**7**	**- 10**						
Coal	2	7	8	8	5	2	2						
Oil	2	4	15	29	29	21	13						
Natural gas	0	0	5	1	- 4	- 15	- 26						
Biomass	0	0	0	0	1	2	5						
Biofuels	0	0	0	0	0	0	0						
Electricity	0	0	- 2	- 5	- 5	- 4	- 4						
Primary Energy Demand[2]	**27**	**43**	**56**	**51**	**56**	**55**	**57**	4.9%	**2.6%**	**-0.9%**	**0.9%**	**-0.3%**	**0.4%**
Coal	2	7	8	8	5	2	2	11.2%	1.4%	-0.1%	-4.1%	-6.9%	-3.0%
Oil	23	31	35	33	30	22	13	3.2%	1.1%	-0.6%	-0.9%	-3.1%	-4.9%
Natural gas	1	5	15	13	18	17	13	12.4%	11.8%	-1.1%	3.5%	-0.9%	-2.9%
Biomass	0	0	0	1	2	4	6	2.9%	1.2%	13.9%	11.9%	6.7%	5.0%
Nuclear[1]	0	0	0	0	0	1	3	n.s.	n.s.	n.s.	n.s.	20.5%	8.6%
Hydro	0	0	0	0	0	0	0	1.5%	-0.6%	-0.1%	1.2%	0.9%	0.6%
Other renewables	1	1	1	2	5	12	24	2.3%	6.7%	3.6%	11.0%	9.1%	7.1%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**27**	**43**	**56**	**51**	**56**	**55**	**57**	**4.9%**	**2.6%**	**-0.9%**	**0.9%**	**-0.3%**	**0.4%**
Energy for Power Generation	**10**	**19**	**31**	**30**	**31**	**31**	**40**	**6.9%**	**5.1%**	**-0.4%**	**0.6%**	**0.0%**	**2.6%**
Other Energy Transformation & Losses	**2**	**2**	**- 1**	**- 3**	**- 1**	**1**	**0**	**0.0%**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**
Final consumption	**18**	**29**	**37**	**37**	**42**	**44**	**46**	**4.9%**	**2.4%**	**0.0%**	**1.2%**	**0.4%**	**0.4%**
Steel, Non-Met. Minerals and Chem.	0	1	2	1	2	2	2	17.8%	2.5%	-1.9%	2.6%	0.4%	1.2%
Other Industry	3	4	5	5	7	8	10	2.1%	2.7%	0.6%	2.4%	1.9%	2.2%
Non-Energy Use	1	4	3	2	2	2	2	11.9%	-1.9%	-2.8%	-2.2%	-1.5%	-1.2%
Residential	3	6	8	7	7	7	7	6.2%	3.3%	-1.1%	-0.1%	-0.2%	0.0%
Services	3	3	4	5	6	7	8	0.1%	3.4%	1.3%	1.6%	1.7%	2.2%
Agriculture	0	1	1	1	1	1	1	4.6%	2.7%	-1.9%	1.8%	1.6%	1.5%
Road	7	10	13	15	17	17	15	4.1%	3.0%	1.0%	1.6%	-0.2%	-1.2%
Rail	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Aviation	0	0	0	0	0	0	0	32.7%	-12.2%	-4.4%	1.2%	-1.0%	-1.4%
Other Transport	0	0	0	0	0	0	0	n.s.	5.8%	0.4%	1.8%	-1.1%	-1.1%

[1] Nuclear energy is accounted as primary electricity

Mediterranean Middle East	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**9**	**18**	**29**	**27**	**26**	**17**	**12**	**7.3%**	**5.2%**	**-0.7%**	**-0.7%**	**-3.9%**	**-3.2%**
Coal	2	6	7	7	4	2	1	10.6%	1.7%	-0.6%	-5.1%	-8.3%	-3.0%
Oil	6	9	9	9	7	4	2	4.5%	0.3%	0.1%	-3.3%	-6.2%	-5.7%
Gas	1	2	13	11	15	12	8	13.8%	18.1%	-1.3%	2.9%	-2.3%	-3.4%
Biomass & Waste	0	0	0	0	0	0	1	n.s.	n.s.	3.6%	12.3%	14.3%	11.5%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**38**	**85**	**135**	**136**	**163**	**210**	**316**	**8.5%**	**4.8%**	**0.1%**	**1.8%**	**2.6%**	**4.1%**
Coal	10	29	34	32	19	9	7	10.9%	1.6%	-0.7%	-4.9%	-7.9%	-2.6%
of which CCS	0	0	0	0	0	1	5	n.s.	n.s.	n.s.	n.s.	n.s.	16.7%
Oil	21	42	39	43	31	17	9	7.0%	-0.8%	1.2%	-3.4%	-5.9%	-5.6%
Gas	3	10	59	52	70	58	46	13.6%	19.3%	-1.3%	3.1%	-1.9%	-2.3%
of which CCS	0	0	0	0	0	3	11	n.s.	n.s.	n.s.	n.s.	n.s.	13.8%
Biomass & Waste	0	0	0	0	0	2	5	n.s.	n.s.	4.8%	13.7%	15.2%	12.1%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	2	16	35	n.s.	n.s.	n.s.	n.s.	20.5%	8.5%
Hydro	3	4	4	4	5	5	8	1.5%	-0.6%	1.8%	1.7%	1.0%	3.3%
Wind	0	0	0	1	13	35	68	11.6%	13.9%	56.0%	29.8%	10.7%	6.8%
Solar	0	0	0	4	21	64	116	n.s.	n.s.	49.6%	18.5%	11.5%	6.2%
Other	0	0	0	0	1	5	21	n.s.	n.s.	n.s.	26.4%	17.3%	15.1%
Generation Capacity (GW_e)	**11**	**20**	**27**	**34**	**46**	**85**	**134**	**6.4%**	**2.9%**	**2.2%**	**3.1%**	**6.3%**	**4.6%**
Coal	2	4	5	4	3	1	1	7.8%	1.2%	-1.5%	-4.2%	-7.1%	-3.1%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	17.4%
Oil	7	9	6	6	6	10	15	2.9%	-4.3%	0.2%	-0.6%	5.7%	4.0%
Gas	1	5	15	18	17	16	12	19.5%	11.5%	2.3%	-0.9%	-0.2%	-3.3%
of which CCS	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	n.s.	14.7%
Biomass & Waste	0	0	0	0	0	0	1	n.s.	n.s.	0.1%	13.8%	16.5%	12.9%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	2	5	n.s.	n.s.	n.s.	n.s.	20.2%	8.3%
Hydro	1	2	2	2	3	3	5	4.6%	-0.4%	2.4%	1.0%	1.1%	4.3%
Wind	0	0	0	0	5	13	24	0.0%	18.1%	48.8%	28.3%	10.2%	6.7%
Solar	0	0	0	3	13	39	71	n.s.	n.s.	42.5%	17.4%	11.5%	6.2%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	13.4%	10.7%
Total Final Consumption[2] (Mtoe)	**18**	**29**	**37**	**37**	**42**	**44**	**46**	**4.9%**	**2.4%**	**0.0%**	**1.2%**	**0.4%**	**0.4%**
Coal	0	0	0	1	1	1	0	30.2%	-0.1%	13.2%	2.1%	-0.9%	-2.6%
Oil	14	20	24	22	22	17	10	3.5%	1.9%	-0.8%	-0.1%	-2.6%	-5.3%
Gas	1	2	2	2	3	5	6	11.5%	-2.5%	-0.5%	5.4%	4.9%	2.1%
Electricity	3	6	9	10	12	15	21	8.4%	4.8%	0.3%	1.9%	2.6%	3.4%
Heat	0	1	1	2	3	4	4	4.8%	6.6%	6.1%	3.0%	2.1%	1.3%
Biomass & Other	0	0	0	1	2	3	4	2.9%	-0.2%	16.1%	10.6%	5.6%	4.4%
Industry (incl. non-energy use)	**5**	**9**	**10**	**9**	**11**	**12**	**14**	**6.9%**	**0.9%**	**-0.8%**	**1.4%**	**1.1%**	**1.6%**
Coal	0	0	0	1	1	1	0	30.2%	-0.1%	13.2%	2.1%	-0.9%	-2.6%
Oil	4	5	6	5	5	4	3	2.7%	1.1%	-1.9%	-0.1%	-2.0%	-3.4%
Gas	0	2	2	1	1	2	2	55.4%	-2.5%	-3.7%	0.5%	3.6%	2.6%
Electricity	1	2	3	3	4	6	8	7.3%	3.7%	1.2%	3.4%	2.8%	3.5%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	12.8%	12.2%
Buildings	**6**	**9**	**12**	**12**	**13**	**14**	**15**	**3.7%**	**3.3%**	**-0.2%**	**0.6%**	**0.6%**	**1.1%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	3	4	4	3	2	1	1	2.6%	0.4%	-5.1%	-3.5%	-4.7%	-5.1%
Gas	1	0	0	0	1	2	1	n.s.	n.s.	n.s.	10.1%	2.7%	-3.4%
Electricity	2	4	7	6	6	6	9	9.1%	5.4%	-0.3%	-0.5%	0.7%	2.9%
Heat	0	1	1	2	3	4	4	4.8%	6.6%	6.1%	3.0%	2.1%	1.3%
Biomass & Other	0	0	0	0	1	1	1	2.9%	-0.2%	9.2%	7.9%	0.7%	-2.4%
Agriculture	**0**	**1**	**1**	**1**	**1**	**1**	**1**	**4.6%**	**2.7%**	**-1.9%**	**1.8%**	**1.6%**	**1.5%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	0	0	1	0	0	0	0	4.0%	2.5%	-4.4%	-1.0%	-3.7%	-3.9%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Electricity	0	0	0	0	0	1	1	5.8%	3.0%	1.7%	2.8%	2.9%	2.5%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	52.7%	9.3%	3.0%
Transport	**7**	**10**	**14**	**15**	**17**	**17**	**15**	**4.4%**	**2.8%**	**0.9%**	**1.6%**	**-0.2%**	**-1.2%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	7	10	14	15	15	12	6	4.4%	2.8%	0.7%	0.4%	-2.6%	-6.0%
Gas	0	0	0	0	0	1	2	n.s.	n.s.	n.s.	52.5%	13.3%	6.4%
Electricity	0	0	0	0	1	3	4	n.s.	n.s.	n.s.	34.0%	8.6%	4.5%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	1	2	3	n.s.	n.s.	n.s.	11.2%	7.6%	5.3%
Other Energy Transformation & Losses[3]	**2**	**2**	**- 1**	**- 3**	**- 1**	**1**	**0**	**0.0%**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Rest Gulf	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	36	50	72	95	116	137	156	3.3%	3.6%	2.9%	2.0%	1.7%	1.3%
GDP per capita (ppp, k$'15)	6	13	13	16	18	20	22	7.2%	0.6%	1.6%	1.6%	1.0%	0.7%
Prices													
International/Regional ($'15/boe)													
Coal	3	2	3	2	3	4	5	-3.4%	3.6%	-3.7%	4.0%	3.0%	1.7%
Oil	39	38	86	89	89	88	90	-0.2%	8.4%	0.3%	0.0%	-0.1%	0.2%
Gas	28	26	46	73	88	95	96	-0.7%	5.8%	4.7%	1.8%	0.9%	0.0%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**365**	**490**	**808**	**1 083**	**872**	**766**	**570**	**3.0%**	**5.1%**	**3.0%**	**-2.1%**	**-1.3%**	**-2.9%**
Total GHG (energy, industry, agriculture)	**368**	**490**	**806**	**1 082**	**871**	**766**	**571**	**2.9%**	**5.1%**	**3.0%**	**-2.1%**	**-1.3%**	**-2.9%**
CO_2	214	327	574	796	652	596	464	4.3%	5.8%	3.3%	-2.0%	-0.9%	-2.5%
CH_4	140	150	212	263	202	155	93	0.7%	3.5%	2.2%	-2.6%	-2.6%	-5.0%
N_2O	9	12	16	18	14	12	12	2.8%	2.9%	1.4%	-2.4%	-1.3%	-0.5%
F gases	4	2	4	5	4	3	2	-6.0%	6.5%	1.1%	-3.2%	-0.8%	-6.1%
Total GHG from Energy and Industry	**355**	**476**	**787**	**1 061**	**851**	**747**	**551**	**3.0%**	**5.2%**	**3.0%**	**-2.2%**	**-1.3%**	**-3.0%**
CO_2 Emissions from Fuel Comb.	**176**	**275**	**496**	**687**	**547**	**501**	**399**	**4.5%**	**6.1%**	**3.3%**	**-2.3%**	**-0.9%**	**-2.3%**
Power generation/District heating	60	105	207	262	131	83	48	5.7%	7.0%	2.4%	-6.7%	-4.5%	-5.2%
Industry	44	61	109	164	132	119	101	3.3%	6.0%	4.2%	-2.1%	-1.0%	-1.6%
Buildings	9	15	19	20	21	20	20	4.8%	2.6%	0.4%	0.6%	-0.3%	0.1%
Agriculture	0	1	1	1	1	1	0	11.0%	-5.2%	1.5%	-1.3%	-4.1%	-4.3%
Transport	43	58	103	128	99	69	41	3.0%	5.8%	2.3%	-2.6%	-3.5%	-5.1%
Other	19	35	58	113	164	210	188	6.1%	5.2%	6.9%	3.7%	2.5%	-1.1%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**1**	**14**	**n.s.**	**n.s.**	**n.s.**	**40.6%**	**31.8%**	**36.9%**
Coal	0	0	0	0	0	0	7	n.s.	n.s.	n.s.	n.s.	n.s.	42.7%
Gas	0	0	0	0	0	0	3	n.s.	n.s.	n.s.	n.s.	n.s.	36.6%
Biomass	0	0	0	0	0	0	3	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	40.6%	21.6%	14.4%
Energy Balance, by fuel (Mtoe)													
Primary Production	**347**	**527**	**650**	**1 016**	**1 110**	**1 063**	**784**	**4.3%**	**2.1%**	**4.6%**	**0.9%**	**-0.4%**	**-3.0%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	309	447	444	711	777	707	471	3.8%	-0.1%	4.8%	0.9%	-1.0%	-4.0%
Natural gas	37	80	205	303	328	345	291	8.1%	9.8%	4.0%	0.8%	0.5%	-1.7%
Biomass	0	0	0	1	2	2	2	1.6%	4.5%	12.1%	13.3%	1.5%	-2.3%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	30.3%
Hydro	0	0	0	0	0	0	0	-13.5%	22.8%	-2.2%	2.3%	1.5%	0.2%
Other renewables	0	0	0	0	2	8	19	n.s.	n.s.	n.s.	27.2%	14.7%	8.5%
Net Imports	**- 277**	**- 420**	**- 445**	**- 720**	**- 867**	**- 818**	**- 545**						
Coal	0	0	1	1	2	3	5						
Oil	- 273	- 397	- 361	- 610	- 706	- 648	- 425						
Natural gas	- 4	- 23	- 91	- 119	- 174	- 197	- 170						
Biomass	0	0	0	0	3	16	37						
Biofuels	0	0	0	0	0	0	0						
Electricity	0	0	6	8	8	8	8						
Primary Energy Demand[2]	**70**	**108**	**206**	**296**	**243**	**245**	**239**	4.5%	**6.7%**	**3.7%**	**-2.0%**	**0.1%**	**-0.2%**
Coal	0	0	1	1	2	3	5	n.s.	n.s.	6.0%	1.8%	4.7%	5.5%
Oil	36	50	83	101	71	59	46	3.4%	5.2%	1.9%	-3.4%	-1.9%	-2.4%
Natural gas	33	57	115	185	154	149	121	5.5%	7.2%	4.9%	-1.8%	-0.4%	-2.0%
Biomass	0	0	0	1	5	18	39	1.6%	4.5%	10.7%	24.9%	13.9%	8.0%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	30.3%
Hydro	0	0	0	0	0	0	0	-13.5%	22.8%	-2.2%	2.3%	1.5%	0.2%
Other renewables	0	0	0	0	2	8	19	n.s.	n.s.	n.s.	27.2%	14.7%	8.5%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**70**	**108**	**206**	**296**	**243**	**245**	**239**	**4.5%**	**6.7%**	**3.7%**	**-2.0%**	**0.1%**	**-0.2%**
Energy for Power Generation	**23**	**40**	**79**	**103**	**53**	**41**	**43**	**5.7%**	**7.1%**	**2.6%**	**-6.4%**	**-2.6%**	**0.4%**
Other Energy Transformation & Losses	**7**	**12**	**31**	**61**	**87**	**116**	**119**	**5.2%**	**9.7%**	**7.0%**	**3.6%**	**3.0%**	**0.3%**
Final consumption	**45**	**65**	**114**	**159**	**120**	**107**	**100**	**3.8%**	**5.8%**	**3.4%**	**-2.8%**	**-1.2%**	**-0.6%**
Steel, Non-Met. Minerals and Chem.	2	4	6	12	8	7	6	6.8%	5.3%	6.7%	-3.7%	-1.7%	-1.5%
Other Industry	17	23	41	61	51	48	48	3.3%	5.9%	4.0%	-1.8%	-0.7%	0.0%
Non-Energy Use	5	6	13	15	8	7	7	3.5%	7.1%	1.9%	-6.4%	-0.9%	-0.4%
Residential	6	9	14	17	10	10	11	4.4%	4.3%	1.9%	-5.0%	-0.1%	0.9%
Services	1	3	8	11	6	6	7	11.3%	10.1%	3.4%	-5.3%	-0.3%	1.6%
Agriculture	0	0	0	0	0	0	0	8.0%	-4.4%	2.1%	1.4%	0.9%	0.7%
Road	14	19	32	43	35	27	20	3.1%	5.1%	3.0%	-1.9%	-2.5%	-2.9%
Rail	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Aviation	0	0	0	1	1	1	1	n.s.	n.s.	8.5%	6.3%	1.0%	-0.8%
Other Transport	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.

[1] Nuclear energy is accounted as primary electricity

Rest Gulf	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**23**	**40**	**79**	**103**	**51**	**32**	**23**	**5.8%**	**7.1%**	**2.6%**	**-6.8%**	**-4.4%**	**-3.2%**
Coal	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	5.5%	5.1%	27.9%
Oil	9	14	26	26	14	9	7	5.0%	6.6%	-0.2%	-6.2%	-4.6%	-2.2%
Gas	14	26	53	77	37	24	13	6.3%	7.4%	3.8%	-7.0%	-4.4%	-5.5%
Biomass & Waste	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	20.4%	50.6%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**79**	**140**	**283**	**424**	**240**	**228**	**287**	**5.9%**	**7.3%**	**4.1%**	**-5.5%**	**-0.5%**	**2.3%**
Coal	0	0	0	0	0	1	9	n.s.	n.s.	n.s.	5.6%	5.2%	28.0%
of which CCS	0	0	0	0	0	0	8	n.s.	n.s.	n.s.	n.s.	n.s.	42.8%
Oil	31	53	65	71	39	24	23	5.6%	2.1%	0.9%	-5.9%	-4.7%	-0.3%
Gas	45	86	213	346	171	111	65	6.7%	9.5%	5.0%	-6.8%	-4.3%	-5.1%
of which CCS	0	0	0	0	0	0	9	n.s.	n.s.	n.s.	n.s.	n.s.	36.4%
Biomass & Waste	0	0	0	0	0	0	7	n.s.	n.s.	n.s.	n.s.	20.6%	51.2%
of which CCS	0	0	0	0	0	0	3	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	3	1	5	4	5	6	6	-13.5%	22.8%	-2.2%	2.3%	1.5%	0.3%
Wind	0	0	0	0	2	18	52	n.s.	n.s.	n.s.	39.5%	22.1%	11.4%
Solar	0	0	0	2	22	65	111	n.s.	n.s.	n.s.	26.1%	11.4%	5.5%
Other	0	0	0	1	1	5	14	n.s.	n.s.	45.9%	4.0%	15.4%	10.8%
Generation Capacity (GW_e)	**26**	**35**	**68**	**124**	**115**	**116**	**117**	**2.9%**	**6.9%**	**6.2%**	**-0.7%**	**0.1%**	**0.1%**
Coal	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	5.6%	5.2%	28.1%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	43.0%
Oil	14	14	16	28	17	17	18	-0.1%	1.2%	6.0%	-4.9%	-0.2%	0.7%
Gas	10	18	50	92	81	53	13	5.7%	10.5%	6.3%	-1.2%	-4.2%	-13.3%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	36.7%
Biomass & Waste	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	20.7%	51.3%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	2	3	3	3	3	4	4	4.7%	-0.4%	0.8%	2.3%	1.5%	0.3%
Wind	0	0	0	0	1	6	17	n.s.	n.s.	n.s.	38.0%	21.2%	10.7%
Solar	0	0	0	1	12	37	63	n.s.	n.s.	n.s.	26.5%	11.5%	5.6%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	10.1%	43.1%
Total Final Consumption[2] (Mtoe)	**45**	**65**	**114**	**159**	**120**	**107**	**100**	**3.8%**	**5.8%**	**3.4%**	**-2.8%**	**-1.2%**	**-0.6%**
Coal	0	0	1	1	2	2	3	n.s.	n.s.	5.5%	1.3%	3.8%	1.0%
Oil	24	33	53	66	50	37	26	3.1%	4.8%	2.3%	-2.9%	-2.8%	-3.7%
Gas	15	22	41	64	50	45	40	4.1%	6.5%	4.4%	-2.3%	-1.1%	-1.3%
Electricity	6	10	19	28	16	15	18	6.2%	6.8%	3.7%	-5.2%	-0.6%	1.8%
Heat	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	n.s.	39.5%	2.2%
Biomass & Other	0	0	0	0	2	5	12	2.5%	5.7%	10.1%	18.1%	11.3%	9.3%
Industry (incl. non-energy use)	**23**	**33**	**60**	**88**	**67**	**62**	**60**	**3.7%**	**6.1%**	**3.9%**	**-2.7%**	**-0.8%**	**-0.2%**
Coal	0	0	1	1	2	2	3	n.s.	n.s.	5.5%	1.3%	3.8%	1.0%
Oil	7	9	14	18	12	12	11	2.2%	5.1%	2.0%	-3.4%	-0.1%	-0.8%
Gas	15	22	41	63	47	39	32	4.0%	6.5%	4.3%	-2.9%	-1.8%	-2.0%
Electricity	1	3	4	6	6	6	7	6.3%	3.3%	6.0%	-0.9%	0.5%	1.5%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	2	7	n.s.	n.s.	n.s.	32.4%	22.7%	15.1%
Buildings	**7**	**12**	**22**	**28**	**16**	**16**	**18**	**5.7%**	**6.0%**	**2.4%**	**-5.1%**	**-0.1%**	**1.2%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	3	4	6	5	4	3	3	4.6%	2.7%	-0.7%	-2.7%	-3.3%	-1.0%
Gas	0	0	0	1	3	5	5	12.0%	-3.8%	21.5%	12.3%	3.3%	0.9%
Electricity	4	7	16	21	9	7	8	6.2%	7.8%	3.0%	-8.6%	-2.5%	1.5%
Heat	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	n.s.	39.5%	2.2%
Biomass & Other	0	0	0	0	0	1	1	2.5%	5.7%	2.7%	9.5%	7.9%	4.5%
Agriculture	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**8.0%**	**-4.4%**	**2.1%**	**1.4%**	**0.9%**	**0.7%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	0	0	0	0	0	0	0	11.0%	-5.2%	1.5%	-1.3%	-4.1%	-4.3%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Electricity	0	0	0	0	0	0	0	-24.9%	22.5%	7.1%	5.1%	4.3%	2.8%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	9.9%	3.4%
Transport	**14**	**19**	**32**	**43**	**36**	**28**	**21**	**3.1%**	**5.2%**	**3.0%**	**-1.8%**	**-2.4%**	**-2.8%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	14	19	32	43	33	22	12	3.1%	5.2%	2.9%	-2.7%	-4.0%	-6.2%
Gas	0	0	0	0	1	2	3	n.s.	n.s.	n.s.	50.8%	12.6%	5.1%
Electricity	0	0	0	0	2	2	3	n.s.	n.s.	n.s.	27.8%	3.0%	2.9%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	1	2	4	n.s.	n.s.	n.s.	21.5%	8.2%	4.6%
Other Energy Transformation & Losses[3]	**7**	**12**	**31**	**61**	**87**	**116**	**119**	**5.2%**	**9.7%**	**7.0%**	**3.6%**	**3.0%**	**0.3%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

China	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	1 179	1 290	1 367	1 428	1 434	1 389	1 316	0.9%	0.6%	0.4%	0.0%	-0.3%	-0.5%
GDP per capita (ppp, k$'15)	1	3	8	16	25	36	48	8.9%	9.6%	6.8%	4.8%	3.7%	2.8%
Prices													
International/Regional ($'15/boe)													
Coal	4	2	4	3	4	4	5	-9.4%	8.8%	-0.9%	1.3%	1.1%	0.7%
Oil	39	38	86	89	89	88	90	-0.2%	8.4%	0.3%	0.0%	-0.1%	0.2%
Gas	28	26	46	73	88	95	96	-0.7%	5.8%	4.7%	1.8%	0.9%	0.0%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**3 745**	**5 151**	**11 117**	**14 367**	**12 384**	**7 859**	**3 951**	**3.2%**	**8.0%**	**2.6%**	**-1.5%**	**-4.4%**	**-6.6%**
Total GHG (energy, industry, agriculture)	**4 067**	**5 441**	**11 450**	**14 671**	**12 749**	**8 461**	**4 582**	**3.0%**	**7.7%**	**2.5%**	**-1.4%**	**-4.0%**	**-5.9%**
CO_2	2 550	3 811	9 099	11 966	10 571	6 809	3 515	4.1%	9.1%	2.8%	-1.2%	-4.3%	-6.4%
CH_4	1 185	1 169	1 583	1 651	1 059	776	558	-0.1%	3.1%	0.4%	-4.3%	-3.1%	-3.2%
N_2O	317	394	505	579	507	434	365	2.2%	2.5%	1.4%	-1.3%	-1.5%	-1.7%
F gases	15	68	263	475	611	441	144	16.3%	14.5%	6.1%	2.5%	-3.2%	-10.6%
Total GHG from Energy and Industry	**3 198**	**4 566**	**10 419**	**13 544**	**11 910**	**7 776**	**3 990**	**3.6%**	**8.6%**	**2.7%**	**-1.3%**	**-4.2%**	**-6.5%**
CO_2 Emissions from Fuel Comb.	**2 282**	**3 292**	**7 800**	**10 071**	**8 470**	**4 872**	**2 249**	**3.7%**	**9.0%**	**2.6%**	**-1.7%**	**-5.4%**	**-7.4%**
Power generation/District heating	595	1 254	3 175	4 564	3 672	1 656	505	7.7%	9.7%	3.7%	-2.2%	-7.7%	-11.2%
Industry	858	992	2 711	2 670	2 206	1 234	535	1.5%	10.6%	-0.2%	-1.9%	-5.6%	-8.0%
Buildings	417	319	502	574	333	219	140	-2.6%	4.6%	1.4%	-5.3%	-4.1%	-4.4%
Agriculture	89	49	89	110	81	43	24	-5.9%	6.3%	2.1%	-3.1%	-6.0%	-5.9%
Transport	112	263	591	1 086	1 191	1 006	660	8.9%	8.4%	6.3%	0.9%	-1.7%	-4.1%
Other	211	415	732	1 067	987	714	386	7.0%	5.8%	3.8%	-0.8%	-3.2%	-6.0%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**1**	**44**	**230**	**n.s.**	**n.s.**	**n.s.**	**38.7%**	**54.3%**	**18.0%**
Coal	0	0	0	0	0	27	98	n.s.	n.s.	n.s.	n.s.	n.s.	13.6%
Gas	0	0	0	0	0	1	9	n.s.	n.s.	n.s.	n.s.	n.s.	19.8%
Biomass	0	0	0	0	0	12	111	n.s.	n.s.	n.s.	n.s.	n.s.	25.1%
Direct Air Capture	0	0	0	0	1	3	13	n.s.	n.s.	n.s.	38.7%	18.8%	14.6%
Energy Balance, by fuel (Mtoe)													
Primary Production	**898**	**1 124**	**2 130**	**2 613**	**2 416**	**1 961**	**2 052**	**2.3%**	**6.6%**	**2.1%**	**-0.8%**	**-2.1%**	**0.5%**
Coal	536	719	1 632	1 909	1 359	519	201	3.0%	8.5%	1.6%	-3.3%	-9.2%	-9.0%
Oil	137	161	202	232	242	203	126	1.7%	2.3%	1.4%	0.4%	-1.7%	-4.7%
Natural gas	13	24	83	122	208	270	240	5.8%	13.5%	3.9%	5.5%	2.6%	-1.2%
Biomass	200	198	133	131	216	318	467	-0.1%	-3.9%	-0.2%	5.1%	4.0%	3.9%
Nuclear[1]	0	1	6	27	60	107	173	n.s.	16.0%	15.7%	8.1%	6.0%	4.9%
Hydro	11	19	61	130	157	173	173	5.8%	12.3%	7.8%	1.9%	1.0%	0.0%
Other renewables	0	1	12	62	175	370	671	28.2%	27.7%	17.5%	10.9%	7.8%	6.1%
Net Imports	**- 32**	**9**	**370**	**699**	**838**	**826**	**490**						
Coal	- 47	- 52	139	205	188	122	41						
Oil	14	60	224	448	547	503	309						
Natural gas	1	- 1	9	34	68	92	49						
Biomass	0	0	0	19	41	113	94						
Biofuels	0	0	0	0	1	2	2						
Electricity	0	1	- 2	- 6	- 6	- 5	- 5						
Primary Energy Demand[2]	**866**	**1 133**	**2 500**	**3 312**	**3 254**	**2 787**	**2 542**	2.7%	**8.2%**	**2.9%**	**-0.2%**	**-1.5%**	**-0.9%**
Coal	489	668	1 771	2 114	1 547	641	242	3.2%	10.2%	1.8%	-3.1%	-8.4%	-9.3%
Oil	151	222	426	680	788	706	435	3.9%	6.8%	4.8%	1.5%	-1.1%	-4.7%
Natural gas	15	23	93	156	276	362	289	4.7%	14.9%	5.3%	5.9%	2.7%	-2.2%
Biomass	200	198	133	149	257	431	561	-0.1%	-3.9%	1.1%	5.6%	5.3%	2.7%
Nuclear[1]	0	1	6	27	60	107	173	n.s.	16.0%	15.7%	8.1%	6.0%	4.9%
Hydro	11	19	61	130	157	173	173	5.8%	12.3%	7.8%	1.9%	1.0%	0.0%
Other renewables	0	1	12	62	175	370	671	28.2%	27.7%	17.5%	10.9%	7.8%	6.1%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**866**	**1 133**	**2 500**	**3 312**	**3 254**	**2 787**	**2 542**	**2.7%**	**8.2%**	**2.9%**	**-0.2%**	**-1.5%**	**-0.9%**
Energy for Power Generation	**163**	**342**	**897**	**1 399**	**1 414**	**1 201**	**1 339**	**7.7%**	**10.1%**	**4.5%**	**0.1%**	**-1.6%**	**1.1%**
Other Energy Transformation & Losses	**56**	**71**	**282**	**369**	**419**	**485**	**430**	**2.3%**	**14.7%**	**2.7%**	**1.3%**	**1.5%**	**-1.2%**
Final consumption	**703**	**840**	**1 697**	**2 231**	**2 226**	**1 980**	**1 816**	**1.8%**	**7.3%**	**2.8%**	**0.0%**	**-1.2%**	**-0.9%**
Steel, Non-Met. Minerals and Chem.	159	225	664	714	629	462	372	3.5%	11.4%	0.7%	-1.3%	-3.0%	-2.1%
Other Industry	108	119	298	411	502	505	524	0.9%	9.6%	3.3%	2.0%	0.1%	0.4%
Non-Energy Use	52	67	121	176	181	167	143	2.7%	6.0%	3.9%	0.3%	-0.8%	-1.5%
Residential	294	278	281	345	296	244	206	-0.5%	0.1%	2.1%	-1.5%	-1.9%	-1.6%
Services	26	41	98	168	160	169	203	4.8%	9.2%	5.5%	-0.5%	0.6%	1.8%
Agriculture	29	18	34	41	43	43	42	-4.5%	6.2%	2.1%	0.3%	0.0%	-0.1%
Road	22	66	161	305	322	304	250	11.6%	9.3%	6.6%	0.5%	-0.6%	-1.9%
Rail	10	9	12	13	16	18	19	-1.3%	2.9%	0.9%	1.8%	1.1%	0.6%
Aviation	1	4	11	24	37	35	29	22.1%	10.3%	7.7%	4.5%	-0.4%	-1.9%
Other Transport	3	12	17	33	41	34	27	16.7%	3.8%	6.7%	2.2%	-1.9%	-2.4%

[1] Nuclear energy is accounted as primary electricity

China	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**152**	**320**	**817**	**1 180**	**1 022**	**550**	**321**	**7.7%**	**9.8%**	**3.7%**	**-1.4%**	**-6.0%**	**-5.2%**
Coal	139	302	783	1 112	799	278	70	8.1%	10.0%	3.6%	-3.3%	-10.0%	-12.8%
Oil	13	14	4	30	81	92	45	0.6%	-10.9%	21.3%	10.4%	1.2%	-6.9%
Gas	1	4	18	18	100	127	110	19.5%	17.1%	0.1%	18.6%	2.4%	-1.5%
Biomass & Waste	0	1	12	20	42	54	96	n.s.	30.2%	5.5%	7.8%	2.4%	6.0%
Other	0	0	0	0	0	0	0	6.7%	1.4%	-3.0%	-6.0%	-0.3%	n.s.
Gross Elec. Generation (TWh_e)	**651**	**1 399**	**4 269**	**7 633**	**8 988**	**9 681**	**11 756**	**7.9%**	**11.8%**	**6.0%**	**1.6%**	**0.7%**	**2.0%**
Coal	470	1 079	3 264	5 034	3 657	1 316	331	8.7%	11.7%	4.4%	-3.1%	-9.7%	-12.9%
of which CCS	0	0	0	0	0	30	113	n.s.	n.s.	n.s.	n.s.	n.s.	14.1%
Oil	52	49	16	129	362	407	205	-0.5%	-10.6%	23.2%	10.9%	1.2%	-6.6%
Gas	3	18	92	98	532	671	626	20.6%	17.8%	0.5%	18.5%	2.3%	-0.7%
of which CCS	0	0	0	0	0	4	23	n.s.	n.s.	n.s.	n.s.	n.s.	18.8%
Biomass & Waste	0	2	34	60	157	230	459	n.s.	30.2%	5.9%	10.1%	3.9%	7.2%
of which CCS	0	0	0	0	0	13	95	n.s.	n.s.	n.s.	n.s.	n.s.	22.4%
Nuclear	0	17	74	318	694	1 244	2 007	n.s.	16.0%	15.7%	8.1%	6.0%	4.9%
Hydro	127	222	722	1 575	1 903	2 110	2 144	5.8%	12.5%	8.1%	1.9%	1.0%	0.2%
Wind	0	1	45	323	1 435	2 454	3 387	n.s.	53.5%	21.9%	16.1%	5.5%	3.3%
Solar	0	0	1	91	213	1 145	2 353	27.1%	41.4%	n.s.	8.9%	18.3%	7.5%
Other	0	11	22	5	35	105	244	52.0%	7.3%	-13.6%	21.5%	11.6%	8.8%
Generation Capacity (GW_e)	**158**	**352**	**1 041**	**1 940**	**2 803**	**3 986**	**4 905**	**8.4%**	**11.4%**	**6.4%**	**3.7%**	**3.6%**	**2.1%**
Coal	98	232	707	1 002	1 039	902	204	9.0%	11.8%	3.5%	0.4%	-1.4%	-13.8%
of which CCS	0	0	0	0	0	4	19	n.s.	n.s.	n.s.	n.s.	n.s.	17.0%
Oil	21	21	16	23	65	70	133	0.2%	-2.9%	3.8%	11.1%	0.7%	6.6%
Gas	3	11	35	47	84	105	228	14.9%	12.4%	3.1%	5.9%	2.3%	8.0%
of which CCS	0	0	0	0	0	1	4	n.s.	n.s.	n.s.	n.s.	n.s.	21.8%
Biomass & Waste	0	0	7	9	20	31	83	n.s.	30.4%	3.2%	8.0%	4.3%	10.4%
of which CCS	0	0	0	0	0	2	16	n.s.	n.s.	n.s.	n.s.	n.s.	25.4%
Nuclear	0	2	10	48	103	181	286	n.s.	16.6%	16.9%	7.9%	5.8%	4.7%
Hydro	36	85	234	442	515	562	583	9.0%	10.6%	6.6%	1.5%	0.9%	0.4%
Wind	0	0	31	189	733	1 173	1 598	7.4%	57.2%	19.7%	14.5%	4.8%	3.1%
Solar	0	0	1	180	245	961	1 787	26.7%	31.7%	n.s.	3.1%	14.7%	6.4%
Other	0	0	0	0	0	1	3	0.0%	0.4%	4.8%	17.8%	17.0%	12.5%
Total Final Consumption[2] (Mtoe)	**703**	**840**	**1 697**	**2 231**	**2 226**	**1 980**	**1 816**	**1.8%**	**7.3%**	**2.8%**	**0.0%**	**-1.2%**	**-0.9%**
Coal	322	297	767	747	563	277	128	-0.8%	10.0%	-0.3%	-2.8%	-6.8%	-7.4%
Oil	114	210	373	596	627	519	319	6.3%	5.9%	4.8%	0.5%	-1.9%	-4.8%
Gas	10	16	62	106	108	150	150	4.9%	14.4%	5.5%	0.2%	3.3%	0.0%
Electricity	43	92	301	544	636	687	824	7.8%	12.5%	6.1%	1.6%	0.8%	1.8%
Heat	13	28	73	128	156	159	155	7.7%	10.2%	5.7%	2.0%	0.2%	-0.3%
Biomass & Other	200	197	120	111	136	187	239	-0.2%	-4.8%	-0.8%	2.0%	3.2%	2.5%
Industry (incl. non-energy use)	**319**	**411**	**1 082**	**1 301**	**1 312**	**1 134**	**1 040**	**2.6%**	**10.2%**	**1.9%**	**0.1%**	**-1.4%**	**-0.9%**
Coal	204	226	670	657	527	269	125	1.0%	11.5%	-0.2%	-2.2%	-6.5%	-7.4%
Oil	67	97	138	178	191	172	117	3.8%	3.6%	2.5%	0.7%	-1.0%	-3.8%
Gas	8	10	28	57	61	82	71	2.4%	11.2%	7.4%	0.8%	3.0%	-1.4%
Electricity	30	60	204	351	451	471	534	7.1%	13.0%	5.6%	2.5%	0.4%	1.3%
Heat	11	19	43	58	71	82	87	5.9%	8.4%	3.2%	2.0%	1.4%	0.7%
Biomass & Other	0	0	0	0	11	58	106	n.s.	n.s.	n.s.	40.1%	18.1%	6.1%
Buildings	**319**	**319**	**379**	**514**	**455**	**413**	**409**	**0.0%**	**1.7%**	**3.1%**	**-1.2%**	**-1.0%**	**-0.1%**
Coal	97	61	82	75	27	4	1	-4.6%	3.1%	-1.0%	-9.8%	-17.5%	-17.3%
Oil	8	19	34	56	43	34	22	9.8%	6.0%	4.9%	-2.6%	-2.3%	-4.4%
Gas	2	7	27	43	39	41	30	10.8%	15.4%	4.5%	-1.0%	0.5%	-3.2%
Electricity	9	27	85	176	156	174	236	11.4%	12.3%	7.5%	-1.2%	1.1%	3.1%
Heat	3	9	31	69	85	78	68	13.4%	13.2%	8.5%	2.0%	-0.9%	-1.3%
Biomass & Other	200	197	119	95	106	82	53	-0.2%	-4.9%	-2.2%	1.1%	-2.5%	-4.2%
Agriculture	**29**	**18**	**34**	**41**	**43**	**43**	**42**	**-4.5%**	**6.2%**	**2.1%**	**0.3%**	**0.0%**	**-0.1%**
Coal	11	6	11	12	7	3	1	-5.8%	6.8%	0.8%	-4.9%	-8.5%	-8.5%
Oil	15	8	14	19	16	10	6	-5.9%	5.8%	3.3%	-1.9%	-4.8%	-5.1%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	6.0%	-0.6%	-2.8%	-3.1%
Electricity	4	5	8	10	13	16	18	2.2%	6.2%	1.4%	2.9%	2.3%	1.1%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	6	14	17	n.s.	n.s.	n.s.	44.1%	8.3%	2.4%
Transport	**35**	**92**	**201**	**375**	**416**	**390**	**324**	**9.9%**	**8.2%**	**6.4%**	**1.0%**	**-0.6%**	**-1.8%**
Coal	10	4	3	2	2	2	1	-8.0%	-2.8%	-2.9%	-2.0%	-2.0%	-2.0%
Oil	25	86	186	343	377	303	174	13.1%	8.0%	6.3%	0.9%	-2.1%	-5.4%
Gas	0	0	7	7	8	27	49	n.s.	n.s.	-0.5%	2.3%	12.4%	6.4%
Electricity	1	1	3	7	16	26	36	9.6%	10.3%	7.4%	8.8%	4.8%	3.2%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	2	16	12	33	63	n.s.	n.s.	25.5%	-2.6%	10.3%	6.8%
Other Energy Transformation & Losses[3]	**56**	**71**	**282**	**369**	**419**	**485**	**430**	**2.3%**	**14.7%**	**2.7%**	**1.3%**	**1.5%**	**-1.2%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

India	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	870	1 053	1 231	1 386	1 520	1 619	1 681	1.9%	1.6%	1.2%	0.9%	0.6%	0.4%
GDP per capita (ppp, k$'15)	1	2	4	6	12	18	27	3.6%	5.9%	5.8%	6.3%	4.5%	3.8%
Prices													
International/Regional ($'15/boe)													
Coal	3	1	3	4	5	5	6	-7.8%	10.3%	2.1%	1.5%	0.8%	2.0%
Oil	39	38	86	89	89	88	90	-0.2%	8.4%	0.3%	0.0%	-0.1%	0.2%
Gas	28	26	46	73	88	95	96	-0.7%	5.8%	4.7%	1.8%	0.9%	0.0%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**1 311**	**1 896**	**2 790**	**3 957**	**3 572**	**3 142**	**2 116**	**3.8%**	**3.9%**	**3.6%**	**-1.0%**	**-1.3%**	**-3.9%**
Total GHG (energy, industry, agriculture)	**1 359**	**1 866**	**2 761**	**3 994**	**3 609**	**3 217**	**2 223**	**3.2%**	**4.0%**	**3.8%**	**-1.0%**	**-1.1%**	**-3.6%**
CO_2	586	995	1 701	2 824	2 577	2 230	1 361	5.4%	5.5%	5.2%	-0.9%	-1.4%	-4.8%
CH_4	617	673	794	850	689	660	617	0.9%	1.7%	0.7%	-2.1%	-0.4%	-0.7%
N_2O	146	182	238	272	261	247	215	2.2%	2.7%	1.3%	-0.4%	-0.5%	-1.4%
F gases	10	16	28	48	82	80	30	4.6%	5.8%	5.7%	5.4%	-0.3%	-9.4%
Total GHG from Energy and Industry	**804**	**1 275**	**2 077**	**3 266**	**2 987**	**2 658**	**1 706**	**4.7%**	**5.0%**	**4.6%**	**-0.9%**	**-1.2%**	**-4.3%**
CO_2 Emissions from Fuel Comb.	**534**	**910**	**1 554**	**2 569**	**2 206**	**1 804**	**1 061**	**5.5%**	**5.5%**	**5.2%**	**-1.5%**	**-2.0%**	**-5.2%**
Power generation/District heating	213	488	791	1 426	1 030	640	246	8.6%	4.9%	6.1%	-3.2%	-4.6%	-9.1%
Industry	143	171	391	472	398	339	199	1.9%	8.6%	1.9%	-1.7%	-1.6%	-5.2%
Buildings	75	96	151	178	231	286	244	2.5%	4.6%	1.7%	2.6%	2.1%	-1.6%
Agriculture	14	26	27	37	32	21	14	6.6%	0.5%	3.2%	-1.6%	-3.9%	-4.2%
Transport	74	95	163	315	379	368	244	2.5%	5.5%	6.8%	1.9%	-0.3%	-4.0%
Other	16	33	30	140	135	149	115	7.6%	-0.7%	16.5%	-0.4%	1.0%	-2.6%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**2**	**67**	**n.s.**	**n.s.**	**n.s.**	**31.4%**	**25.2%**	**44.2%**
Coal	0	0	0	0	0	1	40	n.s.	n.s.	n.s.	n.s.	n.s.	49.3%
Gas	0	0	0	0	0	0	5	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass	0	0	0	0	0	0	17	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	1	5	n.s.	n.s.	n.s.	31.4%	18.2%	17.3%
Energy Balance, by fuel (Mtoe)													
Primary Production	**268**	**343**	**485**	**600**	**593**	**636**	**703**	**2.5%**	**3.5%**	**2.2%**	**-0.1%**	**0.7%**	**1.0%**
Coal	85	132	212	305	188	104	35	4.5%	4.9%	3.7%	-4.8%	-5.7%	-10.3%
Oil	33	33	38	30	18	11	7	-0.2%	1.5%	-2.2%	-5.1%	-4.8%	-4.4%
Natural gas	10	22	42	63	97	106	27	8.0%	6.5%	4.3%	4.4%	0.9%	-12.9%
Biomass	133	149	178	171	199	211	213	1.1%	1.8%	-0.4%	1.5%	0.6%	0.1%
Nuclear[1]	1	1	2	3	6	6	47	10.7%	4.5%	3.2%	6.4%	0.0%	23.4%
Hydro	6	6	11	14	21	28	35	0.4%	5.2%	2.7%	4.2%	2.8%	2.5%
Other renewables	0	0	2	14	65	171	339	30.6%	27.2%	21.1%	17.0%	10.1%	7.1%
Net Imports	**34**	**92**	**204**	**421**	**437**	**436**	**420**						
Coal	7	11	62	134	71	8	10						
Oil	26	79	124	214	282	302	192						
Natural gas	1	1	12	22	62	110	149						
Biomass	0	0	0	46	16	10	60						
Biofuels	0	0	0	0	1	2	3						
Electricity	1	1	6	5	5	5	5						
Primary Energy Demand[2]	**302**	**436**	**689**	**1 022**	**1 030**	**1 072**	**1 123**	3.7%	**4.7%**	**4.0%**	**0.1%**	**0.4%**	**0.5%**
Coal	91	143	275	440	258	112	45	4.6%	6.8%	4.8%	-5.2%	-8.0%	-8.7%
Oil	59	112	162	244	300	313	199	6.6%	3.7%	4.2%	2.1%	0.4%	-4.4%
Natural gas	11	23	54	85	160	216	176	7.9%	8.8%	4.7%	6.5%	3.1%	-2.0%
Biomass	133	149	178	217	215	220	274	1.1%	1.8%	2.0%	-0.1%	0.3%	2.2%
Nuclear[1]	1	1	2	3	6	6	47	10.7%	4.5%	3.2%	6.4%	0.0%	23.4%
Hydro	6	6	11	14	21	28	35	0.4%	5.2%	2.7%	4.2%	2.8%	2.5%
Other renewables	0	0	2	14	65	171	339	30.6%	27.2%	21.1%	17.0%	10.1%	7.1%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**302**	**436**	**689**	**1 022**	**1 030**	**1 072**	**1 123**	**3.7%**	**4.7%**	**4.0%**	**0.1%**	**0.4%**	**0.5%**
Energy for Power Generation	**63**	**137**	**234**	**435**	**443**	**496**	**654**	**8.1%**	**5.5%**	**6.4%**	**0.2%**	**1.1%**	**2.8%**
Other Energy Transformation & Losses	**11**	**10**	**29**	**47**	**53**	**71**	**73**	**-1.3%**	**11.5%**	**4.9%**	**1.2%**	**3.0%**	**0.3%**
Final consumption	**247**	**321**	**488**	**663**	**701**	**753**	**776**	**2.7%**	**4.3%**	**3.1%**	**0.6%**	**0.7%**	**0.3%**
Steel, Non-Met. Minerals and Chem.	24	38	79	104	81	65	48	4.8%	7.6%	2.8%	-2.5%	-2.2%	-2.8%
Other Industry	46	49	86	115	144	157	155	0.6%	5.8%	3.0%	2.3%	0.9%	-0.1%
Non-Energy Use	14	30	37	55	54	52	45	7.7%	2.3%	4.1%	-0.2%	-0.4%	-1.5%
Residential	120	141	171	209	188	187	193	1.7%	1.9%	2.0%	-1.0%	0.0%	0.3%
Services	14	16	33	44	64	105	163	1.6%	7.1%	3.2%	3.6%	5.1%	4.5%
Agriculture	9	15	19	30	36	41	45	6.0%	2.3%	4.4%	2.0%	1.2%	0.9%
Road	16	28	57	96	119	125	103	6.2%	7.3%	5.3%	2.1%	0.5%	-2.0%
Rail	4	2	4	5	8	12	16	-6.1%	5.0%	4.1%	4.3%	3.5%	3.1%
Aviation	1	1	2	3	6	7	7	3.0%	8.5%	5.9%	7.2%	1.8%	-0.4%
Other Transport	1	1	1	1	1	2	2	-0.5%	4.4%	0.5%	4.9%	1.4%	-0.1%

[1] Nuclear energy is accounted as primary electricity

India	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**56**	**129**	**219**	**405**	**351**	**291**	**233**	**8.7%**	**5.4%**	**6.3%**	**-1.4%**	**-1.8%**	**-2.2%**
Coal	47	110	177	316	174	60	25	8.8%	4.9%	6.0%	-5.8%	-10.2%	-8.4%
Oil	5	9	7	19	39	46	16	6.0%	-1.9%	9.7%	7.7%	1.7%	-10.2%
Gas	3	9	27	46	91	110	65	10.3%	11.1%	5.6%	7.1%	1.9%	-5.1%
Biomass & Waste	0	1	8	24	47	76	127	n.s.	27.3%	11.4%	6.9%	4.9%	5.4%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**293**	**573**	**988**	**1 877**	**2 451**	**3 599**	**5 845**	**6.9%**	**5.6%**	**6.6%**	**2.7%**	**3.9%**	**5.0%**
Coal	192	390	658	1 199	665	220	109	7.4%	5.4%	6.2%	-5.7%	-10.5%	-6.8%
of which CCS	0	0	0	0	0	0	49	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	13	29	24	73	169	206	70	8.2%	-1.8%	11.6%	8.7%	2.0%	-10.2%
Gas	10	56	113	200	397	489	302	18.8%	7.3%	5.8%	7.1%	2.1%	-4.7%
of which CCS	0	0	0	0	0	0	15	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	1	15	53	151	316	590	n.s.	27.6%	13.6%	11.1%	7.7%	6.4%
of which CCS	0	0	0	0	0	0	15	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	6	17	26	36	67	66	544	10.7%	4.5%	3.2%	6.4%	0.0%	23.4%
Hydro	72	74	123	174	263	342	449	0.4%	5.2%	3.5%	4.2%	2.7%	2.8%
Wind	0	2	20	79	447	1 024	1 679	48.6%	27.9%	14.9%	18.9%	8.6%	5.1%
Solar	0	0	0	62	280	846	1 686	n.s.	49.7%	n.s.	16.2%	11.7%	7.1%
Other	1	3	8	1	14	90	416	18.7%	9.5%	-18.8%	29.7%	20.6%	16.5%
Generation Capacity (GW_e)	**80**	**127**	**222**	**484**	**923**	**1 683**	**2 517**	**4.7%**	**5.8%**	**8.1%**	**6.7%**	**6.2%**	**4.1%**
Coal	52	80	133	240	202	175	58	4.4%	5.2%	6.1%	-1.7%	-1.4%	-10.4%
of which CCS	0	0	0	0	0	0	7	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	3	5	5	17	54	106	107	5.9%	-1.2%	13.5%	12.6%	6.8%	0.1%
Gas	3	10	21	52	111	159	161	11.4%	7.5%	9.5%	7.8%	3.7%	0.1%
of which CCS	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	2	3	11	21	51	94	n.s.	6.8%	12.2%	6.8%	9.5%	6.3%
of which CCS	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	1	3	4	5	10	10	78	8.2%	4.9%	2.7%	6.2%	-0.2%	23.2%
Hydro	20	25	42	58	84	109	150	2.2%	5.2%	3.2%	3.7%	2.7%	3.3%
Wind	0	1	13	45	224	483	744	44.9%	27.1%	12.9%	17.4%	8.0%	4.4%
Solar	0	0	0	56	218	591	1 123	8.8%	11.8%	n.s.	14.6%	10.5%	6.6%
Other	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	36.2%	15.9%	13.3%
Total Final Consumption[2] (Mtoe)	**247**	**321**	**488**	**663**	**701**	**753**	**776**	**2.7%**	**4.3%**	**3.1%**	**0.6%**	**0.7%**	**0.3%**
Coal	42	40	99	105	75	47	18	-0.4%	9.3%	0.6%	-3.3%	-4.6%	-9.4%
Oil	50	94	134	212	240	239	163	6.5%	3.6%	4.7%	1.3%	0.0%	-3.8%
Gas	6	10	27	37	62	97	107	5.1%	10.6%	3.3%	5.4%	4.6%	1.0%
Electricity	18	32	62	120	159	233	356	5.8%	6.8%	6.8%	2.9%	3.9%	4.3%
Heat	0	0	0	2	3	3	3	16.5%	23.5%	19.0%	4.7%	1.4%	0.7%
Biomass & Other	130	144	166	188	163	133	129	1.0%	1.4%	1.3%	-1.5%	-2.0%	-0.3%
Industry (incl. non-energy use)	**84**	**116**	**201**	**275**	**279**	**274**	**249**	**3.3%**	**5.7%**	**3.1%**	**0.2%**	**-0.2%**	**-1.0%**
Coal	30	32	83	94	71	46	17	0.5%	10.1%	1.2%	-2.8%	-4.2%	-9.3%
Oil	17	36	37	63	66	67	49	8.1%	0.2%	5.6%	0.4%	0.2%	-3.0%
Gas	6	9	25	28	29	40	45	4.8%	10.3%	1.3%	0.4%	3.3%	1.0%
Electricity	9	14	28	46	59	70	84	4.1%	7.3%	5.2%	2.6%	1.7%	1.8%
Heat	0	0	0	0	0	0	0	n.s.	23.5%	8.9%	-0.2%	-0.3%	-0.2%
Biomass & Other	23	26	29	44	55	50	53	1.3%	1.4%	4.0%	2.3%	-0.8%	0.6%
Buildings	**134**	**158**	**204**	**253**	**251**	**292**	**355**	**1.7%**	**2.6%**	**2.2%**	**-0.1%**	**1.5%**	**2.0%**
Coal	10	9	16	11	5	1	0	-1.3%	5.9%	-3.1%	-8.7%	-13.8%	-15.0%
Oil	11	19	27	36	44	51	40	5.6%	3.6%	2.9%	1.9%	1.5%	-2.4%
Gas	0	0	1	8	31	51	50	21.0%	14.3%	21.7%	15.2%	5.1%	-0.3%
Electricity	5	11	23	54	69	120	215	8.5%	7.8%	8.9%	2.6%	5.6%	6.0%
Heat	0	0	0	2	3	3	3	16.5%	23.5%	19.4%	4.8%	1.4%	0.7%
Biomass & Other	108	119	137	142	99	66	47	1.0%	1.4%	0.4%	-3.5%	-4.0%	-3.3%
Agriculture	**9**	**15**	**19**	**30**	**36**	**41**	**45**	**6.0%**	**2.3%**	**4.4%**	**2.0%**	**1.2%**	**0.9%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	4	8	8	12	10	7	4	6.6%	0.4%	3.3%	-1.6%	-3.9%	-4.2%
Gas	0	0	0	0	0	0	0	5.4%	2.7%	1.2%	-0.7%	-2.6%	-2.9%
Electricity	4	7	11	18	23	28	32	5.3%	4.1%	5.2%	2.6%	1.8%	1.5%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	3	6	8	n.s.	n.s.	n.s.	41.5%	7.4%	2.7%
Transport	**21**	**32**	**64**	**106**	**135**	**146**	**127**	**4.4%**	**7.1%**	**5.2%**	**2.5%**	**0.8%**	**-1.4%**
Coal	2	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	18	31	62	100	120	114	69	5.5%	7.1%	5.0%	1.8%	-0.5%	-4.9%
Gas	0	0	1	1	2	5	12	n.s.	36.3%	2.2%	6.0%	13.1%	8.8%
Electricity	0	1	1	2	7	16	25	7.2%	5.0%	7.8%	11.7%	7.8%	4.9%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	2	6	11	20	n.s.	-0.7%	41.8%	9.9%	6.8%	6.6%
Other Energy Transformation & Losses[3]	**11**	**10**	**29**	**47**	**53**	**71**	**73**	**-1.3%**	**11.5%**	**4.9%**	**1.2%**	**3.0%**	**0.3%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Indonesia	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	181	212	243	272	292	304	308	1.5%	1.4%	1.1%	0.7%	0.4%	0.1%
GDP per capita (ppp, k$'15)	2	3	5	7	11	16	23	2.6%	3.8%	4.2%	4.5%	3.8%	3.6%
Prices													
International/Regional ($'15/boe)													
Coal	3	1	3	4	5	6	7	-7.8%	10.3%	1.2%	2.4%	2.4%	1.2%
Oil	39	38	86	89	89	88	90	-0.2%	8.4%	0.3%	0.0%	-0.1%	0.2%
Gas	28	26	46	73	88	95	96	-0.7%	5.8%	4.7%	1.8%	0.9%	0.0%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**1 331**	**895**	**1 190**	**1 352**	**1 052**	**762**	**574**	**-3.9%**	**2.9%**	**1.3%**	**-2.5%**	**-3.2%**	**-2.8%**
Total GHG (energy, industry, agriculture)	**429**	**573**	**786**	**964**	**865**	**696**	**518**	**2.9%**	**3.2%**	**2.1%**	**-1.1%**	**-2.2%**	**-2.9%**
CO_2	163	300	431	567	579	489	341	6.3%	3.7%	2.8%	0.2%	-1.7%	-3.5%
CH_4	207	208	279	310	204	135	109	0.1%	2.9%	1.1%	-4.1%	-4.1%	-2.1%
N_2O	58	64	75	85	81	71	66	0.9%	1.6%	1.3%	-0.5%	-1.3%	-0.8%
F gases	2	1	2	2	2	1	1	-3.6%	3.0%	3.2%	-4.1%	-3.7%	2.1%
Total GHG from Energy and Industry	**283**	**430**	**612**	**771**	**711**	**587**	**421**	**4.3%**	**3.6%**	**2.3%**	**-0.8%**	**-1.9%**	**-3.3%**
CO_2 Emissions from Fuel Comb.	**137**	**267**	**395**	**515**	**514**	**423**	**296**	**6.9%**	**4.0%**	**2.7%**	**0.0%**	**-1.9%**	**-3.5%**
Power generation/District heating	22	62	122	186	162	89	42	10.7%	7.1%	4.3%	-1.4%	-5.8%	-7.4%
Industry	31	58	92	105	103	81	53	6.6%	4.7%	1.3%	-0.2%	-2.4%	-4.1%
Buildings	21	39	24	30	33	40	38	6.1%	-4.6%	2.1%	1.0%	1.9%	-0.6%
Agriculture	3	9	9	5	5	4	2	10.5%	1.0%	-5.8%	0.1%	-3.8%	-4.0%
Transport	32	66	107	140	154	153	113	7.4%	5.0%	2.7%	1.0%	-0.1%	-3.0%
Other	27	34	40	50	57	56	48	2.1%	1.8%	2.1%	1.3%	-0.2%	-1.6%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**33.9%**	**28.1%**
Coal	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	n.s.	28.0%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	26.9%
Biomass	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	25.3%	16.5%
Energy Balance, by fuel (Mtoe)													
Primary Production	**160**	**229**	**367**	**463**	**285**	**223**	**287**	**3.6%**	**4.8%**	**2.4%**	**-4.7%**	**-2.4%**	**2.6%**
Coal	6	45	186	286	84	16	1	22.5%	15.2%	4.4%	-11.5%	-15.5%	-26.1%
Oil	72	70	47	39	31	21	13	-0.3%	-4.0%	-1.8%	-2.1%	-3.8%	-4.6%
Natural gas	37	58	72	77	77	75	79	4.6%	2.1%	0.6%	0.0%	-0.3%	0.6%
Biomass	44	50	53	52	71	69	80	1.4%	0.5%	-0.2%	3.3%	-0.3%	1.4%
Nuclear[1]	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	17.4%
Hydro	0	1	2	2	3	6	11	5.8%	5.7%	1.5%	6.9%	6.6%	5.4%
Other renewables	1	4	8	8	18	35	102	15.8%	6.8%	-0.1%	8.6%	6.8%	11.2%
Net Imports	**- 62**	**- 77**	**- 162**	**- 232**	**- 41**	**18**	**- 2**						
Coal	- 1	- 33	- 154	- 247	- 51	2	5						
Oil	- 38	- 12	26	31	43	45	33						
Natural gas	- 22	- 32	- 33	- 26	- 23	- 23	- 35						
Biomass	0	0	0	7	- 13	- 9	- 9						
Biofuels	0	0	0	- 1	0	0	1						
Electricity	0	0	0	3	3	3	3						
Primary Energy Demand[2]	**98**	**152**	**204**	**231**	**244**	**241**	**285**	4.5%	**3.0%**	**1.2%**	**0.6%**	**-0.1%**	**1.7%**
Coal	5	12	32	39	33	17	6	10.2%	10.2%	2.0%	-1.5%	-6.3%	-10.0%
Oil	34	58	72	70	74	66	47	5.6%	2.2%	-0.3%	0.5%	-1.1%	-3.4%
Natural gas	15	27	39	51	54	52	44	6.0%	3.9%	2.8%	0.6%	-0.4%	-1.7%
Biomass	44	50	53	59	58	60	71	1.4%	0.5%	1.2%	-0.1%	0.3%	1.6%
Nuclear[1]	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	17.4%
Hydro	0	1	2	2	3	6	11	5.8%	5.7%	1.5%	6.9%	6.6%	5.4%
Other renewables	1	4	8	8	18	35	102	15.8%	6.8%	-0.1%	8.6%	6.8%	11.2%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**98**	**152**	**204**	**231**	**244**	**241**	**285**	**4.5%**	**3.0%**	**1.2%**	**0.6%**	**-0.1%**	**1.7%**
Energy for Power Generation	**8**	**24**	**46**	**67**	**74**	**74**	**139**	**11.7%**	**6.7%**	**3.7%**	**1.0%**	**0.1%**	**6.5%**
Other Energy Transformation & Losses	**12**	**14**	**22**	**14**	**15**	**17**	**17**	**1.2%**	**4.6%**	**-4.5%**	**1.0%**	**1.2%**	**0.0%**
Final consumption	**80**	**120**	**149**	**174**	**180**	**179**	**178**	**4.2%**	**2.2%**	**1.5%**	**0.4%**	**-0.1%**	**-0.1%**
Steel, Non-Met. Minerals and Chem.	3	5	10	10	9	6	5	6.1%	6.4%	0.8%	-0.9%	-4.0%	-2.9%
Other Industry	15	25	32	39	39	35	32	5.0%	2.3%	2.0%	0.2%	-1.1%	-0.9%
Non-Energy Use	7	10	10	7	6	5	5	2.9%	0.4%	-3.6%	-1.3%	-1.2%	-0.4%
Residential	42	53	56	62	63	64	65	2.4%	0.5%	1.1%	0.1%	0.1%	0.3%
Services	1	4	5	6	8	12	20	13.9%	2.5%	1.9%	3.1%	4.1%	4.9%
Agriculture	1	3	3	2	2	3	3	11.1%	1.1%	-4.9%	1.9%	1.2%	1.0%
Road	10	19	30	41	41	42	37	6.8%	4.8%	3.3%	0.0%	0.1%	-1.2%
Rail	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Aviation	0	1	2	4	7	9	8	7.4%	14.1%	5.6%	6.5%	1.7%	-0.6%
Other Transport	1	2	2	3	4	3	3	7.9%	2.0%	3.2%	2.8%	-1.0%	-1.5%

[1] Nuclear energy is accounted as primary electricity

Indonesia	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**7**	**19**	**37**	**57**	**52**	**32**	**25**	**11.3%**	**6.7%**	**4.5%**	**-0.9%**	**-4.6%**	**-2.6%**
Coal	2	8	19	28	21	10	3	13.7%	8.4%	3.9%	-2.5%	-7.6%	-12.4%
Oil	4	5	8	11	12	7	5	1.5%	6.3%	3.1%	0.4%	-5.1%	-2.8%
Gas	0	6	9	17	17	12	7	39.3%	4.1%	7.0%	-0.1%	-3.2%	-5.0%
Biomass & Waste	0	0	0	0	0	1	3	n.s.	31.8%	22.1%	1.8%	11.0%	9.7%
Other	0	0	1	1	2	2	7	15.8%	6.8%	-0.2%	7.2%	4.6%	11.4%
Gross Elec. Generation (TWh_e)	**33**	**93**	**170**	**259**	**297**	**353**	**591**	**11.1%**	**6.2%**	**4.3%**	**1.4%**	**1.7%**	**5.3%**
Coal	10	34	68	107	84	39	11	13.3%	7.2%	4.5%	-2.4%	-7.4%	-11.8%
of which CCS	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	n.s.	26.0%
Oil	15	18	34	47	50	31	24	1.8%	6.4%	3.3%	0.6%	-4.6%	-2.7%
Gas	1	26	40	71	71	52	32	42.9%	4.4%	5.9%	0.0%	-3.2%	-4.8%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	24.9%
Biomass & Waste	0	0	0	1	2	5	13	n.s.	31.8%	28.5%	2.7%	12.4%	10.7%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	3	14	n.s.	n.s.	n.s.	n.s.	n.s.	17.2%
Hydro	6	10	17	23	42	79	146	5.8%	5.7%	2.6%	6.4%	6.5%	6.3%
Wind	0	0	0	0	9	29	70	n.s.	n.s.	52.8%	41.8%	12.3%	9.2%
Solar	0	0	0	1	20	79	165	n.s.	n.s.	n.s.	42.9%	15.0%	7.7%
Other	1	5	9	9	20	36	115	15.8%	6.8%	0.0%	7.8%	6.2%	12.2%
Generation Capacity (GW_e)	**13**	**25**	**34**	**60**	**82**	**137**	**242**	**6.9%**	**3.1%**	**5.8%**	**3.1%**	**5.3%**	**5.8%**
Coal	2	8	13	28	25	17	2	16.1%	5.4%	7.8%	-0.8%	-4.0%	-18.6%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	26.6%
Oil	7	5	6	7	9	9	9	-4.6%	2.2%	2.6%	1.5%	0.3%	0.2%
Gas	1	8	10	14	13	10	7	32.6%	2.1%	3.4%	-1.3%	-2.7%	-3.4%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	25.6%
Biomass & Waste	0	0	0	0	0	1	2	n.s.	30.5%	2.0%	2.5%	13.2%	11.3%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	n.s.	17.0%
Hydro	3	4	4	9	17	34	67	2.9%	-1.2%	8.8%	6.8%	7.4%	7.0%
Wind	0	0	0	0	3	10	23	n.s.	n.s.	n.s.	40.6%	11.7%	8.6%
Solar	0	0	0	0	12	52	114	n.s.	n.s.	n.s.	43.2%	15.7%	8.3%
Other	0	0	1	2	3	5	15	9.9%	12.7%	2.6%	7.2%	4.9%	11.7%
Total Final Consumption[2] (Mtoe)	**80**	**120**	**149**	**174**	**180**	**179**	**178**	**4.2%**	**2.2%**	**1.5%**	**0.4%**	**-0.1%**	**-0.1%**
Coal	2	5	8	12	12	8	4	7.7%	5.7%	3.6%	0.4%	-4.5%	-7.5%
Oil	27	48	61	65	68	65	47	5.8%	2.5%	0.5%	0.5%	-0.4%	-3.2%
Gas	6	12	16	21	22	25	26	6.7%	3.2%	2.8%	0.6%	1.3%	0.3%
Electricity	2	7	13	19	22	26	40	10.8%	6.5%	4.3%	1.3%	1.7%	4.3%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	42	49	51	57	56	55	61	1.6%	0.4%	1.1%	-0.2%	-0.2%	1.1%
Industry (incl. non-energy use)	**26**	**40**	**51**	**56**	**55**	**47**	**42**	**4.6%**	**2.5%**	**0.9%**	**-0.2%**	**-1.5%**	**-1.1%**
Coal	2	5	8	12	12	8	4	7.7%	5.7%	3.6%	0.4%	-4.5%	-7.5%
Oil	9	12	17	11	11	9	7	3.3%	3.2%	-4.5%	0.1%	-1.3%	-3.1%
Gas	6	12	16	19	17	16	14	6.7%	3.2%	2.0%	-1.4%	-0.7%	-1.1%
Electricity	1	3	4	7	8	7	8	8.9%	4.2%	4.3%	1.4%	-0.5%	0.5%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	7	9	6	8	8	7	10	1.8%	-3.0%	2.1%	0.0%	-0.9%	3.6%
Buildings	**43**	**57**	**61**	**68**	**71**	**76**	**85**	**2.9%**	**0.7%**	**1.2%**	**0.4%**	**0.7%**	**1.1%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	7	12	8	8	7	6	6	6.1%	-4.7%	0.8%	-2.0%	-0.3%	-1.5%
Gas	0	0	0	2	5	8	9	8.1%	14.4%	27.6%	11.5%	5.0%	0.3%
Electricity	1	4	8	12	14	17	29	12.2%	8.1%	4.3%	0.9%	2.4%	5.6%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	35	41	45	46	45	44	41	1.6%	1.0%	0.2%	-0.1%	-0.4%	-0.6%
Agriculture	**1**	**3**	**3**	**2**	**2**	**3**	**3**	**11.1%**	**1.1%**	**-4.9%**	**1.9%**	**1.2%**	**1.0%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	1	3	3	2	2	1	1	10.5%	1.0%	-5.8%	0.1%	-3.8%	-4.0%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Electricity	0	0	0	0	0	1	1	n.s.	2.5%	3.0%	4.9%	5.2%	3.5%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	57.2%	13.2%	3.8%
Transport	**11**	**21**	**34**	**48**	**52**	**54**	**48**	**6.9%**	**5.1%**	**3.5%**	**0.9%**	**0.3%**	**-1.1%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	11	21	34	44	49	48	33	6.9%	5.0%	2.7%	1.0%	-0.2%	-3.5%
Gas	0	0	0	0	0	1	4	n.s.	9.0%	-0.1%	50.6%	14.1%	10.9%
Electricity	0	0	0	0	0	1	2	n.s.	n.s.	n.s.	37.0%	9.5%	6.0%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	4	3	4	9	n.s.	n.s.	36.2%	-2.7%	2.1%	9.5%
Other Energy Transformation & Losses[3]	**12**	**14**	**22**	**14**	**15**	**17**	**17**	**1.2%**	**4.6%**	**-4.5%**	**1.0%**	**1.2%**	**0.0%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Malaysia	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	18	23	28	33	37	41	44	2.5%	1.9%	1.6%	1.3%	0.9%	0.7%
GDP per capita (ppp, k$'15)	8	13	17	23	32	42	53	4.5%	2.6%	3.5%	3.2%	2.7%	2.3%
Prices													
International/Regional ($'15/boe)													
Coal	3	1	3	4	5	6	7	-7.8%	10.3%	1.2%	2.4%	2.4%	1.2%
Oil	39	38	86	89	89	88	90	-0.2%	8.4%	0.3%	0.0%	-0.1%	0.2%
Gas	28	26	46	73	88	95	96	-0.7%	5.8%	4.7%	1.8%	0.9%	0.0%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**224**	**358**	**369**	**414**	**332**	**246**	**167**	**4.8%**	**0.3%**	**1.2%**	**-2.2%**	**-3.0%**	**-3.8%**
Total GHG (energy, industry, agriculture)	**100**	**179**	**275**	**344**	**295**	**228**	**155**	**6.0%**	**4.4%**	**2.3%**	**-1.5%**	**-2.6%**	**-3.8%**
CO_2	64	131	218	287	255	199	132	7.4%	5.2%	2.8%	-1.2%	-2.4%	-4.0%
CH_4	27	38	43	41	27	17	12	3.2%	1.4%	-0.5%	-4.3%	-4.2%	-3.9%
N_2O	8	10	12	13	12	11	10	2.2%	2.5%	0.8%	-0.7%	-1.5%	-0.8%
F gases	1	1	1	2	1	1	1	-0.7%	9.1%	3.9%	-2.7%	-4.4%	1.0%
Total GHG from Energy and Industry	**86**	**165**	**260**	**328**	**281**	**217**	**144**	**6.8%**	**4.6%**	**2.4%**	**-1.5%**	**-2.6%**	**-4.0%**
CO_2 Emissions from Fuel Comb.	**58**	**117**	**196**	**260**	**223**	**169**	**111**	**7.3%**	**5.3%**	**2.9%**	**-1.5%**	**-2.8%**	**-4.1%**
Power generation/District heating	16	37	96	108	76	39	23	8.9%	9.9%	1.1%	-3.4%	-6.5%	-5.4%
Industry	14	26	31	39	36	30	20	6.4%	1.6%	2.6%	-0.9%	-1.8%	-4.3%
Buildings	2	4	6	5	6	5	5	7.0%	3.5%	-1.5%	0.2%	-0.2%	-1.6%
Agriculture	0	0	3	4	3	2	1	n.s.	25.9%	0.6%	-2.3%	-4.1%	-4.3%
Transport	15	32	44	73	70	62	42	8.3%	3.2%	5.2%	-0.5%	-1.2%	-3.7%
Other	11	17	16	31	32	30	21	4.2%	-0.8%	7.1%	0.5%	-0.8%	-3.5%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**2**	**11**	**n.s.**	**n.s.**	**n.s.**	**27.6%**	**n.s.**	**21.6%**
Coal	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	n.s.	16.7%
Gas	0	0	0	0	0	1	4	n.s.	n.s.	n.s.	n.s.	n.s.	14.9%
Biomass	0	0	0	0	0	0	5	n.s.	n.s.	n.s.	n.s.	n.s.	55.2%
Direct Air Capture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	27.6%	23.2%	15.0%
Energy Balance, by fuel (Mtoe)													
Primary Production	**48**	**73**	**84**	**108**	**104**	**93**	**47**	**4.3%**	**1.5%**	**2.5%**	**-0.4%**	**-1.1%**	**-6.5%**
Coal	0	0	2	2	2	1	1	14.1%	20.3%	3.2%	0.1%	-4.6%	-1.7%
Oil	31	31	33	30	21	13	8	0.0%	0.6%	-0.9%	-3.7%	-4.7%	-4.3%
Natural gas	15	39	47	65	64	56	2	10.4%	1.9%	3.2%	-0.2%	-1.3%	-29.1%
Biomass	2	2	2	9	12	12	16	0.0%	-0.2%	16.9%	3.5%	-0.4%	3.4%
Nuclear[1]	0	0	0	0	0	1	2	n.s.	n.s.	n.s.	n.s.	n.s.	8.5%
Hydro	0	1	1	2	3	3	4	5.7%	-0.7%	14.6%	3.6%	1.1%	0.8%
Other renewables	0	0	0	0	2	7	15	n.s.	n.s.	n.s.	32.9%	11.7%	7.8%
Net Imports	**- 25**	**- 24**	**- 10**	**- 3**	**- 6**	**- 2**	**39**						
Coal	1	2	13	15	10	5	4						
Oil	- 18	- 11	- 7	12	18	20	15						
Natural gas	- 8	- 14	- 16	- 26	- 28	- 26	21						
Biomass	0	0	0	- 4	- 6	- 2	- 1						
Biofuels	0	0	0	0	0	0	0						
Electricity	0	0	0	0	0	0	0						
Primary Energy Demand[2]	**23**	**49**	**74**	**105**	**98**	**90**	**87**	8.0%	**4.2%**	**3.5%**	**-0.6%**	**-0.8%**	**-0.4%**
Coal	1	2	15	17	12	6	5	5.7%	20.3%	1.6%	-3.6%	-6.8%	-2.2%
Oil	12	20	26	42	38	33	23	4.6%	3.0%	4.9%	-0.9%	-1.5%	-3.5%
Natural gas	7	25	31	38	36	30	23	13.6%	2.3%	2.1%	-0.7%	-1.8%	-2.7%
Biomass	2	2	2	5	7	10	16	0.0%	-0.2%	10.3%	3.2%	4.4%	4.4%
Nuclear[1]	0	0	0	0	0	1	2	n.s.	n.s.	n.s.	n.s.	n.s.	8.5%
Hydro	0	1	1	2	3	3	4	5.7%	-0.7%	14.6%	3.6%	1.1%	0.8%
Other renewables	0	0	0	0	2	7	15	n.s.	n.s.	n.s.	32.9%	11.7%	7.8%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**23**	**49**	**74**	**105**	**98**	**90**	**87**	**8.0%**	**4.2%**	**3.5%**	**-0.6%**	**-0.8%**	**-0.4%**
Energy for Power Generation	**6**	**15**	**33**	**40**	**34**	**29**	**33**	**10.7%**	**8.0%**	**2.2%**	**-1.6%**	**-1.8%**	**1.3%**
Other Energy Transformation & Losses	**5**	**9**	**9**	**17**	**19**	**21**	**22**	**5.9%**	**-0.9%**	**7.1%**	**1.0%**	**0.9%**	**0.5%**
Final consumption	**14**	**30**	**42**	**62**	**60**	**58**	**54**	**8.0%**	**3.6%**	**3.9%**	**-0.3%**	**-0.3%**	**-0.7%**
Steel, Non-Met. Minerals and Chem.	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	n.s.	55.5%	3.1%
Other Industry	6	12	15	20	19	18	17	7.9%	2.4%	3.0%	-0.4%	-0.4%	-1.0%
Non-Energy Use	1	2	4	6	5	5	4	10.4%	5.1%	4.7%	-1.0%	-1.1%	-0.6%
Residential	2	3	4	4	4	4	4	3.8%	3.0%	2.1%	-0.6%	-1.3%	-0.4%
Services	1	2	4	5	6	7	8	10.9%	6.9%	2.4%	0.6%	1.1%	2.2%
Agriculture	0	0	1	1	1	1	2	n.s.	26.2%	0.9%	1.3%	0.9%	0.7%
Road	5	10	14	24	23	22	18	8.5%	3.2%	5.4%	-0.5%	-0.6%	-1.8%
Rail	0	0	0	0	0	0	0	n.s.	15.1%	4.8%	3.3%	2.5%	2.0%
Aviation	0	0	0	1	1	1	1	10.0%	4.2%	5.0%	2.7%	-1.2%	-2.1%
Other Transport	0	0	0	0	0	0	0	-20.8%	11.6%	18.2%	1.8%	-1.8%	-2.0%

[1] Nuclear energy is accounted as primary electricity

Malaysia	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**5**	**15**	**32**	**38**	**29**	**18**	**13**	**10.9%**	**8.2%**	**1.7%**	**-2.7%**	**-4.9%**	**-3.2%**
Coal	1	1	13	13	8	3	2	6.3%	24.1%	0.1%	-4.7%	-10.3%	-1.6%
Oil	3	1	1	3	3	2	2	-10.7%	-2.6%	16.5%	-2.8%	-3.1%	-0.7%
Gas	1	12	18	19	15	10	6	24.4%	4.1%	0.6%	-2.1%	-4.1%	-4.8%
Biomass & Waste	0	0	0	2	3	3	2	n.s.	n.s.	21.6%	1.5%	-0.1%	-1.5%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**23**	**69**	**125**	**183**	**186**	**202**	**249**	**11.6%**	**6.1%**	**3.9%**	**0.2%**	**0.9%**	**2.1%**
Coal	3	8	43	53	33	12	10	10.1%	18.7%	2.2%	-4.6%	-10.0%	-1.5%
of which CCS	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	n.s.	15.1%
Oil	11	4	4	14	11	8	8	-10.2%	0.2%	14.3%	-2.4%	-2.5%	-0.7%
Gas	6	51	71	81	68	46	31	24.9%	3.3%	1.3%	-1.7%	-3.8%	-3.8%
of which CCS	0	0	0	0	0	3	10	n.s.	n.s.	n.s.	n.s.	n.s.	13.4%
Biomass & Waste	0	0	1	7	9	10	10	n.s.	n.s.	21.8%	2.5%	0.7%	0.1%
of which CCS	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	8	18	n.s.	n.s.	n.s.	n.s.	n.s.	8.4%
Hydro	4	7	6	25	36	40	45	5.7%	-0.7%	14.6%	3.6%	1.1%	1.0%
Wind	0	0	0	0	11	32	50	n.s.	n.s.	n.s.	46.5%	11.4%	4.7%
Solar	0	0	0	1	16	42	64	n.s.	n.s.	n.s.	28.3%	10.1%	4.3%
Other	0	0	0	0	1	4	13	n.s.	n.s.	n.s.	12.7%	13.0%	12.2%
Generation Capacity (GW_e)	**5**	**14**	**27**	**40**	**54**	**81**	**104**	**11.4%**	**7.0%**	**3.8%**	**3.1%**	**4.2%**	**2.6%**
Coal	1	1	8	8	7	6	4	0.8%	19.4%	1.0%	-1.9%	-2.2%	-3.0%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	16.3%
Oil	1	2	2	3	3	5	6	4.7%	-3.6%	6.3%	1.1%	3.7%	1.9%
Gas	1	8	15	17	14	11	7	24.4%	6.6%	0.9%	-1.9%	-2.5%	-4.5%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	14.7%
Biomass & Waste	0	0	1	1	1	2	2	n.s.	20.9%	4.2%	2.1%	2.4%	-0.1%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	1	3	n.s.	n.s.	n.s.	n.s.	n.s.	8.1%
Hydro	1	2	2	9	14	15	17	6.6%	0.1%	16.2%	3.7%	1.1%	1.2%
Wind	0	0	0	0	4	11	18	n.s.	n.s.	55.2%	45.3%	11.0%	5.0%
Solar	0	0	0	1	11	30	48	n.s.	n.s.	n.s.	28.9%	10.9%	4.6%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	13.3%	13.8%
Total Final Consumption[2] (Mtoe)	**14**	**30**	**42**	**62**	**60**	**58**	**54**	**8.0%**	**3.6%**	**3.9%**	**-0.3%**	**-0.3%**	**-0.7%**
Coal	1	1	2	3	2	2	1	6.8%	6.3%	4.4%	-1.1%	-3.1%	-5.6%
Oil	9	18	24	35	32	27	17	7.2%	2.7%	3.8%	-0.8%	-1.8%	-4.2%
Gas	1	4	6	9	9	10	10	13.4%	4.7%	3.7%	0.5%	1.2%	-0.2%
Electricity	2	5	10	14	15	16	18	11.9%	6.1%	4.1%	0.2%	0.8%	1.5%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	10.8%
Biomass & Other	1	1	1	1	2	4	7	0.5%	-3.8%	4.7%	2.8%	6.8%	7.3%
Industry (incl. non-energy use)	**6**	**14**	**19**	**26**	**25**	**24**	**22**	**8.2%**	**2.9%**	**3.4%**	**-0.5%**	**-0.3%**	**-0.7%**
Coal	1	1	2	3	2	2	1	6.8%	6.3%	4.4%	-1.1%	-3.1%	-5.6%
Oil	4	6	6	8	7	5	4	5.1%	0.3%	2.2%	-1.1%	-2.7%	-3.3%
Gas	1	4	6	8	8	8	7	13.5%	4.5%	3.4%	-0.6%	0.3%	-1.7%
Electricity	1	3	5	7	7	8	8	12.9%	4.9%	4.4%	0.3%	1.0%	0.5%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	1	2	2.5%	n.s.	n.s.	n.s.	22.2%	12.4%
Buildings	**3**	**5**	**8**	**10**	**10**	**10**	**12**	**6.5%**	**4.9%**	**2.3%**	**0.1%**	**0.2%**	**1.3%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	1	1	2	1	1	1	1	7.0%	3.4%	-2.9%	-4.1%	-3.5%	-1.8%
Gas	0	0	0	0	1	1	1	7.4%	8.2%	24.5%	12.6%	2.9%	-1.5%
Electricity	1	2	5	7	7	7	9	10.7%	7.3%	3.8%	-0.3%	0.0%	2.0%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	10.8%
Biomass & Other	1	1	1	1	1	1	1	0.0%	-1.0%	-0.7%	0.7%	0.7%	0.6%
Agriculture	**0**	**0**	**1**	**1**	**1**	**1**	**2**	**n.s.**	**26.2%**	**0.9%**	**1.3%**	**0.9%**	**0.7%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	0	0	1	1	1	1	0	n.s.	25.9%	0.6%	-2.3%	-4.1%	-4.3%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Electricity	0	0	0	0	0	0	0	n.s.	n.s.	7.3%	12.9%	6.5%	3.8%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	40.7%	7.1%	2.7%
Transport	**5**	**11**	**15**	**25**	**24**	**23**	**19**	**8.5%**	**3.2%**	**5.4%**	**-0.4%**	**-0.6%**	**-1.8%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	5	11	15	25	23	20	13	8.4%	3.2%	5.2%	-0.5%	-1.4%	-4.6%
Gas	0	0	0	0	0	1	2	n.s.	32.0%	-5.6%	15.4%	14.4%	11.0%
Electricity	0	0	0	0	0	0	1	n.s.	15.1%	6.3%	17.7%	10.3%	6.9%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	1	1	1	4	n.s.	n.s.	n.s.	0.5%	9.0%	9.3%
Other Energy Transformation & Losses[3]	**5**	**9**	**9**	**17**	**19**	**21**	**22**	**5.9%**	**-0.9%**	**7.1%**	**1.0%**	**0.9%**	**0.5%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Thailand	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	57	63	67	70	71	70	67	1.1%	0.7%	0.4%	0.1%	-0.1%	-0.4%
GDP per capita (ppp, k$'15)	5	7	9	13	18	25	33	3.3%	3.6%	2.9%	3.6%	3.5%	2.8%
Prices													
International/Regional ($'15/boe)													
Coal	3	1	3	4	5	6	7	-7.8%	10.3%	1.2%	2.4%	2.4%	1.2%
Oil	39	38	86	89	89	88	90	-0.2%	8.4%	0.3%	0.0%	-0.1%	0.2%
Gas	28	26	46	73	88	95	96	-0.7%	5.8%	4.7%	1.8%	0.9%	0.0%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**217**	**328**	**468**	**489**	**385**	**288**	**213**	**4.2%**	**3.6%**	**0.4%**	**-2.4%**	**-2.9%**	**-2.9%**
Total GHG (energy, industry, agriculture)	**206**	**282**	**398**	**424**	**357**	**275**	**201**	**3.2%**	**3.5%**	**0.6%**	**-1.7%**	**-2.6%**	**-3.1%**
CO_2	93	171	255	290	260	206	144	6.3%	4.0%	1.3%	-1.1%	-2.3%	-3.5%
CH_4	96	94	120	108	74	49	38	-0.3%	2.5%	-1.0%	-3.8%	-4.1%	-2.4%
N_2O	15	17	22	24	22	20	18	1.2%	2.8%	1.1%	-0.9%	-1.3%	-0.9%
F gases	1	0	1	1	1	1	1	-10.8%	11.8%	-0.6%	-8.5%	0.0%	0.2%
Total GHG from Energy and Industry	**122**	**205**	**304**	**333**	**291**	**230**	**161**	**5.3%**	**4.0%**	**0.9%**	**-1.4%**	**-2.3%**	**-3.5%**
CO_2 Emissions from Fuel Comb.	**82**	**154**	**230**	**260**	**226**	**174**	**123**	**6.5%**	**4.1%**	**1.3%**	**-1.4%**	**-2.6%**	**-3.4%**
Power generation/District heating	27	54	81	86	52	24	21	7.1%	4.2%	0.5%	-4.9%	-7.2%	-1.5%
Industry	14	32	50	60	57	45	31	8.3%	4.7%	1.8%	-0.5%	-2.4%	-3.6%
Buildings	3	5	9	7	8	8	6	6.0%	5.8%	-2.0%	1.0%	-0.4%	-3.4%
Agriculture	6	9	11	14	12	8	5	4.5%	2.1%	2.4%	-1.4%	-4.2%	-4.5%
Transport	27	44	60	71	74	67	43	4.9%	3.0%	1.8%	0.4%	-1.0%	-4.3%
Other	5	11	19	22	23	23	18	8.8%	5.7%	1.8%	0.2%	-0.2%	-2.4%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**2**	**11**	**n.s.**	**n.s.**	**n.s.**	**29.4%**	**57.4%**	**21.5%**
Coal	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	n.s.	18.4%
Gas	0	0	0	0	0	1	6	n.s.	n.s.	n.s.	n.s.	n.s.	18.3%
Biomass	0	0	0	0	0	0	3	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	29.5%	22.6%	15.3%
Energy Balance, by fuel (Mtoe)													
Primary Production	**26**	**43**	**71**	**56**	**72**	**67**	**65**	**5.0%**	**5.2%**	**-2.3%**	**2.6%**	**-0.8%**	**-0.3%**
Coal	3	5	5	5	5	3	2	4.6%	0.5%	-0.6%	-0.4%	-5.8%	-3.2%
Oil	2	6	12	5	3	2	1	9.5%	8.1%	-9.0%	-4.9%	-5.0%	-5.0%
Natural gas	5	17	30	20	30	21	9	11.8%	6.1%	-4.2%	4.2%	-3.4%	-8.4%
Biomass	15	15	23	24	29	28	31	-0.1%	4.5%	0.5%	1.9%	-0.3%	1.1%
Nuclear[1]	0	0	0	0	0	1	2	n.s.	n.s.	n.s.	n.s.	n.s.	10.1%
Hydro	0	1	0	1	2	2	3	1.9%	-0.8%	7.2%	4.8%	3.8%	3.4%
Other renewables	0	0	0	2	5	11	17	n.s.	7.0%	n.s.	9.6%	8.0%	4.5%
Net Imports	**17**	**32**	**52**	**99**	**75**	**67**	**64**						
Coal	1	3	11	9	4	1	1						
Oil	16	26	33	63	57	48	37						
Natural gas	0	1	2	9	- 1	7	16						
Biomass	0	0	0	5	1	- 1	- 3						
Biofuels	0	0	0	0	0	0	0						
Electricity	1	3	6	13	13	13	13						
Primary Energy Demand[2]	**43**	**75**	**123**	**155**	**147**	**134**	**128**	5.7%	**5.1%**	**2.3%**	**-0.5%**	**-0.9%**	**-0.4%**
Coal	4	8	16	14	9	4	3	7.0%	7.8%	-1.8%	-3.9%	-8.2%	-3.7%
Oil	18	32	45	68	60	50	38	5.8%	3.5%	4.2%	-1.2%	-1.9%	-2.6%
Natural gas	5	17	33	29	29	27	25	13.3%	6.5%	-1.2%	0.0%	-0.5%	-1.0%
Biomass	15	15	23	29	30	27	28	-0.1%	4.5%	2.4%	0.5%	-1.2%	0.5%
Nuclear[1]	0	0	0	0	0	1	2	n.s.	n.s.	n.s.	n.s.	n.s.	10.1%
Hydro	0	1	0	1	2	2	3	1.9%	-0.8%	7.2%	4.8%	3.8%	3.4%
Other renewables	0	0	0	2	5	11	17	n.s.	7.0%	n.s.	9.6%	8.0%	4.5%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**43**	**75**	**123**	**155**	**147**	**134**	**128**	**5.7%**	**5.1%**	**2.3%**	**-0.5%**	**-0.9%**	**-0.4%**
Energy for Power Generation	**9**	**20**	**33**	**39**	**33**	**29**	**34**	**8.0%**	**4.9%**	**1.9%**	**-1.7%**	**-1.4%**	**1.7%**
Other Energy Transformation & Losses	**8**	**11**	**19**	**26**	**27**	**28**	**31**	**3.5%**	**5.5%**	**3.3%**	**0.4%**	**0.3%**	**1.1%**
Final consumption	**29**	**51**	**84**	**107**	**105**	**98**	**89**	**5.9%**	**5.2%**	**2.4%**	**-0.2%**	**-0.7%**	**-1.0%**
Steel, Non-Met. Minerals and Chem.	2	6	12	12	12	9	9	8.7%	7.6%	0.5%	-0.8%	-2.0%	-0.8%
Other Industry	6	12	15	23	23	21	18	6.5%	2.4%	4.7%	0.0%	-1.1%	-1.7%
Non-Energy Use	0	6	18	24	21	19	18	29.3%	12.4%	2.8%	-1.3%	-1.0%	-0.7%
Residential	8	8	11	13	12	12	11	0.2%	3.9%	1.2%	-0.2%	-0.3%	-0.6%
Services	1	3	6	6	6	8	9	8.2%	6.1%	0.8%	0.5%	1.8%	1.2%
Agriculture	2	3	3	4	5	5	6	4.5%	2.1%	2.5%	1.0%	0.7%	0.5%
Road	9	14	19	23	24	23	18	5.3%	2.7%	2.1%	0.3%	-0.5%	-2.0%
Rail	0	0	0	0	0	0	0	-0.6%	-1.1%	1.0%	1.1%	0.8%	0.5%
Aviation	0	0	0	1	1	1	1	n.s.	n.s.	4.3%	4.2%	-1.6%	-2.5%
Other Transport	0	0	0	0	0	0	0	-16.2%	2.7%	6.8%	1.2%	-2.0%	-2.6%

[1] Nuclear energy is accounted as primary electricity

Thailand	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**9**	**20**	**32**	**36**	**27**	**15**	**12**	**8.2%**	**5.0%**	**1.2%**	**-3.0%**	**-5.6%**	**-2.1%**
Coal	3	4	7	7	3	1	1	5.0%	5.2%	0.1%	-7.0%	-13.0%	-1.0%
Oil	3	2	0	6	2	1	3	-0.8%	-19.6%	36.3%	-10.4%	-5.8%	10.5%
Gas	4	13	23	17	14	8	7	12.8%	5.9%	-3.0%	-2.0%	-5.0%	-2.2%
Biomass & Waste	0	0	2	7	8	5	2	n.s.	17.5%	11.4%	1.3%	-4.2%	-8.7%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**44**	**98**	**162**	**200**	**197**	**227**	**283**	**8.3%**	**5.2%**	**2.1%**	**-0.1%**	**1.5%**	**2.2%**
Coal	11	18	30	29	14	4	4	4.9%	5.4%	-0.2%	-6.8%	-12.3%	-0.3%
of which CCS	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	n.s.	17.4%
Oil	10	10	1	27	9	5	13	-0.3%	-19.3%	36.6%	-10.4%	-5.8%	10.6%
Gas	18	62	119	87	71	43	37	13.2%	6.8%	-3.1%	-2.0%	-4.9%	-1.5%
of which CCS	0	0	0	0	0	3	13	n.s.	n.s.	n.s.	n.s.	n.s.	16.4%
Biomass & Waste	0	1	3	19	23	16	7	n.s.	20.9%	19.1%	1.6%	-3.7%	-7.7%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	10	25	n.s.	n.s.	n.s.	n.s.	n.s.	10.0%
Hydro	5	6	6	14	21	28	39	1.9%	-0.8%	9.8%	3.8%	3.2%	3.3%
Wind	0	0	0	18	42	67	55	n.s.	n.s.	n.s.	8.7%	4.8%	-1.9%
Solar	0	0	0	5	16	51	88	n.s.	n.s.	n.s.	12.2%	12.2%	5.5%
Other	0	2	3	0	1	4	15	n.s.	5.0%	-22.0%	16.2%	13.6%	14.9%
Generation Capacity (GW_e)	**10**	**28**	**42**	**61**	**77**	**111**	**133**	**11.2%**	**4.2%**	**3.7%**	**2.3%**	**3.7%**	**1.9%**
Coal	1	3	4	4	3	1	1	5.7%	4.3%	1.2%	-3.9%	-13.5%	-2.3%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	16.9%
Oil	3	6	10	8	8	6	9	7.0%	5.6%	-1.9%	-0.7%	-3.0%	4.3%
Gas	3	15	21	23	19	14	7	17.7%	3.4%	1.0%	-2.3%	-3.0%	-6.0%
of which CCS	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	n.s.	16.0%
Biomass & Waste	0	0	1	3	3	2	1	n.s.	9.8%	11.1%	-0.2%	-1.9%	-8.7%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	2	4	n.s.	n.s.	n.s.	n.s.	n.s.	9.8%
Hydro	2	4	6	10	15	21	29	6.1%	4.0%	4.8%	4.1%	3.5%	3.5%
Wind	0	0	0	8	18	28	21	n.s.	n.s.	n.s.	8.8%	4.7%	-2.9%
Solar	0	0	0	4	12	38	62	n.s.	n.s.	n.s.	10.8%	12.0%	5.0%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	14.1%	10.2%
Total Final Consumption[2] (Mtoe)	**29**	**51**	**84**	**107**	**105**	**98**	**89**	**5.9%**	**5.2%**	**2.4%**	**-0.2%**	**-0.7%**	**-1.0%**
Coal	1	4	9	7	6	3	2	10.3%	10.0%	-3.0%	-1.4%	-6.0%	-4.4%
Oil	15	29	44	58	54	45	31	6.9%	4.2%	2.9%	-0.7%	-1.9%	-3.5%
Gas	0	2	4	6	9	13	14	27.8%	10.0%	3.7%	3.9%	4.0%	0.4%
Electricity	3	8	13	16	16	19	22	8.7%	5.4%	2.5%	-0.1%	1.4%	1.4%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	12.5%
Biomass & Other	9	9	14	20	19	18	20	0.2%	4.4%	3.1%	-0.2%	-0.6%	1.0%
Industry (incl. non-energy use)	**9**	**23**	**45**	**60**	**56**	**49**	**44**	**9.7%**	**6.9%**	**2.9%**	**-0.7%**	**-1.2%**	**-1.1%**
Coal	1	4	9	7	6	3	2	10.3%	10.0%	-3.0%	-1.4%	-6.0%	-4.4%
Oil	3	10	20	30	26	21	17	12.1%	7.1%	4.2%	-1.3%	-2.1%	-2.0%
Gas	0	2	3	5	7	10	10	27.8%	6.9%	5.1%	2.9%	4.1%	-0.2%
Electricity	2	3	5	7	7	8	8	8.4%	4.7%	3.1%	0.1%	0.6%	0.5%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	3	4	7	10	9	7	6	4.0%	5.0%	3.9%	-1.2%	-3.2%	-0.7%
Buildings	**9**	**11**	**17**	**19**	**19**	**20**	**20**	**1.9%**	**4.6%**	**1.1%**	**0.0%**	**0.5%**	**0.2%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	1	2	3	2	1	1	1	6.0%	5.8%	-3.4%	-3.7%	-3.7%	-3.5%
Gas	0	0	0	0	2	2	1	n.s.	n.s.	n.s.	14.2%	2.5%	-3.3%
Electricity	2	4	7	9	8	9	11	8.9%	6.0%	2.0%	-0.7%	1.2%	1.4%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	12.5%
Biomass & Other	6	5	7	8	8	7	7	-2.1%	2.9%	1.1%	0.0%	-0.3%	-0.7%
Agriculture	**2**	**3**	**3**	**4**	**5**	**5**	**6**	**4.5%**	**2.1%**	**2.5%**	**1.0%**	**0.7%**	**0.5%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	2	3	3	4	4	2	2	4.5%	2.1%	2.4%	-1.4%	-4.2%	-4.5%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Electricity	0	0	0	0	0	1	1	4.8%	8.1%	1.6%	23.0%	10.9%	5.1%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	1	2	3	n.s.	n.s.	n.s.	35.2%	9.1%	2.9%
Transport	**9**	**15**	**20**	**24**	**25**	**24**	**19**	**4.9%**	**2.9%**	**2.2%**	**0.4%**	**-0.6%**	**-2.0%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	9	15	18	22	23	20	12	4.9%	2.0%	2.1%	0.5%	-1.2%	-5.1%
Gas	0	0	1	0	0	1	2	n.s.	n.s.	-7.9%	-3.0%	8.8%	10.0%
Electricity	0	0	0	0	0	1	1	n.s.	6.6%	16.0%	20.5%	11.6%	6.9%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	1	2	2	2	4	n.s.	n.s.	9.9%	-0.6%	2.3%	7.7%
Other Energy Transformation & Losses[3]	**8**	**11**	**19**	**26**	**27**	**28**	**31**	**3.5%**	**5.5%**	**3.3%**	**0.4%**	**0.3%**	**1.1%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Vietnam	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	68	80	88	98	104	106	106	1.6%	1.0%	1.0%	0.6%	0.2%	0.0%
GDP per capita (ppp, k$'15)	1	2	4	6	10	15	21	5.8%	5.6%	5.1%	5.4%	4.3%	3.5%
Prices													
International/Regional ($'15/boe)													
Coal	3	1	3	4	5	6	7	-7.8%	10.3%	1.2%	2.4%	2.4%	1.2%
Oil	39	38	86	89	89	88	90	-0.2%	8.4%	0.3%	0.0%	-0.1%	0.2%
Gas	28	26	46	73	88	95	96	-0.7%	5.8%	4.7%	1.8%	0.9%	0.0%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**52**	**141**	**326**	**464**	**439**	**321**	**214**	**10.5%**	**8.8%**	**3.6%**	**-0.5%**	**-3.1%**	**-4.0%**
Total GHG (energy, industry, agriculture)	**97**	**153**	**266**	**400**	**408**	**308**	**200**	**4.6%**	**5.7%**	**4.2%**	**0.2%**	**-2.8%**	**-4.2%**
CO_2	19	53	153	272	308	240	147	10.7%	11.1%	5.9%	1.3%	-2.4%	-4.8%
CH_4	68	81	93	104	77	47	35	1.8%	1.4%	1.2%	-2.9%	-4.8%	-2.9%
N_2O	10	19	20	24	23	20	18	6.1%	0.9%	1.8%	-0.4%	-1.5%	-1.1%
F gases	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Total GHG from Energy and Industry	**34**	**76**	**182**	**310**	**341**	**264**	**163**	**8.4%**	**9.1%**	**5.5%**	**1.0%**	**-2.5%**	**-4.7%**
CO_2 Emissions from Fuel Comb.	**17**	**44**	**125**	**232**	**256**	**186**	**110**	**9.9%**	**11.1%**	**6.4%**	**1.0%**	**-3.1%**	**-5.2%**
Power generation/District heating	5	11	41	81	94	52	22	9.0%	13.7%	7.1%	1.5%	-5.8%	-8.1%
Industry	6	14	39	81	84	57	32	9.9%	10.8%	7.4%	0.4%	-3.8%	-5.6%
Buildings	2	7	11	13	11	9	8	12.9%	5.4%	1.3%	-1.7%	-1.3%	-1.9%
Agriculture	1	1	2	2	2	1	1	5.0%	3.8%	2.1%	0.3%	-3.8%	-4.2%
Transport	4	11	31	49	53	52	35	9.8%	11.2%	4.8%	0.8%	-0.1%	-3.8%
Other	0	0	1	6	12	14	11	8.3%	49.0%	15.9%	6.1%	2.1%	-2.7%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**0**	**14**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**39.3%**	**49.3%**
Coal	0	0	0	0	0	0	6	n.s.	n.s.	n.s.	n.s.	n.s.	52.4%
Gas	0	0	0	0	0	0	3	n.s.	n.s.	n.s.	n.s.	n.s.	49.9%
Biomass	0	0	0	0	0	0	4	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	28.8%	17.8%
Energy Balance, by fuel (Mtoe)													
Primary Production	**18**	**39**	**65**	**64**	**54**	**62**	**78**	**8.1%**	**5.2%**	**-0.3%**	**-1.5%**	**1.3%**	**2.3%**
Coal	2	6	25	12	0	0	0	10.1%	14.5%	-6.7%	n.s.	n.s.	n.s.
Oil	3	16	15	23	17	10	6	19.7%	-0.5%	4.0%	-3.0%	-4.5%	-5.0%
Natural gas	0	1	8	9	10	13	16	44.5%	19.4%	0.8%	1.7%	2.5%	2.0%
Biomass	12	14	15	15	20	21	23	1.3%	0.4%	0.0%	2.9%	0.5%	1.0%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	23.0%
Hydro	0	1	2	5	6	6	7	10.5%	6.6%	7.8%	1.2%	1.1%	0.7%
Other renewables	0	0	0	0	2	12	26	n.s.	n.s.	52.6%	23.5%	17.1%	8.3%
Net Imports	**0**	**- 11**	**- 2**	**33**	**57**	**40**	**25**						
Coal	0	- 2	- 10	21	32	15	6						
Oil	0	- 8	3	3	16	21	16						
Natural gas	0	0	0	2	4	1	- 4						
Biomass	0	0	0	5	2	1	4						
Biofuels	0	0	0	0	0	0	0						
Electricity	0	0	5	2	2	2	2						
Primary Energy Demand[2]	**18**	**29**	**63**	**97**	**111**	**102**	**103**	4.9%	**8.2%**	**4.3%**	**1.4%**	**-0.8%**	**0.0%**
Coal	2	4	15	33	32	15	6	7.0%	12.9%	8.6%	-0.4%	-7.6%	-8.1%
Oil	3	8	19	25	33	32	23	11.2%	9.1%	3.1%	2.6%	-0.3%	-3.4%
Natural gas	0	1	8	11	14	14	11	n.s.	21.9%	3.1%	2.5%	0.2%	-2.3%
Biomass	12	14	15	20	22	21	27	1.3%	0.4%	3.1%	1.0%	-0.3%	2.4%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	23.0%
Hydro	0	1	2	5	6	6	7	10.5%	6.6%	7.8%	1.2%	1.1%	0.7%
Other renewables	0	0	0	0	2	12	26	n.s.	n.s.	52.6%	23.5%	17.1%	8.3%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**18**	**29**	**63**	**97**	**111**	**102**	**103**	**4.9%**	**8.2%**	**4.3%**	**1.4%**	**-0.8%**	**0.0%**
Energy for Power Generation	**2**	**5**	**16**	**30**	**37**	**36**	**49**	**10.7%**	**12.8%**	**6.4%**	**2.3%**	**-0.3%**	**3.1%**
Other Energy Transformation & Losses	**1**	**1**	**6**	**5**	**9**	**11**	**13**	**2.4%**	**23.6%**	**-2.5%**	**5.7%**	**2.6%**	**1.9%**
Final consumption	**16**	**25**	**48**	**76**	**84**	**79**	**70**	**4.6%**	**6.8%**	**4.7%**	**0.9%**	**-0.7%**	**-1.2%**
Steel, Non-Met. Minerals and Chem.	0	0	6	16	18	15	13	n.s.	n.s.	10.1%	1.2%	-1.9%	-1.4%
Other Industry	5	8	11	19	22	21	19	5.7%	3.8%	5.0%	1.8%	-0.6%	-0.8%
Non-Energy Use	0	0	2	4	5	4	3	16.9%	32.8%	6.5%	2.2%	-2.1%	-4.4%
Residential	10	12	16	20	18	16	13	2.4%	2.9%	2.3%	-1.0%	-1.4%	-2.3%
Services	0	1	2	3	4	5	7	12.6%	4.8%	4.2%	3.0%	3.7%	3.2%
Agriculture	0	0	1	1	1	1	1	5.4%	3.8%	3.4%	2.3%	1.5%	1.1%
Road	1	3	10	14	15	16	14	10.3%	11.4%	3.5%	0.9%	0.5%	-1.6%
Rail	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Aviation	0	0	0	0	1	1	1	1.4%	3.9%	8.3%	7.2%	0.5%	-1.8%
Other Transport	0	0	0	0	0	0	0	17.8%	8.3%	-7.4%	3.7%	-0.6%	-1.7%

[1] Nuclear energy is accounted as primary electricity

Vietnam	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**1**	**4**	**14**	**24**	**29**	**18**	**16**	**10.8%**	**14.4%**	**6.0%**	**1.8%**	**-4.8%**	**-1.1%**
Coal	1	1	5	14	14	5	3	2.6%	15.5%	11.5%	-0.5%	-9.7%	-5.4%
Oil	0	1	1	1	5	4	4	13.1%	-1.2%	-2.6%	17.8%	-0.6%	-0.1%
Gas	0	1	8	9	11	8	4	n.s.	21.4%	1.6%	1.7%	-2.8%	-6.6%
Biomass & Waste	0	0	0	0	0	1	5	n.s.	n.s.	23.4%	5.9%	10.3%	22.6%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	8.8%	6.3%	17.0%
Gross Elec. Generation (TWh_e)	**9**	**27**	**95**	**183**	**236**	**288**	**366**	**11.8%**	**13.6%**	**6.8%**	**2.5%**	**2.0%**	**2.4%**
Coal	2	3	20	66	63	23	14	4.6%	20.2%	12.9%	-0.5%	-9.7%	-4.9%
of which CCS	0	0	0	0	0	0	8	n.s.	n.s.	n.s.	n.s.	n.s.	52.1%
Oil	1	5	3	4	18	18	19	13.2%	-2.8%	0.3%	18.0%	-0.2%	0.3%
Gas	0	4	44	53	63	46	23	n.s.	26.1%	1.9%	1.7%	-3.1%	-6.5%
of which CCS	0	0	0	0	0	0	7	n.s.	n.s.	n.s.	n.s.	n.s.	49.9%
Biomass & Waste	0	0	0	0	1	3	24	n.s.	n.s.	23.8%	7.4%	11.8%	23.4%
of which CCS	0	0	0	0	0	0	5	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	5	15	28	58	66	74	80	10.5%	6.6%	7.8%	1.2%	1.2%	0.9%
Wind	0	0	0	1	10	49	76	n.s.	n.s.	33.0%	27.8%	17.0%	4.6%
Solar	0	0	0	0	12	70	108	n.s.	n.s.	n.s.	n.s.	18.8%	4.4%
Other	0	0	0	0	2	6	23	n.s.	n.s.	n.s.	15.6%	11.6%	13.9%
Generation Capacity (GW_e)	**2**	**6**	**20**	**42**	**56**	**114**	**149**	**11.7%**	**11.7%**	**7.9%**	**3.0%**	**7.3%**	**2.7%**
Coal	1	1	3	14	14	13	2	-1.0%	17.4%	15.8%	-0.2%	-0.3%	-15.9%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	52.2%
Oil	1	2	2	4	4	5	8	8.2%	2.2%	7.6%	0.9%	1.8%	4.0%
Gas	0	1	6	9	9	9	4	n.s.	19.4%	3.2%	0.5%	-0.8%	-6.5%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	50.8%
Biomass & Waste	0	0	0	0	0	0	3	n.s.	n.s.	16.4%	7.3%	13.3%	24.2%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	1	3	8	15	16	18	21	16.6%	9.7%	6.3%	1.2%	1.2%	1.1%
Wind	0	0	0	0	4	18	28	n.s.	n.s.	46.2%	26.5%	16.7%	4.7%
Solar	0	0	0	0	9	50	81	n.s.	n.s.	n.s.	n.s.	19.3%	4.8%
Other	0	0	0	0	0	0	2	3.4%	0.0%	3.1%	9.2%	7.9%	16.6%
Total Final Consumption[2] (Mtoe)	**16**	**25**	**48**	**76**	**84**	**79**	**70**	**4.6%**	**6.8%**	**4.7%**	**0.9%**	**-0.7%**	**-1.2%**
Coal	1	3	10	19	18	10	3	9.2%	11.8%	6.8%	-0.3%	-6.3%	-9.8%
Oil	2	7	17	23	26	24	16	10.8%	9.8%	3.5%	1.0%	-0.6%	-4.4%
Gas	0	0	0	2	4	6	8	n.s.	39.2%	15.7%	5.2%	6.1%	2.9%
Electricity	1	2	7	14	18	22	27	13.7%	14.5%	6.7%	2.5%	2.0%	1.8%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	9.5%
Biomass & Other	12	13	14	18	18	16	16	1.2%	0.3%	2.5%	0.2%	-1.2%	-0.3%
Industry (incl. non-energy use)	**5**	**8**	**20**	**38**	**45**	**40**	**35**	**5.8%**	**9.4%**	**6.9%**	**1.6%**	**-1.3%**	**-1.4%**
Coal	1	2	8	17	17	9	3	8.5%	13.4%	7.6%	0.1%	-5.9%	-9.7%
Oil	0	2	4	7	9	8	5	13.2%	10.3%	4.7%	2.2%	-1.3%	-4.5%
Gas	0	0	0	2	2	4	5	n.s.	39.2%	13.0%	2.7%	6.2%	2.7%
Electricity	0	1	4	8	12	14	15	12.3%	17.7%	7.6%	3.8%	1.5%	0.7%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	3	3	3	4	5	5	6	1.3%	-2.1%	5.4%	1.2%	-0.7%	2.8%
Buildings	**10**	**13**	**18**	**23**	**22**	**21**	**20**	**2.9%**	**3.1%**	**2.5%**	**-0.5%**	**-0.4%**	**-0.7%**
Coal	0	1	2	2	1	0	0	14.3%	6.2%	0.7%	-5.5%	-15.6%	-15.8%
Oil	0	1	2	2	1	1	1	11.7%	4.6%	0.0%	-2.0%	0.2%	-1.9%
Gas	0	0	0	0	1	2	2	n.s.	n.s.	n.s.	10.6%	4.6%	-0.8%
Electricity	0	1	3	6	6	7	10	15.9%	12.1%	5.4%	0.0%	2.5%	3.2%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	9.5%
Biomass & Other	9	10	11	13	12	10	6	1.2%	1.0%	1.7%	-0.6%	-2.1%	-4.6%
Agriculture	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**5.4%**	**3.8%**	**3.4%**	**2.3%**	**1.5%**	**1.1%**
Coal	0	0	0	0	0	0	0	-9.4%	-2.0%	2.1%	-2.5%	-7.5%	-7.5%
Oil	0	0	1	1	1	0	0	8.8%	4.2%	2.1%	0.4%	-3.7%	-4.1%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Electricity	0	0	0	0	0	0	1	4.0%	3.5%	9.6%	4.4%	4.5%	3.0%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	12.9%	3.7%
Transport	**1**	**3**	**10**	**14**	**16**	**17**	**14**	**9.7%**	**11.2%**	**3.5%**	**1.2%**	**0.5%**	**-1.6%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	1	3	10	14	15	15	9	9.9%	11.2%	3.4%	0.7%	-0.2%	-4.6%
Gas	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	17.0%	12.0%
Electricity	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	41.4%	13.5%	8.2%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	1	1	3	n.s.	n.s.	n.s.	19.4%	6.8%	10.1%
Other Energy Transformation & Losses[3]	**1**	**1**	**6**	**5**	**9**	**11**	**13**	**2.4%**	**23.6%**	**-2.5%**	**5.7%**	**2.6%**	**1.9%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Rest South Asia	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	263	334	400	472	542	602	651	2.4%	1.8%	1.7%	1.4%	1.1%	0.8%
GDP per capita (ppp, k$'15)	1	2	2	3	6	9	14	1.9%	3.4%	3.6%	5.4%	5.1%	4.4%
Prices													
International/Regional ($'15/boe)													
Coal	3	1	3	4	5	5	6	-7.8%	10.3%	1.0%	2.4%	1.7%	0.9%
Oil	39	38	86	89	89	88	90	-0.2%	8.4%	0.3%	0.0%	-0.1%	0.2%
Gas	28	26	46	73	88	95	96	-0.7%	5.8%	4.7%	1.8%	0.9%	0.0%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**463**	**572**	**718**	**886**	**949**	**784**	**616**	**2.1%**	**2.3%**	**2.1%**	**0.7%**	**-1.9%**	**-2.4%**
Total GHG (energy, industry, agriculture)	**373**	**481**	**668**	**861**	**921**	**771**	**612**	**2.6%**	**3.3%**	**2.6%**	**0.7%**	**-1.8%**	**-2.3%**
CO_2	84	152	245	404	516	451	323	6.1%	4.9%	5.1%	2.5%	-1.3%	-3.3%
CH_4	249	279	344	371	319	238	210	1.1%	2.1%	0.8%	-1.5%	-2.9%	-1.2%
N_2O	38	50	78	85	86	82	78	2.7%	4.6%	0.8%	0.1%	-0.5%	-0.5%
F gases	1	0	1	1	1	1	1	-10.1%	11.6%	2.4%	-6.2%	2.8%	3.0%
Total GHG from Energy and Industry	**144**	**234**	**348**	**527**	**629**	**541**	**394**	**5.0%**	**4.0%**	**4.2%**	**1.8%**	**-1.5%**	**-3.1%**
CO_2 Emissions from Fuel Comb.	**75**	**135**	**217**	**365**	**459**	**388**	**279**	**6.1%**	**4.8%**	**5.3%**	**2.3%**	**-1.7%**	**-3.2%**
Power generation/District heating	20	45	68	155	177	132	74	8.4%	4.3%	8.6%	1.3%	-2.9%	-5.7%
Industry	19	28	49	60	65	47	41	3.7%	6.0%	1.9%	0.9%	-3.3%	-1.2%
Buildings	12	18	26	42	62	70	68	3.5%	4.1%	4.9%	4.0%	1.1%	-0.3%
Agriculture	2	3	3	4	5	4	3	3.2%	2.8%	2.8%	1.6%	-2.6%	-3.2%
Transport	20	38	63	90	128	114	75	6.9%	5.3%	3.5%	3.6%	-1.1%	-4.1%
Other	2	5	7	13	21	21	18	10.4%	3.0%	7.3%	4.8%	-0.1%	-1.5%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**2**	**20**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**24.3%**
Coal	0	0	0	0	0	2	8	n.s.	n.s.	n.s.	n.s.	n.s.	17.6%
Gas	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	n.s.	16.8%
Biomass	0	0	0	0	0	0	9	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	26.3%	18.6%
Energy Balance, by fuel (Mtoe)													
Primary Production	**56**	**77**	**116**	**122**	**123**	**154**	**208**	**3.1%**	**4.2%**	**0.5%**	**0.0%**	**2.3%**	**3.1%**
Coal	1	1	2	3	4	4	3	2.0%	5.1%	2.7%	4.1%	-0.4%	-3.8%
Oil	3	3	3	3	2	3	4	0.8%	1.2%	-2.5%	-0.6%	3.0%	2.9%
Natural gas	15	26	52	66	60	55	51	6.0%	7.2%	2.3%	-0.9%	-0.9%	-0.7%
Biomass	36	44	53	45	43	46	51	2.1%	1.9%	-1.7%	-0.5%	0.7%	1.0%
Nuclear[1]	0	0	0	1	2	5	10	21.2%	5.5%	7.1%	10.3%	11.5%	7.6%
Hydro	2	2	4	5	6	8	10	0.4%	7.0%	0.9%	3.1%	2.4%	1.9%
Other renewables	0	0	0	0	5	33	80	n.s.	n.s.	51.3%	29.6%	20.8%	9.1%
Net Imports	**10**	**22**	**21**	**64**	**97**	**87**	**53**						
Coal	1	1	4	8	11	8	4						
Oil	12	25	29	60	83	67	44						
Natural gas	- 1	- 2	- 9	- 7	3	4	4						
Biomass	0	0	0	3	0	8	1						
Biofuels	0	0	0	0	0	0	0						
Electricity	- 1	- 1	- 3	0	0	0	0						
Primary Energy Demand[2]	**67**	**99**	**136**	**186**	**219**	**241**	**261**	4.0%	**3.3%**	**3.2%**	**1.7%**	**0.9%**	**0.8%**
Coal	2	2	6	11	16	12	6	0.7%	9.1%	7.1%	3.4%	-2.6%	-6.3%
Oil	14	27	32	63	85	71	48	6.7%	1.5%	7.0%	3.0%	-1.8%	-3.7%
Natural gas	13	24	43	59	63	59	55	5.9%	6.2%	3.1%	0.7%	-0.7%	-0.6%
Biomass	36	44	53	48	43	54	53	2.1%	1.9%	-1.1%	-1.0%	2.2%	-0.2%
Nuclear[1]	0	0	0	1	2	5	10	21.2%	5.5%	7.1%	10.3%	11.5%	7.6%
Hydro	2	2	4	5	6	8	10	0.4%	7.0%	0.9%	3.1%	2.4%	1.9%
Other renewables	0	0	0	0	5	33	80	n.s.	n.s.	51.3%	29.6%	20.8%	9.1%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**67**	**99**	**136**	**186**	**219**	**241**	**261**	**4.0%**	**3.3%**	**3.2%**	**1.7%**	**0.9%**	**0.8%**
Energy for Power Generation	**10**	**19**	**30**	**60**	**73**	**95**	**143**	**6.6%**	**4.9%**	**7.2%**	**1.9%**	**2.8%**	**4.1%**
Other Energy Transformation & Losses	**0**	**2**	**2**	**8**	**16**	**23**	**21**	**n.s.**	**-4.4%**	**17.5%**	**7.6%**	**3.6%**	**-1.0%**
Final consumption	**60**	**84**	**116**	**140**	**163**	**181**	**192**	**3.4%**	**3.3%**	**1.9%**	**1.5%**	**1.0%**	**0.6%**
Steel, Non-Met. Minerals and Chem.	3	4	7	9	9	8	7	2.7%	5.0%	2.4%	0.7%	-1.9%	-1.8%
Other Industry	7	11	19	23	28	32	30	5.0%	5.4%	1.8%	2.2%	1.5%	-0.9%
Non-Energy Use	4	5	5	5	6	6	6	4.2%	-0.4%	0.2%	0.9%	0.5%	-0.1%
Residential	38	48	60	65	59	61	66	2.4%	2.4%	0.7%	-1.0%	0.4%	0.7%
Services	1	2	3	6	10	19	32	5.1%	5.1%	5.9%	4.9%	6.4%	5.4%
Agriculture	1	1	2	2	4	5	6	2.0%	4.1%	2.8%	3.6%	2.6%	1.9%
Road	6	10	17	28	45	48	43	6.0%	5.0%	5.2%	4.7%	0.6%	-0.9%
Rail	0	0	0	1	1	1	1	1.5%	0.4%	2.9%	1.8%	1.8%	1.7%
Aviation	0	1	1	1	1	1	1	16.2%	0.1%	-0.8%	2.7%	0.4%	-1.4%
Other Transport	0	0	1	1	1	1	1	5.2%	10.5%	2.5%	4.9%	1.4%	0.4%

[1] Nuclear energy is accounted as primary electricity

Rest South Asia	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**8**	**16**	**25**	**54**	**60**	**49**	**43**	**7.8%**	**4.6%**	**7.9%**	**1.0%**	**-1.9%**	**-1.3%**
Coal	0	0	0	5	8	8	4	17.8%	12.7%	32.1%	5.1%	-0.5%	-7.3%
Oil	2	8	10	25	29	19	11	12.5%	2.1%	9.9%	1.7%	-4.4%	-4.9%
Gas	5	8	16	25	22	19	17	4.8%	6.3%	4.7%	-1.1%	-1.5%	-0.9%
Biomass & Waste	0	0	0	0	0	4	11	n.s.	n.s.	15.4%	13.6%	28.7%	10.9%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**52**	**95**	**157**	**322**	**438**	**698**	**1 188**	**6.2%**	**5.2%**	**7.4%**	**3.1%**	**4.8%**	**5.5%**
Coal	0	0	1	18	35	34	18	20.3%	13.6%	35.9%	6.7%	-0.3%	-6.2%
of which CCS	0	0	0	0	0	2	10	n.s.	n.s.	n.s.	n.s.	n.s.	17.1%
Oil	8	32	40	124	141	90	54	14.2%	2.3%	11.9%	1.3%	-4.4%	-4.9%
Gas	19	36	64	105	98	88	89	6.4%	5.9%	5.1%	-0.7%	-1.1%	0.1%
of which CCS	0	0	0	0	0	1	5	n.s.	n.s.	n.s.	n.s.	n.s.	16.4%
Biomass & Waste	0	0	0	0	1	20	58	n.s.	n.s.	19.8%	20.6%	31.3%	11.3%
of which CCS	0	0	0	0	0	0	9	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	2	3	7	18	53	110	21.2%	5.5%	7.1%	10.3%	11.5%	7.5%
Hydro	24	25	49	59	80	101	136	0.4%	7.0%	1.9%	3.0%	2.4%	3.1%
Wind	0	0	0	3	36	118	246	n.s.	33.3%	51.6%	26.7%	12.5%	7.7%
Solar	0	0	0	1	21	176	409	n.s.	7.8%	50.5%	35.3%	23.8%	8.8%
Other	0	0	0	5	8	18	68	n.s.	n.s.	n.s.	5.6%	8.1%	14.3%
Generation Capacity (GW_e)	**13**	**24**	**34**	**63**	**111**	**270**	**476**	**6.5%**	**3.7%**	**6.3%**	**5.9%**	**9.2%**	**5.8%**
Coal	0	0	0	2	5	5	3	0.0%	10.7%	19.5%	7.0%	0.8%	-6.9%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	17.9%
Oil	3	5	7	21	37	50	61	4.7%	3.4%	11.8%	5.9%	3.2%	2.0%
Gas	4	11	16	21	18	16	21	9.9%	3.6%	3.0%	-1.7%	-1.0%	2.8%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	17.2%
Biomass & Waste	0	0	0	0	0	3	8	n.s.	n.s.	9.4%	18.6%	32.1%	11.9%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	1	3	8	17	13.7%	0.0%	9.0%	10.0%	11.2%	7.3%
Hydro	5	7	11	15	19	24	37	3.7%	4.0%	3.3%	2.7%	2.2%	4.5%
Wind	0	0	0	1	13	41	81	n.s.	29.9%	42.3%	25.4%	11.9%	7.1%
Solar	0	0	0	1	16	122	247	n.s.	n.s.	35.3%	29.4%	22.5%	7.3%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	16.4%	12.6%
Total Final Consumption[2] (Mtoe)	**60**	**84**	**116**	**140**	**163**	**181**	**192**	**3.4%**	**3.3%**	**1.9%**	**1.5%**	**1.0%**	**0.6%**
Coal	2	2	5	6	7	4	2	0.3%	9.0%	1.5%	0.6%	-5.9%	-4.7%
Oil	11	18	22	37	54	49	35	5.0%	1.5%	5.5%	3.8%	-0.8%	-3.5%
Gas	8	14	26	31	37	36	37	5.7%	6.5%	1.8%	1.8%	-0.2%	0.4%
Electricity	3	6	11	22	29	48	78	6.1%	6.5%	7.0%	3.1%	5.1%	5.0%
Heat	0	0	0	0	0	5	8	n.s.	n.s.	n.s.	n.s.	43.1%	3.4%
Biomass & Other	36	43	52	45	37	39	32	2.0%	1.9%	-1.5%	-1.9%	0.4%	-2.0%
Industry (incl. non-energy use)	**14**	**21**	**31**	**37**	**43**	**46**	**42**	**4.3%**	**4.1%**	**1.7%**	**1.7%**	**0.7%**	**-0.9%**
Coal	2	2	5	6	6	4	2	0.5%	8.5%	1.6%	0.9%	-5.7%	-4.6%
Oil	2	3	2	4	4	4	4	6.0%	-4.1%	5.1%	1.9%	-1.3%	0.3%
Gas	6	9	15	16	17	15	15	4.8%	4.9%	0.7%	0.6%	-1.4%	0.0%
Electricity	1	2	4	6	8	9	11	4.6%	7.4%	4.7%	1.8%	1.6%	1.8%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	3	4	5	5	8	15	10	4.2%	2.0%	-0.4%	5.2%	6.9%	-3.8%
Buildings	**39**	**50**	**64**	**71**	**69**	**80**	**97**	**2.5%**	**2.6%**	**1.0%**	**-0.3%**	**1.5%**	**2.0%**
Coal	0	0	0	0	0	0	0	-11.7%	31.8%	0.0%	-5.9%	-16.0%	-16.2%
Oil	2	2	2	3	6	9	9	-0.1%	-2.0%	5.0%	7.2%	4.1%	0.2%
Gas	2	4	8	13	18	17	16	7.8%	6.4%	5.2%	3.1%	-0.4%	-0.6%
Electricity	2	3	6	14	18	30	52	8.4%	6.0%	8.6%	2.6%	5.1%	5.7%
Heat	0	0	0	0	0	5	8	n.s.	n.s.	n.s.	n.s.	43.1%	3.4%
Biomass & Other	33	40	48	40	26	18	12	1.9%	1.9%	-1.7%	-4.2%	-3.8%	-3.6%
Agriculture	**1**	**1**	**2**	**2**	**4**	**5**	**6**	**2.0%**	**4.1%**	**2.8%**	**3.6%**	**2.6%**	**1.9%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	1	1	1	1	2	1	1	3.1%	2.8%	2.8%	1.6%	-2.6%	-3.3%
Gas	0	0	0	0	0	0	0	n.s.	2.9%	2.9%	1.9%	-1.3%	-1.9%
Electricity	0	0	1	1	2	2	3	0.1%	6.0%	2.8%	4.7%	3.8%	3.3%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	n.s.	15.3%	3.7%
Transport	**7**	**12**	**19**	**30**	**48**	**51**	**47**	**6.3%**	**4.7%**	**4.8%**	**4.6%**	**0.6%**	**-0.8%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	7	12	16	29	41	35	20	6.3%	3.2%	5.8%	3.7%	-1.6%	-5.3%
Gas	0	0	3	1	1	4	6	n.s.	n.s.	-7.6%	1.7%	10.0%	5.1%
Electricity	0	0	0	0	2	7	12	-7.2%	n.s.	n.s.	33.1%	13.4%	6.0%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	3	5	8	n.s.	n.s.	n.s.	26.5%	4.8%	4.5%
Other Energy Transformation & Losses[3]	**0**	**2**	**2**	**8**	**16**	**23**	**21**	**n.s.**	**-4.4%**	**17.5%**	**7.6%**	**3.6%**	**-1.0%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Rest South East Asia	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	163	194	221	248	269	284	293	1.8%	1.3%	1.1%	0.8%	0.6%	0.3%
GDP per capita (ppp, k$'15)	2	3	4	5	6	8	9	2.8%	4.0%	2.9%	2.0%	2.1%	2.2%
Prices													
International/Regional ($'15/boe)													
Coal	3	1	3	4	5	6	7	-7.8%	10.3%	1.2%	2.4%	2.4%	1.2%
Oil	39	38	86	89	89	88	90	-0.2%	8.4%	0.3%	0.0%	-0.1%	0.2%
Gas	28	26	46	73	88	95	96	-0.7%	5.8%	4.7%	1.8%	0.9%	0.0%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**737**	**991**	**1 237**	**1 202**	**969**	**599**	**384**	**3.0%**	**2.2%**	**-0.3%**	**-2.1%**	**-4.7%**	**-4.3%**
Total GHG (energy, industry, agriculture)	**558**	**703**	**825**	**901**	**781**	**528**	**332**	**2.3%**	**1.6%**	**0.9%**	**-1.4%**	**-3.8%**	**-4.5%**
CO_2	353	463	530	583	510	345	193	2.8%	1.4%	0.9%	-1.3%	-3.8%	-5.7%
CH_4	169	185	233	248	206	131	98	0.9%	2.4%	0.6%	-1.9%	-4.4%	-2.8%
N_2O	35	44	45	48	45	39	36	2.5%	0.1%	0.7%	-0.6%	-1.5%	-0.9%
F gases	3	11	17	22	20	13	6	15.0%	4.7%	2.6%	-0.9%	-4.1%	-7.5%
Total GHG from Energy and Industry	**414**	**545**	**635**	**707**	**625**	**430**	**248**	**2.8%**	**1.6%**	**1.1%**	**-1.2%**	**-3.7%**	**-5.3%**
CO_2 Emissions from Fuel Comb.	**317**	**431**	**491**	**532**	**455**	**295**	**160**	**3.1%**	**1.3%**	**0.8%**	**-1.6%**	**-4.2%**	**-5.9%**
Power generation/District heating	88	180	228	242	175	78	26	7.4%	2.4%	0.6%	-3.2%	-7.7%	-10.4%
Industry	127	110	121	126	125	79	36	-1.4%	1.0%	0.4%	-0.1%	-4.4%	-7.5%
Buildings	30	31	32	34	31	24	18	0.4%	0.3%	0.5%	-1.0%	-2.2%	-3.1%
Agriculture	4	4	2	3	3	2	1	-0.6%	-5.7%	3.4%	-0.6%	-4.1%	-4.2%
Transport	47	74	78	96	93	79	53	4.5%	0.6%	2.0%	-0.3%	-1.5%	-3.9%
Other	20	31	28	31	29	32	25	4.7%	-1.2%	1.0%	-0.5%	0.8%	-2.3%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**n.s.**	**n.s.**	**n.s.**	**27.8%**	**33.2%**	**31.1%**
Coal	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	27.6%
Gas	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	21.7%
Biomass	0	0	0	0	0	0	3	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	27.8%	21.2%	21.8%
Energy Balance, by fuel (Mtoe)													
Primary Production	**80**	**82**	**114**	**120**	**242**	**220**	**215**	**0.2%**	**3.4%**	**0.5%**	**7.3%**	**-1.0%**	**-0.2%**
Coal	27	20	39	34	121	90	45	-3.2%	7.1%	-1.5%	13.7%	-3.0%	-6.7%
Oil	8	10	10	6	6	7	8	2.1%	-0.3%	-5.0%	-0.5%	2.2%	1.8%
Natural gas	9	13	24	31	29	28	26	3.3%	6.4%	2.4%	-0.4%	-0.3%	-1.0%
Biomass	25	23	26	34	59	54	63	-0.8%	1.0%	3.0%	5.5%	-0.9%	1.7%
Nuclear[1]	3	3	4	3	3	3	1	1.6%	0.8%	-2.5%	0.9%	-1.6%	-7.8%
Hydro	3	2	3	5	8	14	19	-0.7%	1.8%	4.8%	5.8%	5.2%	3.7%
Other renewables	5	10	9	8	16	25	52	7.9%	-1.4%	-1.2%	7.6%	4.4%	7.6%
Net Imports	**54**	**94**	**103**	**129**	**3**	**- 8**	**- 9**						
Coal	15	34	28	27	- 74	- 70	- 38						
Oil	44	67	71	95	86	69	46						
Natural gas	- 6	- 3	3	7	6	0	- 6						
Biomass	0	0	0	- 1	- 16	- 8	- 13						
Biofuels	0	0	0	0	- 1	0	0						
Electricity	0	- 3	1	1	1	1	1						
Primary Energy Demand[2]	**134**	**176**	**217**	**248**	**245**	**211**	**205**	2.8%	**2.1%**	**1.3%**	**-0.1%**	**-1.5%**	**-0.3%**
Coal	43	53	68	61	47	20	6	2.3%	2.4%	-1.0%	-2.5%	-8.3%	-10.6%
Oil	53	77	81	100	92	76	55	3.8%	0.5%	2.2%	-0.9%	-1.8%	-3.2%
Natural gas	4	10	27	37	35	28	20	10.0%	10.9%	3.1%	-0.5%	-2.2%	-3.3%
Biomass	25	23	26	34	43	45	50	-0.8%	1.0%	2.7%	2.4%	0.6%	1.1%
Nuclear[1]	3	3	4	3	3	3	1	1.6%	0.8%	-2.5%	0.9%	-1.6%	-7.8%
Hydro	3	2	3	5	8	14	19	-0.7%	1.8%	4.8%	5.8%	5.2%	3.7%
Other renewables	5	10	9	8	16	25	52	7.9%	-1.4%	-1.2%	7.6%	4.4%	7.6%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**134**	**176**	**217**	**248**	**245**	**211**	**205**	**2.8%**	**2.1%**	**1.3%**	**-0.1%**	**-1.5%**	**-0.3%**
Energy for Power Generation	**36**	**69**	**85**	**94**	**86**	**70**	**87**	**6.6%**	**2.2%**	**1.0%**	**-0.8%**	**-2.0%**	**2.1%**
Other Energy Transformation & Losses	**10**	**11**	**13**	**19**	**26**	**29**	**30**	**0.7%**	**2.3%**	**3.6%**	**3.2%**	**1.3%**	**0.3%**
Final consumption	**101**	**119**	**150**	**173**	**174**	**155**	**139**	**1.6%**	**2.4%**	**1.5%**	**0.1%**	**-1.1%**	**-1.1%**
Steel, Non-Met. Minerals and Chem.	14	18	23	28	29	22	17	2.4%	2.4%	2.0%	0.5%	-2.6%	-2.4%
Other Industry	27	25	28	30	32	28	25	-0.9%	1.3%	0.6%	0.4%	-1.2%	-1.0%
Non-Energy Use	6	11	28	31	28	24	23	5.7%	9.8%	1.0%	-1.0%	-1.3%	-0.5%
Residential	26	28	29	33	32	29	26	0.5%	0.6%	1.1%	-0.3%	-0.7%	-1.1%
Services	9	11	14	16	17	17	18	2.0%	2.4%	1.3%	0.3%	0.1%	0.4%
Agriculture	1	1	1	1	2	2	2	-0.1%	-3.2%	3.6%	1.5%	1.3%	1.2%
Road	14	22	24	30	31	28	23	4.4%	0.8%	2.4%	0.3%	-1.1%	-1.9%
Rail	0	0	1	1	1	1	1	0.5%	11.1%	4.7%	0.8%	0.5%	0.5%
Aviation	1	1	1	1	2	2	2	5.4%	-4.5%	9.1%	4.3%	1.1%	-0.5%
Other Transport	1	1	1	1	1	1	1	5.6%	-0.8%	0.3%	0.6%	-2.5%	-2.7%

[1] Nuclear energy is accounted as primary electricity

Rest South East Asia	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**26**	**53**	**70**	**79**	**59**	**29**	**14**	**7.4%**	**2.9%**	**1.2%**	**-2.8%**	**-6.8%**	**-6.8%**
Coal	12	29	40	34	23	8	2	9.6%	3.1%	-1.4%	-3.9%	-10.4%	-14.4%
Oil	12	16	7	11	8	5	2	2.4%	-7.6%	4.9%	-3.6%	-4.1%	-9.2%
Gas	1	6	21	30	25	13	7	18.2%	12.9%	3.6%	-1.9%	-6.0%	-6.1%
Biomass & Waste	0	1	2	3	2	2	2	11.5%	9.0%	3.8%	-0.9%	-1.6%	-2.5%
Other	0	1	1	1	1	1	2	7.8%	-1.6%	-2.6%	3.8%	-1.1%	9.2%
Gross Elec. Generation (TWh_e)	**168**	**297**	**405**	**479**	**490**	**504**	**578**	**5.9%**	**3.2%**	**1.7%**	**0.2%**	**0.3%**	**1.4%**
Coal	41	116	161	138	94	30	7	11.1%	3.3%	-1.5%	-3.8%	-10.7%	-13.7%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	25.2%
Oil	53	67	29	53	36	24	9	2.3%	-8.0%	6.2%	-3.6%	-4.1%	-9.2%
Gas	3	28	117	174	145	77	41	23.7%	15.2%	4.0%	-1.8%	-6.1%	-6.1%
of which CCS	0	0	0	0	0	0	3	n.s.	n.s.	n.s.	n.s.	n.s.	21.2%
Biomass & Waste	1	2	5	6	6	5	8	13.8%	8.4%	2.6%	-0.6%	-1.0%	3.6%
of which CCS	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	33	39	42	32	35	30	13	1.6%	0.8%	-2.5%	0.9%	-1.6%	-8.3%
Hydro	32	32	37	61	99	163	230	0.2%	1.3%	5.1%	5.0%	5.1%	3.5%
Wind	0	0	1	6	32	49	55	n.s.	n.s.	18.5%	18.7%	4.5%	1.2%
Solar	0	0	0	2	31	110	175	n.s.	41.4%	47.3%	34.9%	13.6%	4.8%
Other	6	13	14	8	12	16	41	8.7%	0.7%	-5.3%	4.5%	2.5%	10.0%
Generation Capacity (GW_e)	**41**	**69**	**93**	**111**	**152**	**212**	**271**	**5.3%**	**3.1%**	**1.8%**	**3.1%**	**3.4%**	**2.5%**
Coal	11	22	28	28	24	11	1	7.3%	2.2%	0.1%	-1.6%	-7.4%	-19.6%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	25.3%
Oil	13	19	12	11	8	5	8	4.1%	-4.7%	-0.7%	-3.6%	-3.2%	3.8%
Gas	2	7	26	31	30	20	9	16.5%	14.0%	1.7%	-0.2%	-4.1%	-7.7%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	21.4%
Biomass & Waste	0	1	1	1	1	1	1	23.2%	4.2%	-2.6%	-0.7%	-0.8%	3.2%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	5	5	5	5	6	5	2	0.0%	0.2%	0.3%	0.7%	-1.8%	-8.5%
Hydro	10	13	19	29	47	76	108	2.4%	3.9%	4.3%	5.2%	4.9%	3.6%
Wind	0	0	1	2	12	18	20	n.s.	n.s.	17.0%	17.6%	4.0%	0.7%
Solar	0	0	0	3	22	74	118	n.s.	n.s.	28.4%	23.7%	13.1%	4.7%
Other	1	2	2	2	2	2	5	8.0%	0.2%	-2.3%	3.9%	-0.9%	9.2%
Total Final Consumption[2] (Mtoe)	**101**	**119**	**150**	**173**	**174**	**155**	**139**	**1.6%**	**2.4%**	**1.5%**	**0.1%**	**-1.1%**	**-1.1%**
Coal	30	23	27	25	23	11	4	-2.7%	1.7%	-1.0%	-1.0%	-6.8%	-9.1%
Oil	34	51	66	79	74	60	43	4.0%	2.5%	1.8%	-0.6%	-2.1%	-3.3%
Gas	1	2	4	7	10	14	14	5.5%	8.0%	4.6%	3.9%	3.8%	-0.1%
Electricity	12	21	30	35	36	38	43	5.8%	3.5%	1.6%	0.3%	0.3%	1.3%
Heat	1	1	1	2	2	2	2	-2.9%	4.0%	5.8%	3.5%	0.8%	-0.3%
Biomass & Other	22	21	22	26	30	30	33	-0.7%	0.5%	1.9%	1.3%	0.2%	1.0%
Industry (incl. non-energy use)	**48**	**54**	**79**	**89**	**88**	**74**	**66**	**1.2%**	**3.9%**	**1.2%**	**0.0%**	**-1.7%**	**-1.3%**
Coal	26	19	23	22	21	11	4	-2.9%	2.0%	-0.5%	-0.6%	-6.4%	-9.0%
Oil	14	21	35	40	37	29	23	4.2%	5.2%	1.3%	-0.7%	-2.2%	-2.2%
Gas	1	1	3	4	5	8	8	6.6%	10.6%	3.8%	2.4%	4.4%	-0.8%
Electricity	6	10	15	18	20	20	21	5.0%	3.6%	2.1%	0.9%	0.1%	0.4%
Heat	0	0	0	0	0	0	0	-3.6%	0.7%	1.3%	-0.2%	-0.3%	-0.2%
Biomass & Other	1	2	2	4	5	5	9	7.7%	2.8%	4.5%	2.0%	1.2%	5.4%
Buildings	**36**	**39**	**44**	**49**	**48**	**46**	**44**	**0.9%**	**1.2%**	**1.2%**	**-0.1%**	**-0.4%**	**-0.5%**
Coal	5	4	4	3	1	0	0	-1.6%	0.4%	-4.4%	-5.4%	-15.6%	-15.8%
Oil	3	4	4	6	5	4	3	2.6%	-0.3%	2.9%	-1.8%	-2.6%	-3.4%
Gas	1	1	1	2	4	5	4	4.3%	3.4%	6.7%	5.5%	1.9%	-2.1%
Electricity	5	11	14	16	15	15	18	6.9%	3.2%	1.0%	-0.8%	-0.1%	1.9%
Heat	1	0	1	1	2	2	2	-2.5%	5.3%	6.9%	4.0%	0.9%	-0.4%
Biomass & Other	21	19	19	21	21	21	18	-1.2%	0.1%	1.0%	0.1%	-0.3%	-1.6%
Agriculture	**1**	**1**	**1**	**1**	**2**	**2**	**2**	**-0.1%**	**-3.2%**	**3.6%**	**1.5%**	**1.3%**	**1.2%**
Coal	0	0	0	0	0	0	0	-32.8%	12.8%	4.6%	-2.5%	-7.5%	n.s.
Oil	1	1	1	1	1	1	0	0.0%	-5.7%	3.4%	-0.5%	-4.1%	-4.2%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Electricity	0	0	0	1	1	1	1	1.5%	4.7%	4.0%	2.7%	3.1%	2.6%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	1	4.3%	7.0%	6.6%	19.9%	11.1%	3.3%
Transport	**16**	**25**	**26**	**34**	**36**	**33**	**27**	**4.4%**	**0.7%**	**2.6%**	**0.5%**	**-0.9%**	**-1.7%**
Coal	0	0	0	0	0	0	0	-4.4%	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	16	24	26	32	31	26	16	4.4%	0.5%	2.3%	-0.4%	-1.8%	-4.7%
Gas	0	0	0	0	0	1	2	n.s.	n.s.	-11.9%	26.5%	14.4%	9.0%
Electricity	0	0	0	0	1	2	3	7.5%	15.5%	3.9%	7.7%	7.2%	4.4%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	1	3	4	6	n.s.	n.s.	19.2%	11.4%	0.7%	5.1%
Other Energy Transformation & Losses[3]	**10**	**11**	**13**	**19**	**26**	**29**	**30**	**0.7%**	**2.3%**	**3.6%**	**3.2%**	**1.3%**	**0.3%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Australia	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	17	19	22	25	28	30	33	1.1%	1.5%	1.3%	1.0%	0.8%	0.8%
GDP per capita (ppp, k$'15)	29	35	41	48	57	68	80	2.2%	1.5%	1.5%	1.7%	1.9%	1.6%
Prices													
International/Regional ($'15/boe)													
Coal	3	1	3	4	4	5	5	-7.8%	10.3%	1.7%	1.0%	0.7%	1.3%
Oil	39	38	86	89	89	88	90	-0.2%	8.4%	0.3%	0.0%	-0.1%	0.2%
Gas	28	26	46	73	88	95	96	-0.7%	5.8%	4.7%	1.8%	0.9%	0.0%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**575**	**505**	**467**	**451**	**263**	**123**	**29**	**-1.3%**	**-0.8%**	**-0.3%**	**-5.3%**	**-7.3%**	**-13.6%**
Total GHG (energy, industry, agriculture)	**435**	**504**	**556**	**542**	**402**	**285**	**184**	**1.5%**	**1.0%**	**-0.3%**	**-2.9%**	**-3.4%**	**-4.3%**
CO_2	274	352	409	408	305	206	117	2.5%	1.5%	0.0%	-2.9%	-3.8%	-5.5%
CH_4	133	124	112	99	70	58	50	-0.7%	-1.0%	-1.3%	-3.3%	-1.9%	-1.5%
N_2O	22	25	27	23	21	19	17	1.4%	0.5%	-1.5%	-0.9%	-1.1%	-0.8%
F gases	6	3	9	12	6	2	1	-6.8%	10.7%	3.6%	-6.3%	-10.1%	-12.5%
Total GHG from Energy and Industry	**336**	**410**	**475**	**464**	**331**	**221**	**125**	**2.0%**	**1.5%**	**-0.2%**	**-3.3%**	**-4.0%**	**-5.5%**
CO_2 Emissions from Fuel Comb.	**256**	**331**	**385**	**385**	**284**	**189**	**106**	**2.6%**	**1.5%**	**0.0%**	**-3.0%**	**-4.0%**	**-5.7%**
Power generation/District heating	129	180	206	182	111	54	21	3.4%	1.4%	-1.2%	-4.8%	-7.0%	-9.2%
Industry	43	48	42	45	40	31	20	1.2%	-1.4%	0.8%	-1.3%	-2.5%	-4.3%
Buildings	9	11	13	15	14	12	9	2.1%	1.8%	1.2%	-0.3%	-1.3%	-3.5%
Agriculture	3	4	6	7	6	4	2	2.2%	3.9%	0.6%	-1.8%	-4.1%	-4.2%
Transport	59	71	87	94	80	57	33	1.9%	2.0%	0.8%	-1.6%	-3.3%	-5.5%
Other	13	17	32	42	34	31	21	2.9%	6.6%	2.9%	-2.2%	-0.7%	-3.7%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**0**	**10**	**n.s.**	**n.s.**	**n.s.**	**17.9%**	**39.8%**	**34.6%**
Coal	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	n.s.	20.2%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass	0	0	0	0	0	0	7	n.s.	n.s.	n.s.	n.s.	n.s.	56.5%
Direct Air Capture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	17.9%	20.6%	14.7%
Energy Balance, by fuel (Mtoe)													
Primary Production	**173**	**219**	**306**	**358**	**310**	**182**	**124**	**2.4%**	**3.4%**	**1.6%**	**-1.4%**	**-5.2%**	**-3.8%**
Coal	126	163	236	274	213	86	27	2.6%	3.7%	1.5%	-2.5%	-8.7%	-10.8%
Oil	25	24	20	29	21	15	9	-0.6%	-1.5%	3.7%	-3.2%	-3.0%	-5.4%
Natural gas	17	25	42	36	45	47	37	4.2%	5.4%	-1.6%	2.1%	0.4%	-2.3%
Biomass	4	5	5	14	21	18	25	2.4%	0.4%	10.0%	4.4%	-1.5%	3.6%
Nuclear[1]	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	31.0%	-0.3%	29.9%
Hydro	1	1	1	1	2	2	2	1.5%	-1.9%	2.5%	1.3%	1.3%	0.6%
Other renewables	0	0	1	4	9	15	22	-1.4%	23.2%	17.4%	9.4%	5.1%	4.2%
Net Imports	**- 86**	**- 111**	**- 179**	**- 236**	**- 206**	**- 95**	**- 48**						
Coal	- 91	- 116	- 186	- 228	- 188	- 76	- 25						
Oil	7	10	21	14	17	11	6						
Natural gas	- 2	- 6	- 14	- 16	- 24	- 26	- 22						
Biomass	0	0	0	- 6	- 10	- 4	- 7						
Biofuels	0	0	0	0	0	0	0						
Electricity	0	0	0	0	0	0	0						
Primary Energy Demand[2]	**88**	**108**	**127**	**122**	**104**	**87**	**76**	2.1%	**1.7%**	**-0.4%**	**-1.6%**	**-1.8%**	**-1.4%**
Coal	35	48	50	47	25	10	3	3.0%	0.4%	-0.7%	-6.0%	-9.0%	-12.5%
Oil	33	34	42	44	38	26	15	0.5%	2.0%	0.5%	-1.3%	-3.6%	-5.7%
Natural gas	14	19	28	20	20	20	15	2.9%	4.0%	-3.5%	0.2%	0.1%	-3.1%
Biomass	4	5	5	7	10	14	18	2.4%	0.4%	3.4%	3.7%	2.9%	2.7%
Nuclear[1]	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	31.0%	-0.3%	29.9%
Hydro	1	1	1	1	2	2	2	1.5%	-1.9%	2.5%	1.3%	1.3%	0.6%
Other renewables	0	0	1	4	9	15	22	-1.4%	23.2%	17.4%	9.4%	5.1%	4.2%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**88**	**108**	**127**	**122**	**104**	**87**	**76**	**2.1%**	**1.7%**	**-0.4%**	**-1.6%**	**-1.8%**	**-1.4%**
Energy for Power Generation	**36**	**49**	**59**	**56**	**44**	**35**	**39**	**3.1%**	**1.8%**	**-0.5%**	**-2.4%**	**-2.1%**	**0.8%**
Other Energy Transformation & Losses	**5**	**3**	**9**	**3**	**3**	**6**	**4**	**-5.3%**	**11.8%**	**-11.8%**	**2.9%**	**5.1%**	**-4.2%**
Final consumption	**58**	**70**	**78**	**84**	**79**	**69**	**60**	**2.0%**	**1.0%**	**0.8%**	**-0.7%**	**-1.3%**	**-1.3%**
Steel, Non-Met. Minerals and Chem.	7	8	7	6	6	5	4	0.4%	-0.5%	-1.0%	-0.7%	-2.5%	-2.4%
Other Industry	13	17	17	19	18	17	16	2.9%	-0.2%	1.2%	-0.6%	-0.7%	-0.5%
Non-Energy Use	4	4	4	4	4	4	3	1.2%	0.0%	-0.3%	-0.6%	-1.0%	-0.9%
Residential	7	9	10	11	10	9	8	1.9%	1.2%	0.6%	-1.1%	-1.1%	-0.8%
Services	3	5	7	8	7	6	5	3.8%	3.3%	1.6%	-1.1%	-1.7%	-1.4%
Agriculture	1	2	2	2	3	3	3	2.1%	3.2%	0.9%	0.9%	0.7%	0.6%
Road	19	22	25	27	25	21	16	1.7%	1.3%	0.8%	-1.0%	-1.8%	-2.4%
Rail	1	1	1	1	1	1	1	0.9%	3.3%	2.7%	0.2%	-0.1%	-0.2%
Aviation	1	2	2	3	4	3	3	5.9%	2.8%	2.7%	1.6%	-1.6%	-1.3%
Other Transport	1	0	1	1	1	1	0	-3.9%	7.6%	-2.6%	0.5%	-2.1%	-2.1%

[1] Nuclear energy is accounted as primary electricity

Australia	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**35**	**48**	**57**	**51**	**33**	**19**	**13**	**3.2%**	**1.8%**	**-1.1%**	**-4.2%**	**-5.6%**	**-3.5%**
Coal	30	42	45	39	21	7	1	3.6%	0.6%	-1.3%	-6.0%	-10.1%	-15.3%
Oil	1	1	1	2	2	1	2	-5.7%	10.4%	5.5%	-1.7%	-4.5%	3.5%
Gas	3	4	10	8	9	9	7	1.6%	9.2%	-2.0%	0.9%	0.0%	-2.2%
Biomass & Waste	1	1	1	1	1	1	3	-0.2%	0.5%	5.9%	0.8%	0.5%	7.3%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**157**	**214**	**257**	**273**	**265**	**261**	**286**	**3.1%**	**1.8%**	**0.6%**	**-0.3%**	**-0.1%**	**0.9%**
Coal	121	174	180	159	86	29	6	3.7%	0.3%	-1.3%	-6.0%	-10.2%	-14.6%
of which CCS	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	4	2	6	11	9	6	8	-6.7%	13.1%	5.9%	-1.8%	-4.2%	3.4%
Gas	14	16	45	38	43	44	37	1.2%	10.6%	-1.5%	1.2%	0.1%	-1.7%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	1	1	3	5	6	7	14	4.2%	9.4%	6.6%	0.8%	1.3%	8.3%
of which CCS	0	0	0	0	0	0	6	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	1	1	14	n.s.	n.s.	n.s.	30.8%	-1.0%	30.5%
Hydro	15	17	14	23	23	25	26	1.2%	-2.1%	5.2%	0.3%	0.8%	0.3%
Wind	0	0	5	26	81	120	133	n.s.	56.3%	18.0%	11.8%	4.0%	1.1%
Solar	0	0	0	10	15	28	43	n.s.	27.5%	37.4%	4.0%	6.1%	4.5%
Other	2	4	4	0	1	2	4	6.2%	1.0%	-19.0%	7.8%	7.6%	5.9%
Generation Capacity (GW_e)	**40**	**47**	**62**	**76**	**88**	**104**	**109**	**1.7%**	**2.8%**	**2.0%**	**1.4%**	**1.7%**	**0.5%**
Coal	24	27	30	26	17	12	1	0.9%	1.1%	-1.2%	-4.5%	-3.5%	-20.5%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	2	4	3	3	4	5	6	9.3%	-3.1%	0.3%	4.0%	1.8%	1.2%
Gas	4	6	16	18	17	16	12	4.6%	10.6%	0.7%	-0.5%	-0.8%	-2.9%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	0	1	1	1	1	2	4.5%	5.7%	1.8%	0.4%	2.6%	9.5%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	30.6%	-1.2%	30.3%
Hydro	10	10	11	11	12	13	14	0.3%	0.3%	0.2%	0.9%	1.0%	0.5%
Wind	0	0	2	9	25	38	42	n.s.	49.7%	16.9%	11.1%	4.0%	1.1%
Solar	0	0	0	9	12	20	30	13.6%	22.3%	46.9%	3.1%	5.3%	4.3%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	14.6%	14.5%
Total Final Consumption[2] (Mtoe)	**58**	**70**	**78**	**84**	**79**	**69**	**60**	**2.0%**	**1.0%**	**0.8%**	**-0.7%**	**-1.3%**	**-1.3%**
Coal	5	5	4	3	3	2	1	-0.2%	-3.5%	-0.9%	0.1%	-4.0%	-5.6%
Oil	29	35	39	43	37	26	15	1.8%	1.2%	1.0%	-1.6%	-3.5%	-5.5%
Gas	9	11	12	13	11	12	10	2.4%	1.0%	0.3%	-1.1%	0.3%	-1.3%
Electricity	11	15	18	19	19	19	20	2.9%	2.0%	0.5%	-0.2%	-0.1%	0.9%
Heat	0	0	0	1	1	1	1	0.0%	11.9%	9.5%	1.9%	3.5%	2.7%
Biomass & Other	3	4	5	6	8	9	12	2.9%	0.4%	2.1%	3.2%	2.0%	2.8%
Industry (incl. non-energy use)	**24**	**29**	**29**	**30**	**28**	**25**	**23**	**1.9%**	**-0.2%**	**0.5%**	**-0.7%**	**-1.1%**	**-0.9%**
Coal	5	5	4	3	3	2	1	0.0%	-3.4%	-0.8%	0.1%	-4.0%	-5.6%
Oil	6	8	7	8	7	6	4	1.8%	-1.0%	1.8%	-1.3%	-1.9%	-3.2%
Gas	6	8	8	8	7	6	5	2.1%	0.8%	0.1%	-1.9%	-1.0%	-1.9%
Electricity	5	7	7	7	8	8	9	2.7%	0.6%	0.0%	1.2%	0.4%	0.6%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	1	2	3	3	3	3	4	5.2%	1.9%	1.1%	-1.3%	-0.8%	3.4%
Buildings	**11**	**14**	**17**	**19**	**17**	**15**	**13**	**2.5%**	**2.0%**	**1.0%**	**-1.1%**	**-1.4%**	**-1.1%**
Coal	0	0	0	0	0	0	0	-10.4%	-11.9%	n.s.	n.s.	n.s.	n.s.
Oil	1	1	1	1	2	2	1	0.4%	4.1%	2.8%	2.5%	0.3%	-3.3%
Gas	3	4	4	4	4	3	2	3.1%	1.3%	0.7%	-1.6%	-2.5%	-3.6%
Electricity	6	8	10	11	9	7	7	3.2%	3.0%	0.7%	-2.4%	-2.3%	-0.4%
Heat	0	0	0	1	1	1	1	0.0%	11.9%	9.5%	1.9%	3.5%	2.7%
Biomass & Other	2	2	1	1	2	2	2	0.6%	-3.3%	0.5%	3.7%	0.7%	-1.0%
Agriculture	**1**	**2**	**2**	**2**	**3**	**3**	**3**	**2.1%**	**3.2%**	**0.9%**	**0.9%**	**0.7%**	**0.6%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	1	1	2	2	2	1	1	2.2%	3.9%	0.5%	-1.8%	-4.1%	-4.2%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	26.9%	-1.1%	-2.8%	-2.9%
Electricity	0	0	0	0	0	1	1	2.0%	-2.1%	2.1%	4.5%	4.6%	3.1%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	28.3%	8.2%	2.9%
Transport	**21**	**25**	**30**	**33**	**31**	**26**	**21**	**1.9%**	**1.6%**	**1.0%**	**-0.6%**	**-1.7%**	**-2.1%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	21	25	29	31	26	17	8	1.8%	1.5%	0.7%	-1.8%	-4.2%	-6.9%
Gas	0	0	0	0	1	3	3	n.s.	n.s.	-3.4%	30.6%	12.9%	1.8%
Electricity	0	0	0	1	2	3	4	2.6%	4.5%	5.4%	11.8%	5.8%	4.0%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	1	2	3	5	n.s.	n.s.	16.4%	10.8%	4.4%	4.2%
Other Energy Transformation & Losses[3]	**5**	**3**	**9**	**3**	**3**	**6**	**4**	**-5.3%**	**11.8%**	**-11.8%**	**2.9%**	**5.1%**	**-4.2%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Japan	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	125	128	129	126	121	114	107	0.2%	0.1%	-0.2%	-0.4%	-0.6%	-0.6%
GDP per capita (ppp, k$'15)	31	34	37	41	47	56	66	0.9%	0.7%	1.2%	1.3%	1.8%	1.7%
Prices													
International/Regional ($'15/boe)													
Coal	3	1	3	4	4	5	6	-7.8%	10.3%	1.4%	1.7%	1.6%	1.4%
Oil	39	38	86	89	89	88	90	-0.2%	8.4%	0.3%	0.0%	-0.1%	0.2%
Gas	28	26	46	73	88	95	96	-0.7%	5.8%	4.7%	1.8%	0.9%	0.0%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**1 153**	**1 222**	**1 157**	**1 042**	**752**	**444**	**214**	**0.6%**	**-0.5%**	**-1.0%**	**-3.2%**	**-5.1%**	**-7.1%**
Total GHG (energy, industry, agriculture)	**1 217**	**1 318**	**1 240**	**1 114**	**805**	**487**	**236**	**0.8%**	**-0.6%**	**-1.1%**	**-3.2%**	**-4.9%**	**-7.0%**
CO_2	1 112	1 221	1 171	1 049	769	461	214	0.9%	-0.4%	-1.1%	-3.1%	-5.0%	-7.4%
CH_4	44	38	35	30	15	13	11	-1.6%	-0.8%	-1.4%	-6.5%	-1.9%	-1.2%
N_2O	32	30	22	19	13	11	10	-0.6%	-2.8%	-1.7%	-3.7%	-1.7%	-1.2%
F gases	29	29	12	16	8	3	1	0.0%	-8.5%	2.9%	-6.4%	-10.2%	-10.9%
Total GHG from Energy and Industry	**1 180**	**1 283**	**1 205**	**1 081**	**785**	**469**	**219**	**0.8%**	**-0.6%**	**-1.1%**	**-3.1%**	**-5.0%**	**-7.4%**
CO_2 Emissions from Fuel Comb.	**1 027**	**1 137**	**1 104**	**984**	**712**	**422**	**192**	**1.0%**	**-0.3%**	**-1.1%**	**-3.2%**	**-5.1%**	**-7.6%**
Power generation/District heating	358	414	446	362	210	97	36	1.5%	0.8%	-2.1%	-5.3%	-7.5%	-9.3%
Industry	290	273	256	254	206	119	46	-0.6%	-0.6%	-0.1%	-2.0%	-5.3%	-9.1%
Buildings	126	155	124	114	90	64	39	2.1%	-2.2%	-0.9%	-2.3%	-3.4%	-4.9%
Agriculture	6	3	3	2	2	1	1	-7.3%	-1.5%	-0.5%	-2.4%	-4.6%	-4.7%
Transport	202	249	219	194	150	102	53	2.1%	-1.3%	-1.2%	-2.5%	-3.8%	-6.3%
Other	44	43	56	58	53	38	17	-0.2%	2.6%	0.3%	-0.9%	-3.3%	-7.7%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**0**	**16**	**n.s.**	**n.s.**	**n.s.**	**30.1%**	**25.2%**	**44.9%**
Coal	0	0	0	0	0	0	5	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gas	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass	0	0	0	0	0	0	8	n.s.	n.s.	n.s.	n.s.	n.s.	50.9%
Direct Air Capture	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	30.1%	20.2%	14.2%
Energy Balance, by fuel (Mtoe)													
Primary Production	**39**	**48**	**48**	**53**	**65**	**85**	**124**	**2.0%**	**0.0%**	**1.0%**	**2.1%**	**2.7%**	**3.8%**
Coal	4	2	0	0	0	0	0	-9.3%	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	0	0	0	0	0	0	1	-0.5%	-6.0%	0.8%	4.1%	2.1%	0.2%
Natural gas	2	2	3	2	1	0	0	1.5%	3.0%	-3.8%	-7.5%	-8.3%	-6.0%
Biomass	5	5	9	13	17	22	27	0.4%	7.0%	3.6%	2.5%	2.8%	1.8%
Nuclear[1]	17	28	25	20	19	17	16	4.8%	-1.1%	-2.3%	-0.6%	-0.7%	-0.6%
Hydro	7	7	7	7	7	8	8	-0.2%	-0.4%	0.4%	0.1%	0.2%	0.0%
Other renewables	3	4	3	10	21	37	73	1.6%	-1.1%	11.7%	7.3%	5.9%	7.0%
Net Imports	**359**	**412**	**399**	**346**	**257**	**166**	**92**						
Coal	73	94	114	101	69	26	9						
Oil	239	254	202	181	128	89	53						
Natural gas	47	63	83	65	56	49	27						
Biomass	0	0	0	- 1	4	1	2						
Biofuels	0	0	0	0	0	1	1						
Electricity	0	0	0	0	0	0	0						
Primary Energy Demand[2]	**398**	**460**	**447**	**399**	**322**	**252**	**217**	1.4%	**-0.3%**	**-1.1%**	**-2.1%**	**-2.4%**	**-1.5%**
Coal	77	96	114	101	69	26	9	2.2%	1.8%	-1.2%	-3.8%	-9.3%	-10.2%
Oil	240	255	202	181	129	90	54	0.6%	-2.3%	-1.1%	-3.4%	-3.5%	-5.0%
Natural gas	49	66	86	67	56	50	28	2.9%	2.7%	-2.5%	-1.7%	-1.3%	-5.7%
Biomass	5	5	9	12	21	23	29	0.4%	7.0%	2.7%	5.4%	1.2%	2.2%
Nuclear[1]	17	28	25	20	19	17	16	4.8%	-1.1%	-2.3%	-0.6%	-0.7%	-0.6%
Hydro	7	7	7	7	7	8	8	-0.2%	-0.4%	0.4%	0.1%	0.2%	0.0%
Other renewables	3	4	3	10	21	37	73	1.6%	-1.1%	11.7%	7.3%	5.9%	7.0%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**398**	**460**	**447**	**399**	**322**	**252**	**217**	**1.4%**	**-0.3%**	**-1.1%**	**-2.1%**	**-2.4%**	**-1.5%**
Energy for Power Generation	**145**	**172**	**183**	**157**	**123**	**100**	**121**	**1.7%**	**0.6%**	**-1.5%**	**-2.5%**	**-2.0%**	**1.9%**
Other Energy Transformation & Losses	**16**	**24**	**24**	**18**	**17**	**16**	**4**	**4.0%**	**0.1%**	**-2.9%**	**-0.4%**	**-0.6%**	**-13.4%**
Final consumption	**305**	**349**	**329**	**304**	**254**	**204**	**166**	**1.4%**	**-0.6%**	**-0.8%**	**-1.8%**	**-2.2%**	**-2.0%**
Steel, Non-Met. Minerals and Chem.	74	70	66	67	59	42	29	-0.5%	-0.7%	0.2%	-1.2%	-3.5%	-3.5%
Other Industry	48	46	41	35	33	31	29	-0.5%	-0.9%	-1.8%	-0.5%	-0.7%	-0.6%
Non-Energy Use	40	46	45	39	27	24	22	1.5%	-0.3%	-1.3%	-3.7%	-1.0%	-1.0%
Residential	39	49	50	42	35	27	22	2.5%	0.2%	-1.7%	-1.9%	-2.4%	-2.0%
Services	34	52	51	51	43	34	29	4.3%	-0.1%	0.0%	-1.8%	-2.2%	-1.5%
Agriculture	2	1	1	1	1	1	1	-6.6%	-0.8%	0.1%	0.4%	0.4%	0.3%
Road	60	74	65	60	49	39	28	2.2%	-1.3%	-0.9%	-1.9%	-2.3%	-3.2%
Rail	2	2	2	2	2	2	2	0.5%	0.0%	-0.6%	-0.1%	-0.4%	-0.4%
Aviation	3	4	4	4	3	2	2	2.1%	1.0%	-1.6%	-2.6%	-2.2%	-2.5%
Other Transport	4	5	3	3	3	2	1	0.9%	-3.3%	-0.6%	-1.0%	-3.3%	-3.2%

[1] Nuclear energy is accounted as primary electricity

Japan	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**117**	**133**	**148**	**120**	**76**	**38**	**24**	**1.3%**	**1.0%**	**-2.1%**	**-4.5%**	**-6.6%**	**-4.5%**
Coal	25	48	61	50	27	8	3	6.8%	2.5%	-2.0%	-6.0%	-11.7%	-10.7%
Oil	57	35	19	22	9	4	4	-4.8%	-6.0%	1.4%	-8.9%	-6.8%	-2.0%
Gas	33	48	61	40	32	22	11	3.8%	2.3%	-4.1%	-2.1%	-3.6%	-6.5%
Biomass & Waste	2	2	7	8	7	3	5	0.7%	12.3%	1.6%	-0.3%	-7.9%	5.0%
Other	0	0	0	0	0	0	1	6.8%	-2.3%	-2.3%	-1.2%	4.7%	17.2%
Gross Elec. Generation (TWh_e)	**893**	**1 118**	**1 168**	**1 054**	**927**	**837**	**851**	**2.3%**	**0.4%**	**-1.0%**	**-1.3%**	**-1.0%**	**0.2%**
Coal	118	234	310	251	135	39	13	7.1%	2.8%	-2.1%	-6.0%	-11.7%	-10.7%
of which CCS	0	0	0	0	0	0	6	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	284	179	100	124	49	24	19	-4.5%	-5.7%	2.1%	-8.7%	-6.9%	-2.5%
Gas	171	254	319	208	165	115	65	4.0%	2.3%	-4.2%	-2.3%	-3.6%	-5.6%
of which CCS	0	0	0	0	0	0	6	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	10	10	30	35	34	15	26	0.7%	11.4%	1.6%	-0.3%	-8.0%	5.8%
of which CCS	0	0	0	0	0	0	6	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	202	322	288	229	217	202	189	4.8%	-1.1%	-2.3%	-0.6%	-0.7%	-0.7%
Hydro	96	97	91	111	109	113	110	0.1%	-0.7%	2.0%	-0.1%	0.4%	-0.3%
Wind	0	0	4	24	121	187	219	n.s.	43.4%	19.9%	17.4%	4.5%	1.6%
Solar	0	0	4	69	93	132	179	n.s.	27.0%	33.7%	2.9%	3.7%	3.1%
Other	14	22	22	3	4	9	30	4.7%	0.3%	-19.5%	3.4%	9.9%	12.8%
Generation Capacity (GW_e)	**223**	**258**	**287**	**342**	**364**	**377**	**398**	**1.5%**	**1.0%**	**1.8%**	**0.6%**	**0.4%**	**0.6%**
Coal	31	63	63	67	54	25	2	7.4%	0.1%	0.6%	-2.2%	-7.5%	-20.6%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	78	66	56	45	37	35	42	-1.6%	-1.6%	-2.1%	-2.1%	-0.5%	1.8%
Gas	45	37	55	53	47	40	23	-1.9%	4.1%	-0.4%	-1.3%	-1.6%	-5.2%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	3	3	8	5	5	2	4	1.8%	9.6%	-4.0%	0.6%	-8.0%	6.8%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	29	42	46	37	34	31	29	4.0%	0.9%	-2.2%	-0.8%	-0.9%	-0.9%
Hydro	38	46	51	58	53	49	45	2.0%	1.0%	1.2%	-0.8%	-0.8%	-1.0%
Wind	0	0	2	11	52	81	94	n.s.	32.7%	16.8%	16.9%	4.5%	1.5%
Solar	0	0	4	65	80	113	154	43.4%	27.1%	33.5%	2.1%	3.4%	3.2%
Other	0	1	1	1	0	1	5	7.0%	0.1%	-0.3%	-0.7%	6.3%	18.2%
Total Final Consumption[2] (Mtoe)	**305**	**349**	**329**	**304**	**254**	**204**	**166**	**1.4%**	**-0.6%**	**-0.8%**	**-1.8%**	**-2.2%**	**-2.0%**
Coal	48	45	44	47	37	17	7	-0.7%	-0.3%	0.6%	-2.2%	-7.6%	-8.2%
Oil	171	194	164	145	108	75	43	1.3%	-1.7%	-1.2%	-2.9%	-3.6%	-5.5%
Gas	15	22	30	28	25	29	21	3.6%	3.3%	-0.7%	-0.9%	1.2%	-3.2%
Electricity	66	83	88	78	69	62	63	2.3%	0.5%	-1.1%	-1.3%	-1.0%	0.1%
Heat	2	2	1	1	1	3	5	-0.3%	-3.0%	-0.2%	2.7%	7.2%	5.0%
Biomass & Other	3	3	3	4	13	19	28	0.2%	0.3%	5.0%	11.2%	3.7%	4.3%
Industry (incl. non-energy use)	**161**	**162**	**152**	**141**	**119**	**97**	**80**	**0.0%**	**-0.6%**	**-0.7%**	**-1.7%**	**-2.1%**	**-1.9%**
Coal	47	45	44	46	37	17	7	-0.6%	-0.2%	0.6%	-2.2%	-7.6%	-8.2%
Oil	71	72	62	54	38	31	22	0.2%	-1.5%	-1.5%	-3.3%	-2.1%	-3.6%
Gas	4	8	14	13	12	14	8	7.1%	6.1%	-0.6%	-1.2%	1.5%	-4.8%
Electricity	36	34	29	25	27	27	27	-0.6%	-1.7%	-1.4%	0.6%	0.0%	0.1%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	3	3	3	3	5	8	16	0.5%	0.4%	-0.7%	7.5%	4.7%	6.8%
Buildings	**73**	**101**	**102**	**93**	**78**	**62**	**52**	**3.4%**	**0.0%**	**-0.8%**	**-1.8%**	**-2.3%**	**-1.7%**
Coal	1	0	0	0	0	0	0	-5.7%	-9.8%	10.8%	-10.4%	-17.3%	-17.5%
Oil	30	38	28	25	19	13	7	2.3%	-3.2%	-1.1%	-2.4%	-4.0%	-5.7%
Gas	11	14	16	14	12	10	7	2.0%	1.3%	-0.8%	-1.8%	-1.9%	-3.6%
Electricity	28	47	57	51	39	30	28	5.2%	1.9%	-1.1%	-2.8%	-2.5%	-0.6%
Heat	2	2	1	1	1	3	5	-0.3%	-3.0%	-0.2%	2.7%	7.2%	5.0%
Biomass & Other	0	0	0	1	6	6	5	-7.5%	-6.7%	50.8%	15.3%	0.4%	-2.5%
Agriculture	**2**	**1**	**1**	**1**	**1**	**1**	**1**	**-6.6%**	**-0.8%**	**0.1%**	**0.4%**	**0.4%**	**0.3%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	2	1	1	1	1	0	0	-7.3%	-1.5%	-0.5%	-2.4%	-4.6%	-4.7%
Gas	0	0	0	0	0	0	0	n.s.	0.0%	-0.9%	-1.8%	-3.3%	n.s.
Electricity	0	0	0	0	0	0	0	0.3%	2.6%	1.7%	2.0%	2.6%	1.8%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	38.3%	8.1%	2.7%
Transport	**69**	**85**	**75**	**68**	**56**	**45**	**33**	**2.1%**	**-1.2%**	**-0.9%**	**-1.9%**	**-2.3%**	**-3.0%**
Coal	0	0	0	0	0	0	0	n.s.	-0.3%	0.2%	0.0%	0.0%	0.0%
Oil	67	83	73	66	50	31	14	2.1%	-1.3%	-1.0%	-2.8%	-4.7%	-7.9%
Gas	0	0	0	0	2	5	6	n.s.	n.s.	-5.4%	40.3%	12.1%	1.1%
Electricity	1	2	2	2	3	5	7	1.0%	0.3%	0.0%	7.3%	4.7%	3.0%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	1	2	4	7	n.s.	n.s.	n.s.	12.2%	9.0%	6.2%
Other Energy Transformation & Losses[3]	**16**	**24**	**24**	**18**	**17**	**16**	**4**	**4.0%**	**0.1%**	**-2.9%**	**-0.4%**	**-0.6%**	**-13.4%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

South Korea	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	43	47	50	51	52	51	48	1.0%	0.4%	0.3%	0.1%	-0.2%	-0.5%
GDP per capita (ppp, k$'15)	14	22	32	41	52	65	80	5.0%	3.7%	2.6%	2.4%	2.1%	2.1%
Prices													
International/Regional ($'15/boe)													
Coal	3	1	3	4	4	5	6	-7.8%	10.3%	1.3%	1.8%	1.8%	1.3%
Oil	39	38	86	89	89	88	90	-0.2%	8.4%	0.3%	0.0%	-0.1%	0.2%
Gas	28	26	46	73	88	95	96	-0.7%	5.8%	4.7%	1.8%	0.9%	0.0%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**288**	**520**	**645**	**670**	**579**	**383**	**200**	**6.1%**	**2.2%**	**0.4%**	**-1.5%**	**-4.0%**	**-6.3%**
Total GHG (energy, industry, agriculture)	**323**	**535**	**653**	**678**	**578**	**390**	**203**	**5.2%**	**2.0%**	**0.4%**	**-1.6%**	**-3.9%**	**-6.3%**
CO_2	268	463	594	622	533	356	176	5.6%	2.5%	0.5%	-1.5%	-4.0%	-6.8%
CH_4	39	37	37	34	28	20	17	-0.4%	-0.1%	-0.7%	-2.0%	-3.1%	-2.0%
N_2O	9	18	13	13	11	10	8	6.5%	-3.0%	0.0%	-1.4%	-1.3%	-1.6%
F gases	7	17	9	10	6	3	2	9.9%	-5.9%	0.2%	-4.8%	-5.3%	-3.6%
Total GHG from Energy and Industry	**299**	**514**	**630**	**656**	**556**	**371**	**185**	**5.6%**	**2.1%**	**0.4%**	**-1.6%**	**-4.0%**	**-6.7%**
CO_2 Emissions from Fuel Comb.	**229**	**411**	**538**	**563**	**478**	**312**	**149**	**6.0%**	**2.7%**	**0.4%**	**-1.6%**	**-4.2%**	**-7.1%**
Power generation/District heating	42	133	264	255	204	111	37	12.1%	7.1%	-0.4%	-2.2%	-5.9%	-10.4%
Industry	60	97	98	106	95	63	33	4.9%	0.2%	0.8%	-1.1%	-3.9%	-6.4%
Buildings	69	65	55	49	36	23	13	-0.6%	-1.7%	-1.2%	-3.0%	-4.3%	-5.6%
Agriculture	5	10	7	6	5	3	2	7.5%	-3.7%	-0.8%	-2.0%	-4.4%	-4.6%
Transport	44	80	90	112	100	78	47	6.2%	1.2%	2.2%	-1.1%	-2.5%	-4.8%
Other	9	27	24	35	37	33	17	11.0%	-0.9%	3.6%	0.7%	-1.0%	-6.6%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**6**	**39**	**n.s.**	**n.s.**	**n.s.**	**32.1%**	**n.s.**	**21.6%**
Coal	0	0	0	0	0	3	14	n.s.	n.s.	n.s.	n.s.	n.s.	17.7%
Gas	0	0	0	0	0	3	11	n.s.	n.s.	n.s.	n.s.	n.s.	15.5%
Biomass	0	0	0	0	0	0	14	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	32.2%	21.0%	14.1%
Energy Balance, by fuel (Mtoe)													
Primary Production	**14**	**17**	**24**	**28**	**34**	**48**	**70**	**2.3%**	**3.6%**	**1.3%**	**1.9%**	**3.7%**	**3.8%**
Coal	7	4	1	1	0	0	0	-6.4%	-12.2%	-3.8%	-3.9%	-7.6%	-6.4%
Oil	0	1	1	0	0	0	0	n.s.	0.4%	n.s.	n.s.	n.s.	n.s.
Natural gas	0	0	0	0	1	1	1	n.s.	n.s.	-7.3%	9.1%	2.6%	0.9%
Biomass	2	3	9	11	11	12	12	5.7%	10.7%	1.9%	0.4%	0.2%	0.4%
Nuclear[1]	5	9	13	14	14	9	7	7.5%	3.2%	0.9%	-0.1%	-4.1%	-2.2%
Hydro	0	0	0	0	0	0	1	-1.7%	-0.8%	-0.3%	2.7%	1.7%	1.2%
Other renewables	0	0	0	2	7	26	49	13.1%	14.3%	25.1%	16.2%	14.2%	6.5%
Net Imports	**69**	**152**	**202**	**227**	**193**	**140**	**90**						
Coal	16	37	70	68	49	21	9						
Oil	50	98	94	110	90	68	36						
Natural gas	3	17	38	40	43	40	28						
Biomass	0	0	0	9	11	12	17						
Biofuels	0	0	0	0	0	0	0						
Electricity	0	0	0	0	0	0	0						
Primary Energy Demand[2]	**83**	**169**	**227**	**254**	**227**	**189**	**161**	7.4%	**3.0%**	**1.2%**	**-1.2%**	**-1.8%**	**-1.6%**
Coal	23	40	71	69	50	21	9	5.8%	5.9%	-0.4%	-3.2%	-8.3%	-7.9%
Oil	50	99	95	110	90	68	36	7.0%	-0.4%	1.5%	-1.9%	-2.8%	-6.1%
Natural gas	3	17	38	40	43	40	29	20.1%	8.5%	0.4%	0.8%	-0.7%	-3.4%
Biomass	2	3	9	20	22	23	29	5.7%	10.6%	8.0%	1.1%	0.6%	2.2%
Nuclear[1]	5	9	13	14	14	9	7	7.5%	3.2%	0.9%	-0.1%	-4.1%	-2.2%
Hydro	0	0	0	0	0	0	1	-1.7%	-0.8%	-0.3%	2.7%	1.7%	1.2%
Other renewables	0	0	0	2	7	26	49	13.1%	14.3%	25.1%	16.2%	14.2%	6.5%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**83**	**169**	**227**	**254**	**227**	**189**	**161**	**7.4%**	**3.0%**	**1.2%**	**-1.2%**	**-1.8%**	**-1.6%**
Energy for Power Generation	**17**	**47**	**88**	**92**	**88**	**78**	**91**	**10.5%**	**6.5%**	**0.4%**	**-0.5%**	**-1.1%**	**1.6%**
Other Energy Transformation & Losses	**4**	**13**	**10**	**14**	**14**	**15**	**7**	**13.6%**	**-2.1%**	**2.9%**	**0.2%**	**0.7%**	**-7.9%**
Final consumption	**70**	**135**	**171**	**198**	**177**	**151**	**122**	**6.8%**	**2.4%**	**1.5%**	**-1.1%**	**-1.6%**	**-2.1%**
Steel, Non-Met. Minerals and Chem.	13	25	32	38	36	29	23	6.5%	2.7%	1.6%	-0.5%	-2.2%	-2.2%
Other Industry	10	21	26	34	38	36	34	7.7%	2.0%	2.9%	0.9%	-0.4%	-0.6%
Non-Energy Use	7	25	38	45	32	24	13	14.0%	4.4%	1.6%	-3.5%	-2.8%	-5.7%
Residential	14	15	20	20	16	13	11	0.8%	2.8%	-0.2%	-2.0%	-2.3%	-1.6%
Services	10	18	22	21	17	14	12	6.4%	1.8%	-0.4%	-1.8%	-1.9%	-1.6%
Agriculture	2	4	3	3	4	4	4	8.1%	-1.8%	0.9%	1.1%	0.9%	0.8%
Road	11	22	28	35	33	30	24	7.7%	2.4%	2.2%	-0.5%	-1.1%	-2.2%
Rail	0	0	0	0	0	1	1	2.9%	-2.7%	0.6%	1.5%	1.1%	0.9%
Aviation	2	3	1	2	1	1	1	3.9%	-11.6%	7.5%	-1.7%	-2.4%	-2.5%
Other Transport	2	1	1	0	0	0	0	-1.4%	-6.1%	-15.2%	0.5%	-2.7%	-2.8%

[1] Nuclear energy is accounted as primary electricity

South Korea	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**12**	**37**	**75**	**77**	**66**	**42**	**34**	**11.7%**	**7.2%**	**0.2%**	**-1.4%**	**-4.4%**	**-2.2%**
Coal	6	24	52	46	30	12	5	15.2%	8.1%	-1.3%	-4.0%	-9.1%	-7.2%
Oil	5	8	5	9	9	7	4	5.4%	-4.7%	6.5%	0.1%	-2.8%	-5.1%
Gas	2	6	18	19	24	21	16	10.9%	12.0%	0.6%	2.2%	-1.3%	-2.3%
Biomass & Waste	0	0	0	3	3	3	8	n.s.	34.9%	21.3%	1.5%	-0.4%	9.5%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**105**	**291**	**503**	**576**	**590**	**591**	**653**	**10.7%**	**5.6%**	**1.4%**	**0.2%**	**0.0%**	**1.0%**
Coal	18	111	219	206	139	55	27	20.2%	7.0%	-0.6%	-3.9%	-8.8%	-7.1%
of which CCS	0	0	0	0	0	3	17	n.s.	n.s.	n.s.	n.s.	n.s.	17.8%
Oil	19	35	19	45	44	33	19	6.3%	-5.8%	9.0%	-0.2%	-2.8%	-5.2%
Gas	10	29	103	125	153	130	101	11.9%	13.4%	2.0%	2.0%	-1.5%	-2.5%
of which CCS	0	0	0	0	0	7	30	n.s.	n.s.	n.s.	n.s.	n.s.	15.5%
Biomass & Waste	0	0	1	9	11	12	37	n.s.	28.1%	23.5%	2.1%	0.9%	11.5%
of which CCS	0	0	0	0	0	0	15	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	53	109	149	163	161	105	84	7.5%	3.2%	0.9%	-0.1%	-4.2%	-2.3%
Hydro	6	6	6	12	11	13	10	-1.2%	1.4%	6.5%	-0.8%	1.1%	-1.8%
Wind	0	0	1	11	36	95	139	n.s.	47.3%	29.9%	12.3%	10.4%	3.8%
Solar	0	0	1	4	33	138	193	17.5%	n.s.	17.4%	24.0%	15.5%	3.4%
Other	0	1	4	1	2	8	43	n.s.	13.1%	-16.2%	11.7%	14.7%	18.0%
Generation Capacity (GW_e)	**20**	**49**	**77**	**126**	**162**	**251**	**291**	**9.4%**	**4.6%**	**5.0%**	**2.6%**	**4.5%**	**1.5%**
Coal	4	14	28	32	29	16	5	14.3%	7.1%	1.2%	-0.7%	-5.7%	-11.8%
of which CCS	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	n.s.	18.6%
Oil	4	4	4	9	9	10	12	2.1%	0.0%	6.9%	0.5%	0.7%	2.0%
Gas	3	13	20	43	48	43	27	17.5%	4.6%	7.9%	1.2%	-1.1%	-4.5%
of which CCS	0	0	0	0	0	1	5	n.s.	n.s.	n.s.	n.s.	n.s.	17.1%
Biomass & Waste	0	1	0	1	1	2	6	n.s.	-12.0%	24.3%	0.2%	2.5%	11.8%
of which CCS	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	8	14	18	23	22	14	11	6.1%	2.6%	2.6%	-0.3%	-4.3%	-2.5%
Hydro	2	3	6	7	7	6	6	3.0%	5.8%	2.0%	-0.2%	-0.5%	-0.7%
Wind	0	0	0	6	19	48	68	n.s.	40.3%	32.5%	11.4%	9.9%	3.6%
Solar	0	0	1	5	26	111	155	n.s.	n.s.	22.9%	17.6%	15.6%	3.4%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	21.7%	14.6%	14.7%
Total Final Consumption[2] (Mtoe)	**70**	**135**	**171**	**198**	**177**	**151**	**122**	**6.8%**	**2.4%**	**1.5%**	**-1.1%**	**-1.6%**	**-2.1%**
Coal	16	15	18	20	16	7	2	-0.5%	1.8%	1.2%	-2.4%	-8.2%	-10.1%
Oil	44	80	82	93	75	56	30	6.2%	0.2%	1.3%	-2.2%	-2.9%	-6.1%
Gas	1	11	20	20	18	18	15	32.1%	6.4%	-0.2%	-1.0%	0.2%	-1.9%
Electricity	8	23	39	44	45	45	47	10.8%	5.5%	1.3%	0.3%	0.0%	0.3%
Heat	0	3	4	5	6	7	7	n.s.	2.8%	1.8%	1.2%	1.3%	0.7%
Biomass & Other	2	3	8	15	17	18	21	5.3%	9.9%	6.3%	1.4%	0.3%	1.6%
Industry (incl. non-energy use)	**30**	**71**	**96**	**117**	**105**	**88**	**70**	**9.0%**	**3.1%**	**1.9%**	**-1.1%**	**-1.7%**	**-2.3%**
Coal	7	14	17	19	15	7	2	8.1%	1.7%	1.4%	-2.3%	-8.1%	-10.0%
Oil	18	36	44	50	37	29	16	7.4%	2.0%	1.2%	-2.9%	-2.5%	-5.7%
Gas	0	3	7	8	8	10	7	44.4%	9.4%	0.6%	0.7%	1.7%	-3.8%
Electricity	5	13	20	24	28	28	29	10.0%	4.3%	2.2%	1.2%	0.3%	0.3%
Heat	0	2	2	3	3	3	3	n.s.	1.0%	1.4%	-0.2%	-0.3%	-0.2%
Biomass & Other	1	3	7	13	14	13	13	13.8%	9.4%	7.2%	0.8%	-1.2%	0.6%
Buildings	**24**	**33**	**42**	**40**	**33**	**27**	**23**	**3.4%**	**2.3%**	**-0.3%**	**-1.9%**	**-2.1%**	**-1.6%**
Coal	9	1	1	1	0	0	0	-24.1%	4.5%	-4.4%	-9.2%	-16.2%	-16.3%
Oil	10	14	7	6	4	3	2	3.3%	-6.7%	-1.9%	-2.7%	-3.7%	-5.3%
Gas	1	8	12	12	9	6	3	29.6%	4.5%	-0.4%	-2.8%	-4.3%	-5.7%
Electricity	3	9	18	18	15	13	12	11.9%	7.1%	0.1%	-2.0%	-1.7%	-0.5%
Heat	0	1	2	3	3	4	5	n.s.	5.5%	2.3%	2.4%	2.5%	1.2%
Biomass & Other	1	0	1	1	1	1	1	-8.4%	9.7%	0.3%	1.2%	-0.7%	-1.0%
Agriculture	**2**	**4**	**3**	**3**	**4**	**4**	**4**	**8.1%**	**-1.8%**	**0.9%**	**1.1%**	**0.9%**	**0.8%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	2	3	2	2	2	1	1	7.5%	-3.7%	-0.8%	-2.0%	-4.4%	-4.6%
Gas	0	0	0	0	0	0	0	n.s.	-9.6%	-2.4%	-1.3%	-3.1%	-3.3%
Electricity	0	0	1	1	2	2	3	13.8%	6.6%	4.1%	3.1%	2.8%	2.0%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	36.8%	8.8%	3.0%
Transport	**15**	**27**	**30**	**37**	**36**	**32**	**25**	**6.3%**	**1.1%**	**2.1%**	**-0.5%**	**-1.1%**	**-2.2%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	14	27	29	36	32	23	11	6.3%	0.7%	2.3%	-1.2%	-3.2%	-6.9%
Gas	0	0	1	0	1	3	6	n.s.	n.s.	-7.0%	8.5%	12.7%	6.2%
Electricity	0	0	0	0	1	2	3	7.2%	0.7%	5.0%	15.0%	6.3%	2.8%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	1	1	3	6	n.s.	n.s.	6.2%	8.3%	9.5%	5.3%
Other Energy Transformation & Losses[3]	**4**	**13**	**10**	**14**	**14**	**15**	**7**	**13.6%**	**-2.1%**	**2.9%**	**0.2%**	**0.7%**	**-7.9%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

New Zealand	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	3	4	4	5	5	5	6	1.3%	1.3%	0.9%	0.7%	0.6%	0.4%
GDP per capita (ppp, k$'15)	23	27	30	37	44	52	62	1.7%	1.1%	2.0%	1.7%	1.8%	1.7%
Prices													
International/Regional ($'15/boe)													
Coal	3	1	3	4	4	5	5	-7.8%	10.3%	1.7%	1.0%	0.7%	1.3%
Oil	39	38	86	89	89	88	90	-0.2%	8.4%	0.3%	0.0%	-0.1%	0.2%
Gas	28	26	46	73	88	95	96	-0.7%	5.8%	4.7%	1.8%	0.9%	0.0%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**34**	**54**	**70**	**75**	**55**	**43**	**30**	**4.8%**	**2.7%**	**0.7%**	**-3.1%**	**-2.4%**	**-3.5%**
Total GHG (energy, industry, agriculture)	**64**	**75**	**78**	**79**	**67**	**56**	**42**	**1.6%**	**0.4%**	**0.2%**	**-1.7%**	**-1.7%**	**-2.8%**
CO_2	25	32	34	36	31	25	14	2.5%	0.8%	0.6%	-1.6%	-2.3%	-5.8%
CH_4	33	35	34	33	27	24	22	0.8%	-0.4%	-0.3%	-1.9%	-1.2%	-1.0%
N_2O	6	7	8	8	8	7	7	2.3%	0.8%	0.6%	-0.7%	-0.7%	-0.5%
F gases	1	0	1	2	1	0	0	-9.7%	13.9%	3.1%	-6.3%	-9.9%	-12.0%
Total GHG from Energy and Industry	**31**	**38**	**41**	**42**	**34**	**27**	**15**	**2.1%**	**0.8%**	**0.2%**	**-2.1%**	**-2.4%**	**-5.7%**
CO_2 Emissions from Fuel Comb.	**23**	**29**	**31**	**33**	**28**	**22**	**12**	**2.6%**	**0.5%**	**0.6%**	**-1.6%**	**-2.3%**	**-5.9%**
Power generation/District heating	4	6	6	1	0	0	0	5.1%	0.2%	-17.2%	-7.1%	-0.5%	-11.4%
Industry	7	7	6	10	9	7	3	-0.1%	-0.5%	4.8%	-1.3%	-2.9%	-6.9%
Buildings	1	1	1	2	2	2	1	0.7%	-0.2%	1.5%	1.5%	-0.7%	-5.1%
Agriculture	1	2	1	2	1	1	0	2.2%	-0.6%	1.0%	-3.3%	-4.3%	-4.3%
Transport	9	12	14	15	12	9	5	3.6%	1.4%	0.8%	-2.3%	-2.7%	-5.7%
Other	1	2	2	4	4	3	2	3.0%	1.1%	7.4%	0.0%	-0.3%	-5.0%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**36.9%**	**32.8%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	37.2%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	29.1%
Biomass	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	36.0%
Direct Air Capture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	22.2%	23.2%
Energy Balance, by fuel (Mtoe)													
Primary Production	**12**	**15**	**18**	**22**	**22**	**24**	**34**	**1.7%**	**1.8%**	**2.3%**	**0.0%**	**1.0%**	**3.4%**
Coal	1	2	3	2	3	2	2	4.7%	2.3%	-1.6%	2.0%	-1.2%	-1.7%
Oil	2	2	2	3	7	6	4	-3.9%	4.2%	2.7%	8.3%	-2.1%	-4.4%
Natural gas	4	5	4	4	3	3	3	2.5%	-2.6%	-0.8%	-1.7%	-0.5%	-1.2%
Biomass	1	1	1	1	1	2	2	4.0%	0.7%	-1.4%	3.2%	1.4%	3.7%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	10.5%
Hydro	2	2	2	2	2	2	2	0.5%	0.1%	0.2%	1.3%	-0.3%	-0.2%
Other renewables	2	3	5	10	5	9	21	3.2%	7.5%	6.4%	-6.1%	5.9%	8.6%
Net Imports	**1**	**3**	**2**	**3**	**- 2**	**- 2**	**- 2**						
Coal	0	- 1	- 1	- 1	- 1	- 2	- 2						
Oil	2	4	4	4	- 1	- 1	- 1						
Natural gas	- 1	0	0	0	0	1	0						
Biomass	0	0	0	0	0	0	0						
Biofuels	0	0	0	0	0	0	0						
Electricity	0	0	0	0	0	0	0						
Primary Energy Demand[2]	**13**	**18**	**20**	**26**	**20**	**23**	**32**	2.9%	**1.1%**	**2.6%**	**-2.4%**	**1.2%**	**3.4%**
Coal	1	1	1	1	1	1	0	-1.1%	1.6%	2.2%	-1.7%	-6.8%	-11.7%
Oil	4	6	6	7	6	5	3	2.7%	0.8%	1.5%	-2.0%	-2.1%	-4.6%
Natural gas	3	5	4	4	4	4	3	5.2%	-3.0%	0.0%	-0.3%	-0.1%	-3.2%
Biomass	1	1	1	1	2	2	3	4.0%	0.7%	0.5%	2.9%	1.7%	2.5%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	10.5%
Hydro	2	2	2	2	2	2	2	0.5%	0.1%	0.2%	1.3%	-0.3%	-0.2%
Other renewables	2	3	5	10	5	9	21	3.2%	7.5%	6.4%	-6.1%	5.9%	8.6%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**13**	**18**	**20**	**26**	**20**	**23**	**32**	**2.9%**	**1.1%**	**2.6%**	**-2.4%**	**1.2%**	**3.4%**
Energy for Power Generation	**6**	**7**	**10**	**13**	**8**	**13**	**25**	**2.8%**	**3.4%**	**2.5%**	**-4.5%**	**4.3%**	**7.3%**
Other Energy Transformation & Losses	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**-2.3%**	**n.s.**	**n.s.**	**18.0%**	**0.2%**	**n.s.**
Final consumption	**10**	**13**	**13**	**16**	**15**	**14**	**13**	**2.9%**	**0.0%**	**2.0%**	**-0.7%**	**-0.6%**	**-0.7%**
Steel, Non-Met. Minerals and Chem.	1	1	1	2	2	2	2	0.4%	-2.5%	7.3%	0.8%	-0.9%	1.0%
Other Industry	3	3	3	4	3	3	3	2.1%	0.6%	1.4%	-1.3%	-0.4%	-1.0%
Non-Energy Use	1	2	1	2	2	1	1	10.3%	-5.2%	5.1%	-0.4%	-0.3%	-0.5%
Residential	1	1	1	1	1	1	1	1.1%	0.7%	-0.3%	-0.8%	-0.8%	-0.9%
Services	1	1	1	1	1	1	1	1.7%	1.8%	0.6%	-0.1%	0.1%	-0.2%
Agriculture	0	1	1	1	1	1	1	2.8%	0.5%	1.5%	0.9%	0.7%	0.6%
Road	3	3	4	5	4	3	3	3.2%	1.7%	1.2%	-1.6%	-1.2%	-2.3%
Rail	0	0	0	0	0	0	0	10.4%	-4.8%	0.5%	0.2%	-0.2%	-0.2%
Aviation	0	0	0	0	0	0	0	2.4%	-1.6%	-1.0%	-0.3%	-1.3%	-1.6%
Other Transport	0	0	0	0	0	0	0	4.7%	-3.9%	4.0%	-0.1%	-2.2%	-2.2%

[1] Nuclear energy is accounted as primary electricity

New Zealand	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**2**	**3**	**3**	**1**	**1**	**1**	**2**	**4.4%**	**0.9%**	**-8.2%**	**-6.7%**	**4.4%**	**8.4%**
Coal	0	0	0	0	0	0	0	8.2%	2.7%	-15.8%	n.s.	n.s.	29.4%
Oil	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gas	1	2	2	0	0	0	0	4.3%	-0.7%	-18.2%	-2.3%	-0.1%	-0.2%
Biomass & Waste	0	0	0	0	0	0	0	1.3%	0.2%	n.s.	n.s.	n.s.	38.4%
Other	0	0	1	1	0	1	2	3.2%	7.2%	6.0%	-7.2%	5.8%	9.0%
Gross Elec. Generation (TWh_e)	**32**	**39**	**45**	**45**	**45**	**55**	**77**	**2.0%**	**1.4%**	**0.0%**	**0.1%**	**1.9%**	**3.5%**
Coal	1	2	2	0	0	0	0	8.8%	2.9%	-16.1%	n.s.	n.s.	29.4%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	31.4%
Oil	0	0	0	0	0	0	0	n.s.	n.s.	30.0%	n.s.	n.s.	n.s.
Gas	6	10	10	1	1	1	1	5.3%	0.4%	-18.0%	-2.2%	0.0%	-0.6%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	25.4%
Biomass & Waste	1	1	1	0	0	0	1	1.6%	0.2%	n.s.	n.s.	n.s.	38.6%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	35.0%
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	23	24	25	25	29	28	27	0.5%	0.1%	0.2%	1.3%	-0.3%	-0.2%
Wind	0	0	2	7	10	15	23	n.s.	29.8%	15.3%	3.6%	4.7%	4.1%
Solar	0	0	0	0	1	1	4	n.s.	n.s.	n.s.	9.9%	11.1%	11.1%
Other	2	3	6	11	5	9	21	3.2%	7.2%	6.1%	-7.3%	5.8%	9.0%
Generation Capacity (GW_e)	**7**	**8**	**9**	**13**	**16**	**19**	**26**	**0.8%**	**1.7%**	**3.3%**	**2.2%**	**1.5%**	**3.2%**
Coal	1	1	1	0	0	0	0	-1.0%	-4.8%	-6.4%	-28.5%	-1.5%	9.5%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	23.4%
Oil	0	0	0	0	0	0	0	n.s.	n.s.	-5.7%	2.2%	1.3%	-11.0%
Gas	1	1	2	2	2	1	0	2.7%	3.4%	-2.7%	1.7%	-4.4%	-11.5%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	20.1%
Biomass & Waste	0	0	0	0	0	0	0	0.9%	9.0%	1.2%	-10.0%	-2.5%	0.5%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	34.8%
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	5	5	5	6	6	6	7	0.9%	0.1%	0.6%	1.4%	-0.3%	1.2%
Wind	0	0	1	3	4	6	8	n.s.	30.8%	18.6%	3.3%	3.9%	2.9%
Solar	0	0	0	0	1	2	6	n.s.	n.s.	44.0%	10.7%	11.5%	11.7%
Other	0	0	1	2	3	3	4	3.4%	7.1%	11.6%	3.6%	0.6%	3.2%
Total Final Consumption[2] (Mtoe)	**10**	**13**	**13**	**16**	**15**	**14**	**13**	**2.9%**	**0.0%**	**2.0%**	**-0.7%**	**-0.6%**	**-0.7%**
Coal	1	1	1	1	1	1	0	-2.3%	1.9%	4.4%	-1.0%	-5.5%	-7.8%
Oil	4	5	6	6	5	4	2	2.8%	1.1%	1.0%	-2.2%	-2.5%	-5.2%
Gas	2	3	2	3	3	3	2	5.6%	-5.1%	6.0%	-0.4%	-0.1%	-2.9%
Electricity	2	3	3	3	4	4	5	2.0%	1.3%	0.2%	0.2%	1.8%	2.6%
Heat	0	0	0	0	0	0	0	1.4%	1.6%	2.5%	0.2%	1.3%	2.4%
Biomass & Other	1	1	1	1	2	2	2	4.5%	0.7%	1.8%	2.5%	0.7%	2.7%
Industry (incl. non-energy use)	**4**	**6**	**5**	**8**	**7**	**7**	**7**	**3.2%**	**-1.4%**	**3.5%**	**-0.5%**	**-0.5%**	**-0.2%**
Coal	1	1	1	1	1	1	0	-2.0%	2.1%	5.0%	-0.8%	-5.4%	-7.8%
Oil	1	1	1	1	1	1	1	1.0%	1.8%	0.7%	-1.4%	1.4%	-1.2%
Gas	2	3	1	3	3	2	2	5.8%	-5.8%	6.7%	-1.2%	-1.1%	-3.6%
Electricity	1	1	1	1	2	2	3	2.3%	0.5%	0.8%	1.5%	2.7%	3.3%
Heat	0	0	0	0	0	0	0	2.1%	0.7%	3.2%	-0.2%	-0.3%	-0.2%
Biomass & Other	0	1	1	1	1	1	1	5.6%	0.9%	1.0%	-0.7%	-1.8%	2.5%
Buildings	**2**	**2**	**3**	**3**	**3**	**2**	**2**	**1.4%**	**1.2%**	**0.1%**	**-0.5%**	**-0.3%**	**-0.6%**
Coal	0	0	0	0	0	0	0	-5.8%	-4.0%	-2.5%	-14.4%	-17.5%	n.s.
Oil	0	0	0	0	0	0	0	0.6%	1.7%	1.8%	2.2%	-0.6%	-5.3%
Gas	0	0	0	0	0	0	0	5.6%	-0.5%	2.1%	2.3%	-0.6%	-4.9%
Electricity	1	2	2	2	1	1	1	1.5%	1.7%	-0.5%	-2.4%	-0.5%	0.8%
Heat	0	0	0	0	0	0	0	-0.4%	3.8%	0.8%	1.0%	4.2%	5.4%
Biomass & Other	0	0	0	0	0	0	0	0.1%	-0.5%	2.4%	5.8%	-0.4%	-2.5%
Agriculture	**0**	**1**	**1**	**1**	**1**	**1**	**1**	**2.8%**	**0.5%**	**1.5%**	**0.9%**	**0.7%**	**0.6%**
Coal	0	0	0	0	0	0	0	4.6%	12.4%	-3.9%	-6.0%	-7.5%	-7.5%
Oil	0	0	0	0	0	0	0	2.3%	-1.4%	1.6%	-3.2%	-4.2%	-4.3%
Gas	0	0	0	0	0	0	0	0.5%	-3.5%	0.8%	-2.1%	-2.9%	-3.0%
Electricity	0	0	0	0	0	0	0	6.6%	5.1%	2.4%	2.4%	2.4%	2.0%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	43.3%	5.6%	2.0%
Transport	**3**	**4**	**5**	**5**	**4**	**4**	**3**	**3.3%**	**1.2%**	**1.1%**	**-1.5%**	**-1.3%**	**-2.2%**
Coal	0	0	0	0	0	0	0	0.0%	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	3	4	5	5	4	3	1	3.3%	1.2%	0.9%	-2.5%	-3.4%	-6.9%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	51.9%	11.9%	1.6%
Electricity	0	0	0	0	0	0	1	1.8%	-0.8%	13.3%	26.7%	7.0%	4.8%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	1	n.s.	n.s.	33.6%	10.8%	6.8%	6.5%
Other Energy Transformation & Losses[3]	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**-2.3%**	**n.s.**	**n.s.**	**18.0%**	**0.2%**	**n.s.**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Rest Pacific	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	6	8	9	11	13	14	15	2.3%	2.2%	1.8%	1.4%	1.1%	0.7%
GDP per capita (ppp, k$'15)	2	3	3	4	5	8	13	1.2%	1.0%	3.1%	3.0%	4.2%	4.7%
Prices													
International/Regional ($'15/boe)													
Coal	3	1	3	4	4	5	5	-7.8%	10.3%	1.7%	1.0%	0.7%	1.3%
Oil	39	38	86	89	89	88	90	-0.2%	8.4%	0.3%	0.0%	-0.1%	0.2%
Gas	28	26	46	73	88	95	96	-0.7%	5.8%	4.7%	1.8%	0.9%	0.0%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**62**	**17**	**- 15**	**2**	**- 23**	**- 28**	**- 34**	**-12.4%**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**
Total GHG (energy, industry, agriculture)	**7**	**10**	**12**	**16**	**17**	**20**	**14**	**2.6%**	**1.9%**	**2.9%**	**0.7%**	**1.8%**	**-3.8%**
CO_2	3	5	6	10	12	16	10	4.1%	2.6%	5.1%	1.9%	2.7%	-4.2%
CH_4	3	3	4	4	3	2	2	1.8%	0.9%	-0.5%	-2.8%	-2.0%	-1.5%
N_2O	1	2	2	2	2	2	1	0.4%	1.3%	0.3%	-1.6%	0.5%	-1.9%
F gases	0	0	0	0	0	0	0	n.s.	n.s.	5.7%	3.1%	-3.3%	-11.8%
Total GHG from Energy and Industry	**5**	**7**	**9**	**13**	**14**	**18**	**11**	**3.7%**	**2.4%**	**3.6%**	**1.0%**	**2.3%**	**-4.3%**
CO_2 Emissions from Fuel Comb.	**3**	**4**	**6**	**10**	**12**	**15**	**9**	**3.4%**	**3.1%**	**5.2%**	**1.7%**	**2.6%**	**-4.8%**
Power generation/District heating	1	1	2	3	4	7	2	8.0%	2.4%	4.9%	2.6%	5.2%	-10.2%
Industry	1	1	2	3	3	4	3	6.7%	4.9%	5.4%	1.7%	1.2%	-1.9%
Buildings	0	0	0	0	1	1	1	-4.1%	0.0%	6.2%	4.6%	3.3%	0.4%
Agriculture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Transport	1	2	2	3	3	3	2	2.1%	1.1%	6.1%	-0.2%	-0.4%	-2.5%
Other	0	0	0	0	1	1	1	1.4%	36.0%	0.5%	4.0%	3.2%	-3.2%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**26.1%**
Coal	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	22.3%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	26.2%
Biomass	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	19.3%
Energy Balance, by fuel (Mtoe)													
Primary Production	**13**	**13**	**17**	**18**	**15**	**15**	**16**	**0.2%**	**3.0%**	**0.2%**	**-1.7%**	**-0.3%**	**1.1%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	4	4	0	6	4	2	1	-2.1%	-21.0%	33.5%	-5.0%	-5.0%	-4.9%
Natural gas	6	7	15	7	6	5	4	1.4%	7.1%	-7.2%	-2.2%	-1.1%	-1.2%
Biomass	2	2	2	4	4	3	5	0.2%	-0.1%	8.9%	0.7%	-2.5%	3.8%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	0	0	0	0	0	0	0	0.6%	0.4%	0.3%	1.2%	1.4%	0.6%
Other renewables	0	0	0	0	1	4	5	n.s.	n.s.	-0.6%	14.2%	13.6%	3.7%
Net Imports	**- 10**	**- 10**	**- 13**	**- 12**	**- 8**	**- 4**	**- 4**						
Coal	0	0	0	0	0	0	1						
Oil	- 3	- 2	2	- 3	- 1	1	0						
Natural gas	- 6	- 7	- 15	- 7	- 5	- 4	- 3						
Biomass	0	0	0	- 2	- 3	- 1	- 2						
Biofuels	0	0	0	0	0	0	0						
Electricity	0	0	0	0	0	0	0						
Primary Energy Demand[2]	**3**	**3**	**4**	**5**	**7**	**11**	**12**	1.5%	**2.1%**	**2.6%**	**2.2%**	**4.9%**	**1.3%**
Coal	0	0	0	0	0	0	1	n.s.	n.s.	18.6%	19.7%	6.2%	4.8%
Oil	1	1	2	3	3	4	2	3.0%	3.1%	4.4%	0.5%	1.6%	-6.7%
Natural gas	0	0	0	0	0	1	1	55.8%	0.9%	9.1%	7.7%	7.9%	3.0%
Biomass	2	2	2	2	2	2	3	0.2%	-0.1%	0.4%	-0.3%	1.2%	4.7%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	0	0	0	0	0	0	0	0.6%	0.4%	0.3%	1.2%	1.4%	0.6%
Other renewables	0	0	0	0	1	4	5	n.s.	n.s.	-0.6%	14.2%	13.6%	3.7%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**3**	**3**	**4**	**5**	**7**	**11**	**12**	**1.5%**	**2.1%**	**2.6%**	**2.2%**	**4.9%**	**1.3%**
Energy for Power Generation	**0**	**1**	**1**	**1**	**3**	**7**	**8**	**6.4%**	**5.6%**	**3.1%**	**5.9%**	**9.6%**	**1.9%**
Other Energy Transformation & Losses	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**n.s.**	**n.s.**	**4.3%**	**2.3%**	**3.9%**	**10.8%**
Final consumption	**3**	**3**	**3**	**4**	**5**	**6**	**7**	**0.9%**	**1.1%**	**2.7%**	**1.0%**	**2.3%**	**1.7%**
Steel, Non-Met. Minerals and Chem.	0	0	0	0	0	1	1	n.s.	n.s.	11.0%	1.4%	43.0%	4.9%
Other Industry	1	1	1	2	2	2	2	3.2%	2.2%	3.7%	1.7%	1.3%	0.7%
Non-Energy Use	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Residential	1	1	2	2	2	2	2	-0.1%	0.2%	0.5%	0.3%	0.7%	1.2%
Services	0	0	0	0	0	0	1	2.8%	3.5%	4.7%	2.4%	4.4%	6.5%
Agriculture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Road	0	1	1	1	1	1	1	2.2%	0.9%	5.0%	-0.8%	-0.5%	-0.8%
Rail	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Aviation	0	0	0	0	0	0	0	1.4%	2.1%	5.1%	6.2%	3.7%	0.9%
Other Transport	0	0	0	0	0	0	0	0.0%	0.0%	1.0%	2.4%	0.5%	0.6%

[1] Nuclear energy is accounted as primary electricity

Rest Pacific	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**0**	**1**	**1**	**1**	**1**	**3**	**2**	**8.4%**	**2.7%**	**4.9%**	**3.0%**	**6.5%**	**-1.1%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	25.6%	7.0%	9.3%
Oil	0	0	1	1	1	2	0	6.4%	2.6%	4.4%	1.4%	5.5%	-13.4%
Gas	0	0	0	0	0	0	1	n.s.	0.9%	7.4%	3.9%	5.1%	2.7%
Biomass & Waste	0	0	0	0	0	0	1	5.4%	-0.1%	8.3%	2.4%	13.2%	15.2%
Other	0	0	0	0	0	0	0	n.s.	n.s.	-1.6%	13.5%	13.2%	0.1%
Gross Elec. Generation (TWh_e)	**2**	**3**	**5**	**7**	**10**	**23**	**38**	**3.3%**	**3.5%**	**3.9%**	**4.2%**	**8.5%**	**5.0%**
Coal	0	0	0	0	0	1	2	n.s.	n.s.	n.s.	26.5%	7.4%	9.8%
of which CCS	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	n.s.	22.5%
Oil	1	2	2	4	4	7	2	3.8%	4.4%	4.6%	1.4%	5.5%	-13.4%
Gas	0	0	0	1	2	3	4	n.s.	3.5%	8.9%	3.9%	5.0%	2.7%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	26.4%
Biomass & Waste	0	0	0	0	0	1	3	-0.2%	1.2%	9.6%	3.2%	16.6%	16.1%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	1	1	1	2	2	2	2	0.6%	0.4%	0.3%	1.2%	1.4%	0.6%
Wind	0	0	0	0	1	5	17	n.s.	n.s.	25.8%	31.0%	17.8%	13.1%
Solar	0	0	0	0	0	1	4	n.s.	n.s.	n.s.	31.0%	26.5%	14.6%
Other	0	0	0	0	1	4	4	n.s.	n.s.	-1.5%	13.9%	13.7%	1.4%
Generation Capacity (GW_e)	**1**	**1**	**1**	**2**	**3**	**6**	**18**	**1.6%**	**3.5%**	**3.1%**	**4.9%**	**9.9%**	**10.6%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	26.9%	7.4%	14.2%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	27.6%
Oil	0	0	1	1	1	1	2	-0.3%	4.5%	0.7%	2.3%	3.7%	4.0%
Gas	0	0	0	0	0	1	1	7.4%	0.0%	16.2%	2.2%	3.1%	4.5%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	31.7%
Biomass & Waste	0	0	0	0	0	0	1	0.0%	9.4%	0.6%	-0.4%	16.1%	21.6%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	0	0	0	0	0	1	1	3.2%	1.2%	1.4%	1.2%	1.4%	0.6%
Wind	0	0	0	0	0	2	6	n.s.	n.s.	7.5%	29.3%	16.9%	13.3%
Solar	0	0	0	0	0	1	6	n.s.	n.s.	n.s.	32.1%	27.7%	15.9%
Other	0	0	0	0	0	1	1	0.0%	28.4%	0.0%	13.5%	13.3%	3.1%
Total Final Consumption[2] (Mtoe)	**3**	**3**	**3**	**4**	**5**	**6**	**7**	**0.9%**	**1.1%**	**2.7%**	**1.0%**	**2.3%**	**1.7%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	11.0%	13.9%	9.1%	-2.1%
Oil	1	1	1	2	2	2	1	1.9%	2.3%	4.8%	0.2%	-1.0%	-3.9%
Gas	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	19.5%	11.6%	4.7%
Electricity	0	0	0	1	1	2	3	3.8%	3.1%	3.9%	4.1%	8.4%	5.0%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	11.4%	6.3%	1.9%
Biomass & Other	2	2	2	2	2	2	2	0.2%	-0.1%	0.3%	-0.6%	-0.5%	1.4%
Industry (incl. non-energy use)	**1**	**1**	**1**	**2**	**2**	**3**	**3**	**3.2%**	**2.2%**	**3.7%**	**1.7%**	**4.1%**	**1.9%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	11.0%	13.9%	9.1%	-2.1%
Oil	0	0	1	1	1	1	0	8.1%	4.8%	5.3%	0.7%	-1.7%	-5.9%
Gas	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	18.2%	6.6%
Electricity	0	0	0	0	0	1	2	3.7%	2.4%	3.1%	3.3%	10.8%	4.0%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	1	0.6%	-0.8%	1.3%	0.6%	0.0%	2.8%
Buildings	**2**	**2**	**2**	**2**	**2**	**2**	**3**	**0.0%**	**0.4%**	**0.9%**	**0.6%**	**1.2%**	**2.3%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	0	0	0	0	0	0	0	-4.0%	0.0%	4.2%	1.9%	1.7%	-0.5%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	12.6%	5.8%	1.4%
Electricity	0	0	0	0	0	1	1	4.0%	4.4%	4.9%	3.4%	4.9%	7.1%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	11.4%	6.3%	1.9%
Biomass & Other	1	1	1	1	1	1	1	0.1%	0.1%	-0.2%	-1.0%	-1.0%	-0.2%
Agriculture	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Electricity	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Transport	**0**	**1**	**1**	**1**	**1**	**1**	**1**	**2.1%**	**1.0%**	**5.0%**	**0.5%**	**0.7%**	**-0.2%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	0	1	1	1	1	1	1	2.1%	1.0%	4.6%	-0.4%	-0.8%	-3.1%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	11.7%	3.7%
Electricity	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	34.0%	6.8%	3.7%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	2.5%	6.7%	10.2%
Other Energy Transformation & Losses[3]	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**n.s.**	**n.s.**	**4.3%**	**2.3%**	**3.9%**	**10.8%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

9 GECO 2018 1.5°C scenario

World	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	5 329	6 142	6 954	7 788	8 489	9 047	9 461	1.4%	1.2%	1.1%	0.9%	0.6%	0.4%
GDP per capita (ppp, k$'15)	8	9	12	15	19	24	30	1.5%	2.2%	2.4%	2.6%	2.5%	2.3%
Prices													
International ($'15/boe)													
Coal	21	11	24	25	30	56	65	-5.9%	7.9%	0.2%	1.8%	6.5%	1.6%
Oil	39	38	86	88	89	79	81	-0.2%	8.4%	0.2%	0.1%	-1.2%	0.3%
Gas	25	32	37	52	63	72	74	2.4%	1.5%	3.3%	2.1%	1.2%	0.4%
GHG emissions ($MtCO_2$ eq.)													
Total GHG	**36 247**	**38 006**	**47 509**	**52 259**	**39 405**	**15 401**	**6 048**	**0.5%**	**2.3%**	**1.0%**	**-2.8%**	**-9.0%**	**-8.9%**
Total GHG (energy, industry, agriculture)	**33 343**	**36 023**	**46 183**	**52 012**	**41 844**	**18 570**	**9 242**	**0.8%**	**2.5%**	**1.2%**	**-2.2%**	**-7.8%**	**-6.7%**
CO_2	22 553	25 453	33 769	39 257	32 389	11 605	4 276	1.2%	2.9%	1.5%	-1.9%	-9.8%	-9.5%
CH_4	8 101	7 610	8 804	8 745	5 925	4 101	2 665	-0.6%	1.5%	-0.1%	-3.8%	-3.6%	-4.2%
N_2O	2 345	2 439	2 744	2 871	2 538	2 193	2 067	0.4%	1.2%	0.5%	-1.2%	-1.5%	-0.6%
F gases	345	521	865	1 140	992	671	234	4.2%	5.2%	2.8%	-1.4%	-3.8%	-10.0%
Total GHG from Energy and Industry	**27 969**	**30 702**	**40 199**	**45 844**	**36 814**	**14 206**	**5 053**	**0.9%**	**2.7%**	**1.3%**	**-2.2%**	**-9.1%**	**-9.8%**
CO_2 Emissions from Fuel Comb.	**20 841**	**23 412**	**30 692**	**35 239**	**27 935**	**10 335**	**3 932**	**1.2%**	**2.7%**	**1.4%**	**-2.3%**	**-9.5%**	**-9.2%**
Power generation/District heating	6 783	8 474	11 614	13 343	8 350	2 104	616	2.3%	3.2%	1.4%	-4.6%	-12.9%	-11.6%
Industry	4 092	3 999	6 050	6 399	5 733	1 556	329	-0.2%	4.2%	0.6%	-1.1%	-12.2%	-14.4%
Buildings	2 920	2 728	2 947	2 908	2 337	1 479	706	-0.7%	0.8%	-0.1%	-2.2%	-4.5%	-7.1%
Agriculture	409	351	416	456	355	226	143	-1.5%	1.7%	0.9%	-2.5%	-4.4%	-4.5%
Transport	4 640	5 799	7 070	8 562	7 686	3 491	1 661	2.3%	2.0%	1.9%	-1.1%	-7.6%	-7.2%
Other	1 997	2 061	2 596	3 572	3 475	1 480	476	0.3%	2.3%	3.2%	-0.3%	-8.2%	-10.7%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**3**	**113**	**557**	**0.0%**	**n.s.**	**n.s.**	**32.4%**	**46.2%**	**17.3%**
Coal	0	0	0	0	0	26	39	n.s.	n.s.	n.s.	-0.6%	n.s.	4.1%
Gas	0	0	0	0	0	40	69	n.s.	n.s.	n.s.	n.s.	n.s.	5.7%
Biomass	0	0	0	0	0	20	298	n.s.	n.s.	n.s.	n.s.	n.s.	30.9%
Direct Air Capture	0	0	0	0	3	27	151	n.s.	n.s.	n.s.	33.9%	26.9%	18.7%
Energy Balance, by fuel (Mtoe)													
Primary Production	**8 401**	**9 543**	**12 352**	**14 336**	**13 665**	**10 040**	**9 312**	**1.3%**	**2.6%**	**1.5%**	**-0.5%**	**-3.0%**	**-0.7%**
Coal	2 129	2 271	3 588	4 020	2 432	458	197	0.6%	4.7%	1.1%	-4.9%	-15.4%	-8.1%
Oil	3 271	3 682	4 180	4 834	4 368	2 162	1 118	1.2%	1.3%	1.5%	-1.0%	-6.8%	-6.4%
Natural gas	1 685	2 075	2 734	3 050	3 097	1 637	741	2.1%	2.8%	1.1%	0.2%	-6.2%	-7.6%
Biomass	924	1 015	1 211	1 476	2 191	3 074	3 210	0.9%	1.8%	2.0%	4.0%	3.4%	0.4%
Nuclear[1]	173	223	237	247	286	285	310	2.6%	0.6%	0.4%	1.5%	0.0%	0.8%
Hydro	184	225	296	398	484	593	638	2.0%	2.8%	3.0%	2.0%	2.1%	0.7%
Other renewables	34	53	107	312	807	1 830	3 099	4.3%	7.4%	11.3%	10.0%	8.5%	5.4%
International Bunkers	**237**	**323**	**425**	**562**	**554**	**523**	**496**	**3.2%**	**2.8%**	**2.8%**	**-0.1%**	**-0.6%**	**-0.5%**
Maritime Bunkers	151	206	273	364	308	299	304	3.1%	2.9%	2.9%	-1.7%	-0.3%	0.2%
Oil	151	202	266	328	216	137	90	2.9%	2.8%	2.1%	-4.1%	-4.4%	-4.1%
Gas	0	4	7	36	67	63	47	n.s.	5.5%	17.7%	6.4%	-0.7%	-2.9%
Aviation Bunkers	86	117	152	198	246	224	192	3.2%	2.6%	2.7%	2.2%	-1.0%	-1.5%
Oil	86	117	152	196	226	128	82	3.2%	2.6%	2.6%	1.5%	-5.5%	-4.3%
Regional Energy Demand (excl. bunkers)	**8 164**	**9 220**	**11 927**	**13 777**	**13 156**	**9 712**	**9 093**	**1.2%**	**2.6%**	**1.5%**	**-0.5%**	**-3.0%**	**-0.7%**
Coal	2 129	2 271	3 588	4 020	2 432	458	197	0.6%	4.7%	1.1%	-4.9%	-15.4%	-8.1%
Oil	3 034	3 363	3 762	4 311	3 926	1 896	945	1.0%	1.1%	1.4%	-0.9%	-7.0%	-6.7%
Natural gas	1 685	2 070	2 727	3 013	3 030	1 574	694	2.1%	2.8%	1.0%	0.1%	-6.3%	-7.9%
Biomass	924	1 015	1 211	1 476	2 191	3 074	3 210	0.9%	1.8%	2.0%	4.0%	3.4%	0.4%
Nuclear[1]	173	223	237	247	286	285	310	2.6%	0.6%	0.4%	1.5%	0.0%	0.8%
Hydro	184	225	296	398	484	593	638	2.0%	2.8%	3.0%	2.0%	2.1%	0.7%
Other renewables	34	53	107	312	807	1 830	3 099	4.3%	7.4%	11.3%	10.0%	8.5%	5.4%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**8 401**	**9 543**	**12 352**	**14 336**	**13 665**	**10 040**	**9 312**	**1.3%**	**2.6%**	**1.5%**	**-0.5%**	**-3.0%**	**-0.7%**
Energy for Power Generation	**2 416**	**3 009**	**4 144**	**4 990**	**4 347**	**3 803**	**4 940**	**2.2%**	**3.3%**	**1.9%**	**-1.4%**	**-1.3%**	**2.7%**
Other Energy Transformation & Losses	**791**	**741**	**1 132**	**1 491**	**2 084**	**1 743**	**1 287**	**-0.7%**	**4.3%**	**2.8%**	**3.4%**	**-1.8%**	**-3.0%**
Final consumption (incl. bunkers)	**6 372**	**7 148**	**8 962**	**10 316**	**9 878**	**7 512**	**6 764**	**1.2%**	**2.3%**	**1.4%**	**-0.4%**	**-2.7%**	**-1.0%**
Steel, Non-Met. Minerals and Chem.	838	916	1 412	1 566	1 524	911	758	0.9%	4.4%	1.0%	-0.3%	-5.0%	-1.8%
Other Industry	1 105	1 078	1 361	1 636	1 735	1 369	1 302	-0.3%	2.4%	1.9%	0.6%	-2.3%	-0.5%
Non-Energy Use	495	633	787	865	783	665	593	2.5%	2.2%	1.0%	-1.0%	-1.6%	-1.1%
Residential	1 630	1 795	1 979	2 128	1 908	1 649	1 505	1.0%	1.0%	0.7%	-1.1%	-1.5%	-0.9%
Services	579	621	816	920	819	735	874	0.7%	2.8%	1.2%	-1.2%	-1.1%	1.8%
Agriculture	163	144	177	207	230	248	264	-1.2%	2.1%	1.6%	1.0%	0.8%	0.6%
Road	1 130	1 439	1 806	2 179	2 041	1 169	757	2.4%	2.3%	1.9%	-0.7%	-5.4%	-4.2%
Rail	59	47	51	60	68	73	79	-2.2%	0.8%	1.6%	1.2%	0.7%	0.7%
Aviation	182	227	252	323	388	343	288	2.2%	1.1%	2.5%	1.9%	-1.3%	-1.7%
Other Transport	190	248	320	432	383	351	345	2.7%	2.6%	3.0%	-1.2%	-0.9%	-0.2%

[1] Nuclear energy is accounted as primary electricity

World	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**2 027**	**2 513**	**3 510**	**4 040**	**2 785**	**1 122**	**936**	**2.2%**	**3.4%**	**1.4%**	**-3.6%**	**-8.7%**	**-1.8%**
Coal	1 150	1 509	2 114	2 421	1 236	155	39	2.7%	3.4%	1.4%	-6.5%	-18.8%	-12.9%
Oil	342	300	249	384	367	145	61	-1.3%	-1.8%	4.4%	-0.4%	-8.8%	-8.3%
Gas	479	650	1 031	1 065	969	471	226	3.1%	4.7%	0.3%	-0.9%	-7.0%	-7.1%
Biomass & Waste	53	51	110	163	198	323	567	-0.4%	8.0%	4.0%	2.0%	5.0%	5.8%
Other	3	4	6	7	15	28	42	3.6%	2.8%	1.7%	7.7%	6.7%	4.3%
Gross Elec. Generation (TWh_e)	**11 947**	**15 587**	**21 641**	**27 951**	**28 834**	**29 151**	**38 480**	**2.7%**	**3.3%**	**2.6%**	**0.3%**	**0.1%**	**2.8%**
Coal	4 424	6 002	8 659	10 420	5 409	680	179	3.1%	3.7%	1.9%	-6.3%	-18.7%	-12.5%
of which CCS	0	0	0	0	0	32	47	n.s.	n.s.	n.s.	-0.7%	n.s.	4.0%
Oil	1 339	1 225	945	1 599	1 580	638	274	-0.9%	-2.6%	5.4%	-0.1%	-8.7%	-8.1%
Gas	1 754	2 753	4 835	5 246	4 963	2 398	1 239	4.6%	5.8%	0.8%	-0.6%	-7.0%	-6.4%
of which CCS	0	0	0	0	0	93	191	n.s.	n.s.	n.s.	n.s.	n.s.	7.5%
Biomass & Waste	130	164	366	531	715	1 392	2 733	2.4%	8.4%	3.8%	3.0%	6.9%	7.0%
of which CCS	0	0	0	0	0	17	196	n.s.	n.s.	n.s.	n.s.	n.s.	27.6%
Nuclear	2 013	2 591	2 756	2 871	3 322	3 291	3 547	2.6%	0.6%	0.4%	1.5%	-0.1%	0.7%
Hydro	2 191	2 699	3 529	4 882	5 827	7 161	7 859	2.1%	2.7%	3.3%	1.8%	2.1%	0.9%
Wind	4	31	341	1 693	5 043	7 621	10 016	23.2%	27.0%	17.4%	11.5%	4.2%	2.8%
Solar	1	1	37	591	1 689	5 104	9 237	7.0%	39.3%	31.9%	11.1%	11.7%	6.1%
Other	91	120	171	118	287	866	3 396	2.8%	3.6%	-3.6%	9.3%	11.7%	14.6%
Generation Capacity (GW_e)	**2 814**	**3 585**	**5 286**	**7 242**	**9 655**	**12 365**	**16 354**	**2.5%**	**4.0%**	**3.2%**	**2.9%**	**2.5%**	**2.8%**
Coal	937	1 149	1 718	1 998	1 667	728	121	2.1%	4.1%	1.5%	-1.8%	-7.9%	-16.5%
of which CCS	0	0	0	0	0	5	8	n.s.	n.s.	n.s.	0.0%	n.s.	5.7%
Oil	415	417	403	449	536	523	537	0.1%	-0.3%	1.1%	1.8%	-0.2%	0.3%
Gas	507	784	1 397	1 480	1 476	793	650	4.5%	6.0%	0.6%	0.0%	-6.0%	-2.0%
of which CCS	0	0	0	0	0	14	34	n.s.	n.s.	n.s.	n.s.	n.s.	9.6%
Biomass & Waste	48	36	82	101	121	248	593	-3.0%	8.7%	2.1%	1.8%	7.5%	9.1%
of which CCS	0	0	0	0	0	3	34	n.s.	n.s.	n.s.	n.s.	n.s.	29.3%
Nuclear	293	363	382	400	462	458	493	2.1%	0.5%	0.5%	1.4%	-0.1%	0.7%
Hydro	605	810	1 070	1 462	1 728	2 134	2 396	3.0%	2.8%	3.2%	1.7%	2.1%	1.2%
Wind	2	17	184	766	2 234	3 275	4 174	24.4%	27.0%	15.3%	11.3%	3.9%	2.5%
Solar	0	1	38	565	1 387	4 097	7 035	9.4%	42.7%	31.1%	9.4%	11.4%	5.6%
Other	6	9	11	19	44	109	356	3.8%	2.8%	5.5%	8.6%	9.6%	12.6%
Total Final Consumption (Mtoe)	**6 372**	**7 148**	**8 962**	**10 316**	**9 878**	**7 512**	**6 764**	**1.2%**	**2.3%**	**1.4%**	**-0.4%**	**-2.7%**	**-1.0%**
Coal	849	659	1 204	1 216	939	245	116	-2.5%	6.2%	0.1%	-2.6%	-12.6%	-7.2%
Oil	2 654	3 182	3 653	4 198	3 735	1 860	1 000	1.8%	1.4%	1.4%	-1.2%	-6.7%	-6.0%
Gas	893	1 071	1 281	1 432	1 444	891	486	1.8%	1.8%	1.1%	0.1%	-4.7%	-5.9%
Electricity	832	1 087	1 533	1 958	2 025	2 021	2 536	2.7%	3.5%	2.5%	0.3%	0.0%	2.3%
Heat	339	257	295	355	405	458	462	-2.7%	1.4%	1.9%	1.3%	1.2%	0.1%
Biomass & Other	804	892	995	1 158	1 330	2 038	2 165	1.0%	1.1%	1.5%	1.4%	4.4%	0.6%
Industry (incl. non-energy use)	**2 438**	**2 627**	**3 559**	**4 067**	**4 041**	**2 945**	**2 652**	**0.7%**	**3.1%**	**1.3%**	**-0.1%**	**-3.1%**	**-1.0%**
Coal	589	540	1 047	1 081	892	234	112	-0.9%	6.9%	0.3%	-1.9%	-12.5%	-7.1%
Oil	715	825	914	986	920	581	454	1.4%	1.0%	0.8%	-0.7%	-4.5%	-2.4%
Gas	452	532	643	777	778	374	141	1.6%	1.9%	1.9%	0.0%	-7.1%	-9.3%
Electricity	388	462	639	857	1 009	915	954	1.8%	3.3%	3.0%	1.6%	-1.0%	0.4%
Heat	163	106	127	130	140	149	152	-4.2%	1.8%	0.2%	0.8%	0.6%	0.2%
Biomass & Other	132	163	189	237	302	692	839	2.1%	1.5%	2.3%	2.5%	8.6%	1.9%
Buildings	**2 209**	**2 416**	**2 795**	**3 048**	**2 727**	**2 384**	**2 379**	**0.9%**	**1.5%**	**0.9%**	**-1.1%**	**-1.3%**	**0.0%**
Coal	233	107	141	119	37	6	1	-7.4%	2.7%	-1.7%	-11.0%	-16.8%	-16.8%
Oil	310	337	307	328	296	202	93	0.9%	-0.9%	0.6%	-1.0%	-3.8%	-7.5%
Gas	434	527	605	598	535	350	175	2.0%	1.4%	-0.1%	-1.1%	-4.2%	-6.7%
Electricity	397	580	834	1 015	821	789	1 255	3.9%	3.7%	2.0%	-2.1%	-0.4%	4.8%
Heat	176	150	168	226	265	309	309	-1.6%	1.1%	3.0%	1.6%	1.6%	0.0%
Biomass & Other	659	714	740	763	773	729	546	0.8%	0.4%	0.3%	0.1%	-0.6%	-2.8%
Agriculture	**163**	**144**	**177**	**207**	**230**	**248**	**264**	**-1.2%**	**2.1%**	**1.6%**	**1.0%**	**0.8%**	**0.6%**
Coal	14	8	13	14	8	3	1	-6.1%	5.5%	0.3%	-5.7%	-8.5%	-8.5%
Oil	106	97	109	120	97	63	40	-0.9%	1.2%	1.0%	-2.1%	-4.2%	-4.4%
Gas	7	6	8	10	8	6	4	-2.1%	3.1%	1.8%	-1.6%	-2.9%	-3.0%
Electricity	30	29	39	54	76	98	119	-0.3%	3.1%	3.2%	3.4%	2.6%	2.0%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	6	5	8	10	42	78	99	-1.7%	5.3%	2.0%	15.5%	6.4%	2.4%
Transport (incl. bunkers)	**1 561**	**1 960**	**2 430**	**2 994**	**2 880**	**1 935**	**1 469**	**2.3%**	**2.2%**	**2.1%**	**-0.4%**	**-3.9%**	**-2.7%**
Coal	13	4	3	2	2	2	1	-10.1%	-2.7%	-2.9%	-2.0%	-2.0%	-1.9%
Oil	1 524	1 923	2 323	2 764	2 421	1 014	413	2.4%	1.9%	1.8%	-1.3%	-8.3%	-8.6%
Gas	0	6	25	48	123	162	167	31.5%	15.0%	6.6%	10.0%	2.7%	0.3%
Electricity	17	16	20	31	119	218	207	-0.7%	2.5%	4.3%	14.4%	6.2%	-0.5%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	8	11	58	148	214	539	681	3.9%	18.1%	9.8%	3.7%	9.7%	2.4%
Other Energy Transformation & Losses [2]	**791**	**741**	**1 132**	**1 491**	**2 084**	**1 743**	**1 287**	**-0.7%**	**4.3%**	**2.8%**	**3.4%**	**-1.8%**	**-3.0%**

[2] includes statistical differences

EU28	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	478	487	503	516	524	528	528	0.2%	0.3%	0.3%	0.2%	0.1%	0.0%
GDP per capita (ppp, k$'15)	24	30	33	37	42	47	55	2.0%	1.2%	1.1%	1.2%	1.2%	1.5%
Prices													
International/Regional ($'15/boe)													
Coal	4	2	3	3	4	7	8	-5.3%	3.6%	-1.4%	2.9%	7.1%	0.9%
Oil	39	38	86	88	89	79	81	-0.2%	8.4%	0.2%	0.1%	-1.2%	0.3%
Gas	24	28	33	47	55	61	62	1.5%	1.6%	3.4%	1.7%	1.1%	0.1%
GHG emissions ($MtCO_2$ eq.)													
Total GHG	**5 205**	**4 771**	**4 449**	**3 924**	**2 670**	**896**	**220**	**-0.9%**	**-0.7%**	**-1.2%**	**-3.8%**	**-10.3%**	**-13.1%**
Total GHG (energy, industry, agriculture)	**5 457**	**5 034**	**4 670**	**4 149**	**3 014**	**1 257**	**563**	**-0.8%**	**-0.7%**	**-1.2%**	**-3.1%**	**-8.4%**	**-7.7%**
CO_2	4 259	4 028	3 808	3 413	2 512	834	185	-0.6%	-0.6%	-1.1%	-3.0%	-10.4%	-14.0%
CH_4	736	614	498	396	264	216	175	-1.8%	-2.1%	-2.3%	-4.0%	-2.0%	-2.1%
N_2O	398	319	253	248	216	187	181	-2.2%	-2.3%	-0.2%	-1.4%	-1.4%	-0.3%
F gases	63	73	111	93	22	21	22	1.5%	4.2%	-1.7%	-13.6%	-0.3%	0.3%
Total GHG from Energy and Industry	**4 903**	**4 559**	**4 234**	**3 696**	**2 635**	**908**	**213**	**-0.7%**	**-0.7%**	**-1.4%**	**-3.3%**	**-10.1%**	**-13.5%**
CO_2 Emissions from Fuel Comb.	**3 974**	**3 752**	**3 568**	**3 190**	**2 316**	**795**	**179**	**-0.6%**	**-0.5%**	**-1.1%**	**-3.1%**	**-10.1%**	**-13.8%**
Power generation/District heating	1 415	1 284	1 234	1 015	536	126	- 16	-1.0%	-0.4%	-1.9%	-6.2%	-13.5%	n.s.
Industry	748	604	456	428	380	120	24	-2.1%	-2.8%	-0.6%	-1.2%	-10.9%	-15.0%
Buildings	724	651	662	531	396	183	64	-1.1%	0.2%	-2.2%	-2.9%	-7.4%	-10.0%
Agriculture	84	74	62	57	43	27	18	-1.3%	-1.7%	-0.8%	-2.7%	-4.4%	-4.3%
Transport	764	900	920	897	699	242	80	1.7%	0.2%	-0.3%	-2.5%	-10.1%	-10.5%
Other	240	239	234	261	262	96	10	-0.1%	-0.2%	1.1%	0.0%	-9.5%	-20.3%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**27**	**102**	**n.s.**	**n.s.**	**n.s.**	**29.6%**	**n.s.**	**14.1%**
Coal	0	0	0	0	0	9	10	n.s.	n.s.	n.s.	-0.6%	n.s.	1.2%
Gas	0	0	0	0	0	9	13	n.s.	n.s.	n.s.	n.s.	n.s.	4.1%
Biomass	0	0	0	0	0	7	63	n.s.	n.s.	n.s.	n.s.	n.s.	25.1%
Direct Air Capture	0	0	0	0	0	3	17	n.s.	n.s.	n.s.	n.s.	31.0%	18.3%
Energy Balance, by fuel (Mtoe)													
Primary Production	**735**	**752**	**661**	**569**	**556**	**613**	**700**	**0.2%**	**-1.3%**	**-1.5%**	**-0.2%**	**1.0%**	**1.3%**
Coal	312	213	163	136	82	18	8	-3.7%	-2.6%	-1.8%	-4.9%	-14.1%	-8.3%
Oil	127	160	92	57	36	8	6	2.3%	-5.4%	-4.6%	-4.6%	-14.4%	-2.4%
Natural gas	152	195	149	86	89	80	79	2.5%	-2.7%	-5.3%	0.4%	-1.0%	-0.2%
Biomass	47	66	125	120	131	167	173	3.5%	6.6%	-0.4%	0.9%	2.5%	0.3%
Nuclear[1]	68	81	79	68	64	58	53	1.7%	-0.3%	-1.4%	-0.7%	-1.0%	-0.9%
Hydro	25	31	32	32	35	36	35	1.9%	0.5%	0.0%	0.7%	0.5%	-0.3%
Other renewables	3	6	21	69	120	246	346	7.9%	12.7%	12.4%	5.7%	7.4%	3.5%
Net Imports	**803**	**790**	**901**	**886**	**699**	**321**	**130**						
Coal	133	100	112	120	52	7	2						
Oil	481	465	478	463	386	180	85						
Natural gas	143	201	298	275	222	62	- 31						
Biomass	0	0	3	20	35	69	72						
Biofuels	0	0	2	3	3	1	0						
Electricity	46	24	8	5	1	3	2						
Primary Energy Demand[2]	**1 537**	**1 542**	**1 563**	**1 455**	**1 254**	**935**	**830**	0.0%	**0.1%**	**-0.7%**	**-1.5%**	**-2.9%**	**-1.2%**
Coal	444	313	275	256	134	25	10	-3.4%	-1.3%	-0.7%	-6.3%	-15.6%	-8.5%
Oil	608	624	569	520	422	188	91	0.3%	-0.9%	-0.9%	-2.1%	-7.8%	-7.0%
Natural gas	295	396	446	361	311	142	48	3.0%	1.2%	-2.1%	-1.5%	-7.6%	-10.3%
Biomass	47	67	128	139	165	236	244	3.5%	6.7%	0.9%	1.7%	3.6%	0.3%
Nuclear[1]	68	81	79	68	64	58	53	1.7%	-0.3%	-1.4%	-0.7%	-1.0%	-0.9%
Hydro	25	31	32	32	35	36	35	1.9%	0.5%	0.0%	0.7%	0.5%	-0.3%
Other renewables	3	6	21	69	120	246	346	7.9%	12.7%	12.4%	5.7%	7.4%	3.5%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**1 537**	**1 542**	**1 563**	**1 455**	**1 254**	**935**	**830**	**0.0%**	**0.1%**	**-0.7%**	**-1.5%**	**-2.9%**	**-1.2%**
Energy for Power Generation	**490**	**503**	**547**	**506**	**424**	**447**	**521**	**0.3%**	**0.8%**	**-0.8%**	**-1.8%**	**0.5%**	**1.5%**
Other Energy Transformation & Losses	**136**	**102**	**105**	**117**	**125**	**100**	**69**	**-2.8%**	**0.3%**	**1.1%**	**0.6%**	**-2.1%**	**-3.7%**
Final consumption	**1 152**	**1 201**	**1 224**	**1 152**	**1 039**	**747**	**621**	**0.4%**	**0.2%**	**-0.6%**	**-1.0%**	**-3.2%**	**-1.8%**
Steel, Non-Met. Minerals and Chem.	190	167	141	144	146	104	98	-1.3%	-1.7%	0.2%	0.2%	-3.4%	-0.6%
Other Industry	175	163	145	144	143	115	109	-0.8%	-1.1%	-0.1%	0.0%	-2.2%	-0.5%
Non-Energy Use	100	115	108	94	86	75	70	1.4%	-0.6%	-1.4%	-0.9%	-1.3%	-0.7%
Residential	276	290	319	278	235	176	135	0.5%	1.0%	-1.4%	-1.7%	-2.8%	-2.6%
Services	118	133	164	146	127	97	90	1.2%	2.1%	-1.1%	-1.4%	-2.6%	-0.7%
Agriculture	33	29	27	26	27	28	29	-1.1%	-1.0%	-0.4%	0.4%	0.4%	0.4%
Road	237	281	299	302	258	138	76	1.7%	0.6%	0.1%	-1.5%	-6.1%	-5.7%
Rail	10	10	8	8	8	8	9	0.1%	-1.7%	-0.6%	0.4%	0.3%	0.5%
Aviation	6	7	7	7	6	4	3	2.5%	-0.4%	-0.4%	-1.3%	-3.0%	-2.6%
Other Transport	7	6	6	4	4	2	2	-1.1%	-0.3%	-3.2%	-1.4%	-5.1%	-3.3%

[1] Nuclear energy is accounted as primary electricity

EU28	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**393**	**385**	**415**	**337**	**206**	**110**	**90**	**-0.2%**	**0.7%**	**-2.1%**	**-4.8%**	**-6.1%**	**-2.0%**
Coal	282	234	208	188	76	11	3	-1.8%	-1.2%	-1.0%	-8.7%	-17.3%	-11.7%
Oil	55	41	24	16	13	6	1	-2.9%	-5.5%	-3.5%	-2.1%	-7.9%	-16.4%
Gas	50	95	142	92	82	37	15	6.7%	4.1%	-4.3%	-1.1%	-7.8%	-8.4%
Biomass & Waste	6	15	41	40	34	54	67	9.8%	10.9%	-0.3%	-1.5%	4.6%	2.2%
Other	0	0	0	1	1	2	4	4.0%	1.6%	1.4%	0.1%	16.0%	4.9%
Gross Elec. Generation (TWh_e)	**2 610**	**3 047**	**3 379**	**3 421**	**3 370**	**3 454**	**3 851**	**1.6%**	**1.0%**	**0.1%**	**-0.1%**	**0.2%**	**1.1%**
Coal	1 050	966	861	797	334	55	16	-0.8%	-1.1%	-0.8%	-8.3%	-16.6%	-11.8%
of which CCS	0	0	0	0	0	11	12	n.s.	n.s.	n.s.	-0.7%	n.s.	1.1%
Oil	224	181	87	71	59	27	5	-2.1%	-7.1%	-2.0%	-1.8%	-7.7%	-16.1%
Gas	193	480	765	494	435	201	93	9.5%	4.8%	-4.3%	-1.3%	-7.4%	-7.4%
of which CCS	0	0	0	0	0	24	35	n.s.	n.s.	n.s.	n.s.	n.s.	4.0%
Biomass & Waste	20	46	143	140	132	227	298	8.9%	12.0%	-0.2%	-0.6%	5.6%	2.7%
of which CCS	0	0	0	0	0	7	57	n.s.	n.s.	n.s.	n.s.	n.s.	23.1%
Nuclear	795	945	917	796	739	668	609	1.7%	-0.3%	-1.4%	-0.7%	-1.0%	-0.9%
Hydro	309	387	408	422	441	446	440	2.3%	0.5%	0.3%	0.4%	0.1%	-0.1%
Wind	1	22	149	474	782	1 008	1 128	39.8%	21.0%	12.2%	5.1%	2.6%	1.1%
Solar	0	0	26	207	411	700	878	24.1%	n.s.	23.2%	7.1%	5.5%	2.3%
Other	19	19	23	18	38	122	384	0.3%	1.7%	-2.4%	7.7%	12.4%	12.1%
Generation Capacity (GW_e)	**654**	**717**	**905**	**1 148**	**1 499**	**1 736**	**1 957**	**0.9%**	**2.4%**	**2.4%**	**2.7%**	**1.5%**	**1.2%**
Coal	223	201	192	156	91	43	8	-1.0%	-0.4%	-2.1%	-5.2%	-7.2%	-16.1%
of which CCS	0	0	0	0	0	2	3	n.s.	n.s.	n.s.	0.0%	n.s.	3.7%
Oil	94	81	65	50	56	57	54	-1.4%	-2.2%	-2.7%	1.3%	0.1%	-0.5%
Gas	65	129	219	222	230	110	88	7.1%	5.4%	0.1%	0.4%	-7.1%	-2.2%
of which CCS	0	0	0	0	0	4	8	n.s.	n.s.	n.s.	n.s.	n.s.	8.0%
Biomass & Waste	7	10	28	33	36	69	141	3.0%	10.9%	1.7%	1.0%	6.7%	7.3%
of which CCS	0	0	0	0	0	1	10	n.s.	n.s.	n.s.	n.s.	n.s.	24.1%
Nuclear	126	137	131	114	105	91	83	0.9%	-0.4%	-1.4%	-0.8%	-1.4%	-0.9%
Hydro	138	146	153	166	167	166	157	0.5%	0.5%	0.8%	0.1%	0.0%	-0.6%
Wind	1	12	85	230	402	483	502	36.9%	21.3%	10.4%	5.8%	1.9%	0.4%
Solar	0	0	31	174	401	684	824	36.9%	n.s.	19.0%	8.7%	5.5%	1.9%
Other	0	1	1	5	11	32	100	2.0%	2.3%	19.5%	9.0%	11.6%	12.0%
Total Final Consumption[2] (Mtoe)	**1 152**	**1 201**	**1 224**	**1 152**	**1 039**	**747**	**621**	**0.4%**	**0.2%**	**-0.6%**	**-1.0%**	**-3.2%**	**-1.8%**
Coal	141	74	59	57	43	12	7	-6.3%	-2.2%	-0.4%	-2.7%	-12.0%	-5.4%
Oil	503	543	505	464	373	167	87	0.8%	-0.7%	-0.8%	-2.2%	-7.7%	-6.4%
Gas	229	272	277	238	200	102	46	1.8%	0.2%	-1.5%	-1.7%	-6.5%	-7.6%
Electricity	186	217	244	244	241	247	266	1.6%	1.2%	0.0%	-0.1%	0.2%	0.8%
Heat	55	46	55	54	64	81	81	-1.7%	1.9%	-0.3%	1.7%	2.5%	0.0%
Biomass & Other	39	49	83	95	117	137	133	2.3%	5.3%	1.4%	2.2%	1.6%	-0.3%
Industry (incl. non-energy use)	**466**	**444**	**395**	**382**	**375**	**293**	**276**	**-0.5%**	**-1.2%**	**-0.3%**	**-0.2%**	**-2.4%**	**-0.6%**
Coal	93	61	44	47	40	12	7	-4.2%	-3.1%	0.6%	-1.6%	-11.8%	-5.2%
Oil	140	147	127	105	95	68	60	0.5%	-1.4%	-1.9%	-1.0%	-3.2%	-1.4%
Gas	113	117	96	94	86	40	13	0.3%	-1.9%	-0.2%	-0.9%	-7.3%	-10.4%
Electricity	85	91	88	94	108	108	119	0.7%	-0.3%	0.7%	1.3%	0.0%	1.0%
Heat	21	12	16	16	15	15	15	-5.6%	3.3%	-0.3%	-0.2%	-0.3%	-0.2%
Biomass & Other	14	17	22	25	30	50	63	1.9%	2.6%	1.5%	1.9%	5.2%	2.3%
Buildings	**394**	**423**	**483**	**424**	**361**	**273**	**225**	**0.7%**	**1.3%**	**-1.3%**	**-1.6%**	**-2.8%**	**-1.9%**
Coal	46	12	13	9	2	0	0	-12.8%	1.1%	-4.2%	-13.1%	-18.5%	-24.8%
Oil	89	80	63	54	47	24	8	-1.1%	-2.4%	-1.5%	-1.2%	-6.5%	-10.0%
Gas	110	150	176	140	102	45	16	3.2%	1.6%	-2.3%	-3.2%	-7.8%	-9.9%
Electricity	90	116	146	138	109	92	109	2.5%	2.3%	-0.5%	-2.4%	-1.7%	1.8%
Heat	34	34	39	38	48	66	67	0.1%	1.4%	-0.3%	2.4%	3.2%	0.1%
Biomass & Other	24	30	46	45	53	45	25	2.3%	4.2%	-0.1%	1.6%	-1.6%	-5.8%
Agriculture	**33**	**29**	**27**	**26**	**27**	**28**	**29**	**-1.1%**	**-1.0%**	**-0.4%**	**0.4%**	**0.4%**	**0.4%**
Coal	2	1	1	1	0	0	0	-4.9%	2.0%	-3.6%	-6.8%	-9.5%	-9.5%
Oil	21	19	15	14	11	7	4	-1.0%	-2.4%	-0.5%	-2.6%	-4.5%	-4.5%
Gas	5	4	4	4	3	2	2	-0.9%	-0.3%	-1.3%	-1.9%	-3.2%	-3.1%
Electricity	5	4	5	5	6	9	11	-1.6%	1.2%	0.6%	2.7%	3.0%	2.4%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	1	1	2	2	6	10	12	2.4%	4.4%	0.8%	11.8%	5.2%	2.0%
Transport	**259**	**304**	**320**	**320**	**276**	**152**	**90**	**1.6%**	**0.5%**	**0.0%**	**-1.5%**	**-5.8%**	**-5.1%**
Coal	0	0	0	0	0	0	0	-26.4%	1.7%	-2.9%	0.0%	0.0%	0.0%
Oil	253	297	300	291	220	68	14	1.6%	0.1%	-0.3%	-2.8%	-11.1%	-14.4%
Gas	0	0	0	0	10	14	15	5.0%	3.9%	-1.2%	39.1%	4.0%	0.7%
Electricity	5	6	5	6	18	39	27	1.3%	-1.4%	1.5%	11.5%	7.8%	-3.4%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	1	13	22	28	32	33	n.s.	34.2%	5.2%	2.2%	1.3%	0.4%
Other Energy Transformation & Losses[3]	**136**	**102**	**105**	**117**	**125**	**100**	**69**	**-2.8%**	**0.3%**	**1.1%**	**0.6%**	**-2.1%**	**-3.7%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

EFTA	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	11	12	13	14	15	16	17	0.7%	0.9%	1.0%	0.7%	0.5%	0.5%
GDP per capita (ppp, k$'15)	40	46	50	54	61	69	77	1.5%	0.7%	0.8%	1.1%	1.3%	1.2%
Prices													
International/Regional ($'15/boe)													
Coal	3	2	3	2	3	7	7	-3.4%	3.6%	-2.5%	3.3%	8.1%	1.1%
Oil	39	38	86	88	89	79	81	-0.2%	8.4%	0.2%	0.1%	-1.2%	0.3%
Gas	24	28	33	47	55	61	62	1.5%	1.6%	3.4%	1.7%	1.1%	0.1%
GHG emissions ($MtCO_2$ eq.)													
Total GHG	**106**	**96**	**89**	**88**	**80**	**33**	**13**	**-0.9%**	**-0.8%**	**-0.1%**	**-0.9%**	**-8.6%**	**-9.1%**
Total GHG (energy, industry, agriculture)	**109**	**110**	**113**	**110**	**100**	**50**	**27**	**0.1%**	**0.3%**	**-0.2%**	**-1.0%**	**-6.6%**	**-5.9%**
CO_2	80	85	90	90	82	33	8	0.6%	0.6%	0.0%	-0.9%	-8.7%	-12.7%
CH_4	15	14	14	12	11	12	13	-0.6%	-0.3%	-1.4%	-0.4%	0.3%	1.1%
N_2O	8	7	6	6	5	5	5	-0.7%	-2.1%	-0.7%	-0.4%	-0.8%	0.0%
F gases	7	4	3	3	1	1	1	-5.6%	-1.8%	-0.9%	-11.9%	0.0%	0.1%
Total GHG from Energy and Industry	**94**	**96**	**99**	**96**	**85**	**35**	**9**	**0.2%**	**0.3%**	**-0.3%**	**-1.2%**	**-8.5%**	**-12.2%**
CO_2 Emissions from Fuel Comb.	**67**	**70**	**77**	**77**	**69**	**30**	**8**	**0.5%**	**0.9%**	**0.0%**	**-1.0%**	**-8.1%**	**-12.5%**
Power generation/District heating	1	1	3	3	3	1	- 1	-2.5%	13.3%	2.2%	-1.2%	-11.8%	n.s.
Industry	10	10	10	9	9	3	1	-0.4%	0.1%	-0.7%	-0.5%	-9.1%	-14.0%
Buildings	20	18	18	13	10	4	1	-1.1%	0.2%	-3.1%	-2.9%	-8.1%	-10.4%
Agriculture	2	3	3	2	2	1	1	2.1%	-0.7%	-1.6%	-2.6%	-4.3%	-4.3%
Transport	25	28	31	30	24	9	4	1.1%	1.0%	-0.1%	-2.5%	-9.5%	-7.3%
Other	8	11	13	19	23	12	1	3.0%	1.3%	3.8%	2.0%	-6.5%	-18.9%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**1**	**3**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**14.6%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	3.8%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	9.1%
Biomass	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	29.9%
Direct Air Capture	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	39.1%	16.1%
Energy Balance, by fuel (Mtoe)													
Primary Production	**119**	**222**	**207**	**188**	**139**	**37**	**34**	**6.4%**	**-0.7%**	**-1.0%**	**-3.0%**	**-12.4%**	**-0.9%**
Coal	0	0	1	1	1	0	0	8.7%	12.1%	0.9%	-1.6%	-8.9%	-9.1%
Oil	79	157	91	70	41	7	4	7.1%	-5.3%	-2.7%	-5.2%	-15.7%	-7.1%
Natural gas	22	42	90	90	70	0	0	6.8%	8.0%	-0.1%	-2.5%	-42.3%	-1.0%
Biomass	3	3	4	3	3	5	6	2.4%	2.0%	-1.3%	-0.1%	4.9%	0.6%
Nuclear[1]	2	2	2	2	1	0	0	1.1%	0.0%	-2.4%	-8.7%	-28.0%	5.2%
Hydro	13	16	14	16	16	15	16	1.8%	-1.1%	1.3%	0.0%	-0.5%	0.1%
Other renewables	0	1	4	6	6	8	8	16.0%	13.1%	3.9%	1.1%	1.9%	0.4%
Net Imports	**- 94**	**- 197**	**- 139**	**- 145**	**- 98**	**- 8**	**- 13**						
Coal	1	1	0	0	0	0	0						
Oil	- 59	- 136	- 67	- 52	- 27	2	2						
Natural gas	- 18	- 35	- 80	- 74	- 54	4	- 1						
Biomass	0	0	0	1	2	2	1						
Biofuels	0	0	0	0	0	0	0						
Electricity	- 18	- 26	8	- 20	- 19	- 16	- 15						
Primary Energy Demand[2]	**26**	**25**	**68**	**43**	**41**	**29**	**21**	-0.3%	**10.7%**	**-4.6%**	**-0.5%**	**-3.3%**	**-3.2%**
Coal	1	1	1	1	2	0	0	-0.9%	-2.2%	4.4%	1.7%	-11.9%	-5.0%
Oil	21	21	24	18	13	10	6	0.0%	1.5%	-3.0%	-2.7%	-3.3%	-4.9%
Natural gas	4	7	11	15	16	4	- 1	6.2%	5.0%	3.6%	0.3%	-12.2%	n.s.
Biomass	3	3	4	4	5	8	7	2.4%	2.1%	0.2%	2.7%	3.7%	-0.5%
Nuclear[1]	2	2	2	2	1	0	0	1.1%	0.0%	-2.4%	-8.7%	-28.0%	5.2%
Hydro	13	16	14	16	16	15	16	1.8%	-1.1%	1.3%	0.0%	-0.5%	0.1%
Other renewables	0	1	4	6	6	8	8	16.0%	13.1%	3.9%	1.1%	1.9%	0.4%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**26**	**25**	**68**	**43**	**41**	**29**	**21**	**-0.3%**	**10.7%**	**-4.6%**	**-0.5%**	**-3.3%**	**-3.2%**
Energy for Power Generation	**17**	**21**	**23**	**26**	**26**	**25**	**25**	**2.1%**	**1.0%**	**1.4%**	**-0.2%**	**-0.3%**	**0.2%**
Other Energy Transformation & Losses	**- 15**	**- 21**	**19**	**- 8**	**- 6**	**- 7**	**- 11**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**
Final consumption	**37**	**41**	**45**	**43**	**38**	**29**	**25**	**1.0%**	**0.9%**	**-0.4%**	**-1.1%**	**-2.7%**	**-1.4%**
Steel, Non-Met. Minerals and Chem.	4	4	4	4	5	4	3	1.6%	-0.5%	0.9%	0.3%	-2.6%	-0.9%
Other Industry	6	7	7	8	8	8	8	1.2%	0.2%	0.3%	0.9%	-0.5%	0.7%
Non-Energy Use	2	3	3	3	2	1	1	1.3%	0.2%	0.4%	-3.6%	-4.3%	-8.1%
Residential	10	10	11	9	7	5	4	-0.1%	1.4%	-1.7%	-2.2%	-3.2%	-2.2%
Services	5	6	7	6	5	4	3	0.9%	1.9%	-1.3%	-2.0%	-3.0%	-1.6%
Agriculture	1	1	1	1	1	1	1	3.4%	-0.6%	-0.7%	0.8%	0.7%	0.6%
Road	8	9	10	10	8	5	3	1.4%	0.9%	0.4%	-1.7%	-5.0%	-4.1%
Rail	0	0	0	0	0	0	0	-0.3%	1.4%	0.0%	1.1%	1.1%	1.0%
Aviation	0	0	0	0	0	0	0	5.3%	1.4%	-0.1%	-1.9%	-3.6%	-2.8%
Other Transport	1	1	1	1	1	0	0	0.9%	1.3%	-3.5%	-0.3%	-4.2%	-3.1%

[1] Nuclear energy is accounted as primary electricity

EFTA	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**1**	**1**	**3**	**3**	**3**	**2**	**2**	**2.8%**	**7.6%**	**0.7%**	**-0.8%**	**-3.2%**	**-0.9%**
Coal	0	0	0	0	0	0	0	-5.0%	1.6%	24.2%	1.7%	-9.0%	2.6%
Oil	0	0	0	0	0	0	0	-9.4%	-7.2%	29.0%	-15.2%	n.s.	n.s.
Gas	0	0	1	1	1	0	0	2.2%	16.9%	-5.3%	1.5%	-5.0%	-2.8%
Biomass & Waste	1	1	1	1	1	1	1	3.8%	3.4%	0.9%	-1.0%	-1.4%	1.0%
Other	0	0	0	0	0	0	0	16.0%	12.9%	1.5%	0.5%	-2.5%	-8.0%
Gross Elec. Generation (TWh_e)	**181**	**217**	**206**	**237**	**230**	**219**	**223**	**1.8%**	**-0.5%**	**1.4%**	**-0.3%**	**-0.5%**	**0.2%**
Coal	0	0	0	1	1	0	1	-5.1%	3.8%	25.8%	2.0%	-9.2%	2.7%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	4.0%
Oil	0	0	0	1	0	0	0	-4.9%	-8.3%	27.6%	-13.4%	-38.1%	n.s.
Gas	0	1	6	3	4	2	2	12.5%	18.6%	-5.4%	1.9%	-5.2%	-2.5%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	9.7%
Biomass & Waste	1	2	3	3	4	4	5	6.9%	3.5%	-1.0%	4.4%	0.3%	2.2%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	31.6%
Nuclear	24	26	26	21	8	0	0	1.1%	0.0%	-2.4%	-8.7%	-30.8%	0.0%
Hydro	157	187	168	189	190	180	182	1.8%	-1.1%	1.2%	0.0%	-0.5%	0.1%
Wind	0	0	1	12	15	23	21	n.s.	39.0%	29.7%	1.8%	4.6%	-1.1%
Solar	0	0	0	2	2	4	6	n.s.	23.9%	35.1%	1.8%	6.6%	2.8%
Other	- 1	1	2	5	5	4	7	n.s.	16.0%	8.5%	0.5%	-2.3%	4.8%
Generation Capacity (GW_e)	**46**	**51**	**56**	**73**	**76**	**75**	**72**	**1.0%**	**1.1%**	**2.6%**	**0.4%**	**-0.1%**	**-0.5%**
Coal	0	0	0	0	0	0	0	5.5%	-4.3%	6.8%	6.8%	0.7%	-3.5%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	8.2%
Oil	1	0	0	1	1	1	1	-4.8%	-3.7%	10.0%	4.1%	0.3%	-1.8%
Gas	0	0	2	4	5	3	1	7.7%	19.8%	9.0%	1.6%	-6.1%	-7.7%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	16.5%
Biomass & Waste	0	0	1	0	1	1	2	6.5%	4.3%	-1.2%	5.6%	2.2%	5.4%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	35.0%
Nuclear	3	3	3	3	1	0	0	0.8%	0.2%	-0.1%	-8.9%	-30.9%	-0.2%
Hydro	42	46	49	56	55	52	52	0.9%	0.7%	1.2%	-0.1%	-0.5%	-0.1%
Wind	0	0	0	5	9	12	9	n.s.	40.6%	26.8%	5.4%	3.4%	-3.0%
Solar	0	0	0	2	3	5	5	25.9%	19.9%	32.7%	0.9%	6.3%	1.7%
Other	0	0	1	1	1	1	2	14.4%	12.8%	3.4%	1.9%	1.3%	3.6%
Total Final Consumption[2] (Mtoe)	**37**	**41**	**45**	**43**	**38**	**29**	**25**	**1.0%**	**0.9%**	**-0.4%**	**-1.1%**	**-2.7%**	**-1.4%**
Coal	1	1	1	1	1	0	0	0.2%	-3.1%	1.9%	0.0%	-11.9%	-11.0%
Oil	19	19	20	18	13	5	2	0.0%	0.3%	-1.1%	-2.9%	-8.9%	-10.3%
Gas	1	3	3	4	3	2	1	6.9%	2.2%	0.6%	-0.6%	-4.8%	-4.3%
Electricity	13	15	16	16	15	15	15	1.4%	1.1%	-0.2%	-0.6%	-0.4%	0.2%
Heat	1	1	2	2	2	3	3	2.3%	4.5%	1.5%	1.7%	2.0%	0.7%
Biomass & Other	2	2	3	2	3	4	4	1.9%	1.7%	-0.4%	2.7%	2.8%	0.1%
Industry (incl. non-energy use)	**12**	**14**	**14**	**15**	**15**	**13**	**12**	**1.3%**	**0.0%**	**0.5%**	**0.0%**	**-1.5%**	**-0.4%**
Coal	1	1	1	1	1	0	0	0.2%	-3.1%	1.9%	0.1%	-11.9%	-11.0%
Oil	4	4	4	4	3	1	1	-1.2%	0.0%	-0.8%	-2.5%	-6.4%	-9.0%
Gas	0	1	2	2	1	1	0	11.9%	1.7%	0.9%	-1.7%	-5.2%	-12.6%
Electricity	6	6	7	7	8	8	9	1.3%	0.3%	1.2%	1.0%	0.1%	0.9%
Heat	0	0	0	0	0	0	0	7.7%	1.9%	0.9%	-0.2%	-0.3%	-0.2%
Biomass & Other	1	1	1	1	1	2	2	5.7%	-1.7%	-1.8%	3.4%	4.3%	2.6%
Buildings	**15**	**15**	**18**	**16**	**13**	**9**	**8**	**0.2%**	**1.6%**	**-1.5%**	**-2.1%**	**-3.1%**	**-2.0%**
Coal	0	0	0	0	0	0	0	-5.5%	-1.2%	-3.0%	-13.7%	n.s.	n.s.
Oil	6	5	4	3	2	1	0	-1.8%	-0.5%	-4.4%	-3.7%	-8.6%	-10.5%
Gas	1	1	2	2	2	1	0	3.6%	3.1%	0.3%	-1.4%	-7.3%	-10.3%
Electricity	7	8	9	8	6	4	3	1.3%	1.8%	-1.3%	-3.5%	-3.8%	-1.0%
Heat	1	1	1	2	2	3	3	1.4%	5.1%	1.6%	2.0%	2.3%	0.8%
Biomass & Other	1	1	2	1	1	1	1	-0.9%	3.3%	-1.2%	0.7%	-1.4%	-4.6%
Agriculture	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**3.4%**	**-0.6%**	**-0.7%**	**0.8%**	**0.7%**	**0.6%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	1	1	1	1	1	0	0	1.9%	-0.3%	-1.5%	-2.7%	-4.3%	-4.4%
Gas	0	0	0	0	0	0	0	7.3%	-9.2%	-3.7%	-1.9%	-3.0%	-3.1%
Electricity	0	0	0	0	0	1	1	6.5%	0.4%	0.3%	2.8%	2.6%	2.0%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	41.3%	-3.4%	8.5%	15.0%	5.5%	2.1%
Transport	**9**	**10**	**11**	**11**	**10**	**6**	**4**	**1.4%**	**1.0%**	**0.1%**	**-1.5%**	**-4.6%**	**-3.5%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	8	10	11	11	8	3	1	1.5%	0.8%	-0.1%	-2.8%	-10.5%	-12.3%
Gas	0	0	0	0	0	0	1	n.s.	n.s.	-0.5%	40.4%	3.8%	6.3%
Electricity	0	0	0	0	1	2	2	0.1%	1.7%	0.9%	9.3%	7.9%	-1.6%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	1	1	1	n.s.	n.s.	10.2%	5.0%	7.3%	0.0%
Other Energy Transformation & Losses[3]	**- 15**	**- 21**	**19**	**- 8**	**- 6**	**- 7**	**- 11**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Other Balkans	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	24	23	22	22	20	19	17	-0.4%	-0.3%	-0.4%	-0.6%	-0.8%	-0.9%
GDP per capita (ppp, k$'15)	6	5	8	10	15	23	30	-1.0%	4.2%	2.7%	4.1%	3.8%	3.0%
Prices													
International/Regional ($'15/boe)													
Coal	3	2	3	2	3	7	7	-3.4%	3.6%	-2.5%	3.3%	8.1%	1.1%
Oil	39	38	86	88	89	79	81	-0.2%	8.4%	0.2%	0.1%	-1.2%	0.3%
Gas	24	28	33	47	55	61	62	1.5%	1.6%	3.4%	1.7%	1.1%	0.1%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**133**	**90**	**124**	**127**	**92**	**34**	**8**	**-3.8%**	**3.2%**	**0.2%**	**-3.1%**	**-9.5%**	**-13.8%**
Total GHG (energy, industry, agriculture)	**133**	**99**	**122**	**127**	**94**	**39**	**14**	**-2.9%**	**2.1%**	**0.5%**	**-3.0%**	**-8.5%**	**-9.9%**
CO_2	103	73	88	92	63	17	3	-3.5%	1.9%	0.5%	-3.7%	-12.5%	-16.8%
CH_4	21	17	18	16	10	7	4	-2.1%	0.4%	-1.2%	-4.4%	-3.8%	-5.0%
N_2O	7	6	6	6	5	4	3	-2.2%	0.0%	0.2%	-1.9%	-2.7%	-0.7%
F gases	2	4	11	14	16	12	4	8.1%	11.4%	2.8%	1.5%	-3.2%	-11.2%
Total GHG from Energy and Industry	**117**	**86**	**110**	**116**	**84**	**31**	**6**	**-3.1%**	**2.5%**	**0.5%**	**-3.2%**	**-9.5%**	**-14.7%**
CO_2 Emissions from Fuel Comb.	**96**	**69**	**82**	**86**	**57**	**15**	**2**	**-3.2%**	**1.8%**	**0.4%**	**-4.1%**	**-12.5%**	**-17.0%**
Power generation/District heating	52	47	52	53	26	3	- 1	-1.0%	1.0%	0.3%	-6.7%	-18.6%	n.s.
Industry	16	7	7	7	8	2	0	-7.5%	-1.0%	0.9%	0.6%	-11.3%	-15.2%
Buildings	14	5	6	5	4	2	1	-10.3%	1.4%	-1.7%	-1.9%	-6.5%	-10.4%
Agriculture	0	1	1	1	1	0	0	9.7%	-4.7%	3.3%	-1.9%	-4.1%	-4.4%
Transport	8	7	14	15	13	5	2	-0.9%	6.7%	0.5%	-1.6%	-8.3%	-11.1%
Other	5	2	4	5	5	2	0	-11.5%	9.0%	2.4%	1.0%	-11.5%	-17.3%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**23.2%**	**53.8%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass	0	0	0	0	0	0	3	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	23.2%	18.7%
Energy Balance, by fuel (Mtoe)													
Primary Production	**20**	**18**	**21**	**12**	**14**	**15**	**17**	**-1.2%**	**1.5%**	**-5.3%**	**1.5%**	**0.5%**	**1.2%**
Coal	14	12	14	5	3	1	0	-1.5%	1.2%	-10.6%	-3.2%	-16.0%	-7.3%
Oil	2	1	2	2	2	1	1	-5.0%	2.0%	2.4%	-0.8%	-4.7%	-2.8%
Natural gas	1	1	0	1	1	1	1	-1.5%	-6.4%	7.0%	2.4%	0.4%	0.7%
Biomass	2	2	2	2	4	6	6	-0.1%	2.2%	1.7%	4.6%	4.0%	1.2%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	6.3%
Hydro	1	2	3	2	3	3	3	3.5%	3.9%	-2.0%	1.6%	1.5%	-0.1%
Other renewables	0	0	0	0	1	3	5	n.s.	19.0%	31.4%	30.0%	8.0%	4.4%
Net Imports	**10**	**9**	**7**	**26**	**20**	**9**	**2**						
Coal	2	1	1	12	5	0	0						
Oil	7	3	7	6	6	2	0						
Natural gas	3	1	2	1	3	2	0						
Biomass	0	0	0	0	0	0	1						
Biofuels	0	0	0	0	0	0	0						
Electricity	- 2	3	- 3	7	7	5	0						
Primary Energy Demand[2]	**30**	**26**	**27**	**38**	**34**	**24**	**18**	-1.4%	**0.3%**	**3.3%**	**-0.9%**	**-3.6%**	**-2.6%**
Coal	16	13	15	16	8	1	0	-2.2%	1.5%	0.9%	-6.5%	-22.3%	-5.3%
Oil	9	5	8	8	7	3	1	-6.8%	6.0%	-0.8%	-0.5%	-8.0%	-8.5%
Natural gas	3	2	2	2	4	3	1	-6.0%	1.8%	-0.4%	6.7%	-4.3%	-8.7%
Biomass	2	2	2	2	4	6	7	-0.2%	2.3%	1.1%	4.6%	5.4%	1.4%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	6.3%
Hydro	1	2	3	2	3	3	3	3.5%	3.9%	-2.0%	1.6%	1.5%	-0.1%
Other renewables	0	0	0	0	1	3	5	n.s.	19.0%	31.4%	30.0%	8.0%	4.4%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**30**	**26**	**27**	**38**	**34**	**24**	**18**	**-1.4%**	**0.3%**	**3.3%**	**-0.9%**	**-3.6%**	**-2.6%**
Energy for Power Generation	**15**	**14**	**16**	**16**	**12**	**8**	**10**	**-0.6%**	**1.5%**	**0.0%**	**-3.1%**	**-4.0%**	**2.8%**
Other Energy Transformation & Losses	**0**	**4**	**- 2**	**9**	**10**	**8**	**3**	**n.s.**	**n.s.**	**n.s.**	**1.1%**	**-1.9%**	**-9.1%**
Final consumption	**21**	**13**	**19**	**20**	**20**	**15**	**13**	**-4.3%**	**3.6%**	**0.5%**	**0.2%**	**-2.7%**	**-1.5%**
Steel, Non-Met. Minerals and Chem.	0	1	3	4	5	3	2	4.9%	14.3%	3.8%	2.8%	-5.3%	-3.6%
Other Industry	7	3	2	2	2	2	2	-8.2%	-3.5%	0.4%	1.1%	-1.4%	0.4%
Non-Energy Use	2	0	1	1	1	1	1	-13.4%	10.4%	-3.7%	0.8%	-1.0%	-0.7%
Residential	4	5	6	6	5	4	4	1.1%	1.8%	0.1%	-1.4%	-1.5%	-2.0%
Services	4	2	2	2	2	2	2	-9.8%	2.5%	-0.3%	-1.4%	0.0%	2.5%
Agriculture	0	0	0	0	0	0	0	11.2%	-3.1%	2.3%	1.2%	0.9%	0.6%
Road	3	2	5	5	5	3	2	-1.1%	7.5%	-0.1%	-0.4%	-4.1%	-3.8%
Rail	0	0	0	0	0	0	0	2.1%	-0.9%	1.0%	1.8%	1.4%	0.9%
Aviation	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	1.1%	n.s.	n.s.
Other Transport	0	0	0	0	0	0	0	n.s.	2.3%	5.4%	1.1%	-3.2%	-2.6%

[1] Nuclear energy is accounted as primary electricity

Other Balkans	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**13**	**12**	**13**	**13**	**7**	**1**	**2**	**-1.1%**	**1.0%**	**0.3%**	**-5.8%**	**-15.5%**	**4.5%**
Coal	12	11	13	13	5	0	0	-0.4%	1.0%	0.4%	-8.7%	-31.4%	4.6%
Oil	1	0	0	0	1	0	0	-11.9%	-3.5%	-10.2%	24.9%	-9.8%	-10.0%
Gas	0	0	0	0	1	1	0	-7.4%	7.7%	-7.8%	29.4%	-3.5%	-6.6%
Biomass & Waste	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	6.9%	-1.7%	29.4%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**66**	**59**	**79**	**80**	**75**	**65**	**84**	**-1.0%**	**2.9%**	**0.2%**	**-0.6%**	**-1.4%**	**2.6%**
Coal	44	35	45	51	22	1	1	-2.3%	2.6%	1.3%	-8.3%	-29.4%	3.1%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	4	1	0	0	2	1	0	-11.8%	-13.2%	-0.9%	26.8%	-9.7%	-9.4%
Gas	1	0	0	0	5	4	2	-11.4%	0.3%	0.0%	29.2%	-3.1%	-4.7%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	0	0	0	1	1	7	n.s.	n.s.	n.s.	7.3%	-1.6%	30.8%
of which CCS	0	0	0	0	0	0	3	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	16	23	34	27	32	37	37	3.7%	3.9%	-2.0%	1.5%	1.5%	0.1%
Wind	0	0	0	1	7	8	12	n.s.	n.s.	n.s.	29.2%	1.6%	4.7%
Solar	0	0	0	0	7	15	22	n.s.	n.s.	n.s.	36.9%	7.6%	3.8%
Other	1	0	0	0	0	0	3	-22.1%	n.s.	n.s.	-15.1%	23.9%	50.3%
Generation Capacity (GW_e)	**28**	**16**	**18**	**20**	**28**	**36**	**38**	**-5.1%**	**0.8%**	**1.1%**	**3.5%**	**2.5%**	**0.5%**
Coal	25	8	8	8	7	8	1	-10.5%	0.3%	0.0%	-1.1%	0.1%	-16.6%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	1	1	1	1	1	1	1	-0.6%	1.7%	2.9%	0.0%	0.1%	2.7%
Gas	0	0	0	1	1	1	1	-1.1%	2.2%	14.0%	2.9%	-2.9%	1.3%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	7.3%	-1.6%	32.8%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	2	7	8	9	11	12	12	13.6%	1.3%	0.9%	1.4%	1.3%	0.0%
Wind	0	0	0	0	3	3	4	n.s.	n.s.	n.s.	27.9%	1.4%	3.9%
Solar	0	0	0	0	5	11	17	n.s.	n.s.	n.s.	36.9%	8.0%	4.0%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	40.4%
Total Final Consumption[2] (Mtoe)	**21**	**13**	**19**	**20**	**20**	**15**	**13**	**-4.3%**	**3.6%**	**0.5%**	**0.2%**	**-2.7%**	**-1.5%**
Coal	4	2	2	3	2	0	0	-6.9%	1.0%	3.1%	-0.8%	-15.4%	-10.1%
Oil	8	4	8	7	6	3	1	-6.1%	6.3%	-0.6%	-1.4%	-7.9%	-8.5%
Gas	3	1	1	1	2	1	1	-7.6%	0.0%	-0.9%	4.4%	-3.7%	-7.6%
Electricity	4	4	5	6	5	5	6	-0.8%	2.5%	1.5%	-0.5%	-1.3%	1.6%
Heat	1	1	1	1	1	2	2	-1.1%	5.2%	-0.1%	3.5%	2.2%	-0.3%
Biomass & Other	2	2	2	2	3	4	4	-0.2%	2.2%	0.1%	3.0%	4.4%	-0.9%
Industry (incl. non-energy use)	**9**	**4**	**6**	**7**	**8**	**6**	**5**	**-7.8%**	**3.7%**	**1.5%**	**2.0%**	**-3.5%**	**-1.6%**
Coal	1	1	1	2	2	0	0	-2.3%	1.1%	5.6%	0.5%	-15.3%	-9.8%
Oil	4	1	2	1	1	1	1	-15.1%	7.8%	-1.7%	0.0%	-5.6%	-3.1%
Gas	1	1	1	1	1	0	0	-2.4%	-0.6%	-3.2%	2.9%	-5.9%	-10.4%
Electricity	2	1	1	2	3	3	2	-7.8%	5.3%	3.1%	4.0%	-1.4%	-0.6%
Heat	0	0	0	0	0	0	0	-6.1%	9.0%	-3.7%	-0.2%	-0.3%	-0.2%
Biomass & Other	0	0	0	0	0	1	1	n.s.	-3.4%	11.2%	7.2%	11.3%	1.1%
Buildings	**9**	**6**	**8**	**8**	**7**	**6**	**6**	**-3.0%**	**1.9%**	**0.0%**	**-1.4%**	**-1.1%**	**-0.6%**
Coal	2	1	1	0	0	0	0	-12.7%	2.1%	-3.9%	-12.2%	-18.0%	-19.2%
Oil	1	1	1	1	0	0	0	-1.0%	0.8%	-1.8%	-1.5%	-6.0%	-10.3%
Gas	2	0	0	1	1	0	0	-14.8%	1.1%	3.3%	4.6%	-5.2%	-10.1%
Electricity	2	3	3	4	2	2	2	3.1%	1.5%	0.8%	-5.1%	-3.2%	4.5%
Heat	0	0	1	1	1	2	1	1.4%	3.7%	1.4%	4.4%	2.6%	-0.3%
Biomass & Other	2	2	2	2	2	2	1	-1.2%	2.8%	-1.0%	0.9%	1.0%	-3.7%
Agriculture	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**11.2%**	**-3.1%**	**2.3%**	**1.2%**	**0.9%**	**0.6%**
Coal	0	0	0	0	0	0	0	2.3%	-29.6%	-5.0%	n.s.	n.s.	n.s.
Oil	0	0	0	0	0	0	0	16.2%	-2.0%	3.5%	-1.9%	-4.1%	-4.4%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	1.5%	-1.2%	-2.8%	-3.1%
Electricity	0	0	0	0	0	0	0	5.0%	6.0%	-1.4%	4.5%	3.4%	2.6%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	n.s.	-13.8%	5.4%	14.5%	7.0%	2.5%
Transport	**3**	**2**	**5**	**5**	**5**	**3**	**2**	**-1.0%**	**7.3%**	**-0.1%**	**-0.4%**	**-4.0%**	**-3.6%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	3	2	5	5	4	2	0	-0.9%	7.3%	-0.3%	-1.9%	-9.4%	-13.6%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	4.9%	53.7%	8.6%	-2.1%
Electricity	0	0	0	0	0	1	1	-5.5%	3.9%	5.0%	17.6%	7.3%	1.3%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	17.5%	8.3%	1.5%
Other Energy Transformation & Losses[3]	**0**	**4**	**- 2**	**9**	**10**	**8**	**3**	**n.s.**	**n.s.**	**n.s.**	**1.1%**	**-1.9%**	**-9.1%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Russia	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	148	146	143	144	141	138	136	-0.1%	-0.2%	0.1%	-0.2%	-0.2%	-0.1%
GDP per capita (ppp, k$'15)	15	10	17	19	24	29	31	-3.8%	5.1%	1.4%	2.1%	1.9%	0.6%
Prices													
International/Regional ($'15/boe)													
Coal	3	2	3	2	3	8	8	-3.4%	3.6%	-2.3%	3.1%	9.6%	0.6%
Oil	39	38	86	88	89	79	81	-0.2%	8.4%	0.2%	0.1%	-1.2%	0.3%
Gas	24	28	33	47	55	61	62	1.5%	1.6%	3.4%	1.7%	1.1%	0.1%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**3 787**	**1 693**	**1 501**	**1 605**	**766**	**- 106**	**- 399**	**-7.7%**	**-1.2%**	**0.7%**	**-7.1%**	**n.s.**	**n.s.**
Total GHG (energy, industry, agriculture)	**3 656**	**2 352**	**2 658**	**2 611**	**1 685**	**731**	**352**	**-4.3%**	**1.2%**	**-0.2%**	**-4.3%**	**-8.0%**	**-7.1%**
CO_2	2 447	1 547	1 685	1 718	1 181	416	162	-4.5%	0.9%	0.2%	-3.7%	-9.9%	-9.0%
CH_4	963	653	848	760	387	214	93	-3.8%	2.6%	-1.1%	-6.5%	-5.7%	-8.0%
N_2O	194	114	107	108	105	96	95	-5.2%	-0.7%	0.1%	-0.3%	-0.9%	-0.1%
F gases	52	37	18	25	13	5	2	-3.3%	-7.1%	3.5%	-6.6%	-8.7%	-10.7%
Total GHG from Energy and Industry	**3 320**	**2 165**	**2 488**	**2 438**	**1 521**	**582**	**204**	**-4.2%**	**1.4%**	**-0.2%**	**-4.6%**	**-9.2%**	**-10.0%**
CO_2 Emissions from Fuel Comb.	**2 229**	**1 413**	**1 499**	**1 544**	**1 040**	**375**	**150**	**-4.5%**	**0.6%**	**0.3%**	**-3.9%**	**-9.7%**	**-8.8%**
Power generation/District heating	795	586	624	618	273	68	24	-3.0%	0.6%	-0.1%	-7.8%	-12.9%	-10.0%
Industry	257	184	203	226	165	45	9	-3.3%	1.0%	1.1%	-3.1%	-12.2%	-14.7%
Buildings	336	170	137	130	86	50	24	-6.6%	-2.1%	-0.5%	-4.0%	-5.2%	-7.3%
Agriculture	49	21	14	17	14	9	5	-8.3%	-4.1%	2.4%	-2.3%	-4.3%	-4.5%
Transport	220	115	159	212	185	63	20	-6.3%	3.3%	2.9%	-1.3%	-10.2%	-11.0%
Other	571	338	363	342	317	140	68	-5.1%	0.7%	-0.6%	-0.7%	-7.9%	-7.0%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**3**	**10**	**n.s.**	**n.s.**	**n.s.**	**36.9%**	**37.6%**	**13.6%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gas	0	0	0	0	0	2	0	n.s.	n.s.	n.s.	n.s.	n.s.	-23.6%
Biomass	0	0	0	0	0	0	4	n.s.	n.s.	n.s.	n.s.	n.s.	33.6%
Direct Air Capture	0	0	0	0	0	1	6	n.s.	n.s.	n.s.	36.9%	24.2%	18.9%
Energy Balance, by fuel (Mtoe)													
Primary Production	**1 212**	**913**	**1 181**	**1 277**	**1 120**	**620**	**386**	**-2.8%**	**2.6%**	**0.8%**	**-1.3%**	**-5.7%**	**-4.6%**
Coal	163	127	166	174	87	2	0	-2.4%	2.7%	0.5%	-6.8%	-32.2%	-52.7%
Oil	511	310	483	553	565	333	163	-4.9%	4.5%	1.4%	0.2%	-5.1%	-6.9%
Natural gas	500	444	496	477	367	107	4	-1.2%	1.1%	-0.4%	-2.6%	-11.6%	-27.3%
Biomass	12	7	7	38	53	105	122	-5.5%	0.1%	18.4%	3.4%	7.1%	1.5%
Nuclear[1]	10	11	15	17	18	11	5	1.0%	2.7%	1.5%	0.4%	-4.5%	-8.3%
Hydro	14	14	14	16	21	30	35	-0.1%	0.1%	1.0%	2.9%	3.7%	1.4%
Other renewables	0	0	0	2	10	31	58	7.6%	24.1%	18.0%	15.7%	12.5%	6.3%
Net Imports	**- 377**	**- 348**	**- 559**	**- 638**	**- 617**	**- 248**	**- 90**						
Coal	12	- 14	- 78	- 54	- 22	0	- 6						
Oil	- 267	- 196	- 351	- 382	- 425	- 239	- 89						
Natural gas	- 114	- 125	- 113	- 162	- 140	- 7	37						
Biomass	0	0	0	- 21	- 13	12	- 17						
Biofuels	0	0	0	0	0	0	0						
Electricity	- 8	- 14	- 17	- 18	- 18	- 15	- 14						
Primary Energy Demand[2]	**835**	**565**	**622**	**639**	**502**	**372**	**296**	-3.8%	**1.0%**	**0.3%**	**-2.4%**	**-3.0%**	**-2.2%**
Coal	175	113	88	120	65	2	- 6	-4.3%	-2.5%	3.2%	-6.0%	-29.7%	n.s.
Oil	244	114	131	171	140	94	73	-7.3%	1.4%	2.6%	-2.0%	-3.9%	-2.5%
Natural gas	386	319	384	315	227	101	41	-1.9%	1.9%	-1.9%	-3.2%	-7.8%	-8.6%
Biomass	12	7	7	16	40	117	105	-5.5%	0.1%	8.8%	9.3%	11.4%	-1.1%
Nuclear[1]	10	11	15	17	18	11	5	1.0%	2.7%	1.5%	0.4%	-4.5%	-8.3%
Hydro	14	14	14	16	21	30	35	-0.1%	0.1%	1.0%	2.9%	3.7%	1.4%
Other renewables	0	0	0	2	10	31	58	7.6%	24.1%	18.0%	15.7%	12.5%	6.3%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**835**	**565**	**622**	**639**	**502**	**372**	**296**	**-3.8%**	**1.0%**	**0.3%**	**-2.4%**	**-3.0%**	**-2.2%**
Energy for Power Generation	**304**	**229**	**255**	**251**	**148**	**103**	**109**	**-2.8%**	**1.1%**	**-0.2%**	**-5.2%**	**-3.5%**	**0.6%**
Other Energy Transformation & Losses	**200**	**123**	**116**	**101**	**113**	**106**	**64**	**-4.7%**	**-0.6%**	**-1.4%**	**1.1%**	**-0.6%**	**-4.8%**
Final consumption	**602**	**400**	**426**	**465**	**400**	**310**	**261**	**-4.0%**	**0.6%**	**0.9%**	**-1.5%**	**-2.5%**	**-1.7%**
Steel, Non-Met. Minerals and Chem.	103	78	92	109	88	59	48	-2.7%	1.6%	1.7%	-2.1%	-4.0%	-2.0%
Other Industry	128	65	52	52	44	32	29	-6.5%	-2.2%	0.1%	-1.7%	-3.0%	-1.3%
Non-Energy Use	40	36	66	75	76	75	69	-1.0%	6.2%	1.2%	0.2%	-0.1%	-0.8%
Residential	168	140	111	116	91	74	61	-1.8%	-2.3%	0.4%	-2.4%	-2.1%	-1.9%
Services	62	25	37	37	27	21	17	-8.7%	3.9%	0.0%	-3.2%	-2.5%	-1.9%
Agriculture	22	9	6	7	8	8	9	-8.3%	-4.4%	2.1%	0.8%	0.7%	0.5%
Road	51	34	48	54	51	27	17	-3.9%	3.4%	1.2%	-0.7%	-6.1%	-4.8%
Rail	12	5	7	7	8	7	7	-7.6%	2.1%	1.1%	0.1%	-0.1%	-0.5%
Aviation	9	5	5	6	8	6	5	-6.9%	1.5%	1.0%	2.8%	-1.6%	-2.7%
Other Transport	7	1	1	1	1	1	0	-14.7%	-1.4%	1.0%	-1.2%	-5.2%	-4.3%

[1] Nuclear energy is accounted as primary electricity

Russia	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**279**	**204**	**226**	**216**	**99**	**30**	**12**	**-3.1%**	**1.0%**	**-0.4%**	**-7.5%**	**-11.2%**	**-9.2%**
Coal	63	63	59	66	25	3	2	0.0%	-0.6%	1.1%	-9.1%	-18.2%	-7.5%
Oil	46	12	4	18	9	4	1	-12.6%	-10.2%	16.3%	-6.4%	-9.0%	-9.7%
Gas	170	127	160	127	61	19	6	-2.9%	2.4%	-2.3%	-7.1%	-11.2%	-10.3%
Biomass & Waste	0	2	2	4	3	4	2	29.4%	1.7%	8.5%	-2.7%	2.8%	-7.9%
Other	0	0	0	0	0	0	0	7.6%	24.2%	5.2%	11.5%	0.7%	7.2%
Gross Elec. Generation (TWh_e)	**1 082**	**877**	**1 040**	**1 151**	**903**	**780**	**780**	**-2.1%**	**1.7%**	**1.0%**	**-2.4%**	**-1.5%**	**0.0%**
Coal	157	176	166	243	94	12	6	1.1%	-0.6%	3.9%	-9.0%	-18.5%	-6.8%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	129	33	9	57	30	12	5	-12.7%	-11.9%	20.0%	-6.3%	-8.7%	-8.5%
Gas	512	370	521	435	233	80	29	-3.2%	3.5%	-1.8%	-6.1%	-10.1%	-9.6%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	13.0%
Biomass & Waste	0	3	3	14	11	17	9	52.6%	0.9%	17.8%	-2.6%	4.2%	-6.3%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	51.8%
Nuclear	118	131	170	197	206	130	53	1.0%	2.7%	1.5%	0.4%	-4.5%	-8.6%
Hydro	166	165	168	185	245	352	406	0.0%	0.2%	0.9%	2.9%	3.7%	1.5%
Wind	0	0	0	15	35	58	83	n.s.	7.2%	n.s.	8.6%	5.3%	3.6%
Solar	0	0	0	3	46	115	160	n.s.	n.s.	n.s.	32.9%	9.6%	3.3%
Other	0	- 1	2	1	3	3	29	n.s.	n.s.	-9.9%	11.8%	2.9%	24.1%
Generation Capacity (GW_e)	**144**	**211**	**233**	**222**	**228**	**279**	**292**	**3.9%**	**1.0%**	**-0.5%**	**0.2%**	**2.0%**	**0.5%**
Coal	42	42	42	37	23	17	2	0.0%	0.0%	-1.3%	-4.7%	-2.8%	-19.2%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	8.1%
Oil	16	16	16	13	6	5	6	0.0%	0.0%	-2.4%	-7.6%	-1.3%	1.8%
Gas	86	88	104	83	55	32	7	0.3%	1.7%	-2.2%	-4.1%	-5.3%	-14.0%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	13.2%
Biomass & Waste	0	1	1	2	1	2	1	26.7%	0.0%	11.1%	-2.6%	4.3%	-6.0%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	52.2%
Nuclear	0	20	23	26	27	17	7	n.s.	1.3%	1.5%	0.2%	-4.7%	-8.8%
Hydro	0	44	47	54	70	99	114	n.s.	0.6%	1.3%	2.7%	3.6%	1.4%
Wind	0	0	0	6	13	21	28	n.s.	19.6%	n.s.	8.5%	4.9%	2.8%
Solar	0	0	0	2	32	85	124	n.s.	n.s.	n.s.	32.8%	10.1%	3.9%
Other	0	0	0	0	1	1	4	n.s.	14.6%	8.9%	11.7%	1.9%	17.7%
Total Final Consumption[2] (Mtoe)	**602**	**400**	**426**	**465**	**400**	**310**	**261**	**-4.0%**	**0.6%**	**0.9%**	**-1.5%**	**-2.5%**	**-1.7%**
Coal	69	29	28	41	28	8	3	-8.3%	-0.2%	3.8%	-3.9%	-11.7%	-8.3%
Oil	145	91	109	135	120	75	61	-4.6%	1.9%	2.2%	-1.2%	-4.6%	-2.0%
Gas	109	90	110	107	88	53	27	-1.9%	2.0%	-0.3%	-2.0%	-5.0%	-6.6%
Electricity	68	50	60	66	52	45	45	-2.9%	1.8%	0.9%	-2.3%	-1.3%	0.0%
Heat	203	137	115	111	103	91	80	-3.9%	-1.8%	-0.3%	-0.8%	-1.2%	-1.3%
Biomass & Other	8	3	2	4	10	38	45	-9.3%	-2.5%	4.6%	10.2%	14.5%	1.6%
Industry (incl. non-energy use)	**271**	**179**	**210**	**236**	**208**	**166**	**146**	**-4.0%**	**1.6%**	**1.2%**	**-1.2%**	**-2.2%**	**-1.3%**
Coal	28	19	25	39	27	8	3	-3.9%	2.6%	4.7%	-3.5%	-11.6%	-8.3%
Oil	44	36	43	57	54	50	52	-2.0%	1.9%	2.9%	-0.5%	-0.8%	0.4%
Gas	52	43	66	70	60	35	18	-1.9%	4.5%	0.5%	-1.5%	-5.3%	-6.6%
Electricity	41	27	28	30	26	20	18	-4.2%	0.5%	0.6%	-1.2%	-2.6%	-1.5%
Heat	105	55	48	39	38	36	35	-6.4%	-1.4%	-2.0%	-0.3%	-0.4%	-0.3%
Biomass & Other	0	1	0	1	2	16	20	n.s.	-2.9%	8.9%	7.5%	22.6%	2.0%
Buildings	**231**	**166**	**148**	**153**	**117**	**94**	**77**	**-3.3%**	**-1.1%**	**0.3%**	**-2.6%**	**-2.2%**	**-1.9%**
Coal	40	10	4	2	1	0	0	-13.1%	-8.8%	-4.9%	-13.4%	-27.0%	-22.6%
Oil	14	7	6	11	8	5	2	-7.0%	-0.6%	5.6%	-3.1%	-4.1%	-7.4%
Gas	57	47	43	37	25	14	7	-1.9%	-0.8%	-1.7%	-3.7%	-5.4%	-7.2%
Electricity	15	18	26	28	15	11	14	1.7%	3.8%	0.9%	-6.1%	-3.1%	2.5%
Heat	98	82	67	73	65	55	45	-1.7%	-2.0%	0.8%	-1.0%	-1.7%	-2.0%
Biomass & Other	7	2	2	2	3	9	9	-10.8%	-2.6%	1.9%	3.9%	10.5%	0.5%
Agriculture	**22**	**9**	**6**	**7**	**8**	**8**	**9**	**-8.3%**	**-4.4%**	**2.1%**	**0.8%**	**0.7%**	**0.5%**
Coal	1	0	0	0	0	0	0	-7.1%	-11.5%	1.2%	-4.5%	-7.5%	-7.5%
Oil	14	6	4	5	4	2	1	-8.7%	-4.2%	2.2%	-2.4%	-4.5%	-4.7%
Gas	1	1	1	1	1	1	0	-0.8%	0.9%	4.3%	-1.7%	-3.2%	-3.4%
Electricity	6	3	1	1	2	3	3	-7.7%	-6.2%	0.8%	3.7%	2.8%	1.8%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	1	0	0	0	1	3	4	-15.8%	1.1%	2.3%	20.1%	7.7%	2.9%
Transport	**79**	**46**	**61**	**69**	**67**	**42**	**29**	**-5.3%**	**3.0%**	**1.2%**	**-0.3%**	**-4.6%**	**-3.6%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	73	42	56	62	54	17	5	-5.3%	2.8%	1.1%	-1.5%	-10.9%	-11.6%
Gas	0	0	0	0	2	3	2	n.s.	n.s.	-5.8%	41.3%	5.2%	-5.1%
Electricity	6	3	5	6	8	11	10	-5.5%	4.5%	1.7%	3.0%	3.3%	-0.9%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	3	11	12	n.s.	n.s.	n.s.	25.2%	12.3%	1.4%
Other Energy Transformation & Losses[3]	**200**	**123**	**116**	**101**	**113**	**106**	**64**	**-4.7%**	**-0.6%**	**-1.4%**	**1.1%**	**-0.6%**	**-4.8%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Ukraine	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	51	49	46	44	42	40	38	-0.5%	-0.6%	-0.4%	-0.5%	-0.5%	-0.4%
GDP per capita (ppp, k$'15)	10	4	7	8	12	17	23	-7.5%	5.0%	0.8%	4.1%	3.6%	3.1%
Prices													
International/Regional ($'15/boe)													
Coal	3	2	3	2	3	8	8	-3.4%	3.6%	-2.3%	3.1%	9.6%	0.6%
Oil	39	38	86	88	89	79	81	-0.2%	8.4%	0.2%	0.1%	-1.2%	0.3%
Gas	24	28	33	47	55	61	62	1.5%	1.6%	3.4%	1.7%	1.1%	0.1%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**905**	**425**	**394**	**361**	**209**	**97**	**54**	**-7.3%**	**-0.8%**	**-0.9%**	**-5.3%**	**-7.4%**	**-5.7%**
Total GHG (energy, industry, agriculture)	**957**	**455**	**407**	**373**	**220**	**107**	**63**	**-7.2%**	**-1.1%**	**-0.9%**	**-5.1%**	**-7.0%**	**-5.2%**
CO_2	701	307	287	276	145	46	12	-7.9%	-0.7%	-0.4%	-6.2%	-10.9%	-12.7%
CH_4	191	119	88	57	36	26	17	-4.6%	-3.0%	-4.2%	-4.6%	-3.2%	-4.3%
N_2O	65	29	32	39	39	35	35	-7.8%	1.0%	1.9%	0.1%	-0.9%	-0.2%
F gases	0	0	1	1	0	0	0	-5.3%	19.1%	0.6%	-6.4%	-10.3%	-12.5%
Total GHG from Energy and Industry	**853**	**411**	**367**	**325**	**172**	**63**	**20**	**-7.0%**	**-1.1%**	**-1.2%**	**-6.2%**	**-9.6%**	**-11.0%**
CO_2 Emissions from Fuel Comb.	**659**	**286**	**265**	**260**	**129**	**41**	**11**	**-8.0%**	**-0.8%**	**-0.2%**	**-6.8%**	**-10.7%**	**-12.2%**
Power generation/District heating	209	77	93	122	13	2	0	-9.5%	1.9%	2.7%	-19.8%	-16.5%	-28.2%
Industry	186	77	64	61	53	16	4	-8.4%	-1.9%	-0.4%	-1.4%	-11.5%	-13.6%
Buildings	56	44	37	23	17	7	2	-2.5%	-1.8%	-4.8%	-2.8%	-7.8%	-10.5%
Agriculture	23	3	4	4	4	3	2	-17.2%	2.4%	-0.1%	-1.1%	-4.0%	-4.1%
Transport	67	17	29	22	20	9	3	-12.6%	5.3%	-2.9%	-0.6%	-7.8%	-9.8%
Other	118	67	38	28	21	4	0	-5.5%	-5.6%	-2.9%	-3.0%	-14.5%	-29.3%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**36.3%**	**23.1%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	-3.1%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	-10.7%
Biomass	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	34.1%	24.1%
Energy Balance, by fuel (Mtoe)													
Primary Production	**90**	**56**	**62**	**76**	**87**	**97**	**99**	**-4.7%**	**1.1%**	**2.1%**	**1.3%**	**1.1%**	**0.2%**
Coal	57	32	34	33	20	12	0	-5.6%	0.6%	-0.2%	-4.8%	-5.2%	n.s.
Oil	4	3	3	2	2	1	1	-4.3%	0.0%	-1.7%	-0.3%	-4.4%	-1.7%
Natural gas	22	14	16	30	47	54	57	-4.5%	1.4%	6.8%	4.6%	1.4%	0.6%
Biomass	0	0	2	3	7	12	12	-3.1%	20.0%	5.6%	9.3%	6.1%	-0.5%
Nuclear[1]	7	7	8	7	7	10	20	0.2%	1.4%	-0.9%	0.4%	3.0%	7.5%
Hydro	1	1	1	1	1	1	1	0.8%	1.5%	-2.6%	1.9%	0.7%	-1.1%
Other renewables	0	0	0	0	2	6	7	n.s.	n.s.	55.4%	20.8%	10.5%	1.4%
Net Imports	**114**	**52**	**47**	**15**	**- 26**	**- 52**	**- 57**						
Coal	18	- 1	1	9	- 4	- 10	- 1						
Oil	54	9	11	9	9	4	1						
Natural gas	70	49	40	- 1	- 30	- 46	- 54						
Biomass	0	0	0	1	4	3	- 1						
Biofuels	0	0	0	0	0	0	0						
Electricity	- 28	- 4	- 4	- 4	- 4	- 3	- 3						
Primary Energy Demand[2]	**204**	**108**	**109**	**91**	**61**	**46**	**42**	-6.2%	**0.1%**	**-1.8%**	**-3.9%**	**-2.9%**	**-0.8%**
Coal	75	30	35	42	16	2	- 1	-8.6%	1.3%	1.9%	-9.3%	-18.5%	n.s.
Oil	58	11	13	11	11	6	2	-15.2%	1.5%	-1.5%	0.0%	-6.9%	-8.1%
Natural gas	92	62	55	30	17	9	4	-3.8%	-1.2%	-6.0%	-5.5%	-6.5%	-8.3%
Biomass	0	0	2	4	10	15	11	-3.1%	19.8%	9.0%	10.5%	3.9%	-3.3%
Nuclear[1]	7	7	8	7	7	10	20	0.2%	1.4%	-0.9%	0.4%	3.0%	7.5%
Hydro	1	1	1	1	1	1	1	0.8%	1.5%	-2.6%	1.9%	0.7%	-1.1%
Other renewables	0	0	0	0	2	6	7	n.s.	n.s.	55.4%	20.8%	10.5%	1.4%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**204**	**108**	**109**	**91**	**61**	**46**	**42**	**-6.2%**	**0.1%**	**-1.8%**	**-3.9%**	**-2.9%**	**-0.8%**
Energy for Power Generation	**68**	**30**	**35**	**44**	**20**	**20**	**29**	**-7.7%**	**1.5%**	**2.2%**	**-7.3%**	**-0.3%**	**3.7%**
Other Energy Transformation & Losses	**25**	**26**	**23**	**8**	**6**	**6**	**2**	**0.5%**	**-1.5%**	**-9.5%**	**-3.1%**	**0.2%**	**-13.1%**
Final consumption	**160**	**74**	**75**	**62**	**54**	**41**	**37**	**-7.4%**	**0.2%**	**-2.0%**	**-1.4%**	**-2.6%**	**-1.1%**
Steel, Non-Met. Minerals and Chem.	27	13	22	19	17	10	8	-7.0%	5.5%	-1.6%	-1.1%	-5.3%	-2.6%
Other Industry	61	24	8	5	5	5	6	-8.8%	-10.9%	-3.8%	0.5%	-1.1%	1.8%
Non-Energy Use	6	1	6	4	4	3	3	-15.4%	16.4%	-4.3%	-0.2%	-1.3%	-0.9%
Residential	32	24	24	19	14	11	10	-2.8%	-0.1%	-2.3%	-3.0%	-2.1%	-1.7%
Services	3	2	5	6	4	4	4	-0.7%	6.6%	2.4%	-3.2%	-0.6%	1.0%
Agriculture	9	2	2	2	2	2	2	-16.6%	1.2%	-0.1%	1.4%	1.0%	0.9%
Road	18	6	9	7	7	5	3	-9.6%	2.8%	-2.4%	0.0%	-2.8%	-3.9%
Rail	2	1	1	1	1	1	1	-6.9%	-0.5%	-1.8%	1.8%	1.3%	1.1%
Aviation	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Other Transport	1	0	0	0	0	0	0	n.s.	n.s.	-7.2%	1.0%	-3.7%	-2.2%

[1] Nuclear energy is accounted as primary electricity

Ukraine	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**60**	**23**	**26**	**35**	**10**	**2**	**0**	**-9.3%**	**1.5%**	**3.0%**	**-12.1%**	**-12.9%**	**-34.7%**
Coal	35	14	19	25	2	0	0	-8.5%	3.0%	2.5%	-22.8%	-25.2%	n.s.
Oil	13	0	0	1	0	0	0	-30.9%	0.3%	10.6%	-5.9%	-9.6%	n.s.
Gas	12	8	6	9	2	1	0	-4.2%	-2.5%	3.2%	-14.1%	-11.6%	-24.1%
Biomass & Waste	0	0	0	1	6	2	0	n.s.	n.s.	11.9%	17.3%	-11.5%	n.s.
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**305**	**175**	**193**	**223**	**163**	**187**	**265**	**-5.4%**	**1.0%**	**1.5%**	**-3.1%**	**1.4%**	**3.6%**
Coal	114	52	70	90	7	0	0	-7.6%	3.0%	2.6%	-22.5%	-24.3%	n.s.
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	48	1	1	3	2	1	0	-30.9%	-3.6%	13.2%	-4.5%	-9.6%	n.s.
Gas	50	30	16	25	7	2	0	-5.0%	-6.3%	4.9%	-11.8%	-10.4%	-22.0%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	0	0	4	22	7	0	n.s.	n.s.	36.2%	18.4%	-11.5%	n.s.
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	76	77	89	82	85	113	233	0.2%	1.4%	-0.9%	0.4%	3.0%	7.5%
Hydro	11	11	13	15	15	16	12	0.7%	1.4%	1.5%	-0.1%	0.5%	-2.6%
Wind	0	0	0	3	15	27	10	n.s.	23.6%	51.3%	16.7%	6.3%	-9.2%
Solar	0	0	0	1	10	19	7	n.s.	n.s.	n.s.	25.3%	6.8%	-9.2%
Other	6	4	4	0	0	1	2	-4.3%	0.7%	-28.3%	9.5%	12.5%	6.6%
Generation Capacity (GW_e)	**45**	**56**	**56**	**48**	**62**	**84**	**89**	**2.1%**	**0.1%**	**-1.6%**	**2.6%**	**3.1%**	**0.6%**
Coal	23	22	22	14	13	14	1	-0.2%	0.0%	-4.5%	-0.4%	0.5%	-20.6%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	11.1%
Oil	7	1	1	1	1	1	1	-18.2%	0.0%	-4.0%	6.4%	-0.1%	-2.7%
Gas	12	14	12	8	8	7	1	0.8%	-1.0%	-3.7%	-0.6%	-1.5%	-17.3%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	25.2%
Biomass & Waste	0	0	0	1	3	3	3	n.s.	n.s.	25.3%	18.6%	-0.5%	1.9%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	11	13	13	13	18	35	n.s.	1.6%	0.0%	0.2%	2.8%	7.2%
Hydro	3	8	8	9	9	9	8	9.5%	-0.2%	1.3%	0.6%	0.0%	-1.3%
Wind	0	0	0	1	6	12	22	n.s.	17.3%	29.9%	15.7%	7.4%	6.5%
Solar	0	0	0	1	8	21	17	n.s.	n.s.	n.s.	20.2%	9.8%	-2.2%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	15.0%	35.9%
Total Final Consumption[2] (Mtoe)	**160**	**74**	**75**	**62**	**54**	**41**	**37**	**-7.4%**	**0.2%**	**-2.0%**	**-1.4%**	**-2.6%**	**-1.1%**
Coal	35	15	13	14	12	3	1	-8.4%	-1.3%	1.1%	-1.8%	-12.2%	-9.8%
Oil	43	11	13	10	10	5	2	-13.0%	1.7%	-1.9%	0.0%	-6.8%	-7.5%
Gas	33	26	25	13	11	6	3	-2.6%	-0.2%	-6.1%	-2.3%	-5.4%	-6.6%
Electricity	18	10	11	13	9	11	15	-5.8%	1.7%	1.2%	-3.1%	1.6%	3.4%
Heat	31	13	12	9	9	9	8	-8.0%	-0.6%	-2.9%	-0.2%	0.3%	-1.1%
Biomass & Other	0	0	1	2	2	7	7	-2.2%	14.7%	5.6%	3.8%	10.3%	0.1%
Industry (incl. non-energy use)	**95**	**39**	**36**	**28**	**26**	**18**	**16**	**-8.6%**	**-0.8%**	**-2.4%**	**-0.7%**	**-3.7%**	**-0.9%**
Coal	27	12	12	14	12	3	1	-7.9%	0.2%	1.4%	-1.7%	-12.1%	-9.8%
Oil	15	2	2	2	3	1	1	-16.8%	-0.4%	0.5%	0.4%	-5.6%	-2.0%
Gas	23	12	11	5	4	3	2	-6.5%	-1.2%	-8.1%	-0.4%	-3.1%	-6.8%
Electricity	13	5	6	5	5	5	7	-8.4%	0.9%	-1.4%	0.1%	0.4%	2.8%
Heat	16	7	5	2	2	2	2	-8.0%	-3.6%	-8.7%	-0.2%	-0.3%	-0.2%
Biomass & Other	0	0	0	0	0	3	4	n.s.	n.s.	7.6%	17.5%	21.3%	2.2%
Buildings	**35**	**27**	**28**	**25**	**18**	**15**	**14**	**-2.6%**	**0.7%**	**-1.4%**	**-3.0%**	**-1.7%**	**-0.9%**
Coal	7	3	1	0	0	0	0	-9.0%	-13.4%	-6.3%	-9.8%	-17.1%	-18.5%
Oil	2	0	0	0	1	1	0	-13.8%	-7.5%	4.3%	12.2%	-2.3%	-10.3%
Gas	10	14	14	9	6	2	1	3.2%	0.5%	-4.9%	-3.7%	-8.9%	-10.6%
Electricity	1	3	5	7	3	3	6	8.5%	3.7%	4.0%	-8.3%	1.4%	5.2%
Heat	14	6	8	7	7	7	6	-8.1%	2.1%	-0.4%	-0.2%	0.4%	-1.3%
Biomass & Other	0	0	1	1	1	1	1	-2.2%	14.0%	2.3%	0.7%	1.7%	-6.6%
Agriculture	**9**	**2**	**2**	**2**	**2**	**2**	**2**	**-16.6%**	**1.2%**	**-0.1%**	**1.4%**	**1.0%**	**0.9%**
Coal	1	0	0	0	0	0	0	n.s.	n.s.	-7.0%	-3.6%	-7.5%	-7.5%
Oil	6	1	1	1	1	1	0	-15.7%	1.5%	0.2%	-1.1%	-4.0%	-4.2%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	-2.3%	-0.6%	-2.7%	-2.9%
Electricity	2	0	0	0	0	1	1	-15.9%	-4.2%	-0.3%	4.5%	4.7%	3.7%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	1	1	n.s.	n.s.	1.1%	30.1%	9.2%	2.6%
Transport	**21**	**7**	**10**	**7**	**8**	**6**	**5**	**-9.9%**	**2.6%**	**-2.4%**	**0.2%**	**-2.3%**	**-2.9%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	-13.4%	0.0%	0.0%	0.0%
Oil	20	7	9	6	6	2	0	-10.3%	2.7%	-3.1%	-0.8%	-8.9%	-14.5%
Gas	0	0	0	0	0	1	1	n.s.	n.s.	-11.8%	30.6%	10.2%	3.0%
Electricity	1	1	1	1	1	2	2	-4.7%	0.1%	-0.8%	4.7%	5.5%	1.2%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	1	2	1	n.s.	n.s.	n.s.	2.1%	11.3%	-0.6%
Other Energy Transformation & Losses[3]	**25**	**26**	**23**	**8**	**6**	**6**	**2**	**0.5%**	**-1.5%**	**-9.5%**	**-3.1%**	**0.2%**	**-13.1%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Other CIS	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	77	81	89	99	106	110	113	0.6%	0.9%	1.1%	0.6%	0.4%	0.3%
GDP per capita (ppp, k$'15)	6	4	8	12	19	27	34	-4.1%	7.4%	4.6%	4.8%	3.5%	2.4%
Prices													
International/Regional ($'15/boe)													
Coal	3	2	3	2	3	8	8	-3.4%	3.6%	-2.3%	3.1%	9.6%	0.6%
Oil	39	38	86	88	89	79	81	-0.2%	8.4%	0.2%	0.1%	-1.2%	0.3%
Gas	24	28	33	47	55	61	62	1.5%	1.6%	3.4%	1.7%	1.1%	0.1%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**1 101**	**629**	**826**	**1 045**	**834**	**384**	**206**	**-5.4%**	**2.8%**	**2.4%**	**-2.2%**	**-7.5%**	**-6.0%**
Total GHG (energy, industry, agriculture)	**1 101**	**654**	**861**	**1 076**	**862**	**410**	**229**	**-5.1%**	**2.8%**	**2.2%**	**-2.2%**	**-7.2%**	**-5.7%**
CO_2	715	412	544	698	597	223	80	-5.4%	2.8%	2.5%	-1.5%	-9.4%	-9.8%
CH_4	310	186	251	302	192	119	84	-5.0%	3.0%	1.9%	-4.5%	-4.6%	-3.5%
N_2O	73	54	63	71	70	65	64	-3.0%	1.6%	1.2%	-0.1%	-0.7%	-0.1%
F gases	4	1	3	5	3	1	1	-9.1%	9.9%	3.2%	-5.5%	-6.0%	-7.4%
Total GHG from Energy and Industry	**927**	**541**	**715**	**917**	**716**	**277**	**98**	**-5.2%**	**2.8%**	**2.5%**	**-2.4%**	**-9.1%**	**-9.9%**
CO_2 Emissions from Fuel Comb.	**660**	**375**	**497**	**630**	**532**	**205**	**75**	**-5.5%**	**2.9%**	**2.4%**	**-1.7%**	**-9.1%**	**-9.5%**
Power generation/District heating	248	152	165	252	181	57	23	-4.8%	0.8%	4.4%	-3.3%	-10.8%	-8.8%
Industry	128	49	78	83	80	21	4	-9.1%	4.7%	0.7%	-0.4%	-12.4%	-15.1%
Buildings	156	83	103	109	83	45	21	-6.2%	2.2%	0.6%	-2.8%	-5.9%	-7.3%
Agriculture	13	8	8	8	7	5	3	-4.2%	-0.3%	0.7%	-1.4%	-3.8%	-4.1%
Transport	66	34	53	68	63	22	7	-6.5%	4.8%	2.4%	-0.7%	-9.8%	-11.5%
Other	51	49	90	109	118	54	17	-0.2%	6.2%	2.0%	0.8%	-7.5%	-10.8%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**n.s.**	**n.s.**	**n.s.**	**34.6%**	**21.3%**	**28.3%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gas	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	34.6%	21.3%	15.0%
Energy Balance, by fuel (Mtoe)													
Primary Production	**215**	**196**	**310**	**406**	**406**	**221**	**119**	**-0.9%**	**4.7%**	**2.7%**	**0.0%**	**-5.9%**	**-6.0%**
Coal	52	35	51	103	67	0	0	-3.7%	3.6%	7.4%	-4.2%	-44.1%	n.s.
Oil	46	65	142	163	184	110	41	3.5%	8.1%	1.4%	1.2%	-5.0%	-9.3%
Natural gas	112	90	109	130	132	52	3	-2.1%	2.0%	1.8%	0.1%	-8.8%	-25.7%
Biomass	1	2	2	4	9	27	25	6.7%	2.9%	6.1%	8.8%	11.1%	-0.8%
Nuclear[1]	0	0	0	0	1	1	2	n.s.	2.2%	0.8%	16.2%	-1.0%	8.2%
Hydro	4	4	5	5	7	11	13	-0.6%	2.3%	-0.1%	2.9%	4.6%	1.8%
Other renewables	0	0	0	0	5	20	35	n.s.	n.s.	n.s.	57.5%	14.3%	5.7%
Net Imports	**41**	**- 39**	**- 124**	**- 165**	**- 176**	**- 64**	**8**						
Coal	0	- 13	- 14	- 47	- 36	9	5						
Oil	41	- 30	- 107	- 116	- 139	- 86	- 29						
Natural gas	- 15	- 6	- 1	- 1	- 1	1	17						
Biomass	0	0	0	2	3	15	16						
Biofuels	0	0	0	0	0	- 1	- 1						
Electricity	16	11	- 1	- 2	- 2	- 2	- 2						
Primary Energy Demand[2]	**256**	**158**	**186**	**241**	**230**	**157**	**127**	-4.7%	**1.7%**	**2.6%**	**-0.5%**	**-3.8%**	**-2.1%**
Coal	52	22	37	56	31	9	5	-8.2%	5.2%	4.3%	-5.6%	-11.6%	-5.2%
Oil	87	35	35	47	45	23	12	-8.8%	-0.1%	3.2%	-0.4%	-6.4%	-6.4%
Natural gas	96	84	108	129	131	53	20	-1.4%	2.6%	1.8%	0.1%	-8.5%	-9.3%
Biomass	1	2	2	6	12	41	41	6.6%	2.8%	9.7%	7.9%	13.3%	-0.1%
Nuclear[1]	0	0	0	0	1	1	2	n.s.	2.2%	0.8%	16.2%	-1.0%	8.2%
Hydro	4	4	5	5	7	11	13	-0.6%	2.3%	-0.1%	2.9%	4.6%	1.8%
Other renewables	0	0	0	0	5	20	35	n.s.	n.s.	n.s.	57.5%	14.3%	5.7%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**256**	**158**	**186**	**241**	**230**	**157**	**127**	**-4.7%**	**1.7%**	**2.6%**	**-0.5%**	**-3.8%**	**-2.1%**
Energy for Power Generation	**84**	**56**	**62**	**91**	**81**	**55**	**64**	**-4.0%**	**1.1%**	**3.9%**	**-1.1%**	**-3.9%**	**1.6%**
Other Energy Transformation & Losses	**35**	**30**	**34**	**46**	**54**	**46**	**26**	**-1.4%**	**1.3%**	**3.1%**	**1.6%**	**-1.6%**	**-5.6%**
Final consumption	**189**	**100**	**121**	**145**	**142**	**108**	**95**	**-6.2%**	**1.9%**	**1.8%**	**-0.2%**	**-2.7%**	**-1.3%**
Steel, Non-Met. Minerals and Chem.	8	5	13	23	25	16	13	-3.6%	8.9%	5.8%	0.7%	-3.9%	-2.1%
Other Industry	51	22	25	23	24	14	12	-8.0%	1.1%	-0.8%	0.4%	-5.0%	-1.5%
Non-Energy Use	15	7	6	7	7	5	4	-7.6%	-1.8%	2.1%	0.3%	-3.3%	-1.7%
Residential	14	27	31	35	32	28	26	7.0%	1.1%	1.5%	-0.9%	-1.4%	-0.9%
Services	71	22	25	30	25	21	19	-11.0%	1.3%	1.9%	-1.9%	-1.7%	-1.0%
Agriculture	8	5	5	6	7	8	9	-5.1%	-0.3%	1.6%	2.1%	1.5%	1.2%
Road	19	10	16	19	19	12	9	-6.5%	4.7%	2.2%	0.1%	-4.3%	-3.4%
Rail	2	1	1	1	1	2	2	-7.4%	1.2%	0.1%	2.1%	1.2%	0.7%
Aviation	1	0	0	1	1	1	1	-1.0%	-1.0%	3.5%	7.0%	0.1%	-1.8%
Other Transport	0	0	0	0	0	0	0	-7.8%	4.9%	-2.1%	2.2%	-3.1%	-2.1%

[1] Nuclear energy is accounted as primary electricity

Other CIS	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**80**	**51**	**57**	**86**	**68**	**23**	**14**	**-4.3%**	**1.0%**	**4.2%**	**-2.3%**	**-10.3%**	**-4.6%**
Coal	28	16	19	32	15	3	1	-5.5%	2.0%	5.2%	-7.5%	-15.2%	-8.8%
Oil	19	7	1	6	5	4	2	-9.8%	-19.6%	21.7%	-0.4%	-3.5%	-6.4%
Gas	32	29	37	46	45	15	7	-1.2%	2.5%	2.3%	-0.2%	-10.6%	-7.7%
Biomass & Waste	0	0	0	2	3	2	5	n.s.	n.s.	36.7%	3.0%	-5.6%	11.2%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**295**	**201**	**256**	**383**	**432**	**421**	**515**	**-3.8%**	**2.4%**	**4.1%**	**1.2%**	**-0.2%**	**2.0%**
Coal	73	38	69	113	57	11	5	-6.3%	6.1%	5.0%	-6.7%	-14.8%	-8.5%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	53	23	2	24	24	17	9	-8.1%	-19.9%	25.7%	-0.3%	-3.5%	-6.3%
Gas	116	88	119	176	202	72	32	-2.7%	3.0%	4.0%	1.4%	-9.8%	-7.9%
of which CCS	0	0	0	0	0	0	3	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	0	0	4	9	5	23	n.s.	n.s.	47.3%	6.9%	-5.0%	15.7%
of which CCS	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	2	2	3	12	11	23	n.s.	2.2%	0.8%	16.2%	-1.3%	8.1%
Hydro	52	49	62	62	82	131	162	-0.6%	2.3%	-0.1%	2.9%	4.8%	2.1%
Wind	0	0	0	0	26	70	100	n.s.	n.s.	43.6%	54.4%	10.6%	3.5%
Solar	0	0	0	0	21	95	138	n.s.	n.s.	n.s.	n.s.	16.5%	3.8%
Other	0	0	0	1	0	8	24	n.s.	n.s.	n.s.	-23.9%	n.s.	11.1%
Generation Capacity (GW_e)	**50**	**66**	**72**	**67**	**101**	**176**	**221**	**2.8%**	**0.9%**	**-0.7%**	**4.1%**	**5.7%**	**2.3%**
Coal	15	15	15	15	11	10	1	-0.2%	0.3%	0.1%	-2.7%	-1.9%	-18.3%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	14	7	7	8	7	7	8	-6.2%	-0.4%	1.5%	-1.2%	0.3%	0.8%
Gas	22	29	32	24	31	27	18	2.9%	1.2%	-2.9%	2.6%	-1.7%	-3.7%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	0	1	1	1	1	3	n.s.	n.s.	2.2%	6.0%	-5.2%	17.1%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	2	2	4	n.s.	0.0%	0.6%	16.0%	-1.5%	7.9%
Hydro	0	15	17	19	25	40	53	n.s.	1.1%	1.0%	2.9%	5.0%	2.9%
Wind	0	0	0	0	9	25	34	n.s.	n.s.	36.8%	52.8%	10.1%	3.2%
Solar	0	0	0	0	14	66	99	n.s.	n.s.	n.s.	n.s.	16.8%	4.2%
Other	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Total Final Consumption[2] (Mtoe)	**189**	**100**	**121**	**145**	**142**	**108**	**95**	**-6.2%**	**1.9%**	**1.8%**	**-0.2%**	**-2.7%**	**-1.3%**
Coal	23	7	17	17	12	3	1	-11.6%	9.6%	0.0%	-3.5%	-14.0%	-12.9%
Oil	60	24	30	36	33	14	7	-8.8%	2.2%	1.9%	-0.8%	-8.1%	-7.4%
Gas	53	39	41	49	46	23	10	-2.9%	0.4%	1.8%	-0.7%	-6.8%	-7.6%
Electricity	23	13	16	26	29	28	33	-5.0%	2.0%	4.5%	1.2%	-0.3%	1.8%
Heat	29	15	15	15	16	18	18	-6.4%	0.0%	-0.1%	0.8%	1.0%	0.3%
Biomass & Other	1	1	2	2	6	23	26	5.2%	0.7%	3.6%	10.7%	14.0%	1.3%
Industry (incl. non-energy use)	**74**	**34**	**43**	**53**	**56**	**36**	**30**	**-7.4%**	**2.3%**	**2.0%**	**0.6%**	**-4.3%**	**-1.8%**
Coal	19	6	12	13	11	2	1	-10.9%	7.3%	0.8%	-2.0%	-13.8%	-12.9%
Oil	22	6	6	8	8	3	2	-11.8%	-1.3%	3.4%	0.5%	-8.7%	-3.8%
Gas	12	11	13	17	18	7	3	-0.9%	1.3%	2.8%	0.7%	-8.5%	-8.6%
Electricity	13	6	8	11	15	13	12	-8.1%	3.4%	3.8%	2.6%	-1.4%	-0.7%
Heat	8	5	5	4	4	4	3	-3.8%	-0.2%	-3.6%	-0.2%	-0.3%	-0.2%
Biomass & Other	0	0	0	0	1	7	9	n.s.	-2.0%	11.6%	15.8%	26.1%	3.1%
Buildings	**85**	**49**	**55**	**65**	**57**	**49**	**44**	**-5.2%**	**1.2%**	**1.7%**	**-1.3%**	**-1.6%**	**-0.9%**
Coal	5	1	5	4	1	0	0	-15.0%	18.3%	-1.9%	-10.1%	-16.3%	-16.3%
Oil	15	4	6	6	5	4	2	-11.5%	3.2%	0.7%	-2.5%	-2.3%	-6.2%
Gas	39	28	28	31	26	14	6	-3.3%	-0.1%	1.3%	-1.7%	-6.4%	-7.5%
Electricity	4	5	6	11	9	8	13	1.8%	1.0%	6.4%	-1.8%	-1.2%	5.2%
Heat	21	10	10	11	13	14	15	-7.6%	0.2%	1.4%	1.1%	1.4%	0.4%
Biomass & Other	1	1	1	2	3	9	8	4.7%	0.3%	0.7%	6.7%	11.5%	-1.0%
Agriculture	**8**	**5**	**5**	**6**	**7**	**8**	**9**	**-5.1%**	**-0.3%**	**1.6%**	**2.1%**	**1.5%**	**1.2%**
Coal	0	0	0	0	0	0	0	-26.7%	43.6%	-3.3%	-4.5%	-7.5%	-7.5%
Oil	3	2	2	2	2	1	1	-1.8%	-1.7%	1.1%	-1.3%	-3.8%	-4.2%
Gas	1	0	0	0	0	0	0	-17.0%	3.6%	1.1%	-0.6%	-2.5%	-2.8%
Electricity	4	2	2	3	4	5	6	-5.6%	-0.4%	2.3%	3.3%	2.4%	1.9%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	1	1	2	8.3%	18.2%	2.2%	23.3%	8.6%	3.3%
Transport	**22**	**11**	**17**	**21**	**22**	**15**	**12**	**-6.4%**	**4.2%**	**2.1%**	**0.5%**	**-3.6%**	**-2.8%**
Coal	0	0	0	0	0	0	0	-9.9%	3.8%	-2.6%	0.0%	0.0%	0.0%
Oil	21	11	16	20	18	6	1	-6.2%	4.0%	1.9%	-0.9%	-10.9%	-13.0%
Gas	0	0	0	0	1	1	1	-7.0%	29.6%	1.5%	9.2%	5.7%	-4.6%
Electricity	1	0	1	1	1	2	2	-10.7%	6.5%	0.8%	7.6%	5.1%	0.1%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	2	6	7	n.s.	n.s.	44.4%	15.4%	12.0%	1.6%
Other Energy Transformation & Losses[3]	**35**	**30**	**34**	**46**	**54**	**46**	**26**	**-1.4%**	**1.3%**	**3.1%**	**1.6%**	**-1.6%**	**-5.6%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Argentina	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	33	37	41	45	49	52	55	1.2%	1.1%	1.0%	0.8%	0.6%	0.5%
GDP per capita (ppp, k$'15)	9	12	16	17	22	26	31	3.3%	2.7%	0.7%	2.3%	1.9%	1.7%
Prices													
International/Regional ($'15/boe)													
Coal	2	1	2	2	3	7	7	-4.2%	5.6%	1.0%	2.5%	8.4%	-0.1%
Oil	39	38	86	88	89	79	81	-0.2%	8.4%	0.2%	0.1%	-1.2%	0.3%
Gas	26	40	34	33	41	46	55	4.6%	-1.6%	-0.4%	2.2%	1.1%	1.8%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**352**	**354**	**416**	**445**	**311**	**152**	**96**	**0.1%**	**1.6%**	**0.7%**	**-3.5%**	**-6.9%**	**-4.5%**
Total GHG (energy, industry, agriculture)	**287**	**307**	**357**	**393**	**320**	**164**	**111**	**0.7%**	**1.5%**	**1.0%**	**-2.0%**	**-6.4%**	**-3.8%**
CO_2	114	152	190	233	202	67	21	2.9%	2.3%	2.1%	-1.4%	-10.4%	-11.2%
CH_4	137	118	116	110	77	58	53	-1.5%	-0.2%	-0.6%	-3.5%	-2.8%	-1.0%
N_2O	33	37	51	50	40	39	38	1.3%	3.1%	-0.2%	-2.0%	-0.5%	-0.3%
F gases	3	0	1	1	1	1	0	-16.7%	9.9%	-0.3%	-2.0%	-2.8%	-7.5%
Total GHG from Energy and Industry	**163**	**188**	**227**	**267**	**224**	**78**	**29**	**1.4%**	**1.9%**	**1.6%**	**-1.7%**	**-10.0%**	**-9.4%**
CO_2 Emissions from Fuel Comb.	**102**	**144**	**178**	**219**	**188**	**64**	**20**	**3.6%**	**2.1%**	**2.1%**	**-1.5%**	**-10.2%**	**-10.9%**
Power generation/District heating	19	30	45	60	38	7	1	4.6%	4.2%	2.9%	-4.4%	-16.1%	-19.6%
Industry	16	27	31	40	39	11	2	5.4%	1.5%	2.5%	-0.3%	-11.8%	-16.2%
Buildings	18	20	27	30	27	13	5	1.0%	3.0%	1.0%	-0.9%	-6.9%	-10.1%
Agriculture	5	8	11	13	11	7	5	5.1%	3.3%	2.3%	-1.9%	-4.1%	-4.2%
Transport	29	41	43	50	46	16	8	3.7%	0.4%	1.3%	-0.8%	-9.7%	-7.2%
Other	15	18	21	26	27	10	1	1.9%	1.6%	2.0%	0.3%	-9.9%	-24.8%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**1**	**5**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**39.3%**	**23.6%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	10.1%
Gas	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	11.7%
Biomass	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	28.9%	22.5%
Energy Balance, by fuel (Mtoe)													
Primary Production	**44**	**76**	**72**	**89**	**174**	**83**	**114**	**5.7%**	**-0.6%**	**2.2%**	**6.9%**	**-7.1%**	**3.2%**
Coal	0	0	0	0	0	0	0	0.3%	-12.3%	9.4%	-1.4%	-6.8%	-5.6%
Oil	24	38	30	29	23	4	21	4.8%	-2.2%	-0.4%	-2.3%	-16.6%	18.9%
Natural gas	16	32	34	30	94	0	0	7.2%	0.5%	-1.3%	12.3%	-44.6%	2.7%
Biomass	2	3	4	24	46	60	63	5.5%	3.1%	19.4%	7.0%	2.6%	0.4%
Nuclear[1]	1	1	1	1	1	2	5	-1.6%	1.5%	5.2%	2.8%	4.7%	8.8%
Hydro	2	2	3	4	4	5	5	4.9%	1.5%	2.1%	1.3%	1.9%	-0.2%
Other renewables	0	0	0	2	4	12	20	n.s.	-3.3%	n.s.	10.1%	10.3%	5.6%
Net Imports	**0**	**- 15**	**11**	**21**	**- 70**	**- 6**	**- 40**						
Coal	1	0	1	3	2	0	0						
Oil	- 5	- 15	1	3	4	7	- 16						
Natural gas	3	- 2	2	16	- 55	11	3						
Biomass	0	0	0	- 18	- 38	- 41	- 42						
Biofuels	0	0	- 1	- 1	- 1	- 1	- 1						
Electricity	1	1	9	18	18	17	17						
Primary Energy Demand[2]	**44**	**61**	**83**	**110**	**104**	**77**	**75**	3.5%	**3.0%**	**2.9%**	**-0.6%**	**-2.9%**	**-0.3%**
Coal	1	0	1	3	2	0	0	-10.3%	8.6%	14.7%	-3.4%	-13.6%	-10.0%
Oil	19	23	31	32	27	11	5	2.0%	3.0%	0.3%	-1.8%	-8.7%	-7.7%
Natural gas	19	30	36	46	40	12	3	4.9%	1.6%	2.5%	-1.5%	-11.5%	-12.8%
Biomass	2	3	4	6	8	19	21	5.5%	3.1%	4.4%	2.8%	9.2%	0.8%
Nuclear[1]	1	1	1	1	1	2	5	-1.6%	1.5%	5.2%	2.8%	4.7%	8.8%
Hydro	2	2	3	4	4	5	5	4.9%	1.5%	2.1%	1.3%	1.9%	-0.2%
Other renewables	0	0	0	2	4	12	20	n.s.	-3.3%	n.s.	10.1%	10.3%	5.6%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**44**	**61**	**83**	**110**	**104**	**77**	**75**	**3.5%**	**3.0%**	**2.9%**	**-0.6%**	**-2.9%**	**-0.3%**
Energy for Power Generation	**10**	**15**	**21**	**31**	**26**	**24**	**34**	**4.8%**	**3.5%**	**3.7%**	**-1.8%**	**-0.8%**	**3.7%**
Other Energy Transformation & Losses	**7**	**6**	**18**	**27**	**29**	**24**	**21**	**-1.4%**	**11.4%**	**4.4%**	**0.6%**	**-1.7%**	**-1.7%**
Final consumption	**31**	**47**	**54**	**67**	**65**	**48**	**45**	**4.3%**	**1.4%**	**2.2%**	**-0.3%**	**-2.9%**	**-0.8%**
Steel, Non-Met. Minerals and Chem.	1	3	3	5	5	3	2	13.4%	1.7%	5.4%	-1.1%	-5.3%	-1.6%
Other Industry	8	12	14	15	16	11	11	4.2%	0.8%	1.3%	0.7%	-3.6%	-0.1%
Non-Energy Use	2	4	5	5	3	3	3	9.2%	0.8%	0.0%	-4.9%	-1.0%	0.3%
Residential	6	9	13	16	14	12	10	3.9%	3.0%	2.3%	-0.9%	-1.9%	-1.3%
Services	3	3	4	5	5	4	5	0.2%	4.2%	2.8%	-0.4%	-1.4%	2.1%
Agriculture	2	3	4	4	5	5	6	5.3%	3.5%	2.0%	1.1%	0.8%	0.7%
Road	9	12	12	16	16	9	7	3.4%	-0.4%	2.9%	0.1%	-5.0%	-3.7%
Rail	0	0	0	0	0	0	0	5.2%	2.5%	-0.2%	2.1%	1.7%	1.4%
Aviation	1	0	0	1	1	0	0	-3.3%	-3.0%	3.5%	0.5%	-2.3%	-2.6%
Other Transport	0	0	0	0	0	0	0	24.0%	14.7%	1.1%	1.1%	-3.3%	-2.1%

[1] Nuclear energy is accounted as primary electricity

Argentina	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**7**	**12**	**18**	**25**	**16**	**5**	**5**	**5.2%**	**3.9%**	**3.2%**	**-4.2%**	**-10.5%**	**-1.2%**
Coal	0	0	1	2	1	0	0	3.2%	5.4%	10.7%	-5.1%	-12.2%	-9.6%
Oil	2	1	4	3	2	0	0	-6.1%	15.7%	-3.6%	-4.9%	-14.0%	-11.6%
Gas	5	11	13	18	12	2	1	7.4%	1.7%	3.9%	-4.1%	-16.8%	-7.1%
Biomass & Waste	0	0	1	2	1	3	4	6.6%	13.5%	7.8%	-3.0%	8.8%	2.9%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**51**	**89**	**126**	**178**	**182**	**204**	**303**	**5.8%**	**3.5%**	**3.5%**	**0.2%**	**1.1%**	**4.1%**
Coal	1	2	3	9	5	2	1	10.4%	5.4%	11.1%	-4.7%	-11.4%	-9.3%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	10.5%
Oil	5	3	17	12	7	2	0	-5.3%	19.2%	-3.3%	-4.7%	-13.7%	-11.6%
Gas	20	49	63	80	53	9	5	9.4%	2.6%	2.5%	-4.0%	-16.1%	-5.9%
of which CCS	0	0	0	0	0	1	2	n.s.	n.s.	n.s.	n.s.	n.s.	11.6%
Biomass & Waste	0	1	2	4	3	12	17	20.2%	12.5%	6.1%	-3.0%	15.2%	3.8%
of which CCS	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	7	6	7	12	16	25	57	-1.6%	1.5%	5.2%	2.8%	4.6%	8.8%
Hydro	18	29	34	42	47	57	59	4.7%	1.6%	2.1%	1.2%	1.9%	0.3%
Wind	0	0	0	19	40	59	64	n.s.	-3.3%	n.s.	7.9%	4.1%	0.8%
Solar	0	0	0	1	10	38	88	n.s.	n.s.	n.s.	34.0%	13.7%	8.8%
Other	0	0	0	0	0	0	11	n.s.	-36.5%	33.5%	-1.1%	15.2%	57.3%
Generation Capacity (GW_e)	**18**	**24**	**33**	**43**	**58**	**88**	**137**	**2.8%**	**3.5%**	**2.7%**	**2.9%**	**4.3%**	**4.5%**
Coal	1	1	1	1	1	0	0	-1.9%	0.0%	5.1%	-3.2%	-10.7%	-4.7%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	10.6%
Oil	2	1	2	2	2	3	2	-3.8%	4.9%	0.6%	-1.2%	2.1%	-1.5%
Gas	7	11	17	18	16	8	3	4.8%	4.7%	0.6%	-1.5%	-6.5%	-10.0%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	12.2%
Biomass & Waste	0	0	1	1	0	2	3	19.6%	14.3%	-0.9%	-3.4%	16.1%	6.2%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	1	1	1	2	2	3	7	0.0%	0.0%	5.8%	2.6%	4.4%	8.6%
Hydro	8	10	12	12	14	16	19	2.7%	2.0%	0.1%	1.1%	1.7%	1.7%
Wind	0	0	0	7	15	22	22	n.s.	13.6%	n.s.	7.7%	3.8%	0.0%
Solar	0	0	0	0	8	35	80	n.s.	n.s.	n.s.	33.7%	15.3%	8.8%
Other	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	14.7%	43.7%
Total Final Consumption[2] (Mtoe)	**31**	**47**	**54**	**67**	**65**	**48**	**45**	**4.3%**	**1.4%**	**2.2%**	**-0.3%**	**-2.9%**	**-0.8%**
Coal	1	1	1	1	1	0	0	0.1%	1.0%	3.7%	-0.3%	-10.9%	-3.3%
Oil	16	22	25	28	24	11	5	3.6%	1.1%	1.4%	-1.6%	-7.9%	-6.4%
Gas	10	15	17	21	21	9	4	4.4%	1.3%	2.3%	-0.3%	-8.4%	-8.3%
Electricity	4	6	10	13	14	15	21	6.4%	4.1%	3.3%	0.3%	1.2%	3.2%
Heat	0	0	0	0	0	1	2	n.s.	n.s.	n.s.	n.s.	n.s.	5.0%
Biomass & Other	1	3	2	3	5	12	12	6.4%	-3.2%	5.0%	6.0%	8.5%	0.0%
Industry (incl. non-energy use)	**11**	**19**	**21**	**25**	**24**	**17**	**16**	**6.0%**	**1.0%**	**1.7%**	**-0.5%**	**-3.5%**	**-0.3%**
Coal	1	1	1	1	1	0	0	0.1%	1.0%	3.7%	-0.3%	-10.9%	-3.3%
Oil	3	7	7	8	6	3	2	9.3%	0.6%	0.4%	-2.2%	-7.3%	-3.1%
Gas	4	7	8	11	10	4	1	4.3%	2.1%	3.1%	-0.6%	-10.1%	-12.0%
Electricity	2	3	4	5	5	5	7	4.8%	3.3%	0.8%	1.4%	0.4%	2.4%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	1	2	1	1	1	4	6	7.0%	-8.1%	0.8%	2.0%	14.0%	3.0%
Buildings	**9**	**12**	**16**	**21**	**19**	**16**	**16**	**2.9%**	**3.3%**	**2.4%**	**-0.8%**	**-1.8%**	**-0.3%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	2	1	2	2	1	1	0	-3.5%	4.1%	-0.9%	-3.0%	-4.1%	-9.5%
Gas	5	7	9	10	10	4	1	2.8%	2.7%	1.5%	-0.4%	-7.6%	-10.3%
Electricity	2	3	5	9	7	7	10	8.1%	4.7%	4.8%	-1.7%	-0.4%	4.1%
Heat	0	0	0	0	0	1	2	n.s.	n.s.	n.s.	n.s.	n.s.	5.0%
Biomass & Other	0	0	0	0	1	3	2	2.8%	-3.7%	-0.5%	13.7%	10.9%	-5.2%
Agriculture	**2**	**3**	**4**	**4**	**5**	**5**	**6**	**5.3%**	**3.5%**	**2.0%**	**1.1%**	**0.8%**	**0.7%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	1	2	3	4	3	2	1	5.1%	3.3%	2.3%	-1.9%	-4.1%	-4.2%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Electricity	0	0	0	0	1	1	2	2.5%	5.2%	4.0%	16.8%	6.9%	4.5%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	1	2	3	n.s.	10.4%	-17.3%	46.1%	8.6%	2.7%
Transport	**10**	**13**	**13**	**17**	**17**	**10**	**7**	**3.1%**	**-0.3%**	**2.8%**	**0.2%**	**-4.8%**	**-3.5%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	9	11	12	15	13	5	2	2.1%	0.4%	2.1%	-1.0%	-10.1%	-10.1%
Gas	0	1	0	0	0	0	1	22.7%	n.s.	n.s.	35.3%	0.6%	8.3%
Electricity	0	0	0	0	1	2	2	5.2%	2.5%	5.0%	22.8%	10.9%	1.1%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	1	2	2	3	2	n.s.	n.s.	12.4%	3.2%	2.8%	-3.4%
Other Energy Transformation & Losses[3]	**7**	**6**	**18**	**27**	**29**	**24**	**21**	**-1.4%**	**11.4%**	**4.4%**	**0.6%**	**-1.7%**	**-1.7%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Brazil	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	149	175	197	214	227	234	236	1.6%	1.2%	0.9%	0.6%	0.3%	0.1%
GDP per capita (ppp, k$'15)	9	9	12	12	15	18	22	0.9%	2.4%	0.2%	1.8%	2.2%	2.1%
Prices													
International/Regional ($'15/boe)													
Coal	2	1	2	2	3	7	7	-4.2%	5.6%	1.0%	2.5%	8.4%	-0.1%
Oil	39	38	86	88	89	79	81	-0.2%	8.4%	0.2%	0.1%	-1.2%	0.3%
Gas	26	40	34	33	41	46	55	4.6%	-1.6%	-0.4%	2.2%	1.1%	1.8%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**1 509**	**2 264**	**2 545**	**1 726**	**854**	**271**	**- 95**	**4.1%**	**1.2%**	**-3.8%**	**-6.8%**	**-10.8%**	**n.s.**
Total GHG (energy, industry, agriculture)	**630**	**919**	**1 164**	**1 205**	**903**	**578**	**394**	**3.8%**	**2.4%**	**0.4%**	**-2.8%**	**-4.4%**	**-3.8%**
CO_2	198	312	398	434	407	181	56	4.6%	2.5%	0.9%	-0.6%	-7.8%	-11.1%
CH_4	312	380	431	420	282	233	196	2.0%	1.3%	-0.3%	-3.9%	-1.9%	-1.7%
N_2O	115	148	173	191	166	154	144	2.6%	1.6%	1.0%	-1.4%	-0.8%	-0.7%
F gases	5	79	161	160	48	11	- 1	32.9%	7.4%	-0.1%	-11.4%	-13.8%	n.s.
Total GHG from Energy and Industry	**271**	**478**	**670**	**702**	**524**	**234**	**79**	**5.8%**	**3.4%**	**0.5%**	**-2.9%**	**-7.7%**	**-10.3%**
CO_2 Emissions from Fuel Comb.	**187**	**296**	**376**	**425**	**399**	**178**	**55**	**4.7%**	**2.4%**	**1.2%**	**-0.6%**	**-7.8%**	**-11.1%**
Power generation/District heating	10	27	40	23	5	3	- 2	10.5%	4.0%	-5.4%	-14.3%	-4.0%	n.s.
Industry	52	85	100	100	108	54	19	5.0%	1.6%	0.0%	0.7%	-6.6%	-9.8%
Buildings	20	25	23	28	33	17	6	2.2%	-0.6%	1.7%	1.6%	-6.2%	-9.9%
Agriculture	10	14	19	19	15	10	6	3.5%	2.5%	0.3%	-2.4%	-4.4%	-4.5%
Transport	81	125	168	228	199	72	25	4.5%	3.0%	3.1%	-1.3%	-9.7%	-10.0%
Other	14	19	26	27	39	22	0	3.3%	3.4%	0.4%	3.7%	-5.8%	-34.2%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**2**	**14**	**n.s.**	**n.s.**	**n.s.**	**38.7%**	**49.9%**	**22.8%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	-4.7%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	-7.8%
Biomass	0	0	0	0	0	0	6	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	1	7	n.s.	n.s.	n.s.	38.8%	41.2%	22.5%
Energy Balance, by fuel (Mtoe)													
Primary Production	**101**	**144**	**236**	**275**	**381**	**408**	**451**	**3.6%**	**5.1%**	**1.5%**	**3.3%**	**0.7%**	**1.0%**
Coal	1	3	2	2	1	0	0	6.5%	-2.1%	0.2%	-6.4%	-17.9%	n.s.
Oil	31	61	102	97	83	3	1	7.0%	5.2%	-0.5%	-1.5%	-29.3%	-14.6%
Natural gas	3	6	12	29	24	14	6	9.3%	6.9%	9.1%	-2.1%	-5.1%	-7.9%
Biomass	48	47	83	100	216	297	308	-0.1%	5.9%	1.8%	8.0%	3.3%	0.4%
Nuclear[1]	0	1	1	1	1	7	15	10.5%	9.2%	0.6%	0.5%	17.1%	8.7%
Hydro	18	26	35	38	43	46	45	3.9%	2.9%	0.8%	1.4%	0.5%	-0.2%
Other renewables	0	0	1	7	13	42	76	n.s.	33.7%	29.5%	5.9%	12.3%	6.1%
Net Imports	**62**	**81**	**56**	**35**	**- 41**	**- 118**	**- 164**						
Coal	7	8	11	10	7	2	0						
Oil	27	27	3	26	28	52	29						
Natural gas	1	2	9	- 9	9	9	4						
Biomass	0	0	0	- 17	- 109	- 178	- 194						
Biofuels	1	0	- 1	- 3	- 3	- 5	- 4						
Electricity	27	44	35	27	27	2	2						
Primary Energy Demand[2]	**162**	**225**	**292**	**310**	**340**	**290**	**287**	3.3%	**2.6%**	**0.6%**	**0.9%**	**-1.6%**	**-0.1%**
Coal	8	11	13	13	8	2	0	3.2%	1.5%	0.0%	-3.9%	-13.8%	n.s.
Oil	58	88	105	123	111	55	30	4.2%	1.7%	1.7%	-1.1%	-6.8%	-5.9%
Natural gas	3	8	21	20	33	23	10	9.2%	10.4%	-0.6%	4.9%	-3.3%	-8.4%
Biomass	48	47	83	83	106	119	114	-0.1%	5.9%	0.0%	2.5%	1.1%	-0.4%
Nuclear[1]	0	1	1	1	1	7	15	10.5%	9.2%	0.6%	0.5%	17.1%	8.7%
Hydro	18	26	35	38	43	46	45	3.9%	2.9%	0.8%	1.4%	0.5%	-0.2%
Other renewables	0	0	1	7	13	42	76	n.s.	33.7%	29.5%	5.9%	12.3%	6.1%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**162**	**225**	**292**	**310**	**340**	**290**	**287**	**3.3%**	**2.6%**	**0.6%**	**0.9%**	**-1.6%**	**-0.1%**
Energy for Power Generation	**21**	**36**	**56**	**59**	**68**	**101**	**138**	**5.3%**	**4.4%**	**0.5%**	**1.5%**	**4.0%**	**3.1%**
Other Energy Transformation & Losses	**52**	**66**	**76**	**69**	**89**	**52**	**28**	**2.5%**	**1.4%**	**-0.9%**	**2.6%**	**-5.4%**	**-6.0%**
Final consumption	**114**	**156**	**213**	**235**	**255**	**233**	**228**	**3.3%**	**3.1%**	**1.0%**	**0.8%**	**-0.9%**	**-0.2%**
Steel, Non-Met. Minerals and Chem.	21	28	32	32	34	31	31	2.9%	1.6%	0.0%	0.6%	-1.2%	0.1%
Other Industry	21	32	51	54	65	77	86	4.0%	4.9%	0.5%	1.8%	1.8%	1.1%
Non-Energy Use	9	14	17	15	16	16	15	3.7%	2.2%	-1.0%	0.2%	0.0%	-0.1%
Residential	18	21	24	25	26	24	23	1.4%	1.4%	0.7%	0.4%	-0.9%	-0.6%
Services	5	8	11	13	16	19	23	5.2%	2.7%	2.1%	2.0%	1.5%	1.9%
Agriculture	6	7	10	12	12	13	14	2.0%	3.1%	1.5%	0.6%	0.6%	0.5%
Road	29	43	63	78	79	48	31	3.9%	3.9%	2.1%	0.2%	-4.9%	-4.3%
Rail	1	1	1	1	1	1	1	-2.0%	7.6%	0.4%	0.5%	0.1%	0.4%
Aviation	2	3	3	4	4	4	3	5.1%	0.2%	1.4%	1.5%	-1.4%	-2.2%
Other Transport	1	1	1	1	1	1	1	-1.6%	4.1%	-0.9%	-0.3%	-3.6%	-2.0%

[1] Nuclear energy is accounted as primary electricity

Brazil	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**4**	**9**	**19**	**13**	**11**	**7**	**3**	**10.4%**	**7.4%**	**-4.2%**	**-1.8%**	**-3.5%**	**-9.7%**
Coal	1	3	3	3	0	0	0	8.3%	-0.2%	-1.8%	-24.5%	-3.3%	-8.6%
Oil	1	4	4	3	0	0	0	11.7%	-0.4%	-3.6%	-30.2%	n.s.	n.s.
Gas	0	1	7	2	2	2	1	28.1%	22.8%	-12.1%	-0.6%	-1.1%	-5.4%
Biomass & Waste	1	2	6	6	9	6	2	7.7%	14.0%	-0.4%	4.4%	-4.0%	-11.3%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**223**	**349**	**515**	**594**	**721**	**1 055**	**1 403**	**4.6%**	**4.0%**	**1.4%**	**1.9%**	**3.9%**	**2.9%**
Coal	5	11	11	10	1	1	0	8.8%	0.3%	-0.8%	-24.4%	-1.4%	-8.7%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	-5.6%
Oil	5	15	16	14	0	0	0	11.9%	0.6%	-1.6%	-30.6%	n.s.	n.s.
Gas	0	4	36	10	10	9	5	28.7%	24.5%	-11.7%	-0.6%	-1.0%	-5.3%
of which CCS	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	n.s.	n.s.	-8.6%
Biomass & Waste	4	8	31	30	46	29	9	7.4%	14.9%	-0.3%	4.3%	-4.5%	-11.5%
of which CCS	0	0	0	0	0	0	5	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	2	6	15	15	16	78	178	10.5%	9.2%	0.6%	0.5%	17.0%	8.7%
Hydro	207	304	403	437	503	529	520	3.9%	2.9%	0.8%	1.4%	0.5%	-0.2%
Wind	0	0	2	74	120	278	432	n.s.	n.s.	42.2%	5.0%	8.7%	4.5%
Solar	0	0	0	2	24	130	244	n.s.	n.s.	n.s.	25.4%	18.6%	6.5%
Other	0	0	0	0	0	1	15	n.s.	n.s.	n.s.	-8.9%	17.0%	33.0%
Generation Capacity (GW_e)	**54**	**75**	**114**	**172**	**214**	**332**	**481**	**3.3%**	**4.3%**	**4.2%**	**2.2%**	**4.5%**	**3.8%**
Coal	2	3	4	5	4	2	1	4.3%	0.7%	3.4%	-2.6%	-5.1%	-9.5%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	10.3%
Oil	4	5	7	5	5	4	2	2.9%	3.3%	-3.6%	0.3%	-2.6%	-5.5%
Gas	0	1	11	12	13	4	5	12.0%	23.2%	0.7%	0.6%	-11.9%	3.9%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	13.5%
Biomass & Waste	1	2	8	13	12	8	16	5.1%	16.0%	5.6%	-1.5%	-3.8%	7.1%
of which CCS	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	1	2	2	2	2	10	22	11.8%	0.0%	-0.2%	0.3%	16.8%	8.6%
Hydro	46	61	81	108	124	133	131	3.0%	2.8%	2.9%	1.4%	0.7%	-0.2%
Wind	0	0	1	25	39	86	137	n.s.	46.8%	38.8%	4.8%	8.2%	4.7%
Solar	0	0	0	2	15	85	167	n.s.	n.s.	n.s.	25.9%	18.8%	7.0%
Other	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	20.6%	13.5%	31.1%
Total Final Consumption[2] (Mtoe)	**114**	**156**	**213**	**235**	**255**	**233**	**228**	**3.3%**	**3.1%**	**1.0%**	**0.8%**	**-0.9%**	**-0.2%**
Coal	6	9	11	11	9	3	2	3.9%	2.4%	-0.2%	-1.6%	-9.6%	-7.7%
Oil	53	80	94	113	102	49	25	4.2%	1.6%	1.9%	-1.0%	-7.1%	-6.3%
Gas	2	5	11	12	21	15	8	7.2%	8.2%	1.1%	5.8%	-3.3%	-5.8%
Electricity	18	28	38	43	52	72	87	4.3%	3.1%	1.2%	1.9%	3.4%	1.9%
Heat	0	0	0	1	1	3	3	n.s.	28.4%	12.7%	-1.3%	10.6%	1.2%
Biomass & Other	34	35	60	56	70	91	102	0.4%	5.4%	-0.6%	2.3%	2.6%	1.2%
Industry (incl. non-energy use)	**52**	**73**	**100**	**102**	**115**	**123**	**132**	**3.5%**	**3.3%**	**0.1%**	**1.2%**	**0.7%**	**0.7%**
Coal	6	9	11	11	9	3	2	3.9%	2.4%	-0.2%	-1.6%	-9.6%	-7.7%
Oil	17	27	27	26	28	22	17	4.6%	0.3%	-0.4%	0.6%	-2.6%	-2.4%
Gas	2	4	10	10	14	10	4	7.0%	8.8%	-0.1%	3.4%	-3.9%	-8.9%
Electricity	10	13	17	18	23	30	35	2.7%	3.3%	0.3%	2.6%	2.6%	1.6%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	17	20	34	36	40	59	75	2.0%	5.3%	0.5%	1.0%	3.9%	2.5%
Buildings	**23**	**29**	**34**	**39**	**42**	**43**	**46**	**2.3%**	**1.8%**	**1.2%**	**0.9%**	**0.1%**	**0.6%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	6	8	7	8	6	3	1	2.2%	-0.9%	0.6%	-2.0%	-7.2%	-9.9%
Gas	0	0	0	2	6	3	1	1.9%	7.3%	13.7%	12.5%	-5.0%	-9.9%
Electricity	8	14	19	22	23	28	36	5.9%	3.0%	1.6%	0.8%	1.7%	2.4%
Heat	0	0	0	1	1	3	3	n.s.	28.4%	12.7%	-1.3%	10.6%	1.2%
Biomass & Other	9	7	8	7	6	6	4	-2.1%	1.1%	-1.9%	-0.9%	-0.6%	-2.4%
Agriculture	**6**	**7**	**10**	**12**	**12**	**13**	**14**	**2.0%**	**3.1%**	**1.5%**	**0.6%**	**0.6%**	**0.5%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	3	5	6	6	5	3	2	3.5%	2.5%	0.3%	-2.4%	-4.4%	-4.5%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Electricity	1	1	2	3	3	4	6	6.8%	3.2%	5.7%	2.3%	2.9%	2.3%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	2	2	3	3	4	6	6	-2.8%	4.4%	1.2%	4.0%	2.8%	1.1%
Transport	**33**	**47**	**68**	**84**	**86**	**54**	**36**	**3.7%**	**3.7%**	**2.0%**	**0.2%**	**-4.6%**	**-3.9%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	27	41	54	73	63	22	6	4.5%	2.7%	3.2%	-1.5%	-10.2%	-12.6%
Gas	0	0	0	0	1	2	3	n.s.	n.s.	n.s.	33.3%	5.9%	5.3%
Electricity	0	0	0	0	1	9	10	0.5%	2.9%	5.5%	18.6%	21.4%	0.9%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	6	6	15	10	20	21	17	-0.3%	9.3%	-3.6%	7.1%	0.3%	-2.2%
Other Energy Transformation & Losses[3]	**52**	**66**	**76**	**69**	**89**	**52**	**28**	**2.5%**	**1.4%**	**-0.9%**	**2.6%**	**-5.4%**	**-6.0%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Canada	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	28	31	34	37	40	42	44	1.0%	1.1%	0.9%	0.7%	0.5%	0.5%
GDP per capita (ppp, k$'15)	32	39	42	48	53	61	70	1.9%	0.8%	1.3%	1.1%	1.4%	1.4%
Prices													
International/Regional ($'15/boe)													
Coal	2	1	2	2	3	8	8	-4.2%	5.6%	0.9%	2.0%	10.2%	1.2%
Oil	39	38	86	88	89	79	81	-0.2%	8.4%	0.2%	0.1%	-1.2%	0.3%
Gas	26	40	34	33	41	46	55	4.6%	-1.6%	-0.4%	2.2%	1.1%	1.8%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**496**	**647**	**656**	**675**	**518**	**151**	**63**	**2.7%**	**0.1%**	**0.3%**	**-2.6%**	**-11.6%**	**-8.3%**
Total GHG (energy, industry, agriculture)	**597**	**732**	**727**	**724**	**575**	**201**	**91**	**2.1%**	**-0.1%**	**0.0%**	**-2.3%**	**-10.0%**	**-7.6%**
CO_2	448	562	579	586	481	136	36	2.3%	0.3%	0.1%	-1.9%	-11.9%	-12.5%
CH_4	95	119	101	88	52	32	26	2.3%	-1.7%	-1.3%	-5.1%	-4.8%	-2.2%
N_2O	43	40	38	39	35	31	29	-0.6%	-0.6%	0.3%	-0.9%	-1.4%	-0.7%
F gases	12	11	10	12	6	2	1	-1.0%	-0.5%	2.1%	-6.4%	-9.5%	-11.2%
Total GHG from Energy and Industry	**548**	**674**	**671**	**670**	**525**	**151**	**41**	**2.1%**	**0.0%**	**0.0%**	**-2.4%**	**-11.7%**	**-12.2%**
CO_2 Emissions from Fuel Comb.	**412**	**516**	**536**	**543**	**443**	**128**	**34**	**2.3%**	**0.4%**	**0.1%**	**-2.0%**	**-11.7%**	**-12.3%**
Power generation/District heating	96	135	108	57	11	3	0	3.5%	-2.1%	-6.3%	-15.1%	-13.0%	n.s.
Industry	75	82	58	69	58	18	3	0.9%	-3.4%	1.9%	-1.8%	-10.9%	-15.7%
Buildings	74	85	72	68	50	19	6	1.5%	-1.7%	-0.5%	-3.0%	-9.4%	-10.6%
Agriculture	8	10	15	18	13	9	6	3.1%	3.6%	2.2%	-3.0%	-4.0%	-4.1%
Transport	110	135	163	169	135	46	22	2.1%	1.9%	0.4%	-2.2%	-10.2%	-7.0%
Other	50	69	121	162	176	33	- 3	3.2%	5.8%	3.0%	0.8%	-15.4%	n.s.
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**2**	**12**	**n.s.**	**n.s.**	**n.s.**	**28.2%**	**41.2%**	**23.3%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	-20.7%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	-16.5%
Biomass	0	0	0	0	0	0	3	n.s.	n.s.	n.s.	n.s.	n.s.	41.6%
Direct Air Capture	0	0	0	0	0	1	9	n.s.	n.s.	n.s.	28.2%	38.3%	22.4%
Energy Balance, by fuel (Mtoe)													
Primary Production	**241**	**332**	**352**	**474**	**464**	**242**	**226**	**3.2%**	**0.6%**	**3.0%**	**-0.2%**	**-6.3%**	**-0.7%**
Coal	36	36	34	14	16	0	0	0.0%	-0.8%	-8.5%	1.4%	-43.1%	n.s.
Oil	78	103	145	220	193	13	6	2.8%	3.4%	4.3%	-1.3%	-23.6%	-7.2%
Natural gas	84	141	122	159	159	91	53	5.3%	-1.4%	2.7%	0.0%	-5.4%	-5.3%
Biomass	11	14	13	33	40	64	74	2.5%	-0.8%	10.0%	1.8%	5.0%	1.5%
Nuclear[1]	6	6	8	9	8	11	14	0.0%	2.2%	1.2%	-0.8%	2.8%	2.7%
Hydro	26	31	30	35	37	37	37	1.9%	-0.2%	1.4%	0.6%	0.1%	-0.1%
Other renewables	0	0	1	5	11	26	42	n.s.	41.9%	19.1%	9.6%	8.5%	4.9%
Net Imports	**- 40**	**- 124**	**- 127**	**- 259**	**- 271**	**- 137**	**- 141**						
Coal	- 12	- 5	- 11	0	- 12	2	1						
Oil	2	- 16	- 47	- 126	- 119	15	5						
Natural gas	- 29	- 67	- 43	- 63	- 65	- 72	- 54						
Biomass	0	0	0	- 14	- 21	- 35	- 48						
Biofuels	0	0	0	0	0	0	0						
Electricity	0	- 36	- 26	- 57	- 56	- 47	- 45						
Primary Energy Demand[2]	**201**	**208**	**225**	**214**	**193**	**106**	**85**	0.3%	**0.8%**	**-0.5%**	**-1.1%**	**-5.8%**	**-2.2%**
Coal	24	31	22	14	4	2	1	2.5%	-3.2%	-4.6%	-10.8%	-8.5%	-3.5%
Oil	80	87	98	94	74	28	11	0.8%	1.2%	-0.4%	-2.4%	-9.3%	-8.7%
Natural gas	55	74	79	96	94	19	- 1	3.1%	0.6%	2.0%	-0.2%	-14.8%	n.s.
Biomass	11	14	12	19	19	30	26	2.4%	-1.1%	4.4%	-0.1%	4.7%	-1.3%
Nuclear[1]	6	6	8	9	8	11	14	0.0%	2.2%	1.2%	-0.8%	2.8%	2.7%
Hydro	26	31	30	35	37	37	37	1.9%	-0.2%	1.4%	0.6%	0.1%	-0.1%
Other renewables	0	0	1	5	11	26	42	n.s.	41.9%	19.1%	9.6%	8.5%	4.9%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**201**	**208**	**225**	**214**	**193**	**106**	**85**	**0.3%**	**0.8%**	**-0.5%**	**-1.1%**	**-5.8%**	**-2.2%**
Energy for Power Generation	**58**	**77**	**73**	**68**	**61**	**77**	**93**	**2.8%**	**-0.5%**	**-0.7%**	**-1.0%**	**2.3%**	**1.9%**
Other Energy Transformation & Losses	**20**	**- 14**	**9**	**- 8**	**1**	**- 43**	**- 58**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**
Final consumption	**160**	**187**	**186**	**198**	**178**	**132**	**114**	**1.6%**	**-0.1%**	**0.7%**	**-1.1%**	**-2.9%**	**-1.5%**
Steel, Non-Met. Minerals and Chem.	11	12	12	16	14	11	12	0.8%	-0.1%	2.6%	-1.2%	-2.3%	1.0%
Other Industry	37	44	31	36	35	31	30	1.7%	-3.5%	1.8%	-0.4%	-1.4%	-0.1%
Non-Energy Use	15	20	23	23	23	20	18	2.9%	1.4%	0.2%	-0.3%	-1.3%	-1.3%
Residential	31	33	32	31	27	21	16	0.4%	-0.2%	-0.3%	-1.5%	-2.5%	-2.5%
Services	22	27	25	24	20	14	11	2.2%	-0.7%	-0.4%	-2.1%	-3.3%	-2.4%
Agriculture	3	4	6	7	7	8	8	2.6%	2.8%	2.3%	0.7%	0.6%	0.6%
Road	33	39	49	52	45	23	15	1.7%	2.2%	0.6%	-1.5%	-6.6%	-4.3%
Rail	2	2	2	2	2	2	2	-0.7%	0.2%	1.6%	-0.3%	-1.1%	-0.8%
Aviation	3	4	4	5	4	2	2	2.4%	-0.7%	1.7%	-2.2%	-4.9%	-3.0%
Other Transport	1	1	2	1	1	1	1	0.1%	3.5%	-3.9%	-0.9%	-4.7%	-2.9%

[1] Nuclear energy is accounted as primary electricity

Canada	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**27**	**39**	**34**	**20**	**5**	**3**	**1**	**4.0%**	**-1.6%**	**-5.2%**	**-12.9%**	**-5.4%**	**-15.2%**
Coal	20	27	19	9	1	0	0	3.1%	-3.4%	-6.9%	-20.9%	-21.5%	n.s.
Oil	4	3	2	2	0	0	0	-1.8%	-5.1%	-0.6%	-17.6%	-31.8%	n.s.
Gas	2	7	11	6	3	1	0	14.7%	4.4%	-6.4%	-7.0%	-9.0%	-12.7%
Biomass & Waste	1	2	1	3	1	2	0	7.8%	-3.1%	6.7%	-9.9%	5.7%	-16.8%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**482**	**606**	**596**	**641**	**666**	**814**	**982**	**2.3%**	**-0.2%**	**0.7%**	**0.4%**	**2.0%**	**1.9%**
Coal	82	118	80	37	4	0	0	3.6%	-3.8%	-7.4%	-20.4%	-19.5%	n.s.
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	16	15	8	8	1	0	0	-1.1%	-6.1%	-0.4%	-16.9%	-31.8%	n.s.
Gas	10	33	52	30	17	7	2	13.2%	4.4%	-5.3%	-5.6%	-9.0%	-12.8%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	4	8	6	11	4	7	1	7.6%	-3.2%	6.7%	-9.9%	5.7%	-15.1%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	73	73	91	102	95	125	162	0.0%	2.2%	1.2%	-0.8%	2.8%	2.6%
Hydro	297	359	351	402	426	431	425	1.9%	-0.2%	1.4%	0.6%	0.1%	-0.1%
Wind	0	0	9	48	117	236	377	n.s.	41.9%	18.5%	9.4%	7.3%	4.8%
Solar	0	0	0	2	3	7	11	n.s.	22.0%	35.5%	0.3%	10.9%	4.2%
Other	0	0	0	0	0	0	4	n.s.	n.s.	n.s.	21.6%	9.6%	42.9%
Generation Capacity (GW_e)	**103**	**111**	**131**	**143**	**160**	**196**	**257**	**0.7%**	**1.7%**	**0.9%**	**1.2%**	**2.0%**	**2.7%**
Coal	19	18	14	7	1	0	0	-0.8%	-2.3%	-6.7%	-18.2%	-20.9%	-5.2%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	6.1%
Oil	7	8	5	2	2	3	3	0.5%	-3.7%	-9.5%	1.9%	1.0%	2.2%
Gas	4	7	15	14	11	3	6	5.9%	8.4%	-0.7%	-2.1%	-12.3%	6.6%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	12.6%
Biomass & Waste	1	1	5	3	2	2	5	2.2%	15.1%	-5.6%	-2.4%	-0.9%	11.2%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	13	10	13	13	12	16	20	-2.2%	2.3%	0.5%	-1.0%	2.6%	2.5%
Hydro	59	67	75	83	88	89	90	1.3%	1.1%	1.0%	0.6%	0.1%	0.2%
Wind	0	0	4	18	41	78	123	n.s.	39.9%	16.3%	8.7%	6.5%	4.7%
Solar	0	0	0	3	3	6	9	n.s.	40.9%	29.7%	-1.2%	9.3%	3.0%
Other	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	9.1%	42.2%
Total Final Consumption[2] (Mtoe)	**160**	**187**	**186**	**198**	**178**	**132**	**114**	**1.6%**	**-0.1%**	**0.7%**	**-1.1%**	**-2.9%**	**-1.5%**
Coal	4	5	4	5	3	2	2	0.8%	-1.1%	1.1%	-3.0%	-5.4%	-2.2%
Oil	69	80	89	91	74	35	20	1.6%	1.0%	0.2%	-2.0%	-7.4%	-5.2%
Gas	40	49	40	45	38	17	10	1.9%	-2.0%	1.3%	-1.7%	-7.8%	-5.4%
Electricity	36	41	41	40	42	49	52	1.4%	0.0%	-0.2%	0.5%	1.6%	0.6%
Heat	1	1	1	1	2	3	4	2.5%	-4.7%	6.3%	6.8%	6.1%	2.1%
Biomass & Other	10	12	11	17	18	26	26	1.8%	-0.6%	4.1%	0.9%	3.7%	0.0%
Industry (incl. non-energy use)	**63**	**76**	**66**	**76**	**72**	**62**	**60**	**1.9%**	**-1.4%**	**1.4%**	**-0.5%**	**-1.5%**	**-0.3%**
Coal	4	5	4	5	3	2	2	0.9%	-1.1%	1.1%	-3.0%	-5.4%	-2.2%
Oil	18	22	24	24	22	17	14	2.0%	0.9%	0.1%	-0.8%	-2.7%	-1.8%
Gas	20	23	16	21	19	8	3	1.5%	-3.9%	2.9%	-0.9%	-8.3%	-9.1%
Electricity	14	17	15	16	18	23	27	1.9%	-1.5%	0.3%	1.7%	2.0%	2.0%
Heat	1	1	0	1	1	1	1	2.5%	-5.3%	2.7%	-0.2%	-0.3%	-0.2%
Biomass & Other	6	8	6	10	8	12	13	3.3%	-2.0%	4.6%	-2.0%	3.6%	1.2%
Buildings	**53**	**60**	**57**	**55**	**46**	**35**	**27**	**1.2%**	**-0.5%**	**-0.3%**	**-1.8%**	**-2.8%**	**-2.5%**
Coal	0	0	0	0	0	0	0	-3.0%	-1.3%	-16.2%	-12.8%	n.s.	n.s.
Oil	9	9	5	4	4	2	1	0.0%	-5.0%	-1.7%	-2.0%	-8.1%	-10.6%
Gas	20	25	24	23	17	6	2	2.3%	-0.5%	-0.2%	-3.2%	-9.8%	-10.6%
Electricity	20	23	25	24	20	20	18	1.0%	0.9%	-0.6%	-1.6%	-0.1%	-0.8%
Heat	0	0	0	0	1	3	3	4.4%	17.5%	24.0%	14.0%	8.3%	2.6%
Biomass & Other	4	4	4	4	5	5	3	-1.0%	-0.8%	1.3%	2.1%	-0.1%	-5.2%
Agriculture	**3**	**4**	**6**	**7**	**7**	**8**	**8**	**2.6%**	**2.8%**	**2.3%**	**0.7%**	**0.6%**	**0.6%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	2	3	4	5	3	2	1	3.3%	4.1%	1.3%	-3.2%	-4.3%	-4.3%
Gas	0	1	1	1	1	1	1	1.6%	-0.3%	8.8%	-2.2%	-3.0%	-3.0%
Electricity	1	1	1	1	2	3	4	1.1%	-0.2%	0.2%	7.8%	5.3%	3.4%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	1	2	2	n.s.	n.s.	n.s.	33.4%	5.2%	1.6%
Transport	**40**	**47**	**57**	**60**	**52**	**28**	**19**	**1.6%**	**1.9%**	**0.6%**	**-1.5%**	**-6.1%**	**-3.9%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	40	47	56	58	45	14	4	1.6%	1.7%	0.3%	-2.5%	-11.1%	-11.3%
Gas	0	0	0	0	2	2	4	3.6%	22.8%	-0.4%	45.9%	4.2%	6.2%
Electricity	0	0	0	0	2	4	3	n.s.	n.s.	n.s.	30.0%	8.3%	-4.4%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	1	2	4	8	8	n.s.	24.2%	7.4%	4.5%	7.3%	0.3%
Other Energy Transformation & Losses[3]	**20**	**- 14**	**9**	**- 8**	**1**	**- 43**	**- 58**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Chile	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	13	15	17	18	19	20	20	1.4%	1.1%	0.8%	0.5%	0.2%	0.0%
GDP per capita (ppp, k$'15)	8	13	17	22	28	36	45	4.9%	2.7%	2.4%	2.6%	2.5%	2.2%
Prices													
International/Regional ($'15/boe)													
Coal	2	1	2	2	3	7	7	-4.2%	5.6%	1.0%	2.5%	8.4%	-0.1%
Oil	39	38	86	88	89	79	81	-0.2%	8.4%	0.2%	0.1%	-1.2%	0.3%
Gas	26	40	34	33	41	46	55	4.6%	-1.6%	-0.4%	2.2%	1.1%	1.8%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**43**	**90**	**141**	**157**	**121**	**43**	**10**	**7.7%**	**4.6%**	**1.1%**	**-2.6%**	**-9.9%**	**-13.2%**
Total GHG (energy, industry, agriculture)	**55**	**82**	**108**	**131**	**127**	**51**	**20**	**4.0%**	**2.7%**	**1.9%**	**-0.3%**	**-8.8%**	**-9.1%**
CO_2	33	55	79	99	104	33	6	5.1%	3.7%	2.3%	0.5%	-10.7%	-16.1%
CH_4	17	21	21	24	17	12	9	1.8%	0.3%	1.2%	-3.5%	-3.5%	-3.2%
N_2O	5	7	8	8	6	6	5	3.6%	1.4%	0.3%	-2.2%	-1.2%	-0.6%
F gases	0	0	0	0	0	0	0	-8.4%	1.9%	-3.2%	n.s.	n.s.	n.s.
Total GHG from Energy and Industry	**45**	**69**	**95**	**118**	**117**	**41**	**10**	**4.5%**	**3.2%**	**2.2%**	**-0.1%**	**-9.9%**	**-12.9%**
CO_2 Emissions from Fuel Comb.	**30**	**50**	**73**	**92**	**94**	**31**	**6**	**5.2%**	**3.9%**	**2.3%**	**0.3%**	**-10.4%**	**-16.0%**
Power generation/District heating	8	14	25	31	18	4	- 3	5.2%	6.4%	2.0%	-5.3%	-14.5%	n.s.
Industry	7	11	14	18	34	9	2	4.9%	2.3%	2.6%	6.6%	-12.1%	-14.1%
Buildings	3	5	6	5	4	2	1	3.7%	1.7%	-1.3%	-2.1%	-6.9%	-10.3%
Agriculture	0	1	1	1	1	0	0	3.7%	4.6%	-2.5%	-2.9%	-4.2%	-4.3%
Transport	9	17	21	27	27	12	5	6.4%	2.3%	2.3%	0.1%	-8.1%	-7.4%
Other	2	3	6	10	11	5	0	2.7%	8.4%	5.1%	0.3%	-8.1%	-32.1%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**3**	**8**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**11.8%**
Coal	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	n.s.	n.s.	0.8%
Gas	0	0	0	0	0	1	2	n.s.	n.s.	n.s.	n.s.	n.s.	1.8%
Biomass	0	0	0	0	0	0	5	n.s.	n.s.	n.s.	n.s.	n.s.	32.8%
Direct Air Capture	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	32.2%	17.5%
Energy Balance, by fuel (Mtoe)													
Primary Production	**7**	**8**	**9**	**13**	**18**	**26**	**34**	**1.2%**	**0.5%**	**3.7%**	**3.5%**	**4.0%**	**2.4%**
Coal	1	0	0	2	2	1	1	-15.7%	0.5%	23.4%	-0.7%	-6.2%	-2.5%
Oil	1	0	0	1	0	0	0	-11.2%	-2.1%	10.9%	-2.1%	-4.6%	-3.4%
Natural gas	1	2	2	1	1	1	1	1.1%	-0.2%	-7.4%	4.5%	1.4%	0.7%
Biomass	3	5	5	6	8	12	14	4.2%	0.4%	2.5%	3.0%	3.5%	1.8%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	7.7%
Hydro	1	2	2	2	3	5	5	7.6%	1.6%	2.3%	3.5%	3.7%	0.4%
Other renewables	0	0	0	1	3	7	12	n.s.	n.s.	39.8%	13.0%	10.2%	5.2%
Net Imports	**7**	**18**	**23**	**26**	**25**	**8**	**- 1**						
Coal	1	3	4	5	6	1	0						
Oil	6	10	15	18	17	6	1						
Natural gas	0	4	3	3	4	1	0						
Biomass	0	0	0	0	- 3	- 2	- 3						
Biofuels	0	0	0	0	0	0	0						
Electricity	0	1	1	0	0	0	0						
Primary Energy Demand[2]	**14**	**26**	**32**	**39**	**43**	**34**	**32**	6.4%	**1.9%**	**2.0%**	**1.1%**	**-2.3%**	**-0.5%**
Coal	2	3	4	7	8	2	1	1.9%	4.1%	4.9%	1.4%	-11.5%	-6.7%
Oil	6	10	15	19	18	7	2	4.9%	3.7%	2.3%	-0.6%	-9.2%	-13.0%
Natural gas	1	5	4	4	5	3	1	15.9%	-1.5%	-2.4%	4.2%	-6.9%	-5.5%
Biomass	3	5	5	6	6	10	11	4.2%	0.4%	2.1%	-0.5%	5.9%	0.5%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	7.7%
Hydro	1	2	2	2	3	5	5	7.6%	1.6%	2.3%	3.5%	3.7%	0.4%
Other renewables	0	0	0	1	3	7	12	n.s.	n.s.	39.8%	13.0%	10.2%	5.2%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**14**	**26**	**32**	**39**	**43**	**34**	**32**	**6.4%**	**1.9%**	**2.0%**	**1.1%**	**-2.3%**	**-0.5%**
Energy for Power Generation	**3**	**6**	**10**	**14**	**13**	**16**	**21**	**7.2%**	**4.7%**	**3.8%**	**-0.9%**	**2.2%**	**2.8%**
Other Energy Transformation & Losses	**1**	**3**	**3**	**4**	**5**	**4**	**1**	**9.6%**	**0.7%**	**2.6%**	**3.6%**	**-3.4%**	**-11.7%**
Final consumption	**11**	**21**	**24**	**28**	**34**	**26**	**23**	**6.2%**	**1.5%**	**1.5%**	**2.0%**	**-2.8%**	**-0.9%**
Steel, Non-Met. Minerals and Chem.	0	1	1	1	8	6	6	4.1%	-0.3%	4.4%	23.0%	-2.6%	-1.1%
Other Industry	3	6	8	11	9	8	8	7.1%	2.8%	3.1%	-1.8%	-1.9%	0.0%
Non-Energy Use	1	2	1	1	0	0	0	10.1%	-8.2%	-4.5%	-4.3%	-3.5%	-1.7%
Residential	3	5	5	4	3	3	3	4.5%	0.9%	-3.4%	-0.8%	-2.1%	-0.7%
Services	0	1	1	2	2	2	2	2.7%	8.2%	2.8%	1.5%	-1.2%	2.0%
Agriculture	0	0	0	0	0	0	0	4.3%	4.2%	-2.1%	1.0%	0.7%	0.6%
Road	3	5	6	8	9	5	4	6.8%	2.2%	2.7%	0.8%	-4.9%	-3.8%
Rail	0	0	0	0	0	0	0	0.2%	8.1%	10.4%	1.5%	1.2%	1.0%
Aviation	0	0	0	0	1	0	0	7.4%	4.8%	1.7%	1.7%	-2.8%	-2.3%
Other Transport	0	0	0	0	0	0	0	2.0%	2.2%	-0.3%	1.4%	-3.5%	-2.1%

[1] Nuclear energy is accounted as primary electricity

Chile	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**2**	**5**	**8**	**11**	**7**	**4**	**4**	**7.1%**	**5.6%**	**3.5%**	**-4.6%**	**-5.3%**	**0.1%**
Coal	2	2	4	6	2	0	0	2.4%	6.5%	3.7%	-9.5%	-13.4%	-6.5%
Oil	0	0	2	2	1	1	0	-0.4%	14.4%	-1.5%	-1.2%	-8.0%	-24.0%
Gas	0	2	2	2	2	1	1	38.7%	0.6%	-1.2%	4.2%	-7.9%	0.2%
Biomass & Waste	0	0	0	2	1	2	3	13.5%	1.0%	19.9%	-6.8%	5.4%	3.6%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**18**	**40**	**60**	**85**	**104**	**126**	**162**	**8.5%**	**4.2%**	**3.5%**	**2.0%**	**1.9%**	**2.6%**
Coal	7	8	17	25	9	2	1	2.6%	7.1%	4.1%	-9.5%	-13.1%	-6.1%
of which CCS	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	n.s.	n.s.	0.7%
Oil	2	2	8	8	7	3	0	-0.4%	17.4%	-0.3%	-1.2%	-8.3%	-24.3%
Gas	0	10	11	11	16	6	7	49.4%	0.2%	-0.2%	4.3%	-9.2%	0.8%
of which CCS	0	0	0	0	0	4	5	n.s.	n.s.	n.s.	n.s.	n.s.	1.8%
Biomass & Waste	0	1	2	6	3	7	12	13.4%	9.1%	10.2%	-6.8%	9.2%	5.7%
of which CCS	0	0	0	0	0	0	5	n.s.	n.s.	n.s.	n.s.	n.s.	33.6%
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	9	19	22	27	38	56	60	7.6%	1.6%	2.3%	3.5%	3.8%	0.7%
Wind	0	0	0	4	11	17	20	n.s.	n.s.	26.7%	11.5%	4.6%	2.0%
Solar	0	0	0	4	19	33	50	n.s.	n.s.	n.s.	15.3%	6.0%	4.2%
Other	0	0	0	0	1	1	11	2.8%	4.0%	2.7%	20.6%	8.8%	22.4%
Generation Capacity (GW_e)	**5**	**10**	**16**	**25**	**40**	**55**	**71**	**8.0%**	**4.9%**	**4.1%**	**4.9%**	**3.3%**	**2.6%**
Coal	1	2	2	5	4	2	0	6.5%	0.9%	6.5%	-1.0%	-7.2%	-15.0%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	1.9%
Oil	1	1	3	3	3	3	2	-0.9%	13.9%	0.5%	-0.8%	1.0%	-5.8%
Gas	0	3	4	3	4	1	2	43.0%	4.8%	-2.1%	1.2%	-13.7%	7.0%
of which CCS	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	n.s.	n.s.	4.2%
Biomass & Waste	0	0	1	1	0	1	2	4.3%	12.3%	-1.0%	-8.5%	10.3%	6.9%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	34.1%
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	2	4	5	8	11	17	20	5.7%	2.8%	3.5%	3.5%	4.5%	1.5%
Wind	0	0	0	2	5	7	8	n.s.	n.s.	25.9%	10.5%	4.0%	1.2%
Solar	0	0	0	3	13	24	37	n.s.	n.s.	n.s.	15.9%	6.5%	4.5%
Other	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	18.6%	43.5%
Total Final Consumption[2] (Mtoe)	**11**	**21**	**24**	**28**	**34**	**26**	**23**	**6.2%**	**1.5%**	**1.5%**	**2.0%**	**-2.8%**	**-0.9%**
Coal	1	1	0	1	5	1	0	1.0%	-5.6%	5.2%	20.0%	-13.4%	-10.7%
Oil	5	9	12	15	14	5	2	5.3%	2.8%	2.1%	-0.6%	-9.4%	-11.5%
Gas	1	3	2	2	3	2	1	13.4%	-3.4%	-3.2%	4.1%	-4.6%	-2.2%
Electricity	1	3	5	7	8	9	11	9.0%	4.1%	3.3%	2.0%	1.5%	1.9%
Heat	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	6.7%	7.0%	0.5%
Biomass & Other	3	4	4	4	4	8	8	4.1%	0.4%	-1.3%	1.4%	6.1%	0.6%
Industry (incl. non-energy use)	**4**	**9**	**10**	**13**	**18**	**14**	**14**	**7.5%**	**0.6%**	**2.6%**	**3.5%**	**-2.2%**	**-0.5%**
Coal	1	1	0	1	5	1	0	1.7%	-5.5%	5.3%	20.1%	-13.4%	-10.7%
Oil	2	2	3	5	4	1	0	3.5%	4.6%	3.3%	-0.9%	-11.6%	-11.9%
Gas	1	3	2	1	2	1	0	14.9%	-4.8%	-5.6%	5.0%	-6.3%	-14.9%
Electricity	1	2	3	4	5	6	7	9.7%	3.4%	3.2%	2.1%	1.9%	1.6%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	-0.2%	-0.3%	-0.2%
Biomass & Other	1	1	1	2	2	5	5	5.3%	-0.3%	6.6%	0.3%	8.6%	1.2%
Buildings	**4**	**5**	**7**	**6**	**6**	**5**	**5**	**4.3%**	**2.0%**	**-1.8%**	**0.0%**	**-1.7%**	**0.4%**
Coal	0	0	0	0	0	0	0	-15.5%	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	1	1	1	1	1	0	0	3.6%	1.1%	-2.7%	-3.7%	-7.9%	-10.5%
Gas	0	0	1	1	1	0	0	5.4%	4.5%	2.6%	0.6%	-5.7%	-10.1%
Electricity	0	1	2	2	2	2	3	7.8%	5.6%	3.0%	0.9%	-1.7%	3.6%
Heat	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	6.8%	7.1%	0.5%
Biomass & Other	2	3	3	2	2	2	1	3.7%	0.7%	-6.7%	-0.1%	-0.4%	-1.2%
Agriculture	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4.3%**	**4.2%**	**-2.1%**	**1.0%**	**0.7%**	**0.6%**
Coal	0	0	0	0	0	0	0	-13.4%	-8.8%	-4.4%	-5.8%	n.s.	n.s.
Oil	0	0	0	0	0	0	0	8.3%	5.0%	-2.5%	-2.9%	-4.1%	-4.3%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Electricity	0	0	0	0	0	0	0	5.7%	-6.8%	4.6%	11.3%	5.6%	3.8%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	28.0%	6.2%	2.3%
Transport	**3**	**6**	**7**	**9**	**10**	**6**	**4**	**6.4%**	**2.3%**	**2.6%**	**0.9%**	**-4.5%**	**-3.4%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	3	6	7	9	9	4	1	6.4%	2.3%	2.3%	-0.1%	-8.7%	-11.8%
Gas	0	0	0	0	0	0	1	3.5%	4.7%	1.8%	33.6%	7.5%	11.4%
Electricity	0	0	0	0	0	1	1	0.4%	7.0%	16.4%	10.3%	9.0%	0.4%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	1	1	1	n.s.	n.s.	n.s.	19.3%	8.8%	0.3%
Other Energy Transformation & Losses[3]	**1**	**3**	**3**	**4**	**5**	**4**	**1**	**9.6%**	**0.7%**	**2.6%**	**3.6%**	**-3.4%**	**-11.7%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Mexico	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	85	102	117	133	146	155	161	1.8%	1.4%	1.3%	0.9%	0.6%	0.4%
GDP per capita (ppp, k$'15)	12	14	15	17	21	28	38	1.8%	0.3%	1.5%	2.1%	2.9%	2.9%
Prices													
International/Regional ($'15/boe)													
Coal	2	1	2	2	2	7	7	-4.2%	5.6%	-1.1%	1.9%	11.4%	0.6%
Oil	39	38	86	88	89	79	81	-0.2%	8.4%	0.2%	0.1%	-1.2%	0.3%
Gas	26	40	34	33	41	46	55	4.6%	-1.6%	-0.4%	2.2%	1.1%	1.8%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**461**	**622**	**752**	**770**	**569**	**269**	**160**	**3.1%**	**1.9%**	**0.2%**	**-3.0%**	**-7.2%**	**-5.0%**
Total GHG (energy, industry, agriculture)	**444**	**602**	**733**	**755**	**603**	**281**	**150**	**3.1%**	**2.0%**	**0.3%**	**-2.2%**	**-7.3%**	**-6.1%**
CO_2	292	399	479	528	459	165	58	3.2%	1.9%	1.0%	-1.4%	-9.7%	-10.0%
CH_4	113	121	134	118	79	63	52	0.6%	1.1%	-1.3%	-4.0%	-2.2%	-1.9%
N_2O	37	78	110	95	49	42	37	7.9%	3.5%	-1.5%	-6.5%	-1.5%	-1.2%
F gases	2	4	10	14	17	12	3	8.0%	10.2%	3.5%	1.6%	-3.3%	-11.8%
Total GHG from Energy and Industry	**353**	**511**	**637**	**649**	**518**	**206**	**80**	**3.8%**	**2.2%**	**0.2%**	**-2.2%**	**-8.8%**	**-9.0%**
CO_2 Emissions from Fuel Comb.	**263**	**365**	**444**	**474**	**404**	**151**	**55**	**3.4%**	**2.0%**	**0.6%**	**-1.6%**	**-9.4%**	**-9.6%**
Power generation/District heating	63	117	133	165	138	44	17	6.5%	1.3%	2.1%	-1.8%	-10.8%	-9.2%
Industry	55	56	64	61	60	21	5	0.1%	1.4%	-0.5%	0.0%	-10.1%	-12.7%
Buildings	24	31	28	19	18	13	6	2.4%	-1.1%	-3.8%	-0.5%	-2.8%	-7.6%
Agriculture	5	7	9	9	8	5	3	2.6%	2.6%	0.6%	-1.9%	-3.9%	-4.0%
Transport	84	107	153	153	115	41	17	2.4%	3.7%	0.0%	-2.8%	-9.9%	-8.4%
Other	31	48	57	67	65	27	7	4.5%	1.9%	1.6%	-0.2%	-8.4%	-13.1%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**4**	**14**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**55.3%**	**14.2%**
Coal	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	n.s.	n.s.	4.7%
Gas	0	0	0	0	0	3	5	n.s.	n.s.	n.s.	n.s.	n.s.	5.5%
Biomass	0	0	0	0	0	0	6	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	3	n.s.	n.s.	n.s.	n.s.	25.8%	18.6%
Energy Balance, by fuel (Mtoe)													
Primary Production	**179**	**211**	**206**	**142**	**157**	**162**	**174**	**1.6%**	**-0.2%**	**-3.6%**	**1.0%**	**0.3%**	**0.7%**
Coal	3	5	6	9	7	4	1	6.1%	2.0%	3.6%	-1.8%	-6.6%	-14.2%
Oil	138	156	133	68	41	17	14	1.2%	-1.5%	-6.5%	-5.0%	-8.4%	-2.0%
Natural gas	23	32	49	36	45	23	3	3.4%	4.2%	-3.1%	2.4%	-6.5%	-19.3%
Biomass	9	9	8	17	23	33	39	0.4%	-1.0%	7.7%	2.8%	3.7%	1.9%
Nuclear[1]	0	1	1	1	1	6	10	10.8%	-3.3%	6.0%	4.0%	16.1%	5.4%
Hydro	2	3	3	3	3	4	4	3.5%	1.1%	-0.6%	1.1%	1.0%	0.2%
Other renewables	4	5	6	9	37	76	103	1.5%	1.5%	4.4%	15.0%	7.6%	3.1%
Net Imports	**- 66**	**- 61**	**- 31**	**51**	**47**	**13**	**6**						
Coal	1	1	7	9	6	1	0						
Oil	- 66	- 67	- 43	31	36	15	0						
Natural gas	0	3	6	18	15	2	12						
Biomass	0	0	0	- 7	- 10	- 5	- 5						
Biofuels	0	0	0	0	0	0	0						
Electricity	- 1	1	- 1	0	0	0	0						
Primary Energy Demand[2]	**113**	**149**	**175**	**193**	**204**	**175**	**180**	2.9%	**1.6%**	**1.0%**	**0.6%**	**-1.5%**	**0.3%**
Coal	4	6	13	18	14	5	1	4.7%	7.6%	3.3%	-2.7%	-10.3%	-12.7%
Oil	72	89	91	99	76	32	13	2.2%	0.2%	0.9%	-2.6%	-8.4%	-8.3%
Natural gas	23	35	54	54	61	25	14	4.5%	4.3%	-0.1%	1.2%	-8.3%	-5.7%
Biomass	9	9	8	10	13	28	34	0.4%	-1.0%	1.8%	2.7%	8.1%	2.2%
Nuclear[1]	0	1	1	1	1	6	10	10.8%	-3.3%	6.0%	4.0%	16.1%	5.4%
Hydro	2	3	3	3	3	4	4	3.5%	1.1%	-0.6%	1.1%	1.0%	0.2%
Other renewables	4	5	6	9	37	76	103	1.5%	1.5%	4.4%	15.0%	7.6%	3.1%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**113**	**149**	**175**	**193**	**204**	**175**	**180**	**2.9%**	**1.6%**	**1.0%**	**0.6%**	**-1.5%**	**0.3%**
Energy for Power Generation	**27**	**49**	**59**	**71**	**93**	**110**	**141**	**5.9%**	**1.9%**	**1.9%**	**2.7%**	**1.7%**	**2.5%**
Other Energy Transformation & Losses	**10**	**17**	**16**	**27**	**30**	**17**	**7**	**5.8%**	**-0.5%**	**5.3%**	**1.0%**	**-5.3%**	**-8.7%**
Final consumption	**84**	**96**	**118**	**122**	**120**	**95**	**96**	**1.3%**	**2.1%**	**0.3%**	**-0.2%**	**-2.3%**	**0.1%**
Steel, Non-Met. Minerals and Chem.	15	16	14	15	16	10	9	0.4%	-1.2%	0.9%	0.4%	-4.1%	-1.0%
Other Industry	11	13	20	22	26	25	28	1.3%	4.3%	1.1%	1.5%	-0.1%	1.2%
Non-Energy Use	9	7	7	6	6	5	3	-2.2%	0.1%	-2.1%	-0.6%	-0.6%	-4.8%
Residential	16	18	18	17	15	14	15	1.4%	-0.1%	-0.7%	-0.8%	-1.1%	1.1%
Services	2	3	5	6	7	9	15	4.6%	3.3%	3.2%	1.4%	1.9%	5.4%
Agriculture	2	3	4	4	5	5	6	2.4%	2.2%	1.3%	1.3%	1.2%	1.1%
Road	27	34	50	50	44	25	17	2.2%	3.9%	0.1%	-1.4%	-5.6%	-3.6%
Rail	1	1	1	1	1	1	1	-1.0%	0.5%	1.2%	1.1%	1.2%	1.8%
Aviation	0	0	0	0	0	0	0	n.s.	1.1%	-2.8%	1.8%	-0.8%	-1.7%
Other Transport	0	1	1	1	1	1	0	11.4%	-5.6%	0.5%	0.3%	-3.1%	-1.5%

[1] Nuclear energy is accounted as primary electricity

Mexico	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**21**	**40**	**49**	**58**	**52**	**25**	**23**	**6.8%**	**2.1%**	**1.7%**	**-1.2%**	**-7.1%**	**-0.6%**
Coal	2	5	8	14	10	3	1	10.6%	5.2%	6.0%	-3.3%	-10.1%	-13.4%
Oil	15	23	11	15	11	4	2	4.4%	-7.6%	3.4%	-2.8%	-9.0%	-7.2%
Gas	3	11	29	27	27	8	7	12.1%	10.6%	-1.0%	0.1%	-10.9%	-1.7%
Biomass & Waste	0	1	1	2	2	4	9	n.s.	3.1%	9.0%	-3.2%	9.7%	7.3%
Other	0	1	1	0	2	4	4	1.4%	1.2%	-4.0%	18.9%	6.7%	0.5%
Gross Elec. Generation (TWh_e)	**116**	**206**	**276**	**374**	**476**	**569**	**831**	**5.9%**	**3.0%**	**3.1%**	**2.4%**	**1.8%**	**3.9%**
Coal	8	19	32	55	40	14	3	9.3%	5.4%	5.5%	-3.1%	-9.8%	-13.2%
of which CCS	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	n.s.	n.s.	4.7%
Oil	62	94	45	62	49	19	9	4.2%	-7.1%	3.3%	-2.3%	-8.8%	-7.1%
Gas	14	44	147	151	152	47	42	11.8%	12.8%	0.2%	0.1%	-11.0%	-1.2%
of which CCS	0	0	0	0	0	7	13	n.s.	n.s.	n.s.	n.s.	n.s.	5.6%
Biomass & Waste	0	2	1	4	4	21	45	n.s.	-7.4%	18.6%	-1.9%	19.5%	8.2%
of which CCS	0	0	0	0	0	0	5	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	3	8	6	11	16	69	117	10.8%	-3.3%	6.0%	4.0%	16.1%	5.4%
Hydro	23	33	37	35	39	43	45	3.5%	1.1%	-0.6%	1.1%	1.0%	0.5%
Wind	0	0	1	50	137	216	264	34.2%	51.9%	44.6%	10.7%	4.6%	2.0%
Solar	0	0	0	1	14	88	197	21.5%	16.0%	42.5%	29.7%	19.8%	8.4%
Other	5	6	7	6	25	51	107	1.4%	1.2%	-1.5%	16.0%	7.4%	7.6%
Generation Capacity (GW_e)	**27**	**41**	**62**	**84**	**134**	**219**	**334**	**4.4%**	**4.0%**	**3.1%**	**4.8%**	**5.0%**	**4.3%**
Coal	1	5	6	8	7	4	1	15.6%	1.4%	3.5%	-1.3%	-5.1%	-14.6%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	5.6%
Oil	12	15	13	14	20	18	19	2.3%	-1.1%	0.8%	3.6%	-1.4%	0.5%
Gas	5	9	27	27	28	12	13	7.1%	11.5%	-0.2%	0.5%	-8.4%	1.0%
of which CCS	0	0	0	0	0	1	2	n.s.	n.s.	n.s.	n.s.	n.s.	6.7%
Biomass & Waste	0	0	1	1	0	4	9	n.s.	5.5%	-1.9%	-2.3%	23.7%	9.1%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	1	1	1	2	2	10	16	7.7%	0.0%	1.2%	3.7%	15.8%	5.2%
Hydro	8	10	12	13	14	16	17	2.1%	1.8%	1.0%	1.2%	1.2%	0.7%
Wind	0	0	1	18	48	75	89	n.s.	n.s.	42.5%	10.3%	4.6%	1.8%
Solar	0	0	0	1	9	71	153	19.9%	8.0%	43.2%	23.5%	22.8%	8.1%
Other	1	1	1	1	5	11	17	2.0%	1.2%	-1.7%	18.9%	9.1%	4.6%
Total Final Consumption[2] (Mtoe)	**84**	**96**	**118**	**122**	**120**	**95**	**96**	**1.3%**	**2.1%**	**0.3%**	**-0.2%**	**-2.3%**	**0.1%**
Coal	2	2	5	3	3	1	0	-0.7%	11.1%	-3.4%	-0.6%	-10.5%	-9.3%
Oil	51	61	75	69	53	21	8	1.8%	2.0%	-0.7%	-2.7%	-8.7%	-9.4%
Gas	14	13	13	15	19	11	7	-1.0%	0.3%	1.7%	2.2%	-5.1%	-5.0%
Electricity	9	13	19	26	33	40	55	3.8%	4.0%	3.5%	2.5%	1.8%	3.2%
Heat	0	0	0	1	2	3	3	9.6%	10.3%	24.1%	8.3%	2.6%	1.2%
Biomass & Other	9	8	7	7	9	18	23	-0.4%	-1.4%	-0.4%	2.8%	7.4%	2.1%
Industry (incl. non-energy use)	**36**	**36**	**41**	**43**	**47**	**41**	**41**	**0.1%**	**1.3%**	**0.5%**	**0.9%**	**-1.4%**	**0.0%**
Coal	2	2	5	3	3	1	0	-0.7%	11.1%	-3.4%	-0.6%	-10.5%	-9.3%
Oil	14	14	13	11	10	7	3	-0.2%	-0.9%	-1.7%	-0.5%	-4.3%	-6.6%
Gas	13	12	12	14	14	5	2	-0.9%	0.0%	1.4%	0.3%	-9.4%	-11.9%
Electricity	5	7	11	14	18	19	23	4.5%	4.0%	3.0%	2.3%	0.9%	1.7%
Heat	0	0	0	0	0	0	0	n.s.	9.9%	14.4%	-0.2%	-0.3%	-0.2%
Biomass & Other	2	1	1	1	1	9	13	-3.4%	-4.2%	1.2%	3.7%	19.4%	4.1%
Buildings	**18**	**21**	**23**	**23**	**23**	**23**	**31**	**1.8%**	**0.5%**	**0.3%**	**-0.1%**	**0.0%**	**3.0%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	7	9	8	5	3	2	1	2.8%	-1.5%	-5.0%	-3.3%	-4.8%	-8.2%
Gas	1	1	1	2	3	3	1	-3.0%	5.1%	4.5%	7.0%	-0.4%	-7.0%
Electricity	3	5	7	11	10	11	22	3.2%	4.5%	4.0%	-0.2%	1.0%	7.0%
Heat	0	0	0	1	2	3	3	9.6%	10.3%	24.4%	8.5%	2.6%	1.2%
Biomass & Other	7	7	6	5	4	3	3	0.3%	-0.9%	-1.8%	-3.1%	-1.0%	-2.7%
Agriculture	**2**	**3**	**4**	**4**	**5**	**5**	**6**	**2.4%**	**2.2%**	**1.3%**	**1.3%**	**1.2%**	**1.1%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	2	2	3	3	2	2	1	2.6%	2.6%	0.6%	-1.9%	-3.9%	-4.0%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Electricity	1	1	1	1	1	2	3	1.7%	0.9%	3.6%	3.6%	3.3%	2.6%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	1	1	2	n.s.	n.s.	n.s.	44.6%	8.5%	3.1%
Transport	**28**	**36**	**51**	**52**	**46**	**26**	**19**	**2.4%**	**3.6%**	**0.2%**	**-1.3%**	**-5.4%**	**-3.3%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	28	36	51	51	37	11	3	2.4%	3.6%	0.0%	-3.2%	-11.3%	-13.3%
Gas	0	0	0	0	2	3	4	n.s.	1.0%	23.0%	48.9%	5.9%	2.3%
Electricity	0	0	0	0	4	7	7	3.2%	0.8%	13.4%	26.6%	6.5%	-0.1%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	1	3	5	5	n.s.	n.s.	n.s.	17.9%	4.8%	0.5%
Other Energy Transformation & Losses[3]	**10**	**17**	**16**	**27**	**30**	**17**	**7**	**5.8%**	**-0.5%**	**5.3%**	**1.0%**	**-5.3%**	**-8.7%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

United States	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	253	282	309	331	354	375	392	1.1%	0.9%	0.7%	0.7%	0.6%	0.5%
GDP per capita (ppp, k$'15)	39	49	53	61	68	78	88	2.3%	0.7%	1.5%	1.0%	1.5%	1.2%
Prices													
International/Regional ($'15/boe)													
Coal	2	1	2	2	3	8	8	-4.2%	5.6%	0.9%	2.0%	10.2%	1.2%
Oil	39	38	86	88	89	79	81	-0.2%	8.4%	0.2%	0.1%	-1.2%	0.3%
Gas	26	40	34	33	41	46	55	4.6%	-1.6%	-0.4%	2.2%	1.1%	1.8%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**5 403**	**6 470**	**6 483**	**5 920**	**3 669**	**1 190**	**533**	**1.8%**	**0.0%**	**-0.9%**	**-4.7%**	**-10.6%**	**-7.7%**
Total GHG (energy, industry, agriculture)	**6 234**	**7 006**	**6 737**	**6 189**	**4 035**	**1 585**	**854**	**1.2%**	**-0.4%**	**-0.8%**	**-4.2%**	**-8.9%**	**-6.0%**
CO_2	4 983	5 777	5 508	5 101	3 294	1 026	381	1.5%	-0.5%	-0.8%	-4.3%	-11.0%	-9.4%
CH_4	788	716	699	573	371	273	213	-0.9%	-0.2%	-2.0%	-4.3%	-3.0%	-2.4%
N_2O	363	371	376	339	279	254	251	0.2%	0.1%	-1.0%	-1.9%	-0.9%	-0.1%
F gases	99	142	154	175	91	32	9	3.6%	0.9%	1.3%	-6.4%	-10.0%	-11.9%
Total GHG from Energy and Industry	**5 735**	**6 476**	**6 177**	**5 689**	**3 604**	**1 170**	**438**	**1.2%**	**-0.5%**	**-0.8%**	**-4.5%**	**-10.6%**	**-9.4%**
CO_2 Emissions from Fuel Comb.	**4 824**	**5 604**	**5 347**	**4 928**	**3 149**	**998**	**377**	**1.5%**	**-0.5%**	**-0.8%**	**-4.4%**	**-10.9%**	**-9.3%**
Power generation/District heating	1 866	2 372	2 332	1 861	689	140	74	2.4%	-0.2%	-2.2%	-9.5%	-14.7%	-6.2%
Industry	596	542	454	453	381	126	26	-1.0%	-1.7%	0.0%	-1.7%	-10.5%	-14.6%
Buildings	544	602	545	504	388	184	67	1.0%	-1.0%	-0.8%	-2.6%	-7.2%	-9.6%
Agriculture	46	45	53	52	39	25	16	-0.2%	1.8%	-0.2%	-2.8%	-4.4%	-4.5%
Transport	1 424	1 713	1 641	1 586	1 192	347	125	1.9%	-0.4%	-0.3%	-2.8%	-11.6%	-9.7%
Other	349	331	322	472	460	175	69	-0.5%	-0.3%	3.9%	-0.3%	-9.2%	-8.8%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**6**	**40**	**n.s.**	**n.s.**	**n.s.**	**25.4%**	**32.5%**	**20.9%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	13.5%
Gas	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	13.7%
Biomass	0	0	0	0	0	2	19	n.s.	n.s.	n.s.	n.s.	n.s.	29.2%
Direct Air Capture	0	0	0	0	0	4	19	n.s.	n.s.	n.s.	25.4%	27.3%	16.6%
Energy Balance, by fuel (Mtoe)													
Primary Production	**1 452**	**1 466**	**1 525**	**1 859**	**1 455**	**804**	**740**	**0.1%**	**0.4%**	**2.0%**	**-2.4%**	**-5.8%**	**-0.8%**
Coal	487	532	530	404	122	0	0	0.9%	0.0%	-2.7%	-11.2%	-60.6%	n.s.
Oil	364	299	276	553	493	161	90	-2.0%	-0.8%	7.2%	-1.1%	-10.6%	-5.6%
Natural gas	428	456	509	615	499	138	33	0.6%	1.1%	1.9%	-2.1%	-12.1%	-13.4%
Biomass	82	73	90	130	110	192	226	-1.1%	2.0%	3.8%	-1.6%	5.7%	1.7%
Nuclear[1]	53	69	72	71	72	42	24	2.7%	0.5%	-0.2%	0.2%	-5.3%	-5.4%
Hydro	23	22	23	23	25	28	30	-0.8%	0.4%	0.2%	0.9%	1.2%	0.8%
Other renewables	14	15	26	63	132	243	337	0.3%	5.8%	9.5%	7.6%	6.3%	3.3%
Net Imports	**392**	**693**	**570**	**314**	**237**	**280**	**176**						
Coal	- 31	- 5	- 31	- 43	- 20	17	14						
Oil	408	572	529	235	128	89	48						
Natural gas	13	92	47	39	44	80	60						
Biomass	0	0	0	17	21	34	- 7						
Biofuels	0	0	- 1	5	3	- 1	- 1						
Electricity	2	34	26	61	61	61	61						
Primary Energy Demand[2]	**1 844**	**2 159**	**2 095**	**2 173**	**1 691**	**1 083**	**916**	1.6%	**-0.3%**	**0.4%**	**-2.5%**	**-4.4%**	**-1.7%**
Coal	456	528	499	361	102	17	14	1.5%	-0.6%	-3.2%	-11.9%	-16.6%	-1.4%
Oil	772	871	805	788	622	250	138	1.2%	-0.8%	-0.2%	-2.3%	-8.7%	-5.7%
Natural gas	441	547	556	653	542	218	93	2.2%	0.2%	1.6%	-1.8%	-8.7%	-8.2%
Biomass	82	73	90	147	132	225	219	-1.1%	2.0%	5.1%	-1.1%	5.5%	-0.3%
Nuclear[1]	53	69	72	71	72	42	24	2.7%	0.5%	-0.2%	0.2%	-5.3%	-5.4%
Hydro	23	22	23	23	25	28	30	-0.8%	0.4%	0.2%	0.9%	1.2%	0.8%
Other renewables	14	15	26	63	132	243	337	0.3%	5.8%	9.5%	7.6%	6.3%	3.3%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**1 844**	**2 159**	**2 095**	**2 173**	**1 691**	**1 083**	**916**	**1.6%**	**-0.3%**	**0.4%**	**-2.5%**	**-4.4%**	**-1.7%**
Energy for Power Generation	**644**	**786**	**806**	**748**	**485**	**390**	**452**	**2.0%**	**0.3%**	**-0.8%**	**-4.2%**	**-2.1%**	**1.5%**
Other Energy Transformation & Losses	**129**	**147**	**148**	**308**	**282**	**205**	**148**	**1.3%**	**0.1%**	**7.7%**	**-0.9%**	**-3.1%**	**-3.2%**
Final consumption	**1 300**	**1 538**	**1 500**	**1 540**	**1 260**	**773**	**578**	**1.7%**	**-0.2%**	**0.3%**	**-2.0%**	**-4.8%**	**-2.9%**
Steel, Non-Met. Minerals and Chem.	127	152	108	99	80	45	34	1.8%	-3.4%	-0.8%	-2.2%	-5.6%	-2.7%
Other Industry	181	185	166	180	167	132	116	0.2%	-1.1%	0.8%	-0.7%	-2.3%	-1.3%
Non-Energy Use	119	153	135	131	132	114	103	2.5%	-1.2%	-0.3%	0.0%	-1.4%	-1.0%
Residential	224	265	270	271	219	161	118	1.7%	0.2%	0.0%	-2.1%	-3.0%	-3.1%
Services	157	193	218	222	158	95	70	2.1%	1.2%	0.2%	-3.3%	-5.0%	-2.9%
Agriculture	14	14	19	19	19	20	21	-0.2%	2.8%	0.0%	0.4%	0.4%	0.3%
Road	397	493	522	544	419	156	75	2.2%	0.6%	0.4%	-2.6%	-9.4%	-7.1%
Rail	11	10	9	13	13	13	12	-0.5%	-1.3%	3.5%	0.3%	-0.5%	-0.5%
Aviation	64	68	49	52	44	31	24	0.7%	-3.2%	0.5%	-1.6%	-3.4%	-2.5%
Other Transport	6	4	4	9	8	6	4	-4.3%	0.5%	6.9%	-0.3%	-3.9%	-2.5%

[1] Nuclear energy is accounted as primary electricity

United States	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**554**	**681**	**686**	**590**	**255**	**77**	**61**	**2.1%**	**0.1%**	**-1.5%**	**-8.0%**	**-11.3%**	**-2.3%**
Coal	392	492	469	319	75	3	4	2.3%	-0.5%	-3.8%	-13.5%	-27.5%	1.9%
Oil	27	30	11	21	13	5	5	0.8%	-9.5%	6.8%	-4.6%	-9.7%	-0.1%
Gas	93	137	185	224	149	49	22	3.9%	3.1%	1.9%	-4.0%	-10.5%	-7.5%
Biomass & Waste	40	21	20	25	16	13	17	-6.0%	-0.8%	2.3%	-4.5%	-2.0%	2.9%
Other	1	1	2	2	2	7	13	-0.9%	1.9%	0.5%	4.2%	11.5%	6.1%
Gross Elec. Generation (TWh_e)	**3 236**	**4 064**	**4 391**	**4 609**	**3 651**	**2 663**	**2 339**	**2.3%**	**0.8%**	**0.5%**	**-2.3%**	**-3.1%**	**-1.3%**
Coal	1 700	2 129	1 994	1 447	340	13	17	2.3%	-0.7%	-3.2%	-13.5%	-28.0%	2.8%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	11.7%
Oil	131	118	48	89	59	22	22	-1.0%	-8.6%	6.3%	-4.1%	-9.4%	-0.1%
Gas	382	634	1 018	1 320	930	289	124	5.2%	4.8%	2.6%	-3.4%	-11.0%	-8.1%
of which CCS	0	0	0	0	0	1	3	n.s.	n.s.	n.s.	n.s.	n.s.	12.8%
Biomass & Waste	86	72	73	91	58	53	78	-1.8%	0.1%	2.2%	-4.4%	-0.9%	4.0%
of which CCS	0	0	0	0	0	1	8	n.s.	n.s.	n.s.	n.s.	n.s.	22.7%
Nuclear	612	798	839	825	842	489	276	2.7%	0.5%	-0.2%	0.2%	-5.3%	-5.6%
Hydro	289	280	286	319	300	332	375	-0.3%	0.2%	1.1%	-0.6%	1.0%	1.2%
Wind	3	6	95	391	952	1 022	762	6.3%	32.6%	15.2%	9.3%	0.7%	-2.9%
Solar	1	1	5	103	139	357	462	0.6%	20.9%	36.1%	3.1%	9.9%	2.6%
Other	34	26	33	23	31	87	223	-2.5%	2.5%	-3.5%	2.9%	10.8%	9.9%
Generation Capacity (GW_e)	**792**	**870**	**1 139**	**1 105**	**1 141**	**1 013**	**877**	**1.0%**	**2.7%**	**-0.3%**	**0.3%**	**-1.2%**	**-1.4%**
Coal	317	327	333	231	93	83	8	0.3%	0.2%	-3.6%	-8.7%	-1.1%	-21.4%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	11.7%
Oil	50	53	49	52	52	54	56	0.6%	-0.8%	0.5%	0.1%	0.4%	0.3%
Gas	182	262	489	421	386	115	44	3.7%	6.4%	-1.5%	-0.9%	-11.4%	-9.1%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	14.1%
Biomass & Waste	35	13	15	11	7	10	17	-9.6%	1.3%	-2.5%	-4.4%	3.5%	5.2%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	21.5%
Nuclear	106	108	108	102	103	60	34	0.2%	0.0%	-0.6%	0.1%	-5.3%	-5.6%
Hydro	98	101	101	105	109	116	137	0.3%	0.0%	0.4%	0.3%	0.6%	1.7%
Wind	1	2	40	138	317	348	246	7.3%	32.6%	13.3%	8.7%	0.9%	-3.4%
Solar	0	0	1	41	67	200	291	0.0%	8.5%	46.3%	5.2%	11.5%	3.8%
Other	3	3	3	4	6	26	44	1.1%	1.1%	1.5%	4.2%	15.8%	5.3%
Total Final Consumption[2] (Mtoe)	**1 300**	**1 538**	**1 500**	**1 540**	**1 260**	**773**	**578**	**1.7%**	**-0.2%**	**0.3%**	**-2.0%**	**-4.8%**	**-2.9%**
Coal	58	39	31	22	18	8	5	-3.8%	-2.4%	-3.2%	-2.2%	-7.5%	-3.8%
Oil	683	793	761	732	573	235	136	1.5%	-0.4%	-0.4%	-2.4%	-8.5%	-5.4%
Gas	288	345	306	309	262	120	48	1.8%	-1.2%	0.1%	-1.6%	-7.5%	-8.7%
Electricity	226	301	326	336	272	202	170	2.9%	0.8%	0.3%	-2.1%	-2.9%	-1.8%
Heat	2	7	9	13	22	35	42	11.3%	2.0%	3.8%	5.4%	4.8%	2.0%
Biomass & Other	43	52	69	127	113	172	177	2.1%	2.8%	6.3%	-1.1%	4.3%	0.3%
Industry (incl. non-energy use)	**427**	**490**	**409**	**411**	**379**	**291**	**254**	**1.4%**	**-1.8%**	**0.0%**	**-0.8%**	**-2.6%**	**-1.4%**
Coal	53	37	29	22	18	8	5	-3.6%	-2.3%	-2.9%	-2.1%	-7.5%	-3.8%
Oil	147	160	150	138	133	103	91	0.8%	-0.6%	-0.9%	-0.3%	-2.5%	-1.3%
Gas	124	155	122	144	126	51	18	2.3%	-2.4%	1.7%	-1.3%	-8.6%	-10.1%
Electricity	75	98	74	72	69	58	52	2.8%	-2.7%	-0.3%	-0.5%	-1.7%	-1.1%
Heat	0	4	5	5	5	4	4	n.s.	2.0%	-1.1%	-0.2%	-0.3%	-0.2%
Biomass & Other	29	36	29	31	29	67	84	2.2%	-2.2%	0.8%	-0.6%	8.6%	2.4%
Buildings	**381**	**458**	**489**	**493**	**377**	**256**	**188**	**1.8%**	**0.7%**	**0.1%**	**-2.6%**	**-3.8%**	**-3.0%**
Coal	5	2	2	0	0	0	0	-7.0%	-3.8%	-11.7%	-11.8%	-15.9%	-16.8%
Oil	45	48	36	38	35	20	7	0.5%	-2.8%	0.5%	-0.8%	-5.6%	-9.5%
Gas	164	189	182	164	119	52	19	1.5%	-0.4%	-1.1%	-3.2%	-7.9%	-9.7%
Electricity	152	202	251	262	170	105	93	2.9%	2.2%	0.4%	-4.3%	-4.7%	-1.2%
Heat	2	3	4	8	17	30	38	1.7%	1.8%	8.6%	7.7%	5.9%	2.3%
Biomass & Other	14	13	15	21	37	49	32	-0.3%	1.1%	3.5%	6.0%	2.9%	-4.3%
Agriculture	**14**	**14**	**19**	**19**	**19**	**20**	**21**	**-0.2%**	**2.8%**	**0.0%**	**0.4%**	**0.4%**	**0.3%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	14	14	16	15	11	7	5	-0.2%	1.1%	-0.2%	-2.9%	-4.5%	-4.6%
Gas	0	0	1	1	1	1	1	n.s.	n.s.	-0.5%	-1.9%	-3.0%	-3.1%
Electricity	0	0	0	0	1	3	4	n.s.	n.s.	n.s.	36.5%	8.1%	3.8%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	1	2	5	9	12	n.s.	n.s.	2.4%	12.3%	5.4%	2.2%
Transport	**477**	**576**	**584**	**617**	**484**	**206**	**115**	**1.9%**	**0.1%**	**0.6%**	**-2.4%**	**-8.2%**	**-5.6%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	477	572	559	541	393	105	33	1.8%	-0.2%	-0.3%	-3.1%	-12.4%	-11.0%
Gas	0	0	1	0	17	16	11	n.s.	n.s.	-4.8%	46.3%	-0.6%	-3.4%
Electricity	0	0	1	2	33	37	21	0.7%	3.6%	14.5%	31.6%	1.3%	-5.5%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	3	24	73	42	47	50	n.s.	22.5%	11.8%	-5.5%	1.3%	0.6%
Other Energy Transformation & Losses[3]	**129**	**147**	**148**	**308**	**282**	**205**	**148**	**1.3%**	**0.1%**	**7.7%**	**-0.9%**	**-3.1%**	**-3.2%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Rest Central America	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	63	74	84	93	101	107	110	1.6%	1.3%	1.1%	0.8%	0.5%	0.3%
GDP per capita (ppp, k$'15)	3	4	6	7	9	12	16	3.1%	2.6%	2.0%	2.9%	3.0%	2.9%
Prices													
International/Regional ($'15/boe)													
Coal	2	1	2	2	2	7	7	-4.2%	5.6%	-1.1%	1.9%	11.4%	0.6%
Oil	39	38	86	88	89	79	81	-0.2%	8.4%	0.2%	0.1%	-1.2%	0.3%
Gas	26	40	34	33	41	46	55	4.6%	-1.6%	-0.4%	2.2%	1.1%	1.8%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**240**	**281**	**402**	**407**	**280**	**99**	**25**	**1.6%**	**3.6%**	**0.1%**	**-3.7%**	**-9.9%**	**-13.0%**
Total GHG (energy, industry, agriculture)	**180**	**216**	**277**	**317**	**302**	**146**	**78**	**1.8%**	**2.5%**	**1.4%**	**-0.5%**	**-7.0%**	**-6.1%**
CO_2	94	127	165	200	197	73	19	3.0%	2.7%	1.9%	-0.1%	-9.4%	-12.5%
CH_4	63	65	85	88	75	52	40	0.4%	2.7%	0.3%	-1.5%	-3.6%	-2.6%
N_2O	23	24	25	28	27	19	18	0.2%	0.6%	1.0%	-0.1%	-3.5%	-0.7%
F gases	0	0	2	2	2	2	1	n.s.	17.1%	2.4%	2.3%	-3.3%	-11.8%
Total GHG from Energy and Industry	**123**	**162**	**215**	**251**	**242**	**102**	**37**	**2.8%**	**2.9%**	**1.6%**	**-0.3%**	**-8.3%**	**-9.7%**
CO_2 Emissions from Fuel Comb.	**84**	**111**	**139**	**170**	**163**	**65**	**19**	**2.8%**	**2.2%**	**2.1%**	**-0.4%**	**-8.7%**	**-11.7%**
Power generation/District heating	23	40	50	54	31	8	3	5.5%	2.3%	0.9%	-5.4%	-12.5%	-11.2%
Industry	22	23	27	43	50	16	3	0.3%	1.7%	4.7%	1.7%	-11.0%	-16.6%
Buildings	8	8	11	13	15	9	4	0.4%	2.4%	2.0%	1.4%	-4.5%	-9.0%
Agriculture	2	1	1	1	1	1	0	-2.6%	-2.7%	0.6%	-0.9%	-3.7%	-3.9%
Transport	19	31	37	46	49	23	7	4.8%	2.0%	2.1%	0.6%	-7.5%	-10.8%
Other	10	8	13	13	16	9	2	-1.5%	4.2%	0.5%	2.1%	-6.2%	-12.1%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**37.7%**	**27.5%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	6.7%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	14.7%
Biomass	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	31.0%	21.6%
Energy Balance, by fuel (Mtoe)													
Primary Production	**32**	**41**	**69**	**60**	**80**	**95**	**118**	**2.7%**	**5.3%**	**-1.4%**	**3.0%**	**1.7%**	**2.2%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	8	9	8	8	13	9	5	1.1%	-1.3%	-0.5%	5.6%	-4.1%	-5.0%
Natural gas	4	14	39	18	22	17	16	11.7%	11.1%	-7.5%	2.0%	-2.5%	-0.5%
Biomass	17	15	17	28	33	43	47	-1.1%	1.2%	4.9%	1.9%	2.4%	1.1%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	24.6%	10.5%
Hydro	1	1	2	2	4	5	5	3.1%	3.2%	1.9%	4.1%	3.7%	0.4%
Other renewables	1	2	3	4	8	22	43	9.2%	5.9%	3.4%	7.2%	9.9%	7.3%
Net Imports	**18**	**21**	**13**	**35**	**22**	**- 6**	**- 22**						
Coal	0	0	1	3	4	1	0						
Oil	18	25	30	35	23	5	0						
Natural gas	0	- 4	- 19	5	6	- 2	- 9						
Biomass	0	0	0	- 9	- 12	- 11	- 13						
Biofuels	0	0	0	0	0	0	0						
Electricity	0	0	1	1	1	1	1						
Primary Energy Demand[2]	**50**	**62**	**82**	**95**	**103**	**88**	**96**	2.2%	**2.8%**	**1.5%**	**0.8%**	**-1.5%**	**0.8%**
Coal	0	0	1	3	4	1	0	5.5%	13.0%	10.1%	3.4%	-15.6%	-26.0%
Oil	26	34	38	43	36	13	5	2.8%	1.1%	1.2%	-1.8%	-9.4%	-9.6%
Natural gas	5	9	20	23	28	15	7	6.6%	8.2%	1.3%	2.1%	-6.2%	-6.9%
Biomass	17	15	17	19	22	32	34	-1.1%	1.2%	1.1%	1.3%	3.9%	0.7%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	24.6%	10.5%
Hydro	1	1	2	2	4	5	5	3.1%	3.2%	1.9%	4.1%	3.7%	0.4%
Other renewables	1	2	3	4	8	22	43	9.2%	5.9%	3.4%	7.2%	9.9%	7.3%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**50**	**62**	**82**	**95**	**103**	**88**	**96**	**2.2%**	**2.8%**	**1.5%**	**0.8%**	**-1.5%**	**0.8%**
Energy for Power Generation	**11**	**17**	**24**	**26**	**25**	**34**	**55**	**4.8%**	**3.2%**	**0.8%**	**-0.4%**	**3.3%**	**4.9%**
Other Energy Transformation & Losses	**5**	**5**	**7**	**9**	**12**	**14**	**14**	**-0.4%**	**3.5%**	**2.5%**	**2.8%**	**1.6%**	**-0.2%**
Final consumption	**38**	**46**	**58**	**70**	**79**	**59**	**53**	**1.9%**	**2.4%**	**1.9%**	**1.2%**	**-2.9%**	**-1.1%**
Steel, Non-Met. Minerals and Chem.	0	1	1	3	4	2	1	6.4%	4.9%	9.3%	3.7%	-6.3%	-4.4%
Other Industry	14	12	12	17	20	14	12	-0.8%	-0.3%	3.4%	1.4%	-3.2%	-1.5%
Non-Energy Use	3	6	11	12	12	5	4	7.5%	6.6%	0.2%	0.7%	-8.0%	-1.7%
Residential	11	12	16	17	18	18	18	1.4%	2.5%	1.0%	0.5%	-0.1%	-0.1%
Services	2	2	4	5	6	6	7	2.9%	5.0%	2.7%	2.1%	0.5%	1.8%
Agriculture	1	1	1	1	1	1	1	-0.2%	-1.8%	1.5%	1.6%	1.3%	1.1%
Road	8	11	13	16	18	12	8	4.0%	1.6%	1.7%	1.2%	-4.1%	-3.5%
Rail	0	0	0	0	0	0	0	-8.6%	11.1%	3.7%	2.1%	1.9%	1.6%
Aviation	0	0	0	0	0	0	0	4.7%	9.3%	1.2%	3.7%	-0.2%	-1.7%
Other Transport	1	0	0	0	0	0	0	-14.1%	-6.2%	3.8%	2.2%	-2.6%	-1.3%

[1] Nuclear energy is accounted as primary electricity

Rest Central America	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**9**	**14**	**19**	**19**	**13**	**7**	**6**	**4.6%**	**2.8%**	**0.1%**	**-4.0%**	**-5.4%**	**-2.6%**
Coal	0	0	1	2	1	0	0	28.9%	19.1%	8.1%	-2.4%	-11.2%	-14.4%
Oil	7	11	12	12	5	0	0	5.3%	1.0%	0.0%	-8.8%	-29.2%	2.9%
Gas	1	2	4	4	5	3	1	5.6%	6.8%	1.0%	1.4%	-5.3%	-8.2%
Biomass & Waste	1	1	2	1	2	3	2	-2.0%	5.8%	-7.1%	5.8%	6.5%	-4.8%
Other	0	0	0	0	0	1	2	9.1%	5.5%	-0.1%	-0.4%	13.2%	9.3%
Gross Elec. Generation (TWh_e)	**43**	**73**	**95**	**123**	**150**	**191**	**277**	**5.4%**	**2.7%**	**2.6%**	**2.0%**	**2.4%**	**3.8%**
Coal	0	1	3	6	5	2	0	28.8%	18.9%	7.5%	-2.4%	-10.9%	-13.3%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	7.0%
Oil	24	44	47	56	22	1	1	6.4%	0.7%	1.8%	-8.9%	-29.6%	3.4%
Gas	4	7	14	16	19	11	6	6.6%	7.4%	1.6%	1.7%	-5.0%	-6.8%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	13.8%
Biomass & Waste	2	2	3	1	3	6	8	-0.4%	4.8%	-8.0%	7.4%	8.1%	2.7%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	13	17	23	28	42	62	67	3.0%	3.2%	1.9%	4.1%	4.0%	0.7%
Wind	0	0	1	7	22	34	46	n.s.	12.4%	27.8%	12.1%	4.3%	3.1%
Solar	0	0	0	3	32	57	100	n.s.	8.4%	40.8%	24.8%	6.0%	5.7%
Other	1	2	3	4	4	17	49	9.8%	5.5%	0.7%	1.5%	15.3%	11.3%
Generation Capacity (GW_e)	**13**	**18**	**25**	**33**	**56**	**79**	**115**	**3.6%**	**3.0%**	**2.8%**	**5.5%**	**3.6%**	**3.7%**
Coal	0	0	0	1	1	0	0	5.6%	1.1%	9.5%	-2.4%	-6.2%	-16.3%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	10.1%
Oil	8	11	15	13	12	10	8	3.6%	2.7%	-0.8%	-1.2%	-2.2%	-2.0%
Gas	1	2	3	4	4	3	2	4.3%	3.6%	3.2%	0.0%	-1.4%	-3.9%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	17.4%
Biomass & Waste	0	1	1	1	1	1	2	6.1%	5.1%	2.6%	1.0%	-2.0%	4.5%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	3	4	5	8	12	18	21	2.3%	3.2%	4.3%	4.0%	4.2%	1.4%
Wind	0	0	0	2	6	9	12	n.s.	14.9%	23.5%	11.4%	4.1%	2.9%
Solar	0	0	0	2	19	36	63	n.s.	-11.5%	n.s.	23.5%	6.4%	6.0%
Other	0	0	1	1	1	2	7	9.0%	2.6%	2.1%	-0.3%	14.0%	11.7%
Total Final Consumption[2] (Mtoe)	**38**	**46**	**58**	**70**	**79**	**59**	**53**	**1.9%**	**2.4%**	**1.9%**	**1.2%**	**-2.9%**	**-1.1%**
Coal	0	0	1	2	3	1	0	1.4%	8.1%	12.2%	6.6%	-15.1%	-12.0%
Oil	17	21	24	29	29	12	4	1.9%	1.7%	1.8%	0.1%	-8.7%	-10.9%
Gas	3	6	12	15	19	10	6	8.1%	7.1%	1.9%	2.2%	-6.3%	-5.4%
Electricity	3	5	7	9	11	13	19	5.5%	2.8%	2.6%	2.2%	2.2%	3.4%
Heat	0	0	0	0	1	2	3	n.s.	n.s.	n.s.	8.2%	9.6%	1.1%
Biomass & Other	15	14	14	15	16	21	22	-1.0%	0.4%	0.8%	0.5%	2.5%	0.5%
Industry (incl. non-energy use)	**17**	**19**	**25**	**31**	**36**	**22**	**18**	**1.3%**	**2.5%**	**2.4%**	**1.4%**	**-5.0%**	**-1.8%**
Coal	0	0	1	2	3	1	0	1.4%	8.1%	12.2%	6.6%	-15.1%	-12.0%
Oil	7	7	7	10	10	3	1	0.1%	0.7%	2.9%	0.2%	-11.0%	-8.1%
Gas	3	6	12	14	16	7	4	8.0%	7.3%	1.3%	1.1%	-7.7%	-5.8%
Electricity	1	2	2	3	4	4	5	5.6%	1.6%	2.7%	2.8%	1.0%	1.0%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	6	4	2	3	3	7	8	-3.7%	-5.8%	3.0%	1.2%	7.0%	1.8%
Buildings	**12**	**15**	**19**	**22**	**24**	**24**	**25**	**1.6%**	**2.9%**	**1.4%**	**0.9%**	**0.0%**	**0.4%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	3	3	3	3	3	1	1	0.0%	2.6%	0.2%	-2.6%	-6.3%	-9.2%
Gas	0	0	0	1	3	2	1	12.6%	-2.6%	22.2%	10.7%	-2.7%	-8.8%
Electricity	2	3	4	6	6	7	11	5.2%	3.7%	2.5%	1.0%	1.0%	4.9%
Heat	0	0	0	0	1	2	3	n.s.	n.s.	n.s.	8.2%	9.6%	1.1%
Biomass & Other	8	9	12	12	12	11	10	0.9%	2.8%	0.1%	-0.2%	-0.2%	-1.3%
Agriculture	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**-0.2%**	**-1.8%**	**1.5%**	**1.6%**	**1.3%**	**1.1%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	1	0	0	0	0	0	0	-2.6%	-2.7%	0.6%	-0.9%	-3.7%	-3.9%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Electricity	0	0	0	0	0	0	0	10.2%	-1.3%	1.7%	3.1%	3.3%	2.7%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	4.0%	4.2%	5.7%	5.8%	5.3%	2.2%
Transport	**8**	**12**	**14**	**16**	**18**	**12**	**9**	**3.3%**	**1.7%**	**1.7%**	**1.3%**	**-3.9%**	**-3.4%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	7	11	13	16	16	7	2	4.3%	2.3%	1.5%	0.5%	-7.9%	-13.3%
Gas	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	53.4%	6.9%	4.5%
Electricity	0	0	0	0	1	2	2	-0.7%	11.1%	8.7%	26.5%	13.3%	2.2%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	1	1	0	1	1	3	4	-3.8%	-10.8%	6.8%	7.7%	8.4%	3.6%
Other Energy Transformation & Losses[3]	**5**	**5**	**7**	**9**	**12**	**14**	**14**	**-0.4%**	**3.5%**	**2.5%**	**2.8%**	**1.6%**	**-0.2%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Rest South America	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	102	122	140	157	172	183	189	1.8%	1.4%	1.2%	0.9%	0.6%	0.4%
GDP per capita (ppp, k$'15)	7	8	10	13	19	26	36	0.9%	2.6%	2.8%	3.5%	3.4%	3.2%
Prices													
International/Regional ($'15/boe)													
Coal	2	1	2	2	3	7	7	-4.2%	5.6%	1.0%	2.5%	8.4%	-0.1%
Oil	39	38	86	88	89	79	81	-0.2%	8.4%	0.2%	0.1%	-1.2%	0.3%
Gas	26	40	34	33	41	46	55	4.6%	-1.6%	-0.4%	2.2%	1.1%	1.8%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**953**	**1 099**	**1 321**	**1 373**	**968**	**231**	**34**	**1.4%**	**1.9%**	**0.4%**	**-3.4%**	**-13.4%**	**-17.4%**
Total GHG (energy, industry, agriculture)	**469**	**554**	**710**	**816**	**1 070**	**367**	**200**	**1.7%**	**2.5%**	**1.4%**	**2.7%**	**-10.1%**	**-5.9%**
CO_2	211	268	378	490	834	187	45	2.4%	3.5%	2.6%	5.5%	-13.9%	-13.4%
CH_4	206	229	262	252	173	124	104	1.1%	1.3%	-0.4%	-3.7%	-3.3%	-1.7%
N_2O	49	55	67	69	57	52	50	1.3%	1.9%	0.4%	-1.8%	-1.0%	-0.3%
F gases	4	2	3	5	6	4	1	-9.8%	8.8%	3.1%	2.2%	-3.1%	-10.5%
Total GHG from Energy and Industry	**303**	**368**	**492**	**605**	**910**	**224**	**65**	**2.0%**	**3.0%**	**2.1%**	**4.2%**	**-13.1%**	**-11.6%**
CO_2 Emissions from Fuel Comb.	**189**	**237**	**344**	**445**	**734**	**166**	**41**	**2.3%**	**3.8%**	**2.6%**	**5.1%**	**-13.8%**	**-13.2%**
Power generation/District heating	29	31	62	96	122	26	6	0.6%	7.2%	4.4%	2.5%	-14.5%	-14.1%
Industry	44	57	85	100	361	62	7	2.5%	4.1%	1.7%	13.7%	-16.2%	-19.5%
Buildings	17	19	22	28	27	14	5	1.6%	1.3%	2.5%	-0.5%	-6.4%	-10.3%
Agriculture	2	5	6	8	7	5	3	6.7%	2.6%	3.4%	-1.6%	-3.7%	-3.9%
Transport	65	80	116	153	150	51	21	2.0%	3.9%	2.8%	-0.2%	-10.2%	-8.3%
Other	31	46	53	60	67	10	- 1	4.0%	1.4%	1.2%	1.2%	-17.6%	n.s.
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**5**	**19**	**n.s.**	**n.s.**	**n.s.**	**52.9%**	**53.0%**	**13.4%**
Coal	0	0	0	0	0	1	2	n.s.	n.s.	n.s.	n.s.	n.s.	5.6%
Gas	0	0	0	0	0	4	5	n.s.	n.s.	n.s.	n.s.	n.s.	2.7%
Biomass	0	0	0	0	0	0	9	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	1	3	n.s.	n.s.	n.s.	52.9%	22.6%	16.8%
Energy Balance, by fuel (Mtoe)													
Primary Production	**212**	**305**	**347**	**463**	**488**	**369**	**355**	**3.7%**	**1.3%**	**2.9%**	**0.5%**	**-2.8%**	**-0.4%**
Coal	15	30	50	95	107	14	0	7.4%	5.1%	6.7%	1.2%	-18.5%	-42.6%
Oil	149	217	212	209	143	35	21	3.8%	-0.2%	-0.2%	-3.7%	-13.1%	-4.9%
Natural gas	25	32	54	67	92	61	23	2.4%	5.5%	2.2%	3.2%	-4.1%	-9.4%
Biomass	14	11	13	67	107	151	161	-2.2%	2.0%	17.6%	4.8%	3.5%	0.6%
Nuclear[1]	0	0	0	0	1	6	9	n.s.	n.s.	n.s.	48.2%	22.4%	4.6%
Hydro	10	16	18	23	31	37	38	4.6%	1.5%	2.5%	2.7%	1.9%	0.3%
Other renewables	0	0	0	1	8	66	103	n.s.	-11.6%	44.3%	29.0%	23.9%	4.6%
Net Imports	**- 148**	**- 237**	**- 237**	**- 303**	**- 189**	**- 163**	**- 150**						
Coal	- 11	- 27	- 46	- 86	- 69	- 9	1						
Oil	- 105	- 161	- 131	- 115	- 48	- 5	- 10						
Natural gas	- 5	- 1	- 16	- 9	41	- 32	- 14						
Biomass	0	0	0	- 50	- 70	- 81	- 92						
Biofuels	0	0	0	0	0	0	0						
Electricity	- 27	- 47	- 44	- 43	- 42	- 35	- 34						
Primary Energy Demand[2]	**64**	**69**	**111**	**159**	**300**	**206**	**205**	0.7%	**4.9%**	**3.7%**	**6.5%**	**-3.7%**	**-0.1%**
Coal	4	3	4	9	38	5	1	-1.1%	2.5%	7.8%	15.5%	-18.7%	-11.5%
Oil	44	55	81	94	95	30	11	2.3%	3.9%	1.5%	0.1%	-10.9%	-9.2%
Natural gas	20	30	37	57	133	29	8	4.0%	2.2%	4.4%	8.7%	-14.1%	-11.8%
Biomass	14	11	13	18	37	70	69	-2.2%	2.0%	3.0%	7.7%	6.6%	-0.2%
Nuclear[1]	0	0	0	0	1	6	9	n.s.	n.s.	n.s.	48.2%	22.4%	4.6%
Hydro	10	16	18	23	31	37	38	4.6%	1.5%	2.5%	2.7%	1.9%	0.3%
Other renewables	0	0	0	1	8	66	103	n.s.	-11.6%	44.3%	29.0%	23.9%	4.6%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**64**	**69**	**111**	**159**	**300**	**206**	**205**	**0.7%**	**4.9%**	**3.7%**	**6.5%**	**-3.7%**	**-0.1%**
Energy for Power Generation	**21**	**27**	**42**	**60**	**87**	**124**	**170**	**2.8%**	**4.4%**	**3.6%**	**3.8%**	**3.6%**	**3.2%**
Other Energy Transformation & Losses	**- 15**	**- 29**	**- 24**	**- 14**	**1**	**- 26**	**- 37**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**
Final consumption	**67**	**82**	**110**	**138**	**255**	**173**	**159**	**2.0%**	**3.0%**	**2.3%**	**6.3%**	**-3.8%**	**-0.8%**
Steel, Non-Met. Minerals and Chem.	9	12	17	22	127	74	61	3.0%	3.3%	2.7%	18.9%	-5.2%	-2.0%
Other Industry	13	15	24	29	34	28	30	1.7%	4.7%	1.8%	1.6%	-1.7%	0.7%
Non-Energy Use	2	5	3	3	2	1	1	10.1%	-4.8%	-1.5%	-1.1%	-6.7%	-4.9%
Residential	16	16	18	20	20	19	19	-0.3%	1.5%	0.9%	0.2%	-0.7%	0.4%
Services	3	4	6	9	12	15	21	3.6%	4.6%	3.2%	3.2%	2.2%	3.6%
Agriculture	2	2	3	4	4	5	5	2.2%	1.8%	2.8%	1.2%	0.9%	0.8%
Road	22	27	38	51	55	29	20	2.1%	3.6%	3.0%	0.7%	-6.1%	-3.8%
Rail	0	0	0	0	0	0	0	-2.7%	1.3%	4.1%	1.5%	1.2%	1.3%
Aviation	0	0	0	0	0	0	0	-1.3%	-0.3%	4.3%	7.0%	1.3%	-1.2%
Other Transport	1	0	1	1	1	1	1	-5.1%	2.7%	6.6%	2.2%	-2.1%	-0.8%

[1] Nuclear energy is accounted as primary electricity

Rest South America	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**11**	**12**	**24**	**36**	**48**	**16**	**20**	**0.8%**	**7.4%**	**4.2%**	**3.0%**	**-10.5%**	**2.4%**
Coal	1	1	1	3	3	2	1	-4.2%	7.9%	7.0%	2.0%	-6.8%	-5.7%
Oil	3	4	9	16	15	1	1	1.6%	8.1%	6.2%	-0.9%	-23.5%	-1.0%
Gas	6	7	12	14	26	8	5	0.9%	6.2%	1.6%	6.4%	-11.2%	-4.1%
Biomass & Waste	0	0	1	2	3	5	13	1.7%	17.7%	7.4%	2.6%	4.8%	10.1%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**154**	**226**	**303**	**421**	**648**	**955**	**1 368**	**3.9%**	**3.0%**	**3.3%**	**4.4%**	**4.0%**	**3.7%**
Coal	4	3	5	11	16	9	5	-3.7%	6.9%	8.7%	3.3%	-6.0%	-5.6%
of which CCS	0	0	0	0	0	2	3	n.s.	n.s.	n.s.	n.s.	n.s.	5.7%
Oil	13	15	32	60	56	4	4	1.8%	7.8%	6.5%	-0.6%	-23.0%	-0.7%
Gas	21	25	50	62	126	42	29	1.8%	7.0%	2.3%	7.2%	-10.4%	-3.6%
of which CCS	0	0	0	0	0	6	13	n.s.	n.s.	n.s.	n.s.	n.s.	8.6%
Biomass & Waste	1	1	4	9	12	22	64	3.6%	19.3%	7.3%	3.4%	6.0%	11.3%
of which CCS	0	0	0	0	0	0	9	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	8	62	97	n.s.	n.s.	n.s.	48.1%	22.0%	4.6%
Hydro	116	182	212	273	356	434	458	4.6%	1.5%	2.5%	2.7%	2.0%	0.5%
Wind	0	0	0	4	35	85	150	n.s.	n.s.	43.2%	24.3%	9.2%	5.8%
Solar	0	0	0	2	39	266	456	n.s.	n.s.	n.s.	33.9%	21.3%	5.5%
Other	0	0	0	0	0	31	105	n.s.	n.s.	27.5%	24.2%	n.s.	13.2%
Generation Capacity (GW_e)	**43**	**55**	**66**	**84**	**138**	**328**	**497**	**2.5%**	**1.7%**	**2.5%**	**5.1%**	**9.0%**	**4.2%**
Coal	1	1	1	2	2	1	1	4.7%	-0.2%	6.2%	2.8%	-3.1%	-4.9%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	6.1%
Oil	6	9	8	9	9	9	6	3.3%	-0.6%	1.5%	-0.9%	0.4%	-3.4%
Gas	8	10	16	20	20	17	9	1.8%	5.3%	2.2%	0.1%	-1.6%	-6.0%
of which CCS	0	0	0	0	0	1	2	n.s.	n.s.	n.s.	n.s.	n.s.	9.5%
Biomass & Waste	0	0	1	1	1	3	10	1.9%	14.0%	6.5%	2.7%	7.1%	12.3%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	1	10	15	n.s.	n.s.	n.s.	47.8%	21.8%	4.4%
Hydro	28	36	40	48	62	77	85	2.4%	1.1%	1.8%	2.7%	2.1%	1.0%
Wind	0	0	0	2	18	40	66	n.s.	n.s.	44.9%	22.0%	8.3%	5.0%
Solar	0	0	0	2	25	171	303	n.s.	n.s.	n.s.	31.0%	21.4%	5.9%
Other	0	0	0	0	0	0	3	n.s.	n.s.	n.s.	23.5%	18.6%	40.4%
Total Final Consumption[2] (Mtoe)	**67**	**82**	**110**	**138**	**255**	**173**	**159**	**2.0%**	**3.0%**	**2.3%**	**6.3%**	**-3.8%**	**-0.8%**
Coal	2	3	2	6	34	3	0	2.6%	-2.2%	9.5%	19.0%	-22.2%	-20.8%
Oil	36	46	60	74	77	24	7	2.6%	2.7%	2.1%	0.5%	-10.9%	-12.2%
Gas	8	11	19	21	79	21	7	3.2%	5.8%	1.0%	14.2%	-12.5%	-10.1%
Electricity	8	12	17	24	38	56	78	3.4%	4.0%	3.2%	4.9%	4.0%	3.4%
Heat	0	0	0	0	1	2	2	n.s.	-17.4%	29.1%	29.1%	5.8%	-0.3%
Biomass & Other	13	10	12	14	26	66	64	-2.3%	1.3%	1.9%	6.1%	9.9%	-0.3%
Industry (incl. non-energy use)	**24**	**33**	**44**	**54**	**163**	**104**	**92**	**3.1%**	**3.1%**	**2.0%**	**11.7%**	**-4.4%**	**-1.2%**
Coal	2	3	2	6	34	3	0	3.0%	-2.2%	9.6%	19.2%	-22.2%	-20.8%
Oil	8	13	15	15	23	6	1	4.9%	2.1%	-0.2%	4.3%	-12.6%	-13.3%
Gas	7	9	16	16	72	15	2	2.3%	5.5%	0.6%	15.9%	-14.3%	-20.3%
Electricity	4	5	7	10	20	28	38	2.2%	3.9%	4.0%	6.7%	3.3%	3.2%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	3	3	4	6	14	52	51	0.9%	2.1%	4.4%	9.0%	13.7%	-0.2%
Buildings	**19**	**20**	**24**	**29**	**32**	**34**	**41**	**0.4%**	**2.2%**	**1.6%**	**1.2%**	**0.5%**	**1.9%**
Coal	0	0	0	0	0	0	0	-5.9%	-3.0%	4.1%	-9.9%	-16.0%	n.s.
Oil	5	5	5	6	4	2	1	0.4%	0.6%	1.2%	-3.8%	-7.0%	-10.2%
Gas	1	2	2	4	6	3	1	10.0%	4.1%	5.3%	3.9%	-5.9%	-10.4%
Electricity	4	7	10	13	15	20	32	4.2%	4.1%	2.5%	1.8%	2.9%	4.6%
Heat	0	0	0	0	1	2	2	n.s.	-17.4%	29.1%	29.1%	5.8%	-0.3%
Biomass & Other	9	6	7	6	6	6	5	-3.4%	0.7%	-1.7%	-0.4%	1.0%	-1.5%
Agriculture	**2**	**2**	**3**	**4**	**4**	**5**	**5**	**2.2%**	**1.8%**	**2.8%**	**1.2%**	**0.9%**	**0.8%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	1	1	2	3	2	2	1	6.6%	2.6%	3.3%	-1.6%	-3.8%	-3.9%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	19.1%	-0.8%	-2.4%	-2.6%
Electricity	0	0	0	0	1	1	1	8.9%	1.7%	3.2%	6.1%	5.1%	3.7%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	1	1	1	1	1	2	3	-3.4%	0.2%	0.8%	5.3%	4.1%	1.8%
Transport	**22**	**27**	**39**	**52**	**56**	**31**	**21**	**1.9%**	**3.6%**	**3.0%**	**0.8%**	**-5.9%**	**-3.7%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	22	27	38	50	48	15	4	1.9%	3.3%	2.9%	-0.4%	-11.0%	-13.3%
Gas	0	0	1	0	1	2	4	28.3%	54.1%	-12.2%	16.0%	6.0%	8.1%
Electricity	0	0	0	0	2	7	7	0.7%	1.3%	15.9%	32.8%	12.5%	0.2%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	2	5	6	6	-22.0%	n.s.	22.9%	11.1%	3.4%	-0.9%
Other Energy Transformation & Losses[3]	**- 15**	**- 29**	**- 24**	**- 14**	**1**	**- 26**	**- 37**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Egypt	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	57	70	84	103	117	131	143	2.0%	1.9%	2.0%	1.4%	1.1%	0.9%
GDP per capita (ppp, k$'15)	4	5	6	8	12	17	23	2.3%	2.9%	1.9%	4.4%	3.8%	3.0%
Prices													
International/Regional ($'15/boe)													
Coal	3	2	3	2	3	7	8	-3.4%	3.6%	-3.1%	3.0%	9.6%	0.8%
Oil	39	38	86	88	89	79	81	-0.2%	8.4%	0.2%	0.1%	-1.2%	0.3%
Gas	24	28	33	47	55	61	62	1.5%	1.6%	3.4%	1.7%	1.1%	0.1%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**145**	**186**	**294**	**306**	**306**	**145**	**68**	**2.5%**	**4.7%**	**0.4%**	**0.0%**	**-7.2%**	**-7.3%**
Total GHG (energy, industry, agriculture)	**145**	**186**	**294**	**306**	**306**	**145**	**68**	**2.5%**	**4.7%**	**0.4%**	**0.0%**	**-7.2%**	**-7.3%**
CO_2	94	122	206	224	243	95	31	2.7%	5.4%	0.8%	0.8%	-8.9%	-10.7%
CH_4	38	42	57	51	39	28	15	1.0%	3.0%	-1.2%	-2.5%	-3.3%	-6.0%
N_2O	11	17	25	26	20	19	20	4.4%	3.7%	0.2%	-2.2%	-1.0%	0.9%
F gases	2	4	6	5	3	3	2	6.9%	3.0%	-1.1%	-4.6%	-1.8%	-4.7%
Total GHG from Energy and Industry	**125**	**158**	**262**	**269**	**271**	**113**	**34**	**2.4%**	**5.2%**	**0.3%**	**0.1%**	**-8.4%**	**-11.3%**
CO_2 Emissions from Fuel Comb.	**81**	**100**	**174**	**174**	**177**	**75**	**29**	**2.2%**	**5.6%**	**0.0%**	**0.2%**	**-8.2%**	**-9.1%**
Power generation/District heating	22	27	62	60	51	18	5	2.0%	8.7%	-0.4%	-1.5%	-9.8%	-11.6%
Industry	26	24	31	36	37	13	2	-0.6%	2.4%	1.5%	0.4%	-10.1%	-15.4%
Buildings	11	12	18	16	14	10	5	1.6%	3.7%	-1.1%	-1.2%	-3.6%	-6.9%
Agriculture	0	0	7	7	7	5	3	n.s.	40.6%	-0.3%	-0.3%	-3.3%	-3.7%
Transport	16	29	40	42	54	22	11	6.1%	3.3%	0.6%	2.5%	-8.7%	-6.2%
Other	6	8	16	13	14	8	2	2.1%	7.2%	-1.8%	0.8%	-5.6%	-14.2%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**5**	**13**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**9.9%**
Coal	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	n.s.	n.s.	3.8%
Gas	0	0	0	0	0	4	7	n.s.	n.s.	n.s.	n.s.	n.s.	5.3%
Biomass	0	0	0	0	0	0	4	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	31.6%	19.5%
Energy Balance, by fuel (Mtoe)													
Primary Production	**53**	**54**	**87**	**80**	**76**	**64**	**56**	**0.2%**	**4.9%**	**-0.8%**	**-0.5%**	**-1.7%**	**-1.3%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	44	34	33	18	11	7	5	-2.5%	-0.4%	-5.7%	-4.5%	-5.3%	-3.7%
Natural gas	7	18	52	58	58	38	20	9.9%	11.4%	1.2%	-0.1%	-4.0%	-6.3%
Biomass	2	1	2	0	0	0	0	-1.7%	1.8%	-12.2%	1.4%	-0.2%	-0.2%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	10.1%
Hydro	1	1	1	1	1	2	2	3.4%	-0.5%	1.1%	1.3%	2.1%	0.9%
Other renewables	0	0	0	3	5	17	29	11.4%	26.4%	22.6%	7.8%	12.3%	5.6%
Net Imports	**- 21**	**- 14**	**- 16**	**- 6**	**0**	**0**	**11**						
Coal	1	1	0	2	2	1	1						
Oil	- 22	- 11	1	13	22	7	1						
Natural gas	0	- 3	- 16	- 21	- 25	- 21	- 10						
Biomass	0	0	0	1	2	13	19						
Biofuels	0	0	0	0	0	0	0						
Electricity	0	0	- 1	- 1	- 1	- 1	0						
Primary Energy Demand[2]	**32**	**40**	**71**	**75**	**77**	**64**	**67**	2.3%	**5.8%**	**0.5%**	**0.2%**	**-1.8%**	**0.5%**
Coal	1	1	0	2	2	1	1	0.8%	-5.6%	17.2%	0.3%	-7.9%	-3.2%
Oil	22	23	34	31	33	14	6	0.3%	3.9%	-0.7%	0.6%	-8.5%	-8.2%
Natural gas	7	14	36	37	33	18	10	7.9%	9.5%	0.4%	-1.2%	-6.0%	-5.5%
Biomass	2	1	2	2	2	13	20	-1.9%	1.8%	-0.3%	4.2%	19.1%	4.1%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	10.1%
Hydro	1	1	1	1	1	2	2	3.4%	-0.5%	1.1%	1.3%	2.1%	0.9%
Other renewables	0	0	0	3	5	17	29	11.4%	26.4%	22.6%	7.8%	12.3%	5.6%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**32**	**40**	**71**	**75**	**77**	**64**	**67**	**2.3%**	**5.8%**	**0.5%**	**0.2%**	**-1.8%**	**0.5%**
Energy for Power Generation	**9**	**12**	**26**	**28**	**27**	**30**	**42**	**3.1%**	**8.1%**	**0.5%**	**-0.2%**	**1.0%**	**3.6%**
Other Energy Transformation & Losses	**2**	**2**	**3**	**4**	**5**	**7**	**5**	**-0.5%**	**2.6%**	**4.4%**	**1.9%**	**3.1%**	**-3.3%**
Final consumption	**24**	**32**	**53**	**56**	**59**	**48**	**48**	**2.8%**	**5.2%**	**0.6%**	**0.5%**	**-2.0%**	**-0.1%**
Steel, Non-Met. Minerals and Chem.	1	1	0	2	2	1	1	1.0%	-5.3%	15.1%	-1.0%	-2.9%	-3.0%
Other Industry	10	9	14	15	17	13	12	-0.3%	4.1%	0.8%	1.0%	-2.6%	-0.8%
Non-Energy Use	2	3	7	7	4	3	3	4.0%	7.7%	0.8%	-4.9%	-2.3%	-1.3%
Residential	6	7	12	13	11	11	12	2.8%	4.9%	0.5%	-1.3%	-0.4%	1.0%
Services	0	1	2	2	3	4	7	11.3%	6.9%	0.4%	1.1%	4.0%	5.3%
Agriculture	0	0	3	3	4	4	5	10.1%	24.9%	0.8%	2.3%	1.7%	1.3%
Road	5	8	14	13	18	11	8	4.9%	5.0%	-0.3%	3.1%	-5.0%	-3.2%
Rail	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	4.6%	4.0%	3.1%
Aviation	0	0	1	0	0	0	0	8.0%	2.5%	-5.0%	1.4%	-2.4%	-2.9%
Other Transport	0	1	1	0	0	0	0	n.s.	-3.5%	-7.0%	3.5%	-1.9%	-1.1%

[1] Nuclear energy is accounted as primary electricity

Egypt	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**8**	**11**	**25**	**24**	**20**	**11**	**11**	**3.0%**	**8.6%**	**-0.4%**	**-1.6%**	**-6.0%**	**0.0%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	9.8%	8.3%	0.2%
Oil	4	2	5	5	4	1	1	-6.9%	10.1%	-0.8%	-0.8%	-13.3%	-6.3%
Gas	4	9	20	19	16	8	5	8.3%	8.3%	-0.3%	-2.0%	-6.7%	-3.4%
Biomass & Waste	0	0	0	0	0	2	4	n.s.	n.s.	n.s.	28.2%	47.6%	10.4%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**42**	**78**	**147**	**172**	**185**	**236**	**335**	**6.4%**	**6.5%**	**1.6%**	**0.7%**	**2.5%**	**3.6%**
Coal	0	0	0	0	1	2	2	n.s.	n.s.	n.s.	10.0%	8.1%	0.2%
of which CCS	0	0	0	0	0	1	2	n.s.	n.s.	n.s.	n.s.	n.s.	3.5%
Oil	13	22	20	21	19	5	2	5.2%	-1.2%	0.5%	-0.7%	-13.2%	-6.2%
Gas	19	42	112	111	91	46	34	8.3%	10.3%	-0.1%	-2.0%	-6.5%	-3.1%
of which CCS	0	0	0	0	0	11	19	n.s.	n.s.	n.s.	n.s.	n.s.	5.3%
Biomass & Waste	0	0	0	0	0	9	23	n.s.	n.s.	n.s.	29.3%	48.8%	10.5%
of which CCS	0	0	0	0	0	0	4	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	10	14	13	15	17	21	23	3.3%	-0.5%	1.1%	1.3%	2.3%	1.1%
Wind	0	0	1	24	43	87	108	n.s.	27.0%	32.1%	5.8%	7.4%	2.1%
Solar	0	0	0	1	12	60	118	n.s.	n.s.	13.8%	32.3%	17.1%	7.0%
Other	0	0	0	0	2	7	25	n.s.	n.s.	n.s.	21.2%	13.0%	14.2%
Generation Capacity (GW_e)	**12**	**19**	**26**	**42**	**53**	**93**	**132**	**4.9%**	**3.5%**	**4.7%**	**2.4%**	**5.8%**	**3.6%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	10.3%	9.7%	0.8%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	4.0%
Oil	4	6	5	5	5	4	4	3.1%	-2.1%	-0.6%	1.7%	-4.0%	-0.1%
Gas	5	10	18	24	20	15	9	8.3%	6.2%	2.8%	-1.7%	-3.3%	-4.2%
of which CCS	0	0	0	0	0	2	3	n.s.	n.s.	n.s.	n.s.	n.s.	6.6%
Biomass & Waste	0	0	0	0	0	1	4	n.s.	n.s.	n.s.	29.6%	51.3%	10.8%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	3	3	3	3	3	4	5	0.3%	0.2%	0.2%	1.3%	2.5%	1.6%
Wind	0	0	1	10	17	35	41	n.s.	30.0%	33.3%	5.8%	7.3%	1.7%
Solar	0	0	0	0	7	34	68	n.s.	n.s.	39.4%	32.4%	17.5%	7.1%
Other	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	21.4%	51.5%
Total Final Consumption[2] (Mtoe)	**24**	**32**	**53**	**56**	**59**	**48**	**48**	**2.8%**	**5.2%**	**0.6%**	**0.5%**	**-2.0%**	**-0.1%**
Coal	1	1	0	2	2	0	0	1.0%	-5.3%	15.0%	-0.9%	-14.0%	-10.7%
Oil	16	20	30	26	28	12	5	2.2%	3.8%	-1.3%	0.8%	-7.9%	-8.0%
Gas	2	4	11	14	13	8	6	5.0%	10.5%	2.8%	-0.5%	-4.8%	-3.7%
Electricity	3	6	11	12	13	17	23	5.9%	6.8%	1.6%	0.8%	2.5%	3.1%
Heat	0	0	0	0	1	2	2	n.s.	n.s.	n.s.	5.0%	11.7%	2.8%
Biomass & Other	2	1	2	1	2	8	11	-1.9%	1.8%	-0.7%	3.0%	15.4%	2.6%
Industry (incl. non-energy use)	**13**	**13**	**21**	**24**	**23**	**18**	**16**	**0.6%**	**4.8%**	**1.3%**	**-0.6%**	**-2.5%**	**-1.0%**
Coal	1	1	0	2	2	0	0	1.0%	-5.3%	15.0%	-0.9%	-14.0%	-10.7%
Oil	8	7	8	6	6	3	2	-0.9%	1.0%	-2.1%	-0.4%	-7.5%	-5.5%
Gas	2	4	10	12	11	5	2	4.4%	10.4%	2.5%	-1.7%	-6.7%	-7.9%
Electricity	1	2	4	4	5	5	6	3.8%	5.2%	1.3%	1.6%	1.2%	1.0%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	1	0	0	0	0	4	6	n.s.	n.s.	n.s.	38.3%	31.8%	4.3%
Buildings	**6**	**9**	**14**	**15**	**14**	**14**	**18**	**3.6%**	**5.2%**	**0.5%**	**-0.9%**	**0.6%**	**2.3%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	3	4	5	4	3	2	1	1.1%	3.1%	-2.7%	-3.8%	-5.2%	-7.5%
Gas	0	0	1	2	3	2	1	16.9%	9.7%	7.1%	4.4%	-1.8%	-6.3%
Electricity	2	3	7	8	7	8	13	7.5%	7.7%	1.4%	-1.1%	1.2%	5.3%
Heat	0	0	0	0	1	2	2	n.s.	n.s.	n.s.	5.0%	11.7%	2.8%
Biomass & Other	1	1	2	1	1	1	1	2.1%	1.8%	-1.5%	-3.5%	2.7%	-1.3%
Agriculture	**0**	**0**	**3**	**3**	**4**	**4**	**5**	**10.1%**	**24.9%**	**0.8%**	**2.3%**	**1.7%**	**1.3%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	0	0	2	2	2	2	1	n.s.	40.6%	-0.3%	-0.3%	-3.3%	-3.7%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Electricity	0	0	0	1	1	2	2	6.9%	6.9%	5.6%	4.6%	3.9%	2.8%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	1	2	n.s.	n.s.	n.s.	55.4%	11.0%	3.8%
Transport	**5**	**10**	**15**	**14**	**19**	**11**	**8**	**6.0%**	**4.4%**	**-0.6%**	**3.0%**	**-4.8%**	**-3.1%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	5	10	15	14	17	6	2	6.0%	4.3%	-0.7%	2.4%	-9.4%	-10.9%
Gas	0	0	0	0	0	1	2	n.s.	n.s.	-5.9%	15.0%	8.1%	11.0%
Electricity	0	0	0	0	1	3	3	n.s.	n.s.	n.s.	24.6%	12.3%	0.1%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	2	2	n.s.	n.s.	n.s.	13.1%	17.5%	-0.7%
Other Energy Transformation & Losses[3]	**2**	**2**	**3**	**4**	**5**	**7**	**5**	**-0.5%**	**2.6%**	**4.4%**	**1.9%**	**3.1%**	**-3.3%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Algeria & Libya	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	30	37	42	50	55	59	62	1.9%	1.5%	1.6%	1.0%	0.7%	0.6%
GDP per capita (ppp, k$'15)	6	8	8	10	15	20	26	3.0%	-0.6%	2.5%	4.2%	3.2%	2.5%
Prices													
International/Regional ($'15/boe)													
Coal	3	2	3	2	3	7	8	-3.4%	3.6%	-3.1%	3.0%	9.6%	0.8%
Oil	39	38	86	88	89	79	81	-0.2%	8.4%	0.2%	0.1%	-1.2%	0.3%
Gas	24	28	33	47	55	61	62	1.5%	1.6%	3.4%	1.7%	1.1%	0.1%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**240**	**260**	**300**	**372**	**291**	**142**	**61**	**0.8%**	**1.4%**	**2.2%**	**-2.4%**	**-6.9%**	**-8.1%**
Total GHG (energy, industry, agriculture)	**239**	**254**	**298**	**371**	**290**	**142**	**61**	**0.6%**	**1.6%**	**2.2%**	**-2.4%**	**-6.9%**	**-8.1%**
CO_2	112	142	187	277	236	111	47	2.4%	2.8%	4.0%	-1.6%	-7.3%	-8.2%
CH_4	122	106	102	84	47	25	8	-1.3%	-0.4%	-1.9%	-5.7%	-6.1%	-10.3%
N_2O	5	5	7	8	7	6	6	1.3%	3.3%	1.3%	-2.4%	-1.6%	0.0%
F gases	1	1	1	1	1	1	0	-0.8%	7.2%	2.6%	-2.7%	-2.8%	-6.9%
Total GHG from Energy and Industry	**230**	**245**	**286**	**357**	**278**	**130**	**49**	**0.6%**	**1.5%**	**2.3%**	**-2.5%**	**-7.3%**	**-9.3%**
CO_2 Emissions from Fuel Comb.	**84**	**106**	**153**	**236**	**201**	**97**	**41**	**2.3%**	**3.7%**	**4.4%**	**-1.6%**	**-7.0%**	**-8.4%**
Power generation/District heating	18	32	47	83	58	27	11	5.7%	4.2%	5.7%	-3.5%	-7.5%	-8.5%
Industry	8	10	15	18	10	3	1	2.0%	4.2%	1.8%	-5.1%	-11.5%	-15.1%
Buildings	10	14	20	27	27	20	14	3.6%	3.7%	3.4%	0.0%	-3.1%	-3.5%
Agriculture	0	0	0	0	0	0	0	0.9%	17.6%	2.8%	-0.9%	-3.1%	-3.3%
Transport	22	27	53	81	77	32	10	2.2%	7.1%	4.2%	-0.4%	-8.6%	-11.3%
Other	27	25	18	28	27	16	5	-0.9%	-3.1%	4.4%	-0.1%	-5.4%	-10.1%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**2**	**2**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**-3.7%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	-2.6%
Gas	0	0	0	0	0	2	1	n.s.	n.s.	n.s.	n.s.	n.s.	-11.4%
Biomass	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	21.0%	10.7%
Energy Balance, by fuel (Mtoe)													
Primary Production	**150**	**189**	**225**	**174**	**148**	**88**	**36**	**2.3%**	**1.7%**	**-2.5%**	**-1.6%**	**-5.1%**	**-8.6%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	103	110	143	79	57	29	7	0.7%	2.6%	-5.7%	-3.3%	-6.6%	-13.8%
Natural gas	47	79	82	94	87	47	8	5.3%	0.4%	1.4%	-0.8%	-5.9%	-15.9%
Biomass	0	0	0	1	3	4	3	3.6%	0.8%	14.8%	14.0%	3.3%	-3.2%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	16.2%
Hydro	0	0	0	0	0	0	0	-8.8%	12.4%	8.5%	4.1%	4.6%	2.1%
Other renewables	0	0	0	0	1	7	17	n.s.	n.s.	n.s.	53.5%	19.6%	9.2%
Net Imports	**- 116**	**- 147**	**- 165**	**- 81**	**- 67**	**- 29**	**14**						
Coal	0	0	0	0	1	0	0						
Oil	- 86	- 90	- 112	- 44	- 26	- 13	0						
Natural gas	- 31	- 58	- 53	- 37	- 42	- 26	0						
Biomass	0	0	0	0	0	10	13						
Biofuels	0	0	0	0	0	0	0						
Electricity	0	0	0	0	0	0	0						
Primary Energy Demand[2]	**34**	**42**	**60**	**93**	**80**	**59**	**49**	2.3%	**3.5%**	**4.4%**	**-1.4%**	**-3.1%**	**-1.7%**
Coal	0	0	0	0	1	0	0	0.5%	-5.1%	0.8%	7.3%	-1.6%	-5.6%
Oil	17	21	31	35	30	15	7	1.9%	3.9%	1.4%	-1.5%	-6.6%	-8.2%
Natural gas	16	21	29	57	45	21	8	2.6%	3.3%	6.9%	-2.3%	-7.2%	-8.7%
Biomass	0	0	0	0	4	14	16	3.6%	0.8%	6.6%	24.4%	15.3%	1.3%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	16.2%
Hydro	0	0	0	0	0	0	0	-8.8%	12.4%	8.5%	4.1%	4.6%	2.1%
Other renewables	0	0	0	0	1	7	17	n.s.	n.s.	n.s.	53.5%	19.6%	9.2%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**34**	**42**	**60**	**93**	**80**	**59**	**49**	**2.3%**	**3.5%**	**4.4%**	**-1.4%**	**-3.1%**	**-1.7%**
Energy for Power Generation	**7**	**12**	**19**	**33**	**24**	**19**	**24**	**5.8%**	**4.6%**	**5.8%**	**-3.1%**	**-2.3%**	**2.2%**
Other Energy Transformation & Losses	**11**	**9**	**7**	**11**	**14**	**14**	**9**	**-2.1%**	**-2.5%**	**5.2%**	**2.0%**	**0.4%**	**-4.1%**
Final consumption	**18**	**24**	**39**	**56**	**51**	**37**	**32**	**3.0%**	**4.9%**	**3.6%**	**-1.0%**	**-3.2%**	**-1.4%**
Steel, Non-Met. Minerals and Chem.	1	1	2	4	2	1	1	-1.6%	12.1%	5.6%	-5.4%	-5.4%	-2.6%
Other Industry	3	4	5	5	4	2	2	3.3%	2.0%	1.5%	-2.9%	-4.6%	-1.1%
Non-Energy Use	3	5	5	5	2	2	2	3.5%	1.5%	-0.8%	-7.0%	-1.4%	-0.9%
Residential	4	6	8	12	11	11	11	4.5%	3.0%	4.2%	-0.7%	-0.2%	0.1%
Services	0	1	2	3	3	3	4	4.3%	15.6%	3.2%	-1.5%	1.4%	2.5%
Agriculture	0	0	0	0	0	1	1	0.9%	10.0%	0.0%	2.4%	1.9%	1.6%
Road	7	8	16	25	27	15	10	2.2%	6.5%	4.9%	0.5%	-5.6%	-4.1%
Rail	0	0	0	1	1	1	1	1.2%	9.6%	5.4%	0.4%	-0.4%	-0.4%
Aviation	0	0	0	0	0	0	0	7.2%	26.5%	-1.7%	0.9%	-3.3%	-3.0%
Other Transport	0	0	0	0	0	0	0	0.9%	9.8%	2.6%	1.2%	-2.8%	-1.8%

[1] Nuclear energy is accounted as primary electricity

Algeria & Libya	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**7**	**12**	**19**	**33**	**23**	**12**	**6**	**5.8%**	**4.6%**	**5.8%**	**-3.6%**	**-6.5%**	**-6.2%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	22.8%	4.4%	-6.5%
Oil	3	5	5	8	5	2	2	5.0%	0.6%	4.7%	-3.6%	-9.2%	-2.6%
Gas	4	7	14	25	17	9	3	6.3%	6.5%	6.2%	-3.7%	-6.7%	-10.9%
Biomass & Waste	0	0	0	0	0	1	2	n.s.	n.s.	n.s.	21.5%	49.8%	10.2%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**27**	**43**	**81**	**161**	**130**	**124**	**165**	**4.6%**	**6.5%**	**7.2%**	**-2.1%**	**-0.4%**	**2.8%**
Coal	0	0	0	0	1	2	1	n.s.	n.s.	n.s.	23.2%	4.2%	-6.6%
of which CCS	0	0	0	0	0	1	0	n.s.	n.s.	n.s.	n.s.	n.s.	-2.6%
Oil	11	13	18	32	23	9	7	1.5%	3.5%	5.9%	-3.5%	-8.9%	-2.8%
Gas	16	30	62	128	91	46	14	6.4%	7.6%	7.5%	-3.3%	-6.6%	-11.4%
of which CCS	0	0	0	0	0	2	2	n.s.	n.s.	n.s.	n.s.	n.s.	-2.7%
Biomass & Waste	0	0	0	0	0	3	9	n.s.	n.s.	n.s.	22.7%	50.6%	10.5%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	0	0	0	0	1	1	1	-8.8%	12.4%	8.5%	4.1%	4.9%	3.3%
Wind	0	0	0	0	7	26	47	n.s.	n.s.	n.s.	49.6%	13.8%	6.1%
Solar	0	0	0	0	6	34	72	n.s.	n.s.	n.s.	55.9%	19.4%	7.8%
Other	0	0	0	0	1	4	15	n.s.	n.s.	n.s.	15.4%	12.6%	13.8%
Generation Capacity (GW_e)	**8**	**11**	**20**	**32**	**36**	**57**	**87**	**2.7%**	**6.2%**	**5.0%**	**1.1%**	**4.8%**	**4.4%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	23.2%	4.9%	-3.6%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	0.0%
Oil	4	4	4	5	5	5	5	-0.5%	-0.1%	3.2%	0.0%	-0.6%	-1.3%
Gas	4	6	15	26	23	12	5	5.8%	9.1%	5.4%	-1.2%	-6.3%	-9.2%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	0.0%
Biomass & Waste	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	51.6%	13.8%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	0	0	0	0	0	1	1	-0.4%	0.0%	0.8%	4.1%	4.8%	3.4%
Wind	0	0	0	0	3	9	18	n.s.	n.s.	n.s.	47.8%	13.3%	7.0%
Solar	0	0	0	0	4	29	57	n.s.	n.s.	43.5%	33.0%	22.3%	7.0%
Other	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	27.3%	34.1%
Total Final Consumption[2] (Mtoe)	**18**	**24**	**39**	**56**	**51**	**37**	**32**	**3.0%**	**4.9%**	**3.6%**	**-1.0%**	**-3.2%**	**-1.4%**
Coal	0	0	0	0	0	0	0	-3.2%	-0.9%	-3.0%	2.3%	-7.8%	-4.1%
Oil	12	15	24	32	30	13	5	2.3%	4.9%	3.2%	-0.9%	-8.1%	-9.1%
Gas	4	7	11	16	12	9	6	4.6%	4.7%	4.1%	-2.7%	-3.4%	-3.6%
Electricity	2	2	5	7	6	6	8	4.7%	6.4%	4.9%	-2.2%	-0.3%	3.0%
Heat	0	0	0	0	0	1	2	n.s.	n.s.	n.s.	n.s.	26.3%	5.3%
Biomass & Other	0	0	0	0	3	8	11	3.6%	0.8%	3.4%	25.1%	11.7%	3.3%
Industry (incl. non-energy use)	**7**	**9**	**12**	**14**	**9**	**6**	**5**	**2.9%**	**3.0%**	**1.5%**	**-4.9%**	**-3.8%**	**-1.3%**
Coal	0	0	0	0	0	0	0	-3.2%	-0.9%	-3.0%	2.3%	-7.8%	-4.1%
Oil	2	3	4	4	2	1	1	2.6%	2.8%	-1.8%	-4.6%	-6.2%	-1.6%
Gas	3	5	6	8	4	2	1	3.7%	3.2%	2.2%	-7.0%	-6.4%	-5.9%
Electricity	1	1	1	2	2	2	2	2.7%	4.0%	6.5%	-0.9%	-2.4%	-0.2%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	23.9%	29.2%	4.1%
Buildings	**4**	**7**	**10**	**16**	**14**	**14**	**15**	**4.5%**	**4.9%**	**4.0%**	**-0.9%**	**0.1%**	**0.7%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	2	3	3	3	3	2	2	2.3%	1.0%	-1.1%	0.4%	-1.7%	-3.7%
Gas	1	2	4	8	8	5	4	6.9%	7.5%	6.6%	-0.1%	-3.9%	-3.4%
Electricity	1	1	3	5	3	2	4	6.6%	7.4%	4.5%	-5.3%	-1.6%	6.2%
Heat	0	0	0	0	0	1	2	n.s.	n.s.	n.s.	n.s.	26.3%	5.3%
Biomass & Other	0	0	0	0	1	3	4	3.6%	0.8%	0.3%	13.3%	16.3%	2.1%
Agriculture	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0.9%**	**10.0%**	**0.0%**	**2.4%**	**1.9%**	**1.6%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	0	0	0	0	0	0	0	0.9%	12.0%	1.4%	-1.2%	-3.7%	-4.0%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	4.7%	-0.5%	-2.4%	-2.7%
Electricity	0	0	0	0	0	0	1	1.0%	8.8%	-0.7%	2.8%	2.2%	1.9%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	9.3%	3.7%
Transport	**7**	**9**	**16**	**26**	**27**	**16**	**11**	**2.2%**	**6.6%**	**4.9%**	**0.5%**	**-5.4%**	**-3.9%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	7	9	16	26	24	9	2	2.2%	6.6%	4.8%	-0.6%	-9.4%	-13.2%
Gas	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	n.s.	11.0%	-1.7%
Electricity	0	0	0	0	1	1	1	3.0%	7.5%	10.4%	18.5%	6.7%	0.4%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	2	4	6	n.s.	n.s.	n.s.	39.7%	7.6%	4.0%
Other Energy Transformation & Losses[3]	**11**	**9**	**7**	**11**	**14**	**14**	**9**	**-2.1%**	**-2.5%**	**5.2%**	**2.0%**	**0.4%**	**-4.1%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Morocco & Tunisia	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	33	39	44	49	53	55	57	1.5%	1.1%	1.2%	0.8%	0.4%	0.2%
GDP per capita (ppp, k$'15)	4	4	6	8	13	20	28	1.7%	3.6%	3.1%	4.4%	4.2%	3.5%
Prices													
International/Regional ($'15/boe)													
Coal	3	2	3	2	3	7	8	-3.4%	3.6%	-3.1%	3.0%	9.6%	0.8%
Oil	39	38	86	88	89	79	81	-0.2%	8.4%	0.2%	0.1%	-1.2%	0.3%
Gas	24	28	33	47	55	61	62	1.5%	1.6%	3.4%	1.7%	1.1%	0.1%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**53**	**79**	**120**	**140**	**141**	**74**	**38**	**4.1%**	**4.3%**	**1.6%**	**0.1%**	**-6.3%**	**-6.4%**
Total GHG (energy, industry, agriculture)	**62**	**85**	**112**	**138**	**140**	**74**	**39**	**3.1%**	**2.8%**	**2.1%**	**0.2%**	**-6.1%**	**-6.2%**
CO_2	39	57	81	105	111	52	23	3.8%	3.5%	2.5%	0.6%	-7.3%	-7.9%
CH_4	16	19	22	24	22	16	9	1.9%	1.3%	0.9%	-1.1%	-3.2%	-5.4%
N_2O	7	8	8	9	8	7	8	1.1%	0.9%	0.4%	-1.4%	-0.8%	0.8%
F gases	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Total GHG from Energy and Industry	**49**	**70**	**96**	**121**	**124**	**59**	**24**	**3.7%**	**3.3%**	**2.3%**	**0.3%**	**-7.1%**	**-8.8%**
CO_2 Emissions from Fuel Comb.	**32**	**49**	**72**	**93**	**97**	**48**	**21**	**4.2%**	**4.0%**	**2.6%**	**0.4%**	**-6.9%**	**-7.8%**
Power generation/District heating	12	17	24	31	29	12	4	3.9%	3.7%	2.5%	-0.6%	-8.4%	-10.5%
Industry	9	9	11	13	13	4	1	0.2%	2.2%	2.0%	-0.1%	-11.9%	-15.2%
Buildings	3	6	9	12	13	10	5	6.2%	3.8%	3.1%	0.6%	-2.9%	-5.8%
Agriculture	1	2	3	3	3	2	1	5.8%	3.9%	2.6%	-1.2%	-3.5%	-3.9%
Transport	7	14	22	30	34	17	9	6.9%	4.9%	3.1%	1.3%	-6.8%	-5.8%
Other	1	1	3	3	5	3	1	5.2%	9.9%	-0.3%	3.4%	-3.6%	-16.0%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**1**	**7**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**17.6%**
Coal	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	9.0%
Gas	0	0	0	0	0	1	3	n.s.	n.s.	n.s.	n.s.	n.s.	12.4%
Biomass	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	25.4%	17.3%
Energy Balance, by fuel (Mtoe)													
Primary Production	**7**	**8**	**10**	**11**	**20**	**25**	**32**	**1.0%**	**2.5%**	**1.0%**	**6.0%**	**2.4%**	**2.6%**
Coal	0	0	0	0	0	0	0	-22.8%	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	5	4	4	4	7	4	3	-2.1%	0.2%	-0.1%	6.1%	-4.3%	-4.6%
Natural gas	0	2	3	3	6	7	8	17.5%	6.1%	1.0%	5.1%	2.5%	1.3%
Biomass	2	2	3	3	4	5	5	2.8%	1.8%	1.0%	3.6%	2.9%	-0.5%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	13.8%
Hydro	0	0	0	0	0	0	0	-4.7%	16.2%	-2.8%	1.4%	2.3%	0.6%
Other renewables	0	0	0	1	3	8	16	n.s.	29.0%	20.3%	16.4%	10.6%	7.5%
Net Imports	**6**	**13**	**21**	**29**	**26**	**16**	**10**						
Coal	1	3	3	3	2	1	0						
Oil	4	7	12	15	12	4	1						
Natural gas	1	1	3	5	6	0	- 3						
Biomass	0	0	0	0	0	5	7						
Biofuels	0	0	0	0	0	0	0						
Electricity	0	2	4	6	6	6	6						
Primary Energy Demand[2]	**13**	**20**	**31**	**40**	**45**	**41**	**43**	5.0%	**4.2%**	**2.6%**	**1.3%**	**-1.1%**	**0.4%**
Coal	1	3	3	3	2	1	0	8.3%	0.3%	1.8%	-3.1%	-11.2%	-8.5%
Oil	8	10	16	19	19	9	3	2.4%	4.1%	2.1%	0.0%	-7.4%	-9.1%
Natural gas	1	3	6	8	11	7	5	8.2%	7.4%	3.7%	3.3%	-4.6%	-3.7%
Biomass	2	2	3	2	4	10	12	2.8%	1.8%	-0.8%	4.4%	10.9%	1.5%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	13.8%
Hydro	0	0	0	0	0	0	0	-4.7%	16.2%	-2.8%	1.4%	2.3%	0.6%
Other renewables	0	0	0	1	3	8	16	n.s.	29.0%	20.3%	16.4%	10.6%	7.5%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**13**	**20**	**31**	**40**	**45**	**41**	**43**	**5.0%**	**4.2%**	**2.6%**	**1.3%**	**-1.1%**	**0.4%**
Energy for Power Generation	**4**	**5**	**8**	**11**	**13**	**14**	**21**	**3.7%**	**4.4%**	**3.0%**	**1.8%**	**0.2%**	**4.5%**
Other Energy Transformation & Losses	**1**	**3**	**5**	**7**	**9**	**13**	**11**	**18.0%**	**7.0%**	**2.9%**	**2.5%**	**3.1%**	**-1.2%**
Final consumption	**9**	**14**	**20**	**26**	**30**	**25**	**24**	**4.2%**	**3.7%**	**2.5%**	**1.5%**	**-2.0%**	**-0.3%**
Steel, Non-Met. Minerals and Chem.	0	0	2	3	3	2	2	0.1%	21.0%	3.7%	0.2%	-5.4%	-2.0%
Other Industry	3	3	3	3	4	3	3	1.4%	-2.4%	1.1%	1.9%	-2.1%	-0.2%
Non-Energy Use	0	0	1	1	1	0	0	8.5%	4.7%	0.5%	-1.5%	-8.6%	-7.7%
Residential	2	4	5	6	6	5	5	4.7%	3.6%	1.5%	0.1%	-1.2%	0.1%
Services	1	1	2	2	3	4	5	3.7%	4.6%	2.8%	3.5%	2.0%	2.9%
Agriculture	0	1	1	2	2	2	2	5.8%	5.3%	3.0%	2.0%	1.5%	1.1%
Road	2	4	6	8	10	7	6	6.1%	3.6%	3.3%	2.5%	-3.4%	-2.6%
Rail	0	0	0	0	0	0	0	5.7%	3.4%	2.0%	0.9%	0.3%	0.2%
Aviation	0	0	0	0	0	0	0	n.s.	n.s.	6.8%	6.5%	0.7%	-1.5%
Other Transport	0	0	1	1	1	1	1	9.9%	5.3%	3.3%	2.0%	-2.1%	-1.1%

[1] Nuclear energy is accounted as primary electricity

Morocco & Tunisia	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**4**	**5**	**8**	**10**	**10**	**6**	**5**	**3.8%**	**4.1%**	**2.7%**	**0.0%**	**-5.7%**	**-0.9%**
Coal	1	2	3	3	2	1	0	10.9%	2.7%	1.8%	-3.9%	-11.2%	-8.0%
Oil	2	1	1	2	2	1	0	-5.9%	1.7%	1.8%	-0.1%	-7.6%	-7.1%
Gas	1	2	4	6	7	4	3	9.2%	6.2%	3.6%	1.8%	-5.9%	-1.7%
Biomass & Waste	0	0	0	0	0	1	2	n.s.	n.s.	n.s.	42.2%	35.2%	7.2%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**15**	**23**	**40**	**59**	**85**	**101**	**159**	**4.3%**	**5.4%**	**4.1%**	**3.6%**	**1.8%**	**4.6%**
Coal	2	9	11	13	9	3	1	14.8%	2.2%	1.9%	-3.6%	-10.5%	-7.3%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	9.2%
Oil	8	5	6	8	7	3	2	-5.8%	2.4%	3.0%	-0.4%	-7.5%	-7.1%
Gas	4	9	19	28	35	20	18	9.6%	7.2%	4.3%	2.2%	-5.5%	-0.9%
of which CCS	0	0	0	0	0	3	9	n.s.	n.s.	n.s.	n.s.	n.s.	12.5%
Biomass & Waste	0	0	0	0	0	4	9	n.s.	n.s.	n.s.	43.6%	36.1%	7.2%
of which CCS	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	1	1	4	4	4	5	5	-4.7%	16.8%	0.0%	1.6%	0.6%	0.6%
Wind	0	0	1	6	26	43	61	n.s.	24.8%	23.2%	14.8%	5.4%	3.4%
Solar	0	0	0	0	2	20	49	n.s.	n.s.	n.s.	29.1%	23.5%	9.1%
Other	0	0	0	0	1	2	15	n.s.	n.s.	n.s.	24.9%	14.0%	20.3%
Generation Capacity (GW_e)	**4**	**7**	**10**	**15**	**26**	**49**	**81**	**6.8%**	**3.5%**	**4.2%**	**5.3%**	**6.6%**	**5.2%**
Coal	0	1	2	3	2	1	0	12.1%	2.1%	3.6%	-0.5%	-9.6%	-12.1%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	9.9%
Oil	2	2	2	2	3	3	3	3.4%	-0.6%	0.0%	3.9%	-1.4%	1.3%
Gas	1	2	4	5	6	5	6	10.7%	7.7%	2.9%	1.7%	-1.9%	1.6%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	13.5%
Biomass & Waste	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	n.s.	38.6%	7.7%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	1	2	2	2	3	3	4	4.3%	1.4%	3.0%	1.1%	1.9%	0.6%
Wind	0	0	0	2	9	16	21	n.s.	18.7%	21.7%	14.0%	5.8%	3.1%
Solar	0	0	0	0	2	20	45	n.s.	n.s.	25.4%	19.8%	25.3%	8.3%
Other	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	23.7%	37.2%
Total Final Consumption[2] (Mtoe)	**9**	**14**	**20**	**26**	**30**	**25**	**24**	**4.2%**	**3.7%**	**2.5%**	**1.5%**	**-2.0%**	**-0.3%**
Coal	0	1	0	0	0	0	0	2.8%	-30.6%	7.2%	20.2%	-10.7%	-14.9%
Oil	6	9	14	17	17	8	3	4.3%	4.1%	2.3%	-0.2%	-7.5%	-9.1%
Gas	0	1	1	2	4	3	3	6.1%	6.1%	6.8%	6.0%	-2.0%	-0.3%
Electricity	1	2	3	4	6	7	11	5.2%	5.5%	3.4%	3.3%	1.8%	4.1%
Heat	0	0	0	0	0	1	1	n.s.	n.s.	9.0%	19.5%	8.1%	1.2%
Biomass & Other	1	2	2	2	3	5	6	2.7%	2.0%	-1.3%	2.6%	7.5%	0.7%
Industry (incl. non-energy use)	**3**	**4**	**6**	**7**	**8**	**5**	**5**	**1.8%**	**3.2%**	**2.2%**	**0.8%**	**-4.0%**	**-1.2%**
Coal	0	1	0	0	0	0	0	2.8%	-30.6%	7.2%	20.2%	-10.7%	-14.9%
Oil	2	2	4	4	4	1	0	-0.1%	5.2%	1.7%	-1.2%	-12.3%	-12.8%
Gas	0	0	1	1	1	0	0	5.1%	5.7%	1.4%	1.7%	-8.2%	-14.1%
Electricity	1	1	1	2	2	2	3	4.3%	3.0%	3.7%	3.7%	0.1%	0.5%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	1	2	n.s.	4.4%	2.9%	-3.8%	27.5%	3.9%
Buildings	**3**	**5**	**7**	**8**	**9**	**9**	**11**	**4.5%**	**3.8%**	**1.9%**	**1.1%**	**0.0%**	**1.4%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	1	2	3	3	2	1	1	6.0%	3.5%	1.1%	-3.2%	-4.4%	-6.3%
Gas	0	0	0	1	3	2	1	10.1%	6.9%	15.0%	8.0%	-1.5%	-5.5%
Electricity	0	1	2	2	3	3	6	6.4%	7.1%	3.0%	2.1%	1.0%	7.3%
Heat	0	0	0	0	0	1	1	n.s.	n.s.	9.0%	19.5%	8.1%	1.2%
Biomass & Other	1	2	2	2	1	2	1	2.3%	1.9%	-2.3%	-3.4%	2.6%	-1.7%
Agriculture	**0**	**1**	**1**	**2**	**2**	**2**	**2**	**5.8%**	**5.3%**	**3.0%**	**2.0%**	**1.5%**	**1.1%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	0	1	1	1	1	1	0	5.8%	3.8%	2.5%	-1.2%	-3.5%	-3.9%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	13.8%	-0.5%	-2.2%	-2.6%
Electricity	0	0	0	0	1	1	1	6.1%	11.3%	3.6%	3.6%	3.2%	2.5%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	42.5%	8.5%	3.2%
Transport	**2**	**5**	**7**	**9**	**12**	**8**	**7**	**6.3%**	**3.8%**	**3.2%**	**2.4%**	**-3.2%**	**-2.4%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	2	5	7	9	10	5	2	6.4%	3.8%	3.1%	1.2%	-7.3%	-10.3%
Gas	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	12.9%	13.8%
Electricity	0	0	0	0	0	1	1	2.8%	-1.8%	7.8%	18.4%	11.8%	1.3%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	1	2	2	n.s.	n.s.	n.s.	23.4%	7.7%	-0.2%
Other Energy Transformation & Losses[3]	**1**	**3**	**5**	**7**	**9**	**13**	**11**	**18.0%**	**7.0%**	**2.9%**	**2.5%**	**3.1%**	**-1.2%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

South Africa	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	38	46	52	59	64	68	71	2.0%	1.2%	1.3%	0.9%	0.6%	0.4%
GDP per capita (ppp, k$'15)	9	9	11	12	14	19	23	-0.2%	2.3%	0.5%	1.8%	2.9%	2.0%
Prices													
International/Regional ($'15/boe)													
Coal	3	2	3	2	3	6	6	-3.4%	3.6%	-2.8%	3.1%	7.9%	-0.1%
Oil	39	38	86	88	89	79	81	-0.2%	8.4%	0.2%	0.1%	-1.2%	0.3%
Gas	24	28	33	47	55	61	62	1.5%	1.6%	3.4%	1.7%	1.1%	0.1%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**386**	**446**	**582**	**664**	**469**	**227**	**134**	**1.5%**	**2.7%**	**1.3%**	**-3.4%**	**-7.0%**	**-5.1%**
Total GHG (energy, industry, agriculture)	**385**	**441**	**572**	**664**	**468**	**219**	**118**	**1.4%**	**2.6%**	**1.5%**	**-3.4%**	**-7.3%**	**-6.0%**
CO_2	304	349	471	565	399	168	79	1.4%	3.0%	1.8%	-3.4%	-8.3%	-7.2%
CH_4	62	70	78	76	48	34	23	1.2%	1.0%	-0.2%	-4.4%	-3.6%	-3.6%
N_2O	18	20	20	21	18	16	14	1.0%	0.0%	0.5%	-1.2%	-1.6%	-0.8%
F gases	2	2	4	3	2	2	1	4.6%	5.1%	-1.7%	-4.3%	-2.0%	-5.2%
Total GHG from Energy and Industry	**349**	**405**	**534**	**625**	**434**	**188**	**89**	**1.5%**	**2.8%**	**1.6%**	**-3.6%**	**-8.0%**	**-7.2%**
CO_2 Emissions from Fuel Comb.	**278**	**321**	**426**	**522**	**350**	**144**	**70**	**1.4%**	**2.9%**	**2.1%**	**-3.9%**	**-8.5%**	**-6.9%**
Power generation/District heating	144	190	244	240	136	37	7	2.8%	2.5%	-0.1%	-5.5%	-12.2%	-15.8%
Industry	53	40	53	60	49	8	1	-2.7%	2.7%	1.3%	-2.0%	-16.3%	-18.5%
Buildings	12	9	17	29	20	12	6	-2.2%	6.3%	5.5%	-3.7%	-5.0%	-7.3%
Agriculture	3	4	3	6	4	3	2	2.0%	-1.1%	5.4%	-2.5%	-4.4%	-4.5%
Transport	29	36	48	54	52	25	8	2.0%	2.9%	1.2%	-0.4%	-7.0%	-10.4%
Other	37	41	61	133	88	59	47	1.0%	4.1%	8.0%	-4.0%	-4.0%	-2.3%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**n.s.**	**n.s.**	**n.s.**	**36.8%**	**23.0%**	**28.4%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	11.8%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	26.6%
Biomass	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	36.8%	21.0%	22.7%
Energy Balance, by fuel (Mtoe)													
Primary Production	**109**	**151**	**164**	**219**	**181**	**129**	**196**	**3.4%**	**0.8%**	**2.9%**	**-1.9%**	**-3.3%**	**4.3%**
Coal	91	126	143	179	131	69	124	3.3%	1.3%	2.3%	-3.0%	-6.3%	6.1%
Oil	5	10	4	0	0	0	0	6.8%	-8.2%	n.s.	n.s.	-4.3%	n.s.
Natural gas	2	1	1	7	9	9	9	-0.8%	-1.0%	19.1%	2.4%	-0.5%	-0.3%
Biomass	10	13	15	30	32	35	34	2.0%	1.4%	7.4%	0.6%	1.1%	-0.3%
Nuclear[1]	1	1	1	1	3	4	7	4.4%	-0.7%	2.3%	8.4%	3.7%	5.3%
Hydro	0	0	0	0	0	0	0	0.9%	6.7%	2.5%	2.7%	4.0%	0.2%
Other renewables	0	0	0	1	5	12	22	n.s.	n.s.	32.1%	15.8%	9.2%	6.4%
Net Imports	**- 22**	**- 34**	**- 29**	**- 64**	**- 56**	**- 51**	**- 130**						
Coal	- 23	- 45	- 44	- 62	- 66	- 41	- 105						
Oil	3	- 1	15	14	17	1	- 8						
Natural gas	- 1	0	3	- 3	5	0	- 5						
Biomass	0	0	0	- 12	- 11	- 10	- 11						
Biofuels	0	0	0	0	0	0	0						
Electricity	- 1	12	- 2	- 1	- 1	- 1	- 1						
Primary Energy Demand[2]	**87**	**117**	**136**	**155**	**124**	**79**	**67**	3.1%	**1.5%**	**1.3%**	**-2.2%**	**-4.5%**	**-1.6%**
Coal	68	81	99	117	66	28	19	1.8%	2.0%	1.7%	-5.6%	-8.3%	-3.6%
Oil	9	9	20	14	17	1	- 8	0.2%	8.5%	-3.3%	1.8%	-24.6%	n.s.
Natural gas	0	1	4	4	15	9	4	10.9%	10.7%	1.5%	12.6%	-4.8%	-8.2%
Biomass	10	13	15	18	21	26	24	2.0%	1.4%	2.1%	1.5%	2.1%	-0.8%
Nuclear[1]	1	1	1	1	3	4	7	4.4%	-0.7%	2.3%	8.4%	3.7%	5.3%
Hydro	0	0	0	0	0	0	0	0.9%	6.7%	2.5%	2.7%	4.0%	0.2%
Other renewables	0	0	0	1	5	12	22	n.s.	n.s.	32.1%	15.8%	9.2%	6.4%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**87**	**117**	**136**	**155**	**124**	**79**	**67**	**3.1%**	**1.5%**	**1.3%**	**-2.2%**	**-4.5%**	**-1.6%**
Energy for Power Generation	**37**	**49**	**63**	**64**	**46**	**28**	**33**	**2.9%**	**2.5%**	**0.1%**	**-3.2%**	**-4.8%**	**1.6%**
Other Energy Transformation & Losses	**10**	**27**	**22**	**32**	**24**	**17**	**14**	**10.4%**	**-2.0%**	**4.0%**	**-2.8%**	**-3.2%**	**-2.3%**
Final consumption	**52**	**57**	**69**	**77**	**72**	**52**	**44**	**0.9%**	**2.0%**	**1.1%**	**-0.5%**	**-3.3%**	**-1.6%**
Steel, Non-Met. Minerals and Chem.	10	7	9	11	11	6	4	-3.5%	2.4%	2.1%	-0.3%	-6.4%	-3.2%
Other Industry	13	14	18	18	15	9	8	0.9%	2.6%	-0.1%	-1.6%	-5.5%	-1.2%
Non-Energy Use	4	6	4	3	3	1	1	2.8%	-2.6%	-4.3%	-0.8%	-7.0%	-7.7%
Residential	10	12	15	17	15	13	11	1.5%	2.2%	1.3%	-1.2%	-1.5%	-1.3%
Services	3	4	5	6	5	5	7	2.5%	1.8%	2.5%	-1.3%	0.0%	2.2%
Agriculture	1	2	2	2	2	3	3	1.7%	0.3%	3.5%	1.1%	1.1%	0.8%
Road	9	11	15	18	20	14	9	1.8%	3.0%	2.0%	0.7%	-3.5%	-3.6%
Rail	0	1	0	0	0	1	1	5.2%	-6.5%	2.0%	1.3%	1.8%	1.1%
Aviation	0	1	1	1	1	1	1	5.7%	5.0%	-1.2%	1.7%	-0.3%	-1.6%
Other Transport	0	0	0	0	0	0	0	n.s.	4.5%	19.2%	0.3%	-2.8%	-2.4%

[1] Nuclear energy is accounted as primary electricity

South Africa	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**36**	**48**	**61**	**61**	**38**	**12**	**4**	**2.9%**	**2.5%**	**-0.1%**	**-4.6%**	**-11.1%**	**-11.0%**
Coal	36	48	61	60	29	7	1	2.8%	2.5%	-0.2%	-7.0%	-13.8%	-20.2%
Oil	0	0	0	1	1	1	0	n.s.	n.s.	27.5%	8.7%	-5.6%	-7.4%
Gas	0	0	0	0	7	4	1	n.s.	n.s.	n.s.	n.s.	-6.5%	-8.5%
Biomass & Waste	0	0	0	0	1	1	1	n.s.	-0.7%	14.8%	3.7%	3.2%	4.1%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**168**	**211**	**262**	**256**	**240**	**205**	**264**	**2.3%**	**2.2%**	**-0.2%**	**-0.6%**	**-1.6%**	**2.6%**
Coal	156	193	242	220	109	26	3	2.2%	2.3%	-1.0%	-6.8%	-13.5%	-19.3%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	11.8%
Oil	0	0	0	1	3	2	1	n.s.	n.s.	15.2%	14.5%	-4.4%	-6.1%
Gas	0	0	0	0	31	16	7	n.s.	n.s.	n.s.	n.s.	-6.1%	-8.6%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	25.2%
Biomass & Waste	0	0	0	1	2	4	6	n.s.	-0.7%	14.8%	6.5%	5.2%	5.0%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	8	13	12	15	34	49	81	4.4%	-0.7%	2.3%	8.4%	3.6%	5.3%
Hydro	3	4	5	7	8	7	7	3.3%	2.6%	3.8%	0.5%	-0.3%	-0.7%
Wind	0	0	0	5	33	59	72	n.s.	n.s.	n.s.	19.6%	6.1%	2.0%
Solar	0	0	0	5	20	37	61	n.s.	n.s.	n.s.	13.8%	6.7%	5.1%
Other	1	0	2	0	1	5	27	-19.8%	36.8%	-22.4%	18.4%	18.1%	18.4%
Generation Capacity (GW_e)	**36**	**43**	**47**	**50**	**59**	**80**	**108**	**1.6%**	**1.0%**	**0.7%**	**1.7%**	**3.0%**	**3.0%**
Coal	31	37	38	33	14	7	1	1.8%	0.2%	-1.4%	-8.3%	-6.2%	-21.9%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	13.6%
Oil	0	0	0	0	0	0	0	29.8%	0.0%	-1.3%	2.8%	-1.2%	-2.0%
Gas	0	0	2	3	5	3	2	n.s.	n.s.	2.7%	5.8%	-4.6%	-3.4%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	27.0%
Biomass & Waste	0	0	0	0	0	1	1	n.s.	0.0%	10.8%	4.5%	7.0%	6.7%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	2	2	2	2	4	6	10	0.0%	0.0%	0.3%	8.4%	3.6%	5.3%
Hydro	4	4	5	5	5	6	5	0.2%	3.3%	-0.3%	0.2%	1.4%	-0.8%
Wind	0	0	0	3	14	26	32	n.s.	n.s.	n.s.	18.3%	6.0%	2.3%
Solar	0	0	0	5	17	32	54	n.s.	n.s.	n.s.	13.1%	6.6%	5.5%
Other	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	29.3%	34.1%
Total Final Consumption[2] (Mtoe)	**52**	**57**	**69**	**77**	**72**	**52**	**44**	**0.9%**	**2.0%**	**1.1%**	**-0.5%**	**-3.3%**	**-1.6%**
Coal	17	16	15	18	11	1	0	-0.8%	-0.1%	1.6%	-4.6%	-18.4%	-17.2%
Oil	15	16	23	27	25	12	4	0.7%	3.6%	1.5%	-0.6%	-7.2%	-10.0%
Gas	0	1	3	4	7	5	2	5.6%	11.8%	3.9%	6.0%	-3.7%	-7.3%
Electricity	12	15	17	17	16	13	17	2.3%	1.5%	-0.4%	-0.6%	-1.7%	2.7%
Heat	0	0	0	0	0	1	2	n.s.	n.s.	14.2%	5.6%	8.4%	5.3%
Biomass & Other	8	9	11	11	13	19	18	1.8%	1.5%	0.4%	1.7%	4.0%	-0.5%
Industry (incl. non-energy use)	**27**	**27**	**31**	**32**	**29**	**16**	**12**	**-0.2%**	**1.7%**	**0.1%**	**-1.0%**	**-6.0%**	**-2.3%**
Coal	14	14	12	12	9	1	0	-0.3%	-1.5%	-0.3%	-2.7%	-19.5%	-19.6%
Oil	4	2	4	5	4	2	1	-6.6%	9.4%	1.0%	-1.2%	-9.1%	-9.5%
Gas	0	1	3	3	4	1	0	5.5%	12.2%	2.5%	1.3%	-10.5%	-17.4%
Electricity	7	8	10	10	9	7	7	1.6%	2.2%	-0.4%	-0.6%	-3.5%	0.0%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	1	2	2	2	2	5	5	1.3%	1.6%	0.1%	1.8%	8.5%	-0.4%
Buildings	**14**	**16**	**20**	**23**	**20**	**18**	**18**	**1.7%**	**2.1%**	**1.6%**	**-1.3%**	**-1.1%**	**-0.1%**
Coal	2	1	3	6	2	0	0	-4.6%	8.3%	6.1%	-9.9%	-16.1%	-16.0%
Oil	1	1	1	1	2	1	1	5.0%	1.6%	0.8%	2.0%	-1.8%	-6.9%
Gas	0	0	0	0	3	3	1	8.2%	-4.6%	36.0%	18.7%	-0.3%	-6.4%
Electricity	4	6	6	6	5	4	7	3.4%	0.7%	-0.4%	-2.1%	-2.4%	6.5%
Heat	0	0	0	0	0	1	2	n.s.	n.s.	14.2%	5.6%	8.4%	5.3%
Biomass & Other	6	8	9	9	9	9	7	1.9%	1.4%	0.1%	-0.5%	0.7%	-2.4%
Agriculture	**1**	**2**	**2**	**2**	**2**	**3**	**3**	**1.7%**	**0.3%**	**3.5%**	**1.1%**	**1.1%**	**0.8%**
Coal	0	0	0	0	0	0	0	3.3%	-0.3%	23.1%	-4.5%	-7.5%	-7.5%
Oil	1	1	1	1	1	1	1	2.0%	-1.2%	3.0%	-1.9%	-3.7%	-4.1%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Electricity	0	0	1	0	1	1	1	0.8%	4.1%	-0.2%	3.4%	2.8%	2.1%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	45.7%	8.4%	3.0%
Transport	**10**	**12**	**16**	**20**	**21**	**15**	**11**	**2.1%**	**2.8%**	**1.8%**	**0.7%**	**-3.2%**	**-3.3%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	10	12	16	19	18	8	2	2.1%	3.0%	1.6%	-0.6%	-7.6%	-11.5%
Gas	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	56.7%	9.4%	-2.0%
Electricity	0	0	0	0	1	2	3	2.9%	-4.1%	1.3%	10.7%	8.5%	2.4%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	2	4	5	n.s.	n.s.	n.s.	20.1%	8.0%	2.1%
Other Energy Transformation & Losses[3]	**10**	**27**	**22**	**32**	**24**	**17**	**14**	**10.4%**	**-2.0%**	**4.0%**	**-2.8%**	**-3.2%**	**-2.3%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Rest Sub Saharan Africa	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	475	626	827	1 085	1 361	1 648	1 921	2.8%	2.8%	2.8%	2.3%	1.9%	1.5%
GDP per capita (ppp, k$'15)	1	1	2	2	4	6	9	-0.3%	3.6%	3.0%	4.1%	4.4%	4.5%
Prices													
International/Regional ($'15/boe)													
Coal	3	2	3	2	3	6	6	-3.4%	3.6%	-2.8%	3.1%	7.9%	-0.1%
Oil	39	38	86	88	89	79	81	-0.2%	8.4%	0.2%	0.1%	-1.2%	0.3%
Gas	24	28	33	47	55	61	62	1.5%	1.6%	3.4%	1.7%	1.1%	0.1%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**2 499**	**2 050**	**1 480**	**1 906**	**1 752**	**1 146**	**685**	**-2.0%**	**-3.2%**	**2.6%**	**-0.8%**	**-4.2%**	**-5.0%**
Total GHG (energy, industry, agriculture)	**896**	**1 012**	**1 218**	**1 641**	**1 937**	**1 447**	**947**	**1.2%**	**1.9%**	**3.0%**	**1.7%**	**-2.9%**	**-4.2%**
CO_2	164	225	270	518	991	709	490	3.2%	1.8%	6.7%	6.7%	-3.3%	-3.6%
CH_4	602	624	733	884	711	530	257	0.4%	1.6%	1.9%	-2.2%	-2.9%	-7.0%
N_2O	128	161	212	235	229	203	195	2.3%	2.8%	1.0%	-0.2%	-1.2%	-0.4%
F gases	2	2	3	5	6	5	4	-0.1%	4.3%	4.7%	1.9%	-0.6%	-4.2%
Total GHG from Energy and Industry	**561**	**600**	**672**	**1 066**	**1 432**	**999**	**516**	**0.7%**	**1.1%**	**4.7%**	**3.0%**	**-3.5%**	**-6.4%**
CO_2 Emissions from Fuel Comb.	**96**	**131**	**198**	**414**	**737**	**486**	**306**	**3.2%**	**4.2%**	**7.7%**	**5.9%**	**-4.1%**	**-4.5%**
Power generation/District heating	20	27	42	139	196	102	75	3.0%	4.3%	12.7%	3.5%	-6.3%	-2.9%
Industry	19	19	27	44	185	46	7	-0.2%	3.8%	5.0%	15.5%	-13.0%	-17.6%
Buildings	12	17	23	48	89	139	114	3.5%	3.0%	7.5%	6.4%	4.6%	-2.0%
Agriculture	2	4	3	4	4	3	3	6.3%	-1.5%	1.1%	1.2%	-2.1%	-2.5%
Transport	38	54	90	150	200	134	70	3.6%	5.2%	5.3%	3.0%	-4.0%	-6.3%
Other	5	10	13	31	63	63	38	8.4%	2.3%	9.1%	7.4%	0.0%	-4.8%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**11**	**54**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**17.7%**
Coal	0	0	0	0	0	5	10	n.s.	n.s.	n.s.	n.s.	n.s.	6.6%
Gas	0	0	0	0	0	4	7	n.s.	n.s.	n.s.	n.s.	n.s.	4.7%
Biomass	0	0	0	0	0	0	30	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	1	7	n.s.	n.s.	n.s.	n.s.	36.4%	21.0%
Energy Balance, by fuel (Mtoe)													
Primary Production	**324**	**445**	**643**	**719**	**1 002**	**1 061**	**1 061**	**3.2%**	**3.7%**	**1.1%**	**3.4%**	**0.6%**	**0.0%**
Coal	4	4	3	34	18	7	4	-0.8%	-4.0%	29.5%	-6.4%	-9.3%	-4.5%
Oil	139	197	285	278	184	81	43	3.5%	3.8%	-0.2%	-4.0%	-7.8%	-6.1%
Natural gas	5	16	47	63	123	105	84	12.2%	11.6%	2.9%	7.0%	-1.6%	-2.3%
Biomass	172	223	300	327	613	724	664	2.6%	3.0%	0.9%	6.5%	1.7%	-0.9%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	54.8%	8.9%
Hydro	4	5	8	9	10	12	15	3.1%	4.4%	1.5%	0.8%	2.4%	2.2%
Other renewables	0	0	1	8	55	132	250	2.9%	13.0%	19.7%	21.7%	9.2%	6.6%
Net Imports	**- 116**	**- 172**	**- 259**	**- 191**	**110**	**- 152**	**- 150**						
Coal	1	0	1	- 24	22	4	1						
Oil	- 115	- 163	- 231	- 175	- 50	4	3						
Natural gas	- 1	- 8	- 33	- 29	- 38	- 16	0						
Biomass	0	0	0	36	177	- 142	- 152						
Biofuels	0	0	0	- 2	- 3	- 6	- 5						
Electricity	0	- 1	4	3	3	3	3						
Primary Energy Demand[2]	**208**	**273**	**384**	**528**	**1 113**	**909**	**911**	2.7%	**3.5%**	**3.2%**	**7.7%**	**-2.0%**	**0.0%**
Coal	5	4	3	10	40	11	5	-2.0%	-1.5%	11.9%	14.5%	-12.3%	-7.3%
Oil	24	34	54	103	134	86	46	3.6%	4.7%	6.7%	2.6%	-4.4%	-6.0%
Natural gas	4	8	14	34	85	89	83	7.2%	6.1%	9.4%	9.7%	0.4%	-0.7%
Biomass	172	223	300	363	790	582	513	2.6%	3.0%	1.9%	8.1%	-3.0%	-1.3%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	54.8%	8.9%
Hydro	4	5	8	9	10	12	15	3.1%	4.4%	1.5%	0.8%	2.4%	2.2%
Other renewables	0	0	1	8	55	132	250	2.9%	13.0%	19.7%	21.7%	9.2%	6.6%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**208**	**273**	**384**	**528**	**1 113**	**909**	**911**	**2.7%**	**3.5%**	**3.2%**	**7.7%**	**-2.0%**	**0.0%**
Energy for Power Generation	**11**	**15**	**24**	**63**	**137**	**219**	**387**	**3.4%**	**5.0%**	**10.1%**	**8.0%**	**4.8%**	**5.9%**
Other Energy Transformation & Losses	**29**	**40**	**63**	**88**	**494**	**266**	**183**	**3.2%**	**4.7%**	**3.3%**	**18.9%**	**-6.0%**	**-3.7%**
Final consumption	**173**	**224**	**307**	**399**	**527**	**520**	**534**	**2.6%**	**3.2%**	**2.7%**	**2.8%**	**-0.1%**	**0.3%**
Steel, Non-Met. Minerals and Chem.	1	1	1	3	45	27	18	0.3%	0.5%	10.6%	29.8%	-5.0%	-4.1%
Other Industry	14	17	31	41	54	46	42	2.4%	6.1%	2.7%	2.9%	-1.6%	-0.9%
Non-Energy Use	1	1	2	4	4	4	4	0.6%	3.8%	7.9%	2.0%	-1.3%	-0.6%
Residential	138	177	228	281	323	338	349	2.5%	2.6%	2.1%	1.4%	0.4%	0.3%
Services	5	7	10	14	19	26	45	3.6%	3.7%	3.5%	2.9%	3.2%	5.7%
Agriculture	1	2	2	3	3	4	5	4.7%	0.4%	1.9%	2.2%	1.8%	1.5%
Road	12	18	31	51	72	65	60	4.0%	5.4%	5.1%	3.6%	-1.1%	-0.8%
Rail	0	0	0	0	0	1	1	-5.7%	-1.1%	7.9%	1.7%	1.7%	2.5%
Aviation	0	0	1	2	5	9	11	4.6%	8.2%	7.1%	12.0%	5.9%	1.7%
Other Transport	0	0	0	1	1	1	1	-1.2%	2.2%	9.6%	4.4%	-0.3%	1.0%

[1] Nuclear energy is accounted as primary electricity

Rest Sub Saharan Africa	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**7**	**9**	**15**	**47**	**72**	**75**	**121**	**3.7%**	**4.8%**	**11.9%**	**4.4%**	**0.4%**	**4.9%**
Coal	2	2	2	7	9	7	4	-1.2%	-0.6%	14.8%	1.9%	-2.8%	-4.1%
Oil	2	3	6	27	35	9	9	4.1%	5.5%	16.3%	2.9%	-12.9%	0.3%
Gas	2	4	7	11	21	23	29	7.1%	6.1%	4.8%	6.8%	1.1%	2.2%
Biomass & Waste	0	0	1	1	2	29	71	4.1%	5.8%	9.1%	6.2%	29.2%	9.2%
Other	0	0	0	1	5	7	8	2.9%	13.0%	19.2%	20.4%	3.3%	1.7%
Gross Elec. Generation (TWh_e)	**66**	**90**	**147**	**303**	**561**	**1 129**	**2 606**	**3.1%**	**5.0%**	**7.5%**	**6.3%**	**7.2%**	**8.7%**
Coal	6	5	4	23	37	30	21	-1.1%	-1.9%	17.5%	5.1%	-2.0%	-3.5%
of which CCS	0	0	0	0	0	7	13	n.s.	n.s.	n.s.	n.s.	n.s.	6.8%
Oil	8	12	20	110	155	41	42	3.7%	5.5%	18.4%	3.5%	-12.6%	0.4%
Gas	7	12	29	49	99	118	159	5.3%	8.9%	5.4%	7.2%	1.8%	3.0%
of which CCS	0	0	0	0	0	6	19	n.s.	n.s.	n.s.	n.s.	n.s.	12.2%
Biomass & Waste	0	1	1	3	9	147	363	3.8%	5.5%	11.0%	10.0%	32.8%	9.5%
of which CCS	0	0	0	0	0	0	27	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	44	59	90	105	113	182	294	3.1%	4.4%	1.5%	0.8%	4.9%	4.9%
Wind	0	0	0	3	58	211	438	21.5%	11.2%	n.s.	33.9%	13.9%	7.5%
Solar	0	0	0	1	33	284	920	n.s.	19.0%	47.1%	44.8%	24.1%	12.5%
Other	0	0	1	9	57	116	368	2.9%	13.0%	20.1%	20.2%	7.2%	12.3%
Generation Capacity (GW_e)	**24**	**27**	**41**	**67**	**150**	**571**	**1 256**	**1.3%**	**4.2%**	**5.0%**	**8.5%**	**14.3%**	**8.2%**
Coal	2	2	2	3	5	5	3	-0.5%	1.1%	4.3%	5.4%	-0.4%	-4.6%
of which CCS	0	0	0	0	0	1	2	n.s.	n.s.	n.s.	n.s.	n.s.	6.7%
Oil	4	5	8	18	46	62	65	1.2%	5.3%	8.2%	9.9%	3.1%	0.5%
Gas	3	6	11	17	19	29	41	8.2%	6.6%	4.7%	1.4%	4.2%	3.6%
of which CCS	0	0	0	0	0	1	2	n.s.	n.s.	n.s.	n.s.	n.s.	12.2%
Biomass & Waste	0	0	0	0	1	20	48	1.0%	8.8%	1.5%	9.0%	33.7%	9.0%
of which CCS	0	0	0	0	0	0	3	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	15	15	20	25	27	52	94	-0.2%	2.9%	2.5%	0.9%	6.5%	6.2%
Wind	0	0	0	1	21	74	144	7.4%	13.2%	n.s.	32.2%	13.2%	7.0%
Solar	0	0	0	1	22	317	837	n.s.	39.0%	31.8%	38.3%	30.7%	10.2%
Other	0	0	0	1	9	12	23	4.1%	12.0%	20.6%	20.5%	3.6%	6.3%
Total Final Consumption[2] (Mtoe)	**173**	**224**	**307**	**399**	**527**	**520**	**534**	**2.6%**	**3.2%**	**2.7%**	**2.8%**	**-0.1%**	**0.3%**
Coal	3	2	1	3	30	3	0	-2.6%	-4.2%	7.7%	27.1%	-19.3%	-18.9%
Oil	21	29	46	75	101	72	33	3.4%	4.9%	4.9%	3.0%	-3.3%	-7.6%
Gas	1	2	4	10	35	45	43	5.3%	6.1%	11.1%	13.2%	2.6%	-0.4%
Electricity	4	6	10	21	39	74	156	3.3%	5.7%	7.3%	6.2%	6.6%	7.8%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	7.4%	-1.6%	-2.8%	-0.7%
Biomass & Other	144	185	245	290	324	326	302	2.6%	2.8%	1.7%	1.1%	0.1%	-0.8%
Industry (incl. non-energy use)	**16**	**19**	**34**	**47**	**103**	**77**	**63**	**2.1%**	**5.7%**	**3.4%**	**8.1%**	**-2.9%**	**-1.9%**
Coal	2	1	1	3	30	3	0	-3.6%	-4.1%	11.2%	27.8%	-19.3%	-19.2%
Oil	4	4	6	9	12	6	2	1.0%	3.9%	3.2%	3.6%	-6.8%	-9.3%
Gas	1	1	4	7	20	10	3	2.3%	9.2%	7.1%	10.9%	-6.3%	-11.0%
Electricity	2	3	4	8	13	15	17	2.0%	4.2%	6.7%	4.9%	1.7%	0.6%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	7	10	19	21	29	42	41	3.9%	7.1%	1.0%	3.1%	3.8%	-0.1%
Buildings	**142**	**184**	**238**	**295**	**342**	**364**	**394**	**2.6%**	**2.6%**	**2.2%**	**1.5%**	**0.6%**	**0.8%**
Coal	0	0	0	0	0	0	0	-2.8%	-4.3%	-2.9%	-7.6%	-15.5%	-15.8%
Oil	3	5	7	13	17	21	15	3.3%	4.1%	5.9%	3.3%	1.9%	-3.4%
Gas	0	0	0	3	14	31	29	n.s.	n.s.	n.s.	16.6%	8.0%	-0.8%
Electricity	2	3	6	13	24	52	129	4.7%	7.3%	7.7%	6.4%	8.1%	9.6%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	7.4%	-1.6%	-2.8%	-0.7%
Biomass & Other	137	175	225	267	286	260	221	2.5%	2.5%	1.7%	0.7%	-1.0%	-1.6%
Agriculture	**1**	**2**	**2**	**3**	**3**	**4**	**5**	**4.7%**	**0.4%**	**1.9%**	**2.2%**	**1.8%**	**1.5%**
Coal	0	0	0	0	0	0	0	6.1%	-4.6%	-24.4%	-3.6%	-7.5%	-7.5%
Oil	0	1	1	1	1	1	1	6.4%	0.1%	4.5%	1.3%	-2.0%	-2.5%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Electricity	0	0	0	0	1	1	1	3.2%	-0.6%	5.9%	6.1%	5.5%	4.0%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	1	1	1	1	2	2	2	3.2%	2.5%	1.4%	1.9%	3.0%	1.9%
Transport	**13**	**19**	**32**	**53**	**79**	**75**	**72**	**3.8%**	**5.4%**	**5.2%**	**4.0%**	**-0.5%**	**-0.4%**
Coal	0	0	0	0	0	0	0	-22.1%	-3.5%	6.9%	0.0%	0.0%	0.0%
Oil	13	19	32	53	70	44	15	3.9%	5.4%	5.1%	2.9%	-4.6%	-10.3%
Gas	0	0	0	0	1	4	12	n.s.	n.s.	n.s.	n.s.	16.7%	11.8%
Electricity	0	0	0	0	1	5	8	n.s.	4.7%	39.7%	35.4%	14.9%	4.4%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	1	7	22	37	n.s.	n.s.	n.s.	24.9%	12.4%	5.3%
Other Energy Transformation & Losses[3]	**29**	**40**	**63**	**88**	**494**	**266**	**183**	**3.2%**	**4.7%**	**3.3%**	**18.9%**	**-6.0%**	**-3.7%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Iran	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	56	66	75	84	92	97	100	1.6%	1.2%	1.2%	0.9%	0.5%	0.4%
GDP per capita (ppp, k$'15)	7	9	13	15	20	29	37	2.1%	4.0%	1.2%	3.3%	3.5%	2.5%
Prices													
International/Regional ($'15/boe)													
Coal	3	2	3	2	3	7	7	-3.4%	3.6%	-3.7%	4.3%	8.2%	-0.1%
Oil	39	38	86	88	89	79	81	-0.2%	8.4%	0.2%	0.1%	-1.2%	0.3%
Gas	28	26	46	74	88	90	91	-0.7%	5.8%	4.7%	1.8%	0.2%	0.1%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**387**	**515**	**792**	**916**	**734**	**340**	**156**	**2.9%**	**4.4%**	**1.5%**	**-2.2%**	**-7.4%**	**-7.5%**
Total GHG (energy, industry, agriculture)	**388**	**508**	**781**	**911**	**732**	**341**	**158**	**2.7%**	**4.4%**	**1.6%**	**-2.2%**	**-7.4%**	**-7.4%**
CO_2	216	358	583	734	616	263	100	5.2%	5.0%	2.3%	-1.8%	-8.2%	-9.2%
CH_4	148	122	164	141	88	53	32	-1.9%	3.0%	-1.5%	-4.6%	-4.9%	-5.1%
N_2O	21	26	31	32	28	24	24	2.5%	1.7%	0.3%	-1.4%	-1.5%	0.2%
F gases	3	2	3	3	1	1	1	-2.5%	4.9%	0.6%	-9.9%	0.6%	1.2%
Total GHG from Energy and Industry	**352**	**466**	**738**	**867**	**692**	**303**	**117**	**2.8%**	**4.7%**	**1.6%**	**-2.2%**	**-7.9%**	**-9.1%**
CO_2 Emissions from Fuel Comb.	**184**	**319**	**512**	**646**	**525**	**239**	**96**	**5.7%**	**4.9%**	**2.4%**	**-2.1%**	**-7.5%**	**-8.7%**
Power generation/District heating	36	69	131	207	152	51	19	6.8%	6.6%	4.7%	-3.0%	-10.4%	-9.5%
Industry	38	45	86	113	92	47	13	1.8%	6.7%	2.8%	-2.0%	-6.5%	-11.8%
Buildings	43	92	122	123	108	70	32	8.0%	2.8%	0.1%	-1.3%	-4.3%	-7.4%
Agriculture	12	11	14	12	10	7	5	-0.8%	1.8%	-1.1%	-1.6%	-3.6%	-3.8%
Transport	39	75	122	130	102	35	15	6.7%	5.1%	0.6%	-2.4%	-10.1%	-8.0%
Other	16	26	37	60	59	30	12	4.9%	3.4%	5.0%	-0.1%	-6.8%	-8.7%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**1**	**6**	**n.s.**	**n.s.**	**n.s.**	**38.3%**	**37.0%**	**16.3%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	6.6%
Gas	0	0	0	0	0	1	2	n.s.	n.s.	n.s.	n.s.	n.s.	12.3%
Biomass	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	1	3	n.s.	n.s.	n.s.	38.3%	24.9%	17.1%
Energy Balance, by fuel (Mtoe)													
Primary Production	**184**	**243**	**325**	**351**	**301**	**196**	**136**	**2.8%**	**2.9%**	**0.8%**	**-1.5%**	**-4.2%**	**-3.6%**
Coal	0	1	1	1	1	1	0	7.9%	-0.3%	2.7%	3.1%	-1.7%	-11.9%
Oil	161	192	194	185	156	96	57	1.8%	0.1%	-0.5%	-1.7%	-4.7%	-5.0%
Natural gas	22	50	128	160	129	57	9	8.5%	9.9%	2.3%	-2.2%	-7.9%	-16.6%
Biomass	0	0	1	2	5	8	7	-3.5%	15.0%	13.5%	8.2%	4.9%	-0.5%
Nuclear[1]	0	0	0	1	3	9	12	n.s.	n.s.	n.s.	17.4%	12.8%	2.4%
Hydro	1	0	1	2	4	5	5	-5.0%	10.1%	8.6%	7.3%	2.8%	0.5%
Other renewables	0	0	0	0	4	20	44	n.s.	17.9%	21.3%	42.0%	17.9%	8.4%
Net Imports	**- 114**	**- 121**	**- 126**	**- 94**	**- 89**	**- 30**	**21**						
Coal	0	1	1	0	1	0	0						
Oil	- 110	- 123	- 115	- 91	- 83	- 65	- 42						
Natural gas	- 5	3	- 8	4	- 1	9	18						
Biomass	0	0	0	- 1	0	31	49						
Biofuels	0	0	0	0	0	0	0						
Electricity	0	- 1	- 4	- 6	- 6	- 5	- 5						
Primary Energy Demand[2]	**70**	**122**	**199**	**257**	**212**	**166**	**157**	5.7%	**5.0%**	**2.6%**	**-1.9%**	**-2.4%**	**-0.6%**
Coal	1	1	1	1	2	1	0	8.7%	-0.1%	0.8%	3.3%	-6.5%	-29.8%
Oil	51	69	80	94	73	31	16	2.9%	1.5%	1.7%	-2.5%	-8.3%	-6.5%
Natural gas	17	53	120	164	128	66	28	11.6%	8.6%	3.1%	-2.5%	-6.4%	-8.3%
Biomass	0	0	1	1	5	39	57	-3.5%	15.0%	3.6%	19.2%	22.6%	3.8%
Nuclear[1]	0	0	0	1	3	9	12	n.s.	n.s.	n.s.	17.4%	12.8%	2.4%
Hydro	1	0	1	2	4	5	5	-5.0%	10.1%	8.6%	7.3%	2.8%	0.5%
Other renewables	0	0	0	0	4	20	44	n.s.	17.9%	21.3%	42.0%	17.9%	8.4%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**70**	**122**	**199**	**257**	**212**	**166**	**157**	**5.7%**	**5.0%**	**2.6%**	**-1.9%**	**-2.4%**	**-0.6%**
Energy for Power Generation	**14**	**27**	**52**	**82**	**69**	**55**	**75**	**7.2%**	**6.8%**	**4.7%**	**-1.8%**	**-2.2%**	**3.1%**
Other Energy Transformation & Losses	**6**	**8**	**8**	**14**	**15**	**15**	**11**	**3.9%**	**-1.0%**	**6.1%**	**1.0%**	**-0.1%**	**-3.5%**
Final consumption	**55**	**95**	**155**	**188**	**157**	**134**	**127**	**5.6%**	**5.1%**	**1.9%**	**-1.8%**	**-1.6%**	**-0.5%**
Steel, Non-Met. Minerals and Chem.	1	3	9	11	8	6	5	17.6%	12.1%	1.4%	-2.8%	-3.0%	-0.7%
Other Industry	14	16	30	44	38	33	33	1.7%	6.4%	3.8%	-1.4%	-1.3%	-0.1%
Non-Energy Use	6	8	14	20	9	9	9	1.9%	6.0%	3.8%	-7.9%	0.2%	-0.3%
Residential	13	30	47	54	47	46	42	8.9%	4.6%	1.5%	-1.3%	-0.3%	-1.0%
Services	4	9	11	12	12	13	16	7.4%	2.3%	0.8%	-0.4%	1.2%	1.8%
Agriculture	4	4	6	8	9	11	12	0.4%	4.0%	2.0%	1.7%	1.5%	1.2%
Road	13	24	38	37	32	15	9	6.3%	4.5%	-0.2%	-1.4%	-7.6%	-4.2%
Rail	0	0	0	0	0	0	0	n.s.	36.8%	4.2%	3.0%	2.8%	1.9%
Aviation	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Other Transport	0	1	0	2	2	2	1	n.s.	-30.1%	n.s.	-0.8%	-3.1%	-2.0%

[1] Nuclear energy is accounted as primary electricity

Iran	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**13**	**27**	**51**	**80**	**58**	**21**	**13**	**7.5%**	**6.7%**	**4.5%**	**-3.1%**	**-9.8%**	**-4.3%**
Coal	0	0	0	1	1	1	0	22.3%	-3.1%	20.8%	4.1%	-1.9%	-6.1%
Oil	6	7	13	24	17	3	1	1.5%	6.1%	6.0%	-3.2%	-16.4%	-9.8%
Gas	7	19	38	55	40	17	7	11.2%	7.0%	3.8%	-3.2%	-8.4%	-8.3%
Biomass & Waste	0	0	0	0	0	0	5	n.s.	n.s.	25.9%	8.2%	20.7%	28.2%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**59**	**121**	**233**	**375**	**383**	**456**	**709**	**7.5%**	**6.7%**	**4.9%**	**0.2%**	**1.8%**	**4.5%**
Coal	0	0	0	2	5	4	2	22.2%	-3.1%	21.6%	6.2%	-1.5%	-5.9%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	6.8%
Oil	22	25	46	83	61	11	4	1.5%	6.1%	6.1%	-3.0%	-15.7%	-9.5%
Gas	31	92	177	257	192	81	39	11.5%	6.8%	3.8%	-2.8%	-8.2%	-7.0%
of which CCS	0	0	0	0	0	2	5	n.s.	n.s.	n.s.	n.s.	n.s.	12.4%
Biomass & Waste	0	0	0	0	0	2	25	n.s.	n.s.	26.0%	10.0%	22.7%	28.7%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	7	33	110	140	n.s.	n.s.	n.s.	17.4%	12.8%	2.4%
Hydro	6	4	10	24	46	61	64	-5.0%	10.1%	9.7%	6.8%	2.8%	0.4%
Wind	0	0	0	1	17	60	145	n.s.	16.0%	19.6%	33.2%	13.3%	9.2%
Solar	0	0	0	0	27	114	224	n.s.	n.s.	28.3%	53.9%	15.7%	7.0%
Other	0	0	0	0	1	13	66	n.s.	n.s.	n.s.	18.5%	26.7%	17.7%
Generation Capacity (GW_e)	**18**	**34**	**61**	**83**	**119**	**176**	**278**	**6.5%**	**6.2%**	**3.1%**	**3.7%**	**3.9%**	**4.7%**
Coal	0	0	0	0	1	1	0	22.4%	-3.2%	4.8%	5.2%	-1.0%	-4.1%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	8.4%
Oil	6	8	13	16	15	7	7	3.5%	4.1%	2.1%	-0.4%	-6.8%	-0.4%
Gas	10	23	40	49	44	19	14	8.6%	5.8%	2.0%	-1.0%	-8.1%	-3.2%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	14.4%
Biomass & Waste	0	0	0	0	0	0	4	n.s.	n.s.	5.1%	9.9%	23.2%	30.9%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	1	5	17	21	n.s.	n.s.	n.s.	17.1%	12.6%	2.2%
Hydro	2	2	8	17	32	42	45	0.2%	15.6%	6.9%	7.0%	2.7%	0.6%
Wind	0	0	0	0	7	22	49	n.s.	18.8%	16.1%	31.8%	12.5%	8.6%
Solar	0	0	0	0	15	67	135	n.s.	n.s.	28.3%	54.0%	15.9%	7.2%
Other	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	29.2%	43.1%
Total Final Consumption[2] (Mtoe)	**55**	**95**	**155**	**188**	**157**	**134**	**127**	**5.6%**	**5.1%**	**1.9%**	**-1.8%**	**-1.6%**	**-0.5%**
Coal	0	1	1	1	1	1	0	7.4%	-0.8%	4.6%	0.7%	-5.1%	-6.9%
Oil	41	56	64	63	49	26	14	3.3%	1.3%	-0.2%	-2.4%	-6.3%	-5.9%
Gas	9	29	73	96	73	42	19	12.0%	9.7%	2.7%	-2.6%	-5.4%	-7.6%
Electricity	4	8	16	27	28	33	48	6.7%	7.0%	5.5%	0.3%	1.6%	3.9%
Heat	0	0	0	0	0	3	5	n.s.	n.s.	n.s.	n.s.	55.6%	4.0%
Biomass & Other	0	0	1	1	5	29	41	-1.8%	16.3%	2.2%	21.1%	18.8%	3.4%
Industry (incl. non-energy use)	**21**	**27**	**53**	**74**	**54**	**48**	**47**	**2.7%**	**7.0%**	**3.4%**	**-3.0%**	**-1.3%**	**-0.2%**
Coal	0	1	1	1	1	1	0	7.2%	-0.7%	4.7%	0.8%	-5.1%	-6.9%
Oil	12	12	16	15	9	7	6	0.3%	2.6%	-1.0%	-4.9%	-2.0%	-1.6%
Gas	7	11	31	50	36	20	7	4.6%	11.2%	5.1%	-3.3%	-5.7%	-9.4%
Electricity	1	3	5	8	8	9	10	8.6%	6.7%	4.0%	0.3%	0.4%	1.6%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	11	23	n.s.	n.s.	n.s.	39.7%	54.5%	7.4%
Buildings	**17**	**39**	**58**	**66**	**59**	**59**	**57**	**8.6%**	**4.1%**	**1.4%**	**-1.2%**	**0.0%**	**-0.3%**
Coal	0	0	0	0	0	0	0	n.s.	-7.3%	-0.9%	-11.3%	n.s.	n.s.
Oil	12	15	9	6	8	7	3	3.0%	-5.0%	-3.8%	2.0%	-1.0%	-7.1%
Gas	3	19	40	44	36	20	9	21.7%	7.9%	1.1%	-2.0%	-5.5%	-7.5%
Electricity	3	5	8	15	13	15	27	5.3%	6.5%	6.1%	-1.9%	1.5%	6.5%
Heat	0	0	0	0	0	3	5	n.s.	n.s.	n.s.	n.s.	55.6%	4.0%
Biomass & Other	0	0	1	1	3	14	13	-1.8%	16.3%	0.5%	16.1%	17.2%	-1.0%
Agriculture	**4**	**4**	**6**	**8**	**9**	**11**	**12**	**0.4%**	**4.0%**	**2.0%**	**1.7%**	**1.5%**	**1.2%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	4	4	4	3	2	2	1	-0.8%	1.1%	-3.2%	-1.8%	-4.0%	-4.3%
Gas	0	0	0	1	1	1	1	n.s.	n.s.	12.5%	-0.9%	-2.5%	-2.8%
Electricity	0	1	2	4	5	6	8	9.4%	10.2%	5.9%	3.0%	2.5%	2.0%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	1	2	3	n.s.	n.s.	n.s.	51.9%	9.3%	3.3%
Transport	**13**	**25**	**38**	**40**	**35**	**16**	**11**	**6.6%**	**4.3%**	**0.4%**	**-1.4%**	**-7.2%**	**-4.0%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	13	25	35	39	30	10	3	6.6%	3.4%	1.1%	-2.5%	-10.6%	-10.1%
Gas	0	0	3	0	1	1	2	n.s.	n.s.	-24.5%	11.9%	5.5%	6.0%
Electricity	0	0	0	0	2	3	3	n.s.	36.8%	21.4%	28.0%	4.7%	-1.4%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	1	2	3	n.s.	n.s.	n.s.	30.2%	4.1%	3.2%
Other Energy Transformation & Losses[3]	**6**	**8**	**8**	**14**	**15**	**15**	**11**	**3.9%**	**-1.0%**	**6.1%**	**1.0%**	**-0.1%**	**-3.5%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Saudi Arabia	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	16	21	27	35	40	45	48	2.4%	2.8%	2.4%	1.5%	1.1%	0.8%
GDP per capita (ppp, k$'15)	23	23	30	32	36	42	46	0.3%	2.5%	0.8%	1.2%	1.6%	0.9%
Prices													
International/Regional ($'15/boe)													
Coal	3	2	3	2	3	7	7	-3.4%	3.6%	-3.7%	4.3%	8.2%	-0.1%
Oil	39	38	86	88	89	79	81	-0.2%	8.4%	0.2%	0.1%	-1.2%	0.3%
Gas	28	26	46	74	88	90	91	-0.7%	5.8%	4.7%	1.8%	0.2%	0.1%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**251**	**341**	**578**	**688**	**560**	**269**	**106**	**3.1%**	**5.4%**	**1.8%**	**-2.0%**	**-7.1%**	**-8.9%**
Total GHG (energy, industry, agriculture)	**251**	**340**	**577**	**688**	**560**	**269**	**106**	**3.1%**	**5.4%**	**1.8%**	**-2.0%**	**-7.1%**	**-8.9%**
CO_2	177	269	487	587	496	234	87	4.3%	6.1%	1.9%	-1.7%	-7.2%	-9.4%
CH_4	66	63	80	90	56	30	14	-0.4%	2.3%	1.2%	-4.5%	-6.3%	-7.0%
N_2O	6	7	7	9	6	4	4	1.3%	0.8%	1.8%	-3.4%	-3.5%	-1.6%
F gases	2	1	3	2	1	1	0	-5.7%	8.1%	-1.2%	-7.6%	-1.6%	-6.8%
Total GHG from Energy and Industry	**246**	**335**	**571**	**681**	**554**	**263**	**100**	**3.1%**	**5.5%**	**1.8%**	**-2.1%**	**-7.2%**	**-9.2%**
CO_2 Emissions from Fuel Comb.	**156**	**240**	**427**	**487**	**390**	**211**	**85**	**4.4%**	**5.9%**	**1.3%**	**-2.2%**	**-6.0%**	**-8.6%**
Power generation/District heating	59	104	181	152	92	39	16	5.9%	5.7%	-1.7%	-4.9%	-8.2%	-8.6%
Industry	28	53	112	152	125	63	16	6.5%	7.8%	3.1%	-2.0%	-6.6%	-12.7%
Buildings	3	4	5	5	6	6	5	3.0%	2.8%	0.4%	1.4%	-1.0%	-1.6%
Agriculture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Transport	49	61	105	125	79	32	12	2.1%	5.6%	1.7%	-4.4%	-8.8%	-9.2%
Other	17	19	24	52	87	71	36	1.1%	2.4%	7.9%	5.3%	-2.0%	-6.5%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**2**	**5**	**n.s.**	**n.s.**	**n.s.**	**24.6%**	**46.5%**	**10.4%**
Coal	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	n.s.	n.s.	1.1%
Gas	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	3.5%
Biomass	0	0	0	0	0	1	3	n.s.	n.s.	n.s.	n.s.	n.s.	19.4%
Direct Air Capture	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	24.6%	22.7%	5.8%
Energy Balance, by fuel (Mtoe)													
Primary Production	**344**	**441**	**476**	**660**	**583**	**360**	**211**	**2.5%**	**0.8%**	**3.3%**	**-1.2%**	**-4.7%**	**-5.2%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	316	399	403	583	512	310	183	2.4%	0.1%	3.8%	-1.3%	-4.9%	-5.1%
Natural gas	28	42	74	76	67	39	13	3.9%	5.9%	0.3%	-1.3%	-5.1%	-10.7%
Biomass	0	0	0	0	4	5	4	-9.3%	2.9%	54.3%	23.4%	2.9%	-2.5%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	27.2%
Hydro	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Other renewables	0	0	0	0	1	6	11	n.s.	n.s.	n.s.	27.3%	16.8%	6.8%
Net Imports	**- 282**	**- 343**	**- 291**	**- 461**	**- 422**	**- 229**	**- 103**						
Coal	0	0	0	0	1	1	1						
Oil	- 273	- 332	- 277	- 453	- 428	- 267	- 161						
Natural gas	- 9	- 11	- 14	- 7	5	9	12						
Biomass	0	0	0	0	1	27	46						
Biofuels	0	0	0	0	0	0	1						
Electricity	0	0	0	0	0	0	0						
Primary Energy Demand[2]	**62**	**98**	**186**	**199**	**162**	**130**	**108**	4.6%	**6.6%**	**0.7%**	**-2.1%**	**-2.1%**	**-1.9%**
Coal	0	0	0	0	1	1	1	n.s.	n.s.	n.s.	19.0%	5.2%	-5.6%
Oil	43	67	126	130	84	43	21	4.6%	6.5%	0.3%	-4.3%	-6.5%	-6.8%
Natural gas	19	31	60	69	72	49	25	4.7%	6.9%	1.4%	0.4%	-3.8%	-6.5%
Biomass	0	0	0	0	5	32	50	-9.5%	2.9%	52.9%	27.6%	21.0%	4.5%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	27.2%
Hydro	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Other renewables	0	0	0	0	1	6	11	n.s.	n.s.	n.s.	27.3%	16.8%	6.8%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**62**	**98**	**186**	**199**	**162**	**130**	**108**	**4.6%**	**6.6%**	**0.7%**	**-2.1%**	**-2.1%**	**-1.9%**
Energy for Power Generation	**22**	**37**	**65**	**55**	**35**	**21**	**19**	**5.6%**	**5.7%**	**-1.6%**	**-4.5%**	**-5.0%**	**-1.0%**
Other Energy Transformation & Losses	**6**	**5**	**17**	**20**	**39**	**46**	**36**	**-0.4%**	**12.3%**	**1.3%**	**7.2%**	**1.6%**	**-2.5%**
Final consumption	**39**	**64**	**121**	**140**	**100**	**77**	**68**	**4.9%**	**6.6%**	**1.5%**	**-3.3%**	**-2.5%**	**-1.2%**
Steel, Non-Met. Minerals and Chem.	0	0	1	1	1	1	1	n.s.	n.s.	0.2%	-0.4%	-1.4%	-1.4%
Other Industry	11	20	42	57	47	39	36	6.3%	7.7%	3.0%	-1.8%	-1.9%	-0.7%
Non-Energy Use	7	14	25	25	13	13	12	7.1%	5.7%	0.1%	-6.6%	-0.1%	-0.4%
Residential	3	6	11	12	8	7	6	5.9%	6.1%	0.6%	-3.5%	-2.1%	-1.1%
Services	1	2	5	2	1	1	1	5.3%	8.2%	-7.3%	-13.7%	1.1%	6.6%
Agriculture	0	0	0	1	1	1	1	9.2%	4.8%	5.6%	1.9%	1.8%	1.5%
Road	16	20	35	41	28	16	10	2.2%	5.8%	1.7%	-3.6%	-5.6%	-4.1%
Rail	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Aviation	1	1	1	1	1	1	0	2.0%	0.5%	2.2%	-0.1%	-3.2%	-2.7%
Other Transport	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.

[1] Nuclear energy is accounted as primary electricity

Saudi Arabia	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**22**	**37**	**65**	**55**	**34**	**15**	**7**	**5.6%**	**5.7%**	**-1.6%**	**-4.8%**	**-7.8%**	**-6.8%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	0.1%	16.3%	-0.2%
Oil	9	19	35	28	16	7	2	7.7%	6.0%	-2.1%	-5.2%	-8.2%	-13.3%
Gas	12	18	30	27	17	8	5	3.7%	5.3%	-1.1%	-4.4%	-7.9%	-4.1%
Biomass & Waste	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	8.7%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**69**	**126**	**240**	**219**	**149**	**125**	**123**	**6.2%**	**6.6%**	**-0.9%**	**-3.7%**	**-1.8%**	**-0.1%**
Coal	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	0.1%	16.3%	-0.2%
of which CCS	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	n.s.	n.s.	1.1%
Oil	34	68	129	105	64	29	7	7.2%	6.6%	-2.1%	-4.8%	-7.6%	-13.1%
Gas	35	58	111	112	70	30	22	5.1%	6.7%	0.1%	-4.6%	-8.1%	-3.2%
of which CCS	0	0	0	0	0	1	2	n.s.	n.s.	n.s.	n.s.	n.s.	3.4%
Biomass & Waste	0	0	0	0	0	1	3	n.s.	n.s.	n.s.	n.s.	n.s.	9.0%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	5.0%
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	0	0	0	0	0	1	2	n.s.	n.s.	n.s.	n.s.	n.s.	7.6%
Wind	0	0	0	1	4	24	40	n.s.	n.s.	n.s.	13.4%	19.8%	5.2%
Solar	0	0	0	0	10	33	37	n.s.	n.s.	n.s.	49.4%	12.6%	0.9%
Other	0	0	0	1	2	6	12	n.s.	n.s.	n.s.	11.7%	12.3%	7.9%
Generation Capacity (GW_e)	**24**	**31**	**60**	**72**	**57**	**67**	**70**	**2.6%**	**6.8%**	**1.8%**	**-2.3%**	**1.7%**	**0.4%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	0.0%	16.3%	0.2%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	1.6%
Oil	13	18	33	42	33	32	27	3.2%	6.4%	2.6%	-2.5%	-0.3%	-1.6%
Gas	11	13	27	29	16	7	5	1.9%	7.2%	0.7%	-5.5%	-7.8%	-3.1%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	3.7%
Biomass & Waste	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	9.5%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	5.5%
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	n.s.	16.5%
Wind	0	0	0	0	1	8	13	n.s.	n.s.	n.s.	13.1%	19.0%	5.0%
Solar	0	0	0	0	6	19	21	n.s.	n.s.	n.s.	49.8%	12.7%	1.1%
Other	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	35.9%
Total Final Consumption[2] (Mtoe)	**39**	**64**	**121**	**140**	**100**	**77**	**68**	**4.9%**	**6.6%**	**1.5%**	**-3.3%**	**-2.5%**	**-1.2%**
Coal	0	0	0	0	1	1	0	n.s.	n.s.	n.s.	23.3%	4.1%	-7.2%
Oil	29	43	76	92	60	30	16	4.3%	5.7%	2.0%	-4.2%	-6.6%	-5.9%
Gas	6	12	27	32	26	18	8	6.4%	9.0%	1.5%	-1.9%	-3.7%	-7.9%
Electricity	5	9	17	16	11	9	8	6.1%	7.4%	-0.7%	-3.8%	-2.3%	-0.5%
Heat	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	n.s.	33.7%	3.1%
Biomass & Other	0	0	0	0	2	19	35	-9.6%	2.9%	20.7%	48.8%	24.8%	6.1%
Industry (incl. non-energy use)	**18**	**34**	**69**	**84**	**62**	**53**	**49**	**6.6%**	**7.2%**	**2.0%**	**-3.0%**	**-1.5%**	**-0.7%**
Coal	0	0	0	0	1	1	0	n.s.	n.s.	n.s.	23.3%	4.1%	-7.2%
Oil	11	22	39	49	33	20	13	6.9%	6.0%	2.3%	-3.9%	-5.0%	-4.1%
Gas	6	12	27	32	25	16	5	6.4%	9.0%	1.4%	-2.4%	-4.5%	-10.3%
Electricity	1	1	2	3	3	3	3	4.2%	8.7%	3.0%	-0.2%	-1.3%	-0.5%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	14	28	n.s.	n.s.	n.s.	n.s.	48.5%	7.3%
Buildings	**5**	**8**	**16**	**14**	**9**	**7**	**7**	**5.7%**	**6.8%**	**-1.4%**	**-4.7%**	**-1.8%**	**-0.2%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	1	1	2	2	1	1	1	3.0%	2.8%	-0.5%	-2.6%	-3.3%	-3.3%
Gas	0	0	0	0	1	1	1	n.s.	n.s.	n.s.	17.9%	1.9%	-0.2%
Electricity	4	7	15	12	6	4	4	6.3%	7.3%	-1.6%	-6.5%	-4.3%	-0.5%
Heat	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	n.s.	33.7%	3.1%
Biomass & Other	0	0	0	0	0	0	1	-9.6%	2.9%	7.9%	24.7%	13.8%	1.7%
Agriculture	**0**	**0**	**0**	**1**	**1**	**1**	**1**	**9.2%**	**4.8%**	**5.6%**	**1.9%**	**1.8%**	**1.5%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Electricity	0	0	0	1	1	1	1	9.2%	4.8%	5.6%	1.9%	1.8%	1.5%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Transport	**16**	**20**	**35**	**42**	**29**	**17**	**11**	**2.2%**	**5.6%**	**1.7%**	**-3.5%**	**-5.5%**	**-4.0%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	16	20	35	42	26	10	3	2.2%	5.6%	1.7%	-4.5%	-9.4%	-11.4%
Gas	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	n.s.	9.9%	3.0%
Electricity	0	0	0	0	1	1	1	n.s.	n.s.	n.s.	33.5%	2.8%	-2.6%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	2	5	6	n.s.	n.s.	n.s.	51.7%	10.5%	2.3%
Other Energy Transformation & Losses[3]	**6**	**5**	**17**	**20**	**39**	**46**	**36**	**-0.4%**	**12.3%**	**1.3%**	**7.2%**	**1.6%**	**-2.5%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Turkey	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	54	63	72	82	89	94	96	1.6%	1.4%	1.3%	0.8%	0.5%	0.3%
GDP per capita (ppp, k$'15)	10	12	15	23	31	39	47	2.0%	2.5%	4.4%	2.8%	2.5%	1.9%
Prices													
International/Regional ($'15/boe)													
Coal	3	2	3	2	3	7	7	-3.4%	3.6%	-2.5%	3.3%	8.1%	1.1%
Oil	39	38	86	88	89	79	81	-0.2%	8.4%	0.2%	0.1%	-1.2%	0.3%
Gas	24	28	33	47	55	61	62	1.5%	1.6%	3.4%	1.7%	1.1%	0.1%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**178**	**280**	**395**	**506**	**467**	**196**	**79**	**4.7%**	**3.5%**	**2.5%**	**-0.8%**	**-8.3%**	**-8.6%**
Total GHG (energy, industry, agriculture)	**208**	**292**	**392**	**499**	**472**	**192**	**76**	**3.4%**	**3.0%**	**2.4%**	**-0.5%**	**-8.6%**	**-8.8%**
CO_2	142	223	307	407	400	136	32	4.6%	3.2%	2.9%	-0.2%	-10.2%	-13.5%
CH_4	41	42	51	49	35	26	20	0.3%	1.9%	-0.4%	-3.4%	-2.8%	-2.6%
N_2O	24	25	29	34	29	23	21	0.5%	1.4%	1.8%	-1.7%	-2.2%	-0.8%
F gases	1	1	5	8	8	6	3	7.1%	13.2%	5.1%	0.6%	-2.5%	-7.3%
Total GHG from Energy and Industry	**164**	**250**	**347**	**441**	**425**	**151**	**36**	**4.3%**	**3.3%**	**2.4%**	**-0.4%**	**-9.9%**	**-13.2%**
CO_2 Emissions from Fuel Comb.	**125**	**201**	**267**	**353**	**337**	**123**	**31**	**4.8%**	**2.9%**	**2.8%**	**-0.5%**	**-9.6%**	**-12.9%**
Power generation/District heating	31	68	96	100	87	19	- 2	8.1%	3.6%	0.4%	-1.4%	-14.3%	n.s.
Industry	33	58	54	64	74	25	5	5.8%	-0.7%	1.6%	1.5%	-10.3%	-14.6%
Buildings	23	27	49	54	37	16	5	1.6%	6.2%	1.0%	-3.7%	-8.2%	-10.9%
Agriculture	6	8	14	15	12	8	5	3.4%	5.4%	0.4%	-2.0%	-4.0%	-4.3%
Transport	27	34	43	88	91	40	18	2.6%	2.2%	7.5%	0.4%	-7.8%	-7.6%
Other	5	5	11	33	35	15	- 1	-0.8%	7.9%	11.7%	0.6%	-8.0%	n.s.
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**5**	**23**	**n.s.**	**n.s.**	**n.s.**	**37.9%**	**n.s.**	**15.4%**
Coal	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	7.1%
Gas	0	0	0	0	0	3	7	n.s.	n.s.	n.s.	n.s.	n.s.	8.5%
Biomass	0	0	0	0	0	2	12	n.s.	n.s.	n.s.	n.s.	n.s.	22.2%
Direct Air Capture	0	0	0	0	0	1	3	n.s.	n.s.	n.s.	37.9%	32.4%	19.7%
Energy Balance, by fuel (Mtoe)													
Primary Production	**23**	**25**	**31**	**45**	**60**	**99**	**141**	**0.8%**	**2.0%**	**4.0%**	**2.8%**	**5.2%**	**3.6%**
Coal	10	13	17	15	9	3	1	2.1%	3.4%	-1.7%	-4.4%	-11.9%	-9.5%
Oil	4	3	2	2	1	1	1	-2.9%	-1.0%	-2.7%	-5.0%	-5.1%	5.8%
Natural gas	0	1	1	1	2	3	3	11.5%	0.7%	9.0%	4.9%	1.6%	0.9%
Biomass	7	7	5	11	12	18	27	-1.0%	-3.5%	9.1%	0.8%	4.5%	3.9%
Nuclear[1]	0	0	0	0	0	3	8	n.s.	n.s.	n.s.	56.0%	32.9%	8.4%
Hydro	2	3	4	8	13	15	14	2.9%	5.3%	5.9%	4.8%	1.4%	-0.2%
Other renewables	0	0	1	9	22	57	87	12.2%	14.3%	21.2%	10.0%	9.8%	4.4%
Net Imports	**26**	**52**	**73**	**100**	**110**	**56**	**22**						
Coal	4	9	14	20	14	2	1						
Oil	20	28	29	45	49	25	9						
Natural gas	3	12	31	37	44	16	5						
Biomass	0	0	0	- 6	- 2	9	4						
Biofuels	0	0	0	0	0	0	0						
Electricity	- 1	3	- 1	4	4	4	4						
Primary Energy Demand[2]	**49**	**78**	**104**	**145**	**169**	**155**	**163**	4.6%	**3.0%**	**3.4%**	**1.5%**	**-0.9%**	**0.5%**
Coal	15	22	32	35	24	5	2	4.2%	3.8%	0.9%	-3.7%	-14.6%	-9.8%
Oil	23	30	31	47	50	25	10	2.6%	0.4%	4.1%	0.7%	-6.7%	-9.1%
Natural gas	3	13	31	38	46	19	8	16.0%	9.5%	2.0%	1.9%	-8.7%	-8.2%
Biomass	7	7	5	5	10	27	31	-1.0%	-3.5%	0.0%	7.8%	11.0%	1.1%
Nuclear[1]	0	0	0	0	0	3	8	n.s.	n.s.	n.s.	56.0%	32.9%	8.4%
Hydro	2	3	4	8	13	15	14	2.9%	5.3%	5.9%	4.8%	1.4%	-0.2%
Other renewables	0	0	1	9	22	57	87	12.2%	14.3%	21.2%	10.0%	9.8%	4.4%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**49**	**78**	**104**	**145**	**169**	**155**	**163**	**4.6%**	**3.0%**	**3.4%**	**1.5%**	**-0.9%**	**0.5%**
Energy for Power Generation	**11**	**24**	**37**	**49**	**68**	**89**	**123**	**7.9%**	**4.6%**	**2.8%**	**3.3%**	**2.7%**	**3.4%**
Other Energy Transformation & Losses	**1**	**5**	**4**	**15**	**17**	**16**	**7**	**11.9%**	**-0.2%**	**12.9%**	**1.4%**	**-1.0%**	**-7.7%**
Final consumption	**41**	**59**	**80**	**109**	**124**	**102**	**96**	**3.7%**	**3.1%**	**3.1%**	**1.3%**	**-1.9%**	**-0.6%**
Steel, Non-Met. Minerals and Chem.	5	6	9	17	23	19	22	2.1%	4.6%	6.1%	3.2%	-1.7%	1.2%
Other Industry	7	15	15	17	19	18	19	8.1%	0.3%	0.8%	1.5%	-0.5%	0.4%
Non-Energy Use	3	4	7	8	9	6	4	2.3%	7.3%	1.3%	0.4%	-3.7%	-4.5%
Residential	15	18	23	21	21	18	15	1.8%	2.7%	-0.7%	-0.2%	-1.7%	-1.4%
Services	1	2	6	13	14	13	14	13.4%	9.7%	8.4%	0.9%	-1.2%	1.3%
Agriculture	2	3	5	5	6	6	7	4.1%	5.5%	0.6%	1.1%	0.8%	0.5%
Road	8	11	13	25	29	20	14	2.3%	2.3%	6.8%	1.4%	-3.8%	-3.7%
Rail	0	0	0	0	0	0	0	0.4%	-3.6%	4.1%	1.1%	0.6%	0.4%
Aviation	0	1	0	1	2	1	1	9.5%	-5.7%	13.6%	2.2%	-4.7%	-3.0%
Other Transport	0	0	1	1	1	1	0	-2.6%	11.9%	0.0%	1.6%	-3.1%	-2.6%

[1] Nuclear energy is accounted as primary electricity

Turkey	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**9**	**21**	**32**	**33**	**33**	**14**	**15**	**8.7%**	**4.3%**	**0.3%**	**0.1%**	**-8.0%**	**0.2%**
Coal	6	11	14	16	8	1	0	6.4%	2.6%	1.3%	-6.9%	-20.5%	-7.6%
Oil	1	3	1	1	2	1	0	8.9%	-14.3%	3.3%	9.7%	-10.2%	-17.6%
Gas	2	7	17	15	22	8	5	13.3%	8.7%	-1.2%	3.6%	-9.8%	-4.2%
Biomass & Waste	0	0	0	1	1	3	6	n.s.	7.3%	18.5%	-0.4%	15.9%	7.9%
Other	0	0	0	0	1	2	3	-0.5%	24.3%	19.3%	12.5%	8.4%	3.4%
Gross Elec. Generation (TWh_e)	**58**	**125**	**211**	**303**	**441**	**544**	**735**	**8.1%**	**5.4%**	**3.7%**	**3.8%**	**2.1%**	**3.1%**
Coal	20	38	55	63	32	3	2	6.6%	3.7%	1.3%	-6.6%	-19.8%	-7.6%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	6.5%
Oil	4	9	2	3	8	3	0	9.0%	-13.5%	3.8%	10.2%	-10.0%	-17.3%
Gas	10	46	98	94	130	46	31	16.3%	7.8%	-0.5%	3.3%	-10.0%	-3.9%
of which CCS	0	0	0	0	0	8	19	n.s.	n.s.	n.s.	n.s.	n.s.	8.7%
Biomass & Waste	0	0	0	3	2	13	29	n.s.	7.6%	18.6%	-0.3%	18.2%	8.4%
of which CCS	0	0	0	0	0	2	10	n.s.	n.s.	n.s.	n.s.	n.s.	20.2%
Nuclear	0	0	0	0	2	39	87	n.s.	n.s.	n.s.	56.0%	32.7%	8.4%
Hydro	23	31	52	92	147	169	167	2.9%	5.3%	5.9%	4.8%	1.4%	-0.1%
Wind	0	0	3	43	86	152	202	n.s.	56.5%	31.0%	7.2%	5.8%	2.9%
Solar	0	0	0	1	18	88	149	n.s.	n.s.	n.s.	30.7%	17.0%	5.4%
Other	0	0	1	4	14	31	68	-0.5%	24.3%	20.9%	12.0%	8.4%	8.1%
Generation Capacity (GW_e)	**17**	**27**	**49**	**100**	**154**	**246**	**311**	**5.1%**	**6.1%**	**7.3%**	**4.5%**	**4.8%**	**2.4%**
Coal	6	7	12	14	10	5	1	2.9%	5.1%	1.5%	-3.2%	-6.1%	-20.8%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	7.7%
Oil	2	2	2	2	2	3	4	-2.7%	-0.4%	0.0%	4.4%	2.4%	2.0%
Gas	2	7	18	25	29	21	20	12.3%	10.0%	3.2%	1.6%	-3.2%	-0.5%
of which CCS	0	0	0	0	0	2	4	n.s.	n.s.	n.s.	n.s.	n.s.	10.9%
Biomass & Waste	0	0	0	0	0	3	6	n.s.	10.2%	12.9%	-1.3%	23.3%	9.5%
of which CCS	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	n.s.	20.6%
Nuclear	0	0	0	0	0	6	13	n.s.	n.s.	n.s.	55.7%	32.4%	8.2%
Hydro	7	11	16	40	63	73	74	5.1%	3.5%	9.7%	4.7%	1.5%	0.0%
Wind	0	0	1	17	32	58	74	n.s.	53.0%	28.7%	6.9%	6.0%	2.5%
Solar	0	0	0	1	14	68	105	n.s.	n.s.	n.s.	25.8%	17.3%	4.4%
Other	0	0	0	1	3	9	14	0.0%	20.2%	23.7%	12.9%	12.9%	4.9%
Total Final Consumption[2] (Mtoe)	**41**	**59**	**80**	**109**	**124**	**102**	**96**	**3.7%**	**3.1%**	**3.1%**	**1.3%**	**-1.9%**	**-0.6%**
Coal	8	12	17	15	13	3	1	3.5%	3.3%	-0.7%	-1.8%	-12.8%	-12.0%
Oil	20	26	28	41	42	21	8	2.5%	0.8%	3.8%	0.2%	-6.8%	-9.0%
Gas	1	5	13	22	23	11	7	21.0%	10.3%	5.3%	0.5%	-6.7%	-5.1%
Electricity	4	8	15	22	32	39	51	7.9%	5.9%	4.0%	3.9%	2.2%	2.6%
Heat	0	1	3	5	6	7	8	12.4%	9.2%	5.3%	1.6%	2.1%	1.4%
Biomass & Other	7	6	4	4	8	20	21	-1.1%	-3.7%	-1.4%	8.0%	9.0%	0.6%
Industry (incl. non-energy use)	**15**	**24**	**32**	**41**	**51**	**43**	**44**	**5.3%**	**2.7%**	**2.7%**	**2.0%**	**-1.5%**	**0.2%**
Coal	5	10	9	9	11	3	1	6.5%	-0.8%	0.3%	1.4%	-12.3%	-11.6%
Oil	6	8	8	9	10	6	4	2.9%	-0.2%	1.1%	0.7%	-4.3%	-5.4%
Gas	1	2	7	10	12	5	1	10.1%	14.0%	4.7%	1.4%	-8.0%	-15.2%
Electricity	2	4	7	11	15	19	26	5.4%	5.3%	4.7%	3.7%	2.5%	3.1%
Heat	0	0	1	2	2	2	2	50.7%	10.9%	4.4%	-0.2%	-0.3%	-0.2%
Biomass & Other	0	0	0	0	1	8	11	n.s.	n.s.	n.s.	31.1%	22.1%	3.4%
Buildings	**15**	**20**	**29**	**34**	**35**	**30**	**30**	**2.6%**	**3.7%**	**1.8%**	**0.2%**	**-1.5%**	**-0.2%**
Coal	3	2	7	6	2	0	0	-4.5%	13.9%	-2.1%	-10.5%	-16.2%	-16.4%
Oil	3	4	1	1	2	1	0	1.4%	-8.7%	-1.6%	2.7%	-3.5%	-9.8%
Gas	0	3	6	11	10	5	1	50.4%	7.5%	5.9%	-0.9%	-7.7%	-10.7%
Electricity	1	4	7	10	14	14	18	10.7%	6.5%	3.3%	2.7%	0.3%	2.7%
Heat	0	1	2	3	4	5	6	7.4%	8.0%	6.0%	2.6%	3.2%	1.9%
Biomass & Other	7	6	4	3	4	5	3	-1.1%	-3.7%	-5.1%	3.7%	2.2%	-4.9%
Agriculture	**2**	**3**	**5**	**5**	**6**	**6**	**7**	**4.1%**	**5.5%**	**0.6%**	**1.1%**	**0.8%**	**0.5%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	2	3	4	5	4	3	2	3.4%	5.3%	0.4%	-2.0%	-4.0%	-4.3%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	10.1%	-1.2%	-2.7%	-3.0%
Electricity	0	0	0	1	1	2	2	18.2%	6.2%	1.0%	6.0%	4.8%	3.3%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	1	2	3	n.s.	n.s.	n.s.	40.1%	7.7%	2.5%
Transport	**9**	**12**	**14**	**28**	**32**	**22**	**15**	**2.4%**	**2.1%**	**6.8%**	**1.4%**	**-3.8%**	**-3.6%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	9	12	14	26	27	11	3	2.4%	2.1%	6.3%	0.3%	-8.5%	-13.7%
Gas	0	0	0	0	0	1	4	n.s.	n.s.	-2.0%	34.4%	11.6%	11.0%
Electricity	0	0	0	0	2	4	4	8.3%	-6.5%	20.4%	25.0%	8.1%	-0.3%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	1	2	5	4	n.s.	n.s.	n.s.	7.8%	7.5%	-1.5%
Other Energy Transformation & Losses[3]	**1**	**5**	**4**	**15**	**17**	**16**	**7**	**11.9%**	**-0.2%**	**12.9%**	**1.4%**	**-1.0%**	**-7.7%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Mediterranean Middle East	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	25	34	44	51	59	66	73	3.0%	2.6%	1.4%	1.5%	1.2%	0.9%
GDP per capita (ppp, k$'15)	7	9	10	13	16	21	26	2.6%	1.4%	2.2%	2.4%	2.5%	2.4%
Prices													
International/Regional ($'15/boe)													
Coal	3	2	3	2	3	7	7	-3.4%	3.6%	-3.7%	4.3%	8.2%	-0.1%
Oil	39	38	86	88	89	79	81	-0.2%	8.4%	0.2%	0.1%	-1.2%	0.3%
Gas	28	26	46	74	88	90	91	-0.7%	5.8%	4.7%	1.8%	0.2%	0.1%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**122**	**176**	**213**	**208**	**192**	**91**	**35**	**3.7%**	**1.9%**	**-0.2%**	**-0.8%**	**-7.2%**	**-9.1%**
Total GHG (energy, industry, agriculture)	**123**	**176**	**212**	**208**	**192**	**91**	**35**	**3.6%**	**1.9%**	**-0.2%**	**-0.8%**	**-7.2%**	**-9.0%**
CO_2	86	133	169	164	154	60	16	4.5%	2.4%	-0.3%	-0.6%	-9.0%	-12.4%
CH_4	29	32	29	28	23	20	10	1.0%	-1.0%	-0.3%	-2.0%	-1.7%	-6.2%
N_2O	7	9	10	10	9	7	7	2.0%	1.1%	0.2%	-1.3%	-2.3%	-0.3%
F gases	1	2	3	5	6	4	2	6.3%	5.8%	3.7%	1.7%	-2.5%	-7.0%
Total GHG from Energy and Industry	**115**	**166**	**201**	**195**	**180**	**79**	**23**	**3.8%**	**1.9%**	**-0.3%**	**-0.8%**	**-7.9%**	**-11.5%**
CO_2 Emissions from Fuel Comb.	**77**	**118**	**157**	**150**	**138**	**55**	**15**	**4.4%**	**2.9%**	**-0.4%**	**-0.8%**	**-8.8%**	**-12.3%**
Power generation/District heating	29	59	88	83	67	22	5	7.3%	4.1%	-0.6%	-2.1%	-10.4%	-14.2%
Industry	8	10	13	12	13	5	1	2.4%	2.3%	-0.7%	1.1%	-8.9%	-13.5%
Buildings	12	13	14	9	8	5	2	1.0%	0.4%	-3.8%	-1.1%	-4.7%	-8.2%
Agriculture	1	1	2	1	1	1	0	4.0%	2.5%	-4.4%	-1.6%	-3.7%	-3.9%
Transport	18	26	35	39	40	17	5	3.7%	2.8%	1.0%	0.4%	-8.3%	-11.2%
Other	8	8	6	6	8	5	1	-0.8%	-3.1%	0.9%	3.0%	-5.7%	-15.2%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**1**	**3**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**57.3%**	**8.6%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	2.2%
Gas	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	n.s.	n.s.	4.2%
Biomass	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	24.0%	15.5%
Energy Balance, by fuel (Mtoe)													
Primary Production	**23**	**33**	**31**	**18**	**31**	**48**	**63**	**3.8%**	**-0.5%**	**-5.1%**	**5.5%**	**4.3%**	**2.9%**
Coal	0	0	0	0	0	0	0	5.1%	0.1%	n.s.	n.s.	n.s.	n.s.
Oil	20	27	19	3	1	1	1	2.9%	-3.2%	-16.3%	-8.5%	-8.3%	6.5%
Natural gas	1	5	10	12	23	32	37	12.1%	7.8%	2.6%	6.3%	3.2%	1.7%
Biomass	0	0	0	1	1	2	1	3.1%	1.2%	12.1%	9.0%	3.1%	-2.6%
Nuclear[1]	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	n.s.	19.8%	0.4%
Hydro	0	0	0	0	0	0	0	1.5%	-0.6%	-0.1%	1.4%	2.4%	0.6%
Other renewables	1	1	1	2	5	12	22	2.3%	6.7%	3.6%	11.0%	8.9%	6.1%
Net Imports	**4**	**11**	**25**	**33**	**23**	**- 8**	**- 20**						
Coal	2	7	8	7	5	1	0						
Oil	2	4	15	29	27	10	2						
Natural gas	0	0	5	1	- 5	- 22	- 35						
Biomass	0	0	0	0	1	6	16						
Biofuels	0	0	0	0	0	0	0						
Electricity	0	0	- 2	- 5	- 4	- 4	- 4						
Primary Energy Demand[2]	**27**	**43**	**56**	**51**	**54**	**39**	**43**	4.9%	**2.6%**	**-0.9%**	**0.6%**	**-3.2%**	**1.0%**
Coal	2	7	8	7	5	1	0	11.2%	1.4%	-0.1%	-4.9%	-15.5%	-11.6%
Oil	23	31	35	33	28	11	3	3.2%	1.1%	-0.6%	-1.4%	-9.2%	-11.0%
Natural gas	1	5	15	13	18	9	2	12.4%	11.8%	-1.1%	3.3%	-6.3%	-13.6%
Biomass	0	0	0	1	2	8	17	2.9%	1.2%	14.0%	12.8%	14.7%	8.0%
Nuclear[1]	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	n.s.	19.8%	0.4%
Hydro	0	0	0	0	0	0	0	1.5%	-0.6%	-0.1%	1.4%	2.4%	0.6%
Other renewables	1	1	1	2	5	12	22	2.3%	6.7%	3.6%	11.0%	8.9%	6.1%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**27**	**43**	**56**	**51**	**54**	**39**	**43**	**4.9%**	**2.6%**	**-0.9%**	**0.6%**	**-3.2%**	**1.0%**
Energy for Power Generation	**10**	**19**	**31**	**29**	**30**	**24**	**35**	**6.9%**	**5.1%**	**-0.5%**	**0.1%**	**-2.1%**	**3.9%**
Other Energy Transformation & Losses	**2**	**2**	**- 1**	**- 3**	**- 1**	**1**	**0**	**0.0%**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**
Final consumption	**18**	**29**	**37**	**37**	**41**	**32**	**33**	**4.9%**	**2.4%**	**0.0%**	**1.0%**	**-2.5%**	**0.4%**
Steel, Non-Met. Minerals and Chem.	0	1	2	1	2	1	1	17.8%	2.5%	-1.9%	1.9%	-3.9%	-0.9%
Other Industry	3	4	5	5	7	6	7	2.1%	2.7%	0.6%	2.2%	-1.3%	1.6%
Non-Energy Use	1	4	3	2	2	1	1	11.9%	-1.9%	-3.0%	-2.6%	-4.5%	-3.4%
Residential	3	6	8	7	7	6	7	6.2%	3.3%	-1.1%	-0.4%	-1.4%	0.9%
Services	3	3	4	5	5	5	8	0.1%	3.4%	1.2%	1.2%	-0.1%	4.8%
Agriculture	0	1	1	1	1	1	1	4.6%	2.7%	-1.9%	1.8%	1.6%	1.4%
Road	7	10	13	15	17	11	8	4.1%	3.0%	1.0%	1.4%	-4.2%	-3.2%
Rail	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Aviation	0	0	0	0	0	0	0	32.7%	-12.2%	-4.4%	1.1%	-2.1%	-2.4%
Other Transport	0	0	0	0	0	0	0	n.s.	5.8%	0.4%	1.3%	-2.8%	-1.5%

[1] Nuclear energy is accounted as primary electricity

Mediterranean Middle East	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**9**	**18**	**29**	**27**	**24**	**10**	**11**	**7.3%**	**5.2%**	**-0.7%**	**-1.3%**	**-8.3%**	**1.2%**
Coal	2	6	7	7	4	1	0	10.6%	1.7%	-0.6%	-5.7%	-15.9%	-10.9%
Oil	6	9	9	9	6	1	0	4.5%	0.3%	0.1%	-4.6%	-13.2%	-10.6%
Gas	1	2	13	11	14	7	2	13.8%	18.1%	-1.3%	2.6%	-7.0%	-12.5%
Biomass & Waste	0	0	0	0	0	1	9	n.s.	n.s.	3.6%	12.2%	29.0%	23.1%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**38**	**85**	**135**	**136**	**155**	**163**	**265**	**8.5%**	**4.8%**	**0.0%**	**1.3%**	**0.5%**	**5.0%**
Coal	10	29	34	32	18	3	1	10.9%	1.6%	-0.7%	-5.6%	-15.4%	-10.6%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	2.3%
Oil	21	42	39	43	27	7	2	7.0%	-0.8%	1.1%	-4.7%	-12.9%	-10.7%
Gas	3	10	59	51	68	35	10	13.6%	19.3%	-1.3%	2.9%	-6.6%	-11.4%
of which CCS	0	0	0	0	0	2	3	n.s.	n.s.	n.s.	n.s.	n.s.	4.2%
Biomass & Waste	0	0	0	0	0	6	48	n.s.	n.s.	4.8%	13.6%	30.6%	23.4%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	3	15	16	n.s.	n.s.	n.s.	n.s.	19.7%	0.3%
Hydro	3	4	4	4	5	7	8	1.5%	-0.6%	1.8%	1.8%	3.0%	2.0%
Wind	0	0	0	1	14	32	70	11.6%	13.9%	56.2%	30.6%	8.8%	8.2%
Solar	0	0	0	4	19	52	93	n.s.	n.s.	49.4%	17.4%	10.5%	5.9%
Other	0	0	0	0	1	6	17	n.s.	n.s.	n.s.	26.7%	18.2%	11.5%
Generation Capacity (GW_e)	**11**	**20**	**27**	**34**	**44**	**69**	**108**	**6.4%**	**2.9%**	**2.2%**	**2.7%**	**4.5%**	**4.6%**
Coal	2	4	5	4	3	1	0	7.8%	1.2%	-1.5%	-4.4%	-15.1%	-9.4%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	2.6%
Oil	7	9	6	6	5	6	4	2.9%	-4.3%	0.2%	-2.0%	1.8%	-3.2%
Gas	1	5	15	18	17	12	5	19.5%	11.5%	2.3%	-0.9%	-3.6%	-7.3%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	4.8%
Biomass & Waste	0	0	0	0	0	1	8	n.s.	n.s.	0.1%	13.7%	32.1%	25.5%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	2	2	n.s.	n.s.	n.s.	n.s.	19.5%	0.1%
Hydro	1	2	2	2	3	4	5	4.6%	-0.4%	2.4%	1.2%	3.9%	2.4%
Wind	0	0	0	0	5	12	25	0.0%	18.1%	49.0%	29.0%	8.6%	8.0%
Solar	0	0	0	3	12	32	57	n.s.	n.s.	42.3%	16.2%	10.5%	6.0%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	21.1%
Total Final Consumption[2] (Mtoe)	**18**	**29**	**37**	**37**	**41**	**32**	**33**	**4.9%**	**2.4%**	**0.0%**	**1.0%**	**-2.5%**	**0.4%**
Coal	0	0	0	1	1	0	0	30.2%	-0.1%	13.2%	1.3%	-11.5%	-11.9%
Oil	14	20	24	22	21	9	2	3.5%	1.9%	-0.8%	-0.4%	-8.6%	-11.6%
Gas	1	2	2	2	3	3	2	11.5%	-2.5%	-0.5%	5.3%	0.0%	-4.8%
Electricity	3	6	9	10	11	11	18	8.4%	4.8%	0.3%	1.4%	0.0%	4.7%
Heat	0	1	1	2	3	4	4	4.8%	6.6%	6.1%	3.3%	2.3%	0.0%
Biomass & Other	0	0	0	1	2	5	7	2.9%	-0.2%	16.1%	11.2%	11.5%	3.6%
Industry (incl. non-energy use)	**5**	**9**	**10**	**9**	**10**	**8**	**9**	**6.9%**	**0.9%**	**-0.9%**	**1.1%**	**-2.2%**	**0.7%**
Coal	0	0	0	1	1	0	0	30.2%	-0.1%	13.2%	1.3%	-11.5%	-11.9%
Oil	4	5	6	5	4	2	1	2.7%	1.1%	-1.9%	-0.4%	-7.9%	-7.4%
Gas	0	2	2	1	1	1	0	55.4%	-2.5%	-3.8%	0.4%	-3.4%	-9.4%
Electricity	1	2	3	3	4	4	5	7.3%	3.7%	1.2%	3.0%	-0.2%	2.4%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	1	3	n.s.	n.s.	n.s.	n.s.	29.6%	6.8%
Buildings	**6**	**9**	**12**	**12**	**12**	**11**	**15**	**3.7%**	**3.3%**	**-0.2%**	**0.3%**	**-0.9%**	**2.9%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	3	4	4	3	2	1	0	2.6%	0.4%	-5.1%	-3.9%	-7.2%	-8.9%
Gas	1	0	0	0	1	1	1	n.s.	n.s.	n.s.	9.9%	-1.2%	-7.6%
Electricity	2	4	7	6	6	4	9	9.1%	5.4%	-0.3%	-1.4%	-2.9%	8.3%
Heat	0	1	1	2	3	4	4	4.8%	6.6%	6.1%	3.3%	2.3%	0.0%
Biomass & Other	0	0	0	0	1	1	1	2.9%	-0.2%	9.2%	8.1%	6.7%	-1.8%
Agriculture	**0**	**1**	**1**	**1**	**1**	**1**	**1**	**4.6%**	**2.7%**	**-1.9%**	**1.8%**	**1.6%**	**1.4%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	0	0	1	0	0	0	0	4.0%	2.5%	-4.4%	-1.6%	-3.7%	-3.9%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Electricity	0	0	0	0	0	1	1	5.8%	3.0%	1.7%	2.8%	2.6%	2.3%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	46.0%	8.7%	3.1%
Transport	**7**	**10**	**14**	**15**	**17**	**11**	**8**	**4.4%**	**2.8%**	**0.9%**	**1.4%**	**-4.2%**	**-3.2%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	7	10	14	15	15	6	1	4.4%	2.8%	0.7%	0.2%	-9.2%	-14.8%
Gas	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	52.7%	9.5%	0.7%
Electricity	0	0	0	0	1	2	3	n.s.	n.s.	n.s.	33.9%	7.9%	1.2%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	1	2	3	n.s.	n.s.	n.s.	11.8%	10.4%	4.0%
Other Energy Transformation & Losses[3]	**2**	**2**	**- 1**	**- 3**	**- 1**	**1**	**0**	**0.0%**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Rest Gulf	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	36	50	72	95	116	137	156	3.3%	3.6%	2.9%	2.0%	1.7%	1.3%
GDP per capita (ppp, k$'15)	6	13	13	16	18	20	22	7.2%	0.6%	1.6%	1.6%	1.0%	0.7%
Prices													
International/Regional ($'15/boe)													
Coal	3	2	3	2	3	7	7	-3.4%	3.6%	-3.7%	4.3%	8.2%	-0.1%
Oil	39	38	86	88	89	79	81	-0.2%	8.4%	0.2%	0.1%	-1.2%	0.3%
Gas	28	26	46	74	88	90	91	-0.7%	5.8%	4.7%	1.8%	0.2%	0.1%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**365**	**490**	**808**	**1 068**	**829**	**419**	**188**	**3.0%**	**5.1%**	**2.8%**	**-2.5%**	**-6.6%**	**-7.7%**
Total GHG (energy, industry, agriculture)	**368**	**490**	**806**	**1 068**	**829**	**419**	**188**	**2.9%**	**5.1%**	**2.9%**	**-2.5%**	**-6.6%**	**-7.7%**
CO_2	214	327	574	785	625	309	132	4.3%	5.8%	3.2%	-2.3%	-6.8%	-8.1%
CH_4	140	150	212	261	187	96	45	0.7%	3.5%	2.1%	-3.2%	-6.4%	-7.4%
N_2O	9	12	16	18	13	10	10	2.8%	2.9%	1.2%	-2.7%	-2.6%	-0.4%
F gases	4	2	4	5	4	3	2	-6.0%	6.5%	0.8%	-3.1%	-0.8%	-6.4%
Total GHG from Energy and Industry	**355**	**476**	**787**	**1 047**	**809**	**400**	**169**	**3.0%**	**5.2%**	**2.9%**	**-2.5%**	**-6.8%**	**-8.2%**
CO_2 Emissions from Fuel Comb.	**176**	**275**	**496**	**677**	**524**	**281**	**125**	**4.5%**	**6.1%**	**3.2%**	**-2.5%**	**-6.1%**	**-7.8%**
Power generation/District heating	60	105	207	252	119	48	23	5.7%	7.0%	2.0%	-7.3%	-8.6%	-7.1%
Industry	44	61	109	164	129	62	17	3.3%	6.0%	4.2%	-2.4%	-7.0%	-12.2%
Buildings	9	15	19	20	21	18	16	4.8%	2.6%	0.4%	0.6%	-1.4%	-1.4%
Agriculture	0	1	1	1	1	1	0	11.0%	-5.2%	1.5%	-1.8%	-4.1%	-4.3%
Transport	43	58	103	128	95	35	15	3.0%	5.8%	2.3%	-2.9%	-9.6%	-8.1%
Other	19	35	58	112	159	117	54	6.1%	5.2%	6.8%	3.6%	-3.1%	-7.4%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**3**	**8**	**n.s.**	**n.s.**	**n.s.**	**36.2%**	**52.4%**	**8.2%**
Coal	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	n.s.	n.s.	3.6%
Gas	0	0	0	0	0	3	4	n.s.	n.s.	n.s.	n.s.	n.s.	5.7%
Biomass	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	36.2%	22.1%	7.3%
Energy Balance, by fuel (Mtoe)													
Primary Production	**347**	**527**	**650**	**1 013**	**1 087**	**664**	**360**	**4.3%**	**2.1%**	**4.5%**	**0.7%**	**-4.8%**	**-5.9%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	309	447	444	710	758	441	235	3.8%	-0.1%	4.8%	0.7%	-5.3%	-6.1%
Natural gas	37	80	205	302	324	212	106	8.1%	9.8%	3.9%	0.7%	-4.2%	-6.6%
Biomass	0	0	0	1	2	3	2	1.6%	4.5%	12.1%	13.3%	2.9%	-3.0%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	14.8%
Hydro	0	0	0	0	0	1	1	-13.5%	22.8%	-2.2%	2.6%	3.1%	0.9%
Other renewables	0	0	0	0	2	8	16	n.s.	n.s.	n.s.	27.7%	14.0%	6.9%
Net Imports	**- 277**	**- 420**	**- 445**	**- 722**	**- 853**	**- 473**	**- 195**						
Coal	0	0	1	1	2	1	1						
Oil	- 273	- 397	- 361	- 611	- 691	- 410	- 219						
Natural gas	- 4	- 23	- 91	- 120	- 175	- 118	- 58						
Biomass	0	0	0	0	4	46	74						
Biofuels	0	0	0	0	0	0	0						
Electricity	0	0	6	8	8	8	8						
Primary Energy Demand[2]	**70**	**108**	**206**	**291**	**234**	**191**	**165**	4.5%	**6.7%**	**3.5%**	**-2.2%**	**-2.0%**	**-1.5%**
Coal	0	0	1	1	2	1	1	n.s.	n.s.	5.9%	1.4%	-4.1%	-7.4%
Oil	36	50	83	99	67	31	15	3.4%	5.2%	1.8%	-3.9%	-7.5%	-6.8%
Natural gas	33	57	115	182	149	94	49	5.5%	7.2%	4.7%	-2.0%	-4.6%	-6.3%
Biomass	0	0	0	1	6	49	76	1.6%	4.5%	10.8%	26.4%	24.2%	4.4%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	14.8%
Hydro	0	0	0	0	0	1	1	-13.5%	22.8%	-2.2%	2.6%	3.1%	0.9%
Other renewables	0	0	0	0	2	8	16	n.s.	n.s.	n.s.	27.7%	14.0%	6.9%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**70**	**108**	**206**	**291**	**234**	**191**	**165**	**4.5%**	**6.7%**	**3.5%**	**-2.2%**	**-2.0%**	**-1.5%**
Energy for Power Generation	**23**	**40**	**79**	**100**	**49**	**30**	**29**	**5.7%**	**7.1%**	**2.3%**	**-6.8%**	**-4.9%**	**-0.3%**
Other Energy Transformation & Losses	**7**	**12**	**31**	**61**	**86**	**95**	**79**	**5.2%**	**9.7%**	**6.9%**	**3.5%**	**1.0%**	**-1.8%**
Final consumption	**45**	**65**	**114**	**158**	**116**	**84**	**75**	**3.8%**	**5.8%**	**3.3%**	**-3.1%**	**-3.2%**	**-1.1%**
Steel, Non-Met. Minerals and Chem.	2	4	6	11	8	5	4	6.8%	5.3%	6.7%	-4.1%	-4.8%	-1.7%
Other Industry	17	23	41	61	50	39	37	3.3%	5.9%	4.0%	-2.0%	-2.4%	-0.7%
Non-Energy Use	5	6	13	15	7	7	7	3.5%	7.1%	1.6%	-7.3%	-0.2%	-0.4%
Residential	6	9	14	17	10	9	10	4.4%	4.3%	1.6%	-5.1%	-0.3%	0.7%
Services	1	3	8	10	6	5	6	11.3%	10.1%	2.9%	-5.5%	-1.7%	1.5%
Agriculture	0	0	0	0	0	0	0	8.0%	-4.4%	2.1%	1.3%	0.9%	0.6%
Road	14	19	32	43	34	17	11	3.1%	5.1%	2.9%	-2.3%	-6.7%	-4.6%
Rail	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Aviation	0	0	0	1	1	1	1	n.s.	n.s.	8.5%	5.9%	-0.2%	-1.8%
Other Transport	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.

[1] Nuclear energy is accounted as primary electricity

Rest Gulf	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**23**	**40**	**79**	**99**	**47**	**21**	**12**	**5.8%**	**7.1%**	**2.3%**	**-7.3%**	**-7.7%**	**-5.2%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	5.2%	9.2%	0.7%
Oil	9	14	26	25	12	3	2	5.0%	6.6%	-0.6%	-7.1%	-12.0%	-4.5%
Gas	14	26	53	74	35	17	9	6.3%	7.4%	3.5%	-7.3%	-6.8%	-6.3%
Biomass & Waste	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	10.9%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**79**	**140**	**283**	**410**	**224**	**175**	**197**	**5.9%**	**7.3%**	**3.8%**	**-5.9%**	**-2.5%**	**1.2%**
Coal	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	5.3%	9.1%	0.7%
of which CCS	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	n.s.	n.s.	3.6%
Oil	31	53	65	68	33	10	6	5.6%	2.1%	0.4%	-7.0%	-11.5%	-4.1%
Gas	45	86	213	335	160	82	46	6.7%	9.5%	4.6%	-7.2%	-6.5%	-5.5%
of which CCS	0	0	0	0	0	7	12	n.s.	n.s.	n.s.	n.s.	n.s.	5.8%
Biomass & Waste	0	0	0	0	0	2	6	n.s.	n.s.	n.s.	n.s.	n.s.	11.2%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	3	1	5	4	5	7	8	-13.5%	22.8%	-2.2%	2.6%	3.1%	1.6%
Wind	0	0	0	0	3	15	30	n.s.	n.s.	n.s.	41.3%	18.1%	7.0%
Solar	0	0	0	2	22	54	74	n.s.	n.s.	n.s.	26.5%	9.4%	3.3%
Other	0	0	0	1	1	5	25	n.s.	n.s.	46.7%	2.9%	15.5%	18.1%
Generation Capacity (GW_e)	**26**	**35**	**68**	**123**	**114**	**84**	**82**	**2.9%**	**6.9%**	**6.2%**	**-0.8%**	**-3.0%**	**-0.2%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	5.3%	9.0%	0.8%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	3.7%
Oil	14	14	16	28	17	16	12	-0.1%	1.2%	6.0%	-5.1%	-0.5%	-2.3%
Gas	10	18	50	91	80	27	9	5.7%	10.5%	6.3%	-1.3%	-10.2%	-10.5%
of which CCS	0	0	0	0	0	1	2	n.s.	n.s.	n.s.	n.s.	n.s.	5.9%
Biomass & Waste	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	11.3%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	2	3	3	3	3	5	5	4.7%	-0.4%	0.8%	2.5%	3.1%	1.5%
Wind	0	0	0	0	1	5	10	n.s.	n.s.	n.s.	39.7%	17.4%	6.5%
Solar	0	0	0	1	12	30	43	n.s.	n.s.	n.s.	26.8%	9.5%	3.4%
Other	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	6.2%	n.s.
Total Final Consumption[2] (Mtoe)	**45**	**65**	**114**	**158**	**116**	**84**	**75**	**3.8%**	**5.8%**	**3.3%**	**-3.1%**	**-3.2%**	**-1.1%**
Coal	0	0	1	1	2	1	0	n.s.	n.s.	5.4%	1.0%	-5.3%	-9.4%
Oil	24	33	53	66	47	21	10	3.1%	4.8%	2.3%	-3.3%	-7.6%	-7.0%
Gas	15	22	41	63	49	28	14	4.1%	6.5%	4.4%	-2.5%	-5.4%	-6.5%
Electricity	6	10	19	27	15	12	13	6.2%	6.8%	3.4%	-5.5%	-2.6%	0.8%
Heat	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	n.s.	40.2%	1.7%
Biomass & Other	0	0	0	0	2	20	36	2.5%	5.7%	10.3%	20.1%	25.5%	5.9%
Industry (incl. non-energy use)	**23**	**33**	**60**	**87**	**65**	**51**	**47**	**3.7%**	**6.1%**	**3.8%**	**-3.0%**	**-2.4%**	**-0.7%**
Coal	0	0	1	1	2	1	0	n.s.	n.s.	5.4%	1.0%	-5.3%	-9.4%
Oil	7	9	14	17	12	8	6	2.2%	5.1%	1.9%	-3.9%	-3.7%	-3.2%
Gas	15	22	41	62	45	23	7	4.0%	6.5%	4.2%	-3.1%	-6.7%	-10.9%
Electricity	1	3	4	6	6	5	5	6.3%	3.3%	6.0%	-1.1%	-1.4%	0.3%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	14	29	n.s.	n.s.	n.s.	38.7%	44.1%	7.4%
Buildings	**7**	**12**	**22**	**27**	**16**	**15**	**16**	**5.7%**	**6.0%**	**2.1%**	**-5.2%**	**-0.8%**	**1.0%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	3	4	6	5	4	3	2	4.6%	2.7%	-0.7%	-2.9%	-3.9%	-3.0%
Gas	0	0	0	1	3	4	4	12.0%	-3.8%	21.7%	12.6%	1.8%	-0.1%
Electricity	4	7	16	20	8	5	6	6.2%	7.8%	2.6%	-9.2%	-4.8%	2.6%
Heat	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	n.s.	40.2%	1.7%
Biomass & Other	0	0	0	0	0	2	2	2.5%	5.7%	2.8%	10.8%	14.1%	3.1%
Agriculture	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**8.0%**	**-4.4%**	**2.1%**	**1.3%**	**0.9%**	**0.6%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	0	0	0	0	0	0	0	11.0%	-5.2%	1.5%	-1.8%	-4.1%	-4.3%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Electricity	0	0	0	0	0	0	0	-24.9%	22.5%	7.2%	5.2%	3.2%	2.1%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	47.6%	8.8%	3.3%
Transport	**14**	**19**	**32**	**43**	**35**	**18**	**11**	**3.1%**	**5.2%**	**3.0%**	**-2.1%**	**-6.4%**	**-4.4%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	14	19	32	43	31	11	2	3.1%	5.2%	2.9%	-3.1%	-10.4%	-13.4%
Gas	0	0	0	0	1	2	3	n.s.	n.s.	n.s.	50.7%	10.8%	7.8%
Electricity	0	0	0	0	2	2	1	n.s.	n.s.	n.s.	27.4%	0.9%	-3.5%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	1	4	4	n.s.	n.s.	n.s.	22.7%	13.2%	0.8%
Other Energy Transformation & Losses[3]	**7**	**12**	**31**	**61**	**86**	**95**	**79**	**5.2%**	**9.7%**	**6.9%**	**3.5%**	**1.0%**	**-1.8%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

China	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	1 179	1 290	1 367	1 428	1 434	1 389	1 316	0.9%	0.6%	0.4%	0.0%	-0.3%	-0.5%
GDP per capita (ppp, k$'15)	1	3	8	16	25	36	48	8.9%	9.6%	6.8%	4.8%	3.7%	2.8%
Prices													
International/Regional ($'15/boe)													
Coal	4	2	4	3	4	6	9	-9.4%	8.8%	-0.9%	1.5%	5.0%	3.7%
Oil	39	38	86	88	89	79	81	-0.2%	8.4%	0.2%	0.1%	-1.2%	0.3%
Gas	28	26	46	74	88	90	91	-0.7%	5.8%	4.7%	1.8%	0.2%	0.1%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**3 745**	**5 151**	**11 117**	**14 235**	**11 320**	**3 308**	**844**	**3.2%**	**8.0%**	**2.5%**	**-2.3%**	**-11.6%**	**-12.8%**
Total GHG (energy, industry, agriculture)	**4 067**	**5 441**	**11 450**	**14 559**	**11 722**	**3 899**	**1 494**	**3.0%**	**7.7%**	**2.4%**	**-2.1%**	**-10.4%**	**-9.1%**
CO_2	2 550	3 811	9 099	11 898	9 615	2 477	710	4.1%	9.1%	2.7%	-2.1%	-12.7%	-11.7%
CH_4	1 185	1 169	1 583	1 624	1 004	591	301	-0.1%	3.1%	0.3%	-4.7%	-5.2%	-6.5%
N_2O	317	394	505	562	495	393	344	2.2%	2.5%	1.1%	-1.3%	-2.3%	-1.3%
F gases	15	68	263	475	608	438	138	16.3%	14.5%	6.1%	2.5%	-3.2%	-10.9%
Total GHG from Energy and Industry	**3 198**	**4 566**	**10 419**	**13 456**	**10 908**	**3 238**	**893**	**3.6%**	**8.6%**	**2.6%**	**-2.1%**	**-11.4%**	**-12.1%**
CO_2 Emissions from Fuel Comb.	**2 282**	**3 292**	**7 800**	**10 009**	**7 583**	**2 007**	**651**	**3.7%**	**9.0%**	**2.5%**	**-2.7%**	**-12.4%**	**-10.6%**
Power generation/District heating	595	1 254	3 175	4 516	3 109	582	165	7.7%	9.7%	3.6%	-3.7%	-15.4%	-11.8%
Industry	858	992	2 711	2 663	2 036	425	95	1.5%	10.6%	-0.2%	-2.6%	-14.5%	-13.9%
Buildings	417	319	502	570	315	165	68	-2.6%	4.6%	1.3%	-5.8%	-6.3%	-8.5%
Agriculture	89	49	89	110	75	40	22	-5.9%	6.3%	2.0%	-3.8%	-6.0%	-5.9%
Transport	112	263	591	1 085	1 155	540	250	8.9%	8.4%	6.3%	0.6%	-7.3%	-7.4%
Other	211	415	732	1 066	893	255	51	7.0%	5.8%	3.8%	-1.8%	-11.8%	-14.9%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**1**	**18**	**104**	**n.s.**	**n.s.**	**n.s.**	**33.8%**	**37.0%**	**19.5%**
Coal	0	0	0	0	0	3	4	n.s.	n.s.	n.s.	n.s.	n.s.	1.8%
Gas	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	n.s.	18.6%
Biomass	0	0	0	0	0	8	66	n.s.	n.s.	n.s.	n.s.	n.s.	23.3%
Direct Air Capture	0	0	0	0	1	6	33	n.s.	n.s.	n.s.	33.8%	22.7%	18.7%
Energy Balance, by fuel (Mtoe)													
Primary Production	**898**	**1 124**	**2 130**	**2 597**	**2 257**	**1 647**	**1 611**	**2.3%**	**6.6%**	**2.0%**	**-1.4%**	**-3.1%**	**-0.2%**
Coal	536	719	1 632	1 890	1 177	235	44	3.0%	8.5%	1.5%	-4.6%	-14.9%	-15.5%
Oil	137	161	202	231	236	125	60	1.7%	2.3%	1.4%	0.2%	-6.1%	-7.1%
Natural gas	13	24	83	124	207	171	89	5.8%	13.5%	4.0%	5.2%	-1.9%	-6.3%
Biomass	200	198	133	131	229	482	499	-0.1%	-3.9%	-0.2%	5.7%	7.7%	0.4%
Nuclear[1]	0	1	6	27	61	75	86	n.s.	16.0%	15.7%	8.3%	2.1%	1.4%
Hydro	11	19	61	130	160	202	216	5.8%	12.3%	7.8%	2.1%	2.3%	0.7%
Other renewables	0	1	12	62	188	358	618	28.2%	27.7%	17.5%	11.6%	6.7%	5.6%
Net Imports	**- 32**	**9**	**370**	**703**	**812**	**448**	**281**						
Coal	- 47	- 52	139	204	163	15	75						
Oil	14	60	224	449	526	254	130						
Natural gas	1	- 1	9	35	68	21	- 3						
Biomass	0	0	0	20	59	160	81						
Biofuels	0	0	0	0	1	4	3						
Electricity	0	1	- 2	- 6	- 6	- 5	- 5						
Primary Energy Demand[2]	**866**	**1 133**	**2 500**	**3 300**	**3 069**	**2 094**	**1 892**	2.7%	**8.2%**	**2.8%**	**-0.7%**	**-3.7%**	**-1.0%**
Coal	489	668	1 771	2 095	1 340	250	118	3.2%	10.2%	1.7%	-4.4%	-15.5%	-7.2%
Oil	151	222	426	681	762	379	190	3.9%	6.8%	4.8%	1.1%	-6.7%	-6.7%
Natural gas	15	23	93	160	275	192	86	4.7%	14.9%	5.6%	5.6%	-3.5%	-7.7%
Biomass	200	198	133	151	288	641	580	-0.1%	-3.9%	1.2%	6.7%	8.3%	-1.0%
Nuclear[1]	0	1	6	27	61	75	86	n.s.	16.0%	15.7%	8.3%	2.1%	1.4%
Hydro	11	19	61	130	160	202	216	5.8%	12.3%	7.8%	2.1%	2.3%	0.7%
Other renewables	0	1	12	62	188	358	618	28.2%	27.7%	17.5%	11.6%	6.7%	5.6%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**866**	**1 133**	**2 500**	**3 300**	**3 069**	**2 094**	**1 892**	**2.7%**	**8.2%**	**2.8%**	**-0.7%**	**-3.7%**	**-1.0%**
Energy for Power Generation	**163**	**342**	**897**	**1 390**	**1 288**	**885**	**1 046**	**7.7%**	**10.1%**	**4.5%**	**-0.8%**	**-3.7%**	**1.7%**
Other Energy Transformation & Losses	**56**	**71**	**282**	**369**	**415**	**462**	**358**	**2.3%**	**14.7%**	**2.7%**	**1.2%**	**1.1%**	**-2.5%**
Final consumption	**703**	**840**	**1 697**	**2 226**	**2 140**	**1 517**	**1 349**	**1.8%**	**7.3%**	**2.8%**	**-0.4%**	**-3.4%**	**-1.2%**
Steel, Non-Met. Minerals and Chem.	159	225	664	712	592	321	260	3.5%	11.4%	0.7%	-1.8%	-5.9%	-2.1%
Other Industry	108	119	298	410	484	362	353	0.9%	9.6%	3.3%	1.7%	-2.9%	-0.2%
Non-Energy Use	52	67	121	176	177	143	127	2.7%	6.0%	3.9%	0.0%	-2.1%	-1.1%
Residential	294	278	281	344	286	220	184	-0.5%	0.1%	2.0%	-1.8%	-2.6%	-1.8%
Services	26	41	98	168	154	150	187	4.8%	9.2%	5.5%	-0.8%	-0.2%	2.2%
Agriculture	29	18	34	41	43	43	42	-4.5%	6.2%	2.1%	0.3%	0.0%	-0.1%
Road	22	66	161	305	315	205	135	11.6%	9.3%	6.6%	0.3%	-4.2%	-4.1%
Rail	10	9	12	13	16	17	19	-1.3%	2.9%	0.9%	1.8%	1.0%	0.6%
Aviation	1	4	11	24	35	29	21	22.1%	10.3%	7.7%	4.1%	-1.9%	-3.0%
Other Transport	3	12	17	33	39	27	20	16.7%	3.8%	6.6%	1.7%	-3.6%	-2.8%

[1] Nuclear energy is accounted as primary electricity

China	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**152**	**320**	**817**	**1 170**	**879**	**251**	**126**	**7.7%**	**9.8%**	**3.7%**	**-2.8%**	**-11.8%**	**-6.6%**
Coal	139	302	783	1 097	664	70	12	8.1%	10.0%	3.4%	-4.9%	-20.2%	-15.8%
Oil	13	14	4	31	75	43	14	0.6%	-10.9%	21.8%	9.2%	-5.4%	-10.6%
Gas	1	4	18	21	97	75	42	19.5%	17.1%	1.5%	16.5%	-2.5%	-5.7%
Biomass & Waste	0	1	12	21	43	63	58	n.s.	30.2%	5.9%	7.5%	4.0%	-0.8%
Other	0	0	0	0	0	0	0	6.7%	1.4%	-3.0%	-6.0%	-1.4%	n.s.
Gross Elec. Generation (TWh_e)	**651**	**1 399**	**4 269**	**7 595**	**8 523**	**7 578**	**9 027**	**7.9%**	**11.8%**	**5.9%**	**1.2%**	**-1.2%**	**1.8%**
Coal	470	1 079	3 264	4 967	3 040	324	58	8.7%	11.7%	4.3%	-4.8%	-20.1%	-15.8%
of which CCS	0	0	0	0	0	4	4	n.s.	n.s.	n.s.	n.s.	n.s.	0.8%
Oil	52	49	16	134	335	192	63	-0.5%	-10.6%	23.6%	9.6%	-5.4%	-10.5%
Gas	3	18	92	112	515	400	240	20.6%	17.8%	2.0%	16.4%	-2.5%	-5.0%
of which CCS	0	0	0	0	0	1	4	n.s.	n.s.	n.s.	n.s.	n.s.	18.0%
Biomass & Waste	0	2	34	63	158	268	262	n.s.	30.2%	6.4%	9.6%	5.4%	-0.2%
of which CCS	0	0	0	0	0	6	27	n.s.	n.s.	n.s.	n.s.	n.s.	15.9%
Nuclear	0	17	74	318	707	863	984	n.s.	16.0%	15.7%	8.3%	2.0%	1.3%
Hydro	127	222	722	1 578	1 939	2 421	2 603	5.8%	12.5%	8.1%	2.1%	2.2%	0.7%
Wind	0	1	45	328	1 589	2 124	2 328	n.s.	53.5%	22.1%	17.1%	2.9%	0.9%
Solar	0	0	1	90	208	907	1 677	27.1%	41.4%	n.s.	8.8%	15.9%	6.3%
Other	0	11	22	5	33	78	811	52.0%	7.3%	-13.7%	21.1%	8.8%	26.4%
Generation Capacity (GW_e)	**158**	**352**	**1 041**	**1 940**	**2 826**	**3 131**	**3 766**	**8.4%**	**11.4%**	**6.4%**	**3.8%**	**1.0%**	**1.9%**
Coal	98	232	707	1 000	995	284	71	9.0%	11.8%	3.5%	0.0%	-11.8%	-12.9%
of which CCS	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	n.s.	n.s.	6.0%
Oil	21	21	16	23	57	52	67	0.2%	-2.9%	3.9%	9.6%	-1.0%	2.6%
Gas	3	11	35	48	79	77	128	14.9%	12.4%	3.2%	5.2%	-0.3%	5.2%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	24.1%
Biomass & Waste	0	0	7	10	20	40	64	n.s.	30.4%	3.4%	7.8%	7.1%	4.8%
of which CCS	0	0	0	0	0	1	6	n.s.	n.s.	n.s.	n.s.	n.s.	21.9%
Nuclear	0	2	10	48	105	125	140	n.s.	16.6%	16.9%	8.1%	1.8%	1.1%
Hydro	36	85	234	443	524	642	695	9.0%	10.6%	6.6%	1.7%	2.1%	0.8%
Wind	0	0	31	191	808	1 055	1 156	7.4%	57.2%	19.9%	15.5%	2.7%	0.9%
Solar	0	0	1	177	238	853	1 367	26.7%	31.7%	n.s.	3.0%	13.6%	4.8%
Other	0	0	0	0	0	2	78	0.0%	0.4%	4.8%	19.0%	24.9%	42.4%
Total Final Consumption[2] (Mtoe)	**703**	**840**	**1 697**	**2 226**	**2 140**	**1 517**	**1 349**	**1.8%**	**7.3%**	**2.8%**	**-0.4%**	**-3.4%**	**-1.2%**
Coal	322	297	767	743	514	145	78	-0.8%	10.0%	-0.3%	-3.6%	-11.9%	-6.0%
Oil	114	210	373	595	608	285	148	6.3%	5.9%	4.8%	0.2%	-7.3%	-6.3%
Gas	10	16	62	106	110	84	45	4.9%	14.4%	5.5%	0.4%	-2.6%	-6.1%
Electricity	43	92	301	541	604	541	631	7.8%	12.5%	6.1%	1.1%	-1.1%	1.5%
Heat	13	28	73	128	156	159	154	7.7%	10.2%	5.7%	2.0%	0.2%	-0.3%
Biomass & Other	200	197	120	112	147	303	292	-0.2%	-4.8%	-0.8%	2.8%	7.5%	-0.4%
Industry (incl. non-energy use)	**319**	**411**	**1 082**	**1 298**	**1 252**	**825**	**740**	**2.6%**	**10.2%**	**1.8%**	**-0.4%**	**-4.1%**	**-1.1%**
Coal	204	226	670	655	484	137	75	1.0%	11.5%	-0.2%	-3.0%	-11.8%	-5.8%
Oil	67	97	138	177	185	95	68	3.8%	3.6%	2.5%	0.4%	-6.4%	-3.3%
Gas	8	10	28	57	62	31	11	2.4%	11.2%	7.4%	0.9%	-6.8%	-9.5%
Electricity	30	60	204	350	431	350	350	7.1%	13.0%	5.6%	2.1%	-2.0%	0.0%
Heat	11	19	43	58	71	82	87	5.9%	8.4%	3.2%	2.0%	1.4%	0.7%
Biomass & Other	0	0	0	0	19	130	148	n.s.	n.s.	n.s.	45.1%	21.3%	1.3%
Buildings	**319**	**319**	**379**	**511**	**440**	**371**	**371**	**0.0%**	**1.7%**	**3.0%**	**-1.5%**	**-1.7%**	**0.0%**
Coal	97	61	82	74	22	3	0	-4.6%	3.1%	-1.1%	-11.5%	-17.6%	-17.2%
Oil	8	19	34	56	43	25	10	9.8%	6.0%	4.9%	-2.6%	-5.2%	-8.5%
Gas	2	7	27	43	40	31	14	10.8%	15.4%	4.6%	-0.8%	-2.4%	-7.5%
Electricity	9	27	85	175	143	147	230	11.4%	12.3%	7.4%	-2.0%	0.2%	4.6%
Heat	3	9	31	69	85	77	67	13.4%	13.2%	8.5%	2.1%	-1.0%	-1.4%
Biomass & Other	200	197	119	95	107	88	49	-0.2%	-4.9%	-2.2%	1.2%	-2.0%	-5.6%
Agriculture	**29**	**18**	**34**	**41**	**43**	**43**	**42**	**-4.5%**	**6.2%**	**2.1%**	**0.3%**	**0.0%**	**-0.1%**
Coal	11	6	11	12	7	3	1	-5.8%	6.8%	0.7%	-5.7%	-8.5%	-8.5%
Oil	15	8	14	19	15	9	5	-5.9%	5.8%	3.2%	-2.4%	-4.8%	-5.1%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	5.9%	-1.0%	-2.8%	-3.1%
Electricity	4	5	8	10	13	15	17	2.2%	6.2%	1.4%	3.1%	1.6%	0.7%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	8	15	19	n.s.	n.s.	n.s.	38.0%	7.3%	2.3%
Transport	**35**	**92**	**201**	**375**	**405**	**279**	**195**	**9.9%**	**8.2%**	**6.4%**	**0.8%**	**-3.7%**	**-3.5%**
Coal	10	4	3	2	2	2	1	-8.0%	-2.8%	-2.9%	-2.0%	-2.0%	-2.0%
Oil	25	86	186	343	365	155	64	13.1%	8.0%	6.3%	0.6%	-8.2%	-8.4%
Gas	0	0	7	7	8	23	20	n.s.	n.s.	-0.5%	2.3%	10.6%	-1.5%
Electricity	1	1	3	7	16	29	34	9.6%	10.3%	7.4%	8.8%	5.9%	1.6%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	2	16	14	70	76	n.s.	n.s.	25.6%	-1.7%	17.8%	0.8%
Other Energy Transformation & Losses[3]	**56**	**71**	**282**	**369**	**415**	**462**	**358**	**2.3%**	**14.7%**	**2.7%**	**1.2%**	**1.1%**	**-2.5%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

India	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	870	1 053	1 231	1 386	1 520	1 619	1 681	1.9%	1.6%	1.2%	0.9%	0.6%	0.4%
GDP per capita (ppp, k$'15)	1	2	4	6	12	18	27	3.6%	5.9%	5.8%	6.3%	4.5%	3.8%
Prices													
International/Regional ($'15/boe)													
Coal	3	1	3	4	5	8	9	-7.8%	10.3%	2.1%	1.6%	6.2%	0.1%
Oil	39	38	86	88	89	79	81	-0.2%	8.4%	0.2%	0.1%	-1.2%	0.3%
Gas	28	26	46	74	88	90	91	-0.7%	5.8%	4.7%	1.8%	0.2%	0.1%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**1 311**	**1 896**	**2 790**	**3 958**	**3 583**	**1 942**	**830**	**3.8%**	**3.9%**	**3.6%**	**-1.0%**	**-5.9%**	**-8.1%**
Total GHG (energy, industry, agriculture)	**1 359**	**1 866**	**2 761**	**3 995**	**3 620**	**2 014**	**924**	**3.2%**	**4.0%**	**3.8%**	**-1.0%**	**-5.7%**	**-7.5%**
CO_2	586	995	1 701	2 825	2 588	1 147	336	5.4%	5.5%	5.2%	-0.9%	-7.8%	-11.5%
CH_4	617	673	794	850	689	565	355	0.9%	1.7%	0.7%	-2.1%	-2.0%	-4.5%
N_2O	146	182	238	272	261	223	203	2.2%	2.7%	1.3%	-0.4%	-1.6%	-0.9%
F gases	10	16	28	48	82	79	29	4.6%	5.8%	5.7%	5.4%	-0.3%	-9.4%
Total GHG from Energy and Industry	**804**	**1 275**	**2 077**	**3 267**	**2 998**	**1 472**	**401**	**4.7%**	**5.0%**	**4.6%**	**-0.9%**	**-6.9%**	**-12.2%**
CO_2 Emissions from Fuel Comb.	**534**	**910**	**1 554**	**2 570**	**2 216**	**1 026**	**324**	**5.5%**	**5.5%**	**5.2%**	**-1.5%**	**-7.4%**	**-10.9%**
Power generation/District heating	213	488	791	1 426	1 040	350	67	8.6%	4.9%	6.1%	-3.1%	-10.3%	-15.2%
Industry	143	171	391	473	398	114	21	1.9%	8.6%	1.9%	-1.7%	-11.7%	-15.8%
Buildings	75	96	151	179	231	238	119	2.5%	4.6%	1.7%	2.6%	0.3%	-6.7%
Agriculture	14	26	27	37	32	21	14	6.6%	0.5%	3.2%	-1.6%	-3.9%	-4.2%
Transport	74	95	163	315	379	216	84	2.5%	5.5%	6.8%	1.9%	-5.5%	-9.0%
Other	16	33	30	141	136	86	19	7.6%	-0.7%	16.5%	-0.3%	-4.4%	-13.9%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**2**	**21**	**n.s.**	**n.s.**	**n.s.**	**31.5%**	**25.8%**	**27.9%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass	0	0	0	0	0	0	9	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	2	12	n.s.	n.s.	n.s.	31.5%	25.8%	20.3%
Energy Balance, by fuel (Mtoe)													
Primary Production	**268**	**343**	**485**	**603**	**599**	**544**	**674**	**2.5%**	**3.5%**	**2.2%**	**-0.1%**	**-1.0%**	**2.2%**
Coal	85	132	212	307	193	17	4	4.5%	4.9%	3.8%	-4.5%	-21.3%	-13.2%
Oil	33	33	38	30	18	9	8	-0.2%	1.5%	-2.2%	-5.2%	-6.3%	-2.0%
Natural gas	10	22	42	63	98	90	16	8.0%	6.5%	4.3%	4.4%	-0.9%	-15.7%
Biomass	133	149	178	172	199	222	229	1.1%	1.8%	-0.4%	1.5%	1.1%	0.3%
Nuclear[1]	1	1	2	3	6	6	7	10.7%	4.5%	3.2%	6.5%	0.2%	1.4%
Hydro	6	6	11	14	21	31	38	0.4%	5.2%	2.7%	4.2%	4.1%	2.0%
Other renewables	0	0	2	14	65	168	372	30.6%	27.2%	21.1%	17.0%	10.0%	8.2%
Net Imports	**34**	**92**	**204**	**419**	**431**	**342**	**314**						
Coal	7	11	62	133	67	23	4						
Oil	26	79	124	214	283	177	68						
Natural gas	1	1	12	22	63	72	47						
Biomass	0	0	0	45	13	60	185						
Biofuels	0	0	0	0	1	4	5						
Electricity	1	1	6	5	5	5	5						
Primary Energy Demand[2]	**302**	**436**	**689**	**1 022**	**1 031**	**886**	**988**	3.7%	**4.7%**	**4.0%**	**0.1%**	**-1.5%**	**1.1%**
Coal	91	143	275	440	260	40	8	4.6%	6.8%	4.8%	-5.1%	-17.0%	-14.6%
Oil	59	112	162	244	300	187	76	6.6%	3.7%	4.2%	2.1%	-4.6%	-8.6%
Natural gas	11	23	54	85	160	162	64	7.9%	8.8%	4.7%	6.5%	0.1%	-8.9%
Biomass	133	149	178	217	212	282	413	1.1%	1.8%	2.0%	-0.2%	2.9%	3.9%
Nuclear[1]	1	1	2	3	6	6	7	10.7%	4.5%	3.2%	6.5%	0.2%	1.4%
Hydro	6	6	11	14	21	31	38	0.4%	5.2%	2.7%	4.2%	4.1%	2.0%
Other renewables	0	0	2	14	65	168	372	30.6%	27.2%	21.1%	17.0%	10.0%	8.2%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**302**	**436**	**689**	**1 022**	**1 031**	**886**	**988**	**3.7%**	**4.7%**	**4.0%**	**0.1%**	**-1.5%**	**1.1%**
Energy for Power Generation	**63**	**137**	**234**	**435**	**443**	**415**	**655**	**8.1%**	**5.5%**	**6.4%**	**0.2%**	**-0.7%**	**4.7%**
Other Energy Transformation & Losses	**11**	**10**	**29**	**47**	**53**	**82**	**85**	**-1.3%**	**11.5%**	**4.9%**	**1.2%**	**4.5%**	**0.2%**
Final consumption	**247**	**321**	**488**	**663**	**701**	**615**	**641**	**2.7%**	**4.3%**	**3.1%**	**0.6%**	**-1.3%**	**0.4%**
Steel, Non-Met. Minerals and Chem.	24	38	79	104	81	43	30	4.8%	7.6%	2.9%	-2.5%	-6.2%	-3.4%
Other Industry	46	49	86	115	144	115	105	0.6%	5.8%	3.0%	2.3%	-2.3%	-0.8%
Non-Energy Use	14	30	37	55	54	43	38	7.7%	2.3%	4.1%	-0.2%	-2.3%	-1.3%
Residential	120	141	171	209	188	174	181	1.7%	1.9%	2.0%	-1.0%	-0.7%	0.3%
Services	14	16	33	44	64	90	157	1.6%	7.1%	3.2%	3.6%	3.5%	5.8%
Agriculture	9	15	19	30	36	41	45	6.0%	2.3%	4.4%	2.0%	1.2%	0.9%
Road	16	28	57	96	119	91	63	6.2%	7.3%	5.3%	2.1%	-2.6%	-3.7%
Rail	4	2	4	5	8	12	16	-6.1%	5.0%	4.1%	4.3%	3.4%	3.1%
Aviation	1	1	2	3	6	6	5	3.0%	8.5%	5.9%	7.2%	0.7%	-1.6%
Other Transport	1	1	1	1	1	1	1	-0.5%	4.4%	0.5%	4.9%	-1.1%	-0.3%

[1] Nuclear energy is accounted as primary electricity

India	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**56**	**129**	**219**	**405**	**351**	**209**	**238**	**8.7%**	**5.4%**	**6.3%**	**-1.4%**	**-5.1%**	**1.3%**
Coal	47	110	177	316	176	21	3	8.8%	4.9%	6.0%	-5.7%	-19.1%	-16.7%
Oil	5	9	7	19	40	26	4	6.0%	-1.9%	9.7%	7.8%	-4.2%	-16.3%
Gas	3	9	27	46	92	79	18	10.3%	11.1%	5.6%	7.2%	-1.5%	-13.8%
Biomass & Waste	0	1	8	24	44	83	212	n.s.	27.3%	11.4%	6.3%	6.5%	9.8%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**293**	**573**	**988**	**1 877**	**2 452**	**3 192**	**5 888**	**6.9%**	**5.6%**	**6.6%**	**2.7%**	**2.7%**	**6.3%**
Coal	192	390	658	1 199	671	74	14	7.4%	5.4%	6.2%	-5.6%	-19.8%	-15.5%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	13	29	24	73	171	112	19	8.2%	-1.8%	11.6%	8.8%	-4.1%	-16.2%
Gas	10	56	113	200	400	346	83	18.8%	7.3%	5.8%	7.2%	-1.4%	-13.3%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	1	15	53	137	346	1 026	n.s.	27.6%	13.6%	10.1%	9.7%	11.5%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	6	17	26	36	67	68	76	10.7%	4.5%	3.2%	6.5%	0.0%	1.2%
Hydro	72	74	123	174	263	398	483	0.4%	5.2%	3.5%	4.2%	4.2%	1.9%
Wind	0	2	20	79	448	967	2 040	48.6%	27.9%	14.9%	19.0%	8.0%	7.7%
Solar	0	0	0	62	280	731	1 624	n.s.	49.7%	n.s.	16.2%	10.1%	8.3%
Other	1	3	8	1	14	149	523	18.7%	9.5%	-18.8%	29.7%	26.8%	13.3%
Generation Capacity (GW_e)	**80**	**127**	**222**	**484**	**924**	**1 508**	**2 597**	**4.7%**	**5.8%**	**8.1%**	**6.7%**	**5.0%**	**5.6%**
Coal	52	80	133	240	202	173	11	4.4%	5.2%	6.1%	-1.7%	-1.5%	-23.9%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	3	5	5	17	55	63	70	5.9%	-1.2%	13.5%	12.7%	1.3%	1.1%
Gas	3	10	21	52	112	115	142	11.4%	7.5%	9.5%	7.9%	0.3%	2.1%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	2	3	11	19	48	174	n.s.	6.8%	12.2%	5.8%	10.0%	13.6%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	1	3	4	5	10	10	11	8.2%	4.9%	2.7%	6.3%	-0.2%	1.0%
Hydro	20	25	42	58	84	132	162	2.2%	5.2%	3.2%	3.7%	4.7%	2.0%
Wind	0	1	13	45	225	458	918	44.9%	27.1%	12.9%	17.4%	7.4%	7.2%
Solar	0	0	0	56	218	508	1 097	8.8%	11.8%	n.s.	14.6%	8.8%	8.0%
Other	0	0	0	0	0	0	12	n.s.	n.s.	n.s.	36.2%	21.6%	38.1%
Total Final Consumption[2] (Mtoe)	**247**	**321**	**488**	**663**	**701**	**615**	**641**	**2.7%**	**4.3%**	**3.1%**	**0.6%**	**-1.3%**	**0.4%**
Coal	42	40	99	105	75	17	4	-0.4%	9.3%	0.6%	-3.3%	-13.8%	-13.7%
Oil	50	94	134	212	240	148	69	6.5%	3.6%	4.7%	1.3%	-4.8%	-7.3%
Gas	6	10	27	37	62	77	48	5.1%	10.6%	3.3%	5.4%	2.2%	-4.5%
Electricity	18	32	62	120	159	198	355	5.8%	6.8%	6.8%	2.9%	2.2%	6.0%
Heat	0	0	0	2	3	3	3	16.5%	23.5%	19.0%	4.7%	1.4%	0.7%
Biomass & Other	130	144	166	188	162	172	161	1.0%	1.4%	1.3%	-1.5%	0.6%	-0.7%
Industry (incl. non-energy use)	**84**	**116**	**201**	**275**	**279**	**200**	**173**	**3.3%**	**5.7%**	**3.2%**	**0.2%**	**-3.3%**	**-1.4%**
Coal	30	32	83	94	71	16	4	0.5%	10.1%	1.2%	-2.8%	-13.8%	-13.7%
Oil	17	36	37	63	66	36	25	8.1%	0.2%	5.6%	0.4%	-5.9%	-3.5%
Gas	6	9	25	28	29	26	15	4.8%	10.3%	1.3%	0.4%	-1.3%	-5.0%
Electricity	9	14	28	46	59	55	57	4.1%	7.3%	5.2%	2.6%	-0.6%	0.3%
Heat	0	0	0	0	0	0	0	n.s.	23.5%	8.9%	-0.2%	-0.3%	-0.2%
Biomass & Other	23	26	29	44	55	67	72	1.3%	1.4%	4.0%	2.3%	2.1%	0.7%
Buildings	**134**	**158**	**204**	**253**	**251**	**264**	**338**	**1.7%**	**2.6%**	**2.2%**	**-0.1%**	**0.5%**	**2.5%**
Coal	10	9	16	11	5	1	0	-1.3%	5.9%	-3.1%	-8.7%	-13.8%	-15.0%
Oil	11	19	27	36	44	39	18	5.6%	3.6%	2.9%	1.9%	-1.2%	-7.5%
Gas	0	0	1	8	31	47	26	21.0%	14.3%	21.7%	15.2%	4.1%	-5.7%
Electricity	5	11	23	54	69	100	243	8.5%	7.8%	8.9%	2.6%	3.7%	9.3%
Heat	0	0	0	2	3	3	3	16.5%	23.5%	19.4%	4.8%	1.4%	0.7%
Biomass & Other	108	119	137	142	99	74	47	1.0%	1.4%	0.4%	-3.5%	-3.0%	-4.5%
Agriculture	**9**	**15**	**19**	**30**	**36**	**41**	**45**	**6.0%**	**2.3%**	**4.4%**	**2.0%**	**1.2%**	**0.9%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	4	8	8	12	10	7	4	6.6%	0.4%	3.3%	-1.6%	-3.9%	-4.2%
Gas	0	0	0	0	0	0	0	5.4%	2.7%	1.2%	-0.7%	-2.6%	-2.9%
Electricity	4	7	11	18	23	27	31	5.3%	4.1%	5.2%	2.6%	1.7%	1.4%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	3	7	9	n.s.	n.s.	n.s.	41.5%	7.9%	2.9%
Transport	**21**	**32**	**64**	**106**	**135**	**111**	**85**	**4.4%**	**7.1%**	**5.2%**	**2.5%**	**-2.0%**	**-2.6%**
Coal	2	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	18	31	62	100	120	66	22	5.5%	7.1%	5.0%	1.8%	-5.8%	-10.5%
Gas	0	0	1	1	2	4	7	n.s.	36.3%	2.2%	6.0%	11.1%	4.4%
Electricity	0	1	1	2	7	15	23	7.2%	5.0%	7.8%	11.7%	7.6%	4.2%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	2	6	25	33	n.s.	-0.7%	41.7%	9.9%	16.1%	3.0%
Other Energy Transformation & Losses[3]	**11**	**10**	**29**	**47**	**53**	**82**	**85**	**-1.3%**	**11.5%**	**4.9%**	**1.2%**	**4.5%**	**0.2%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Indonesia	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	181	212	243	272	292	304	308	1.5%	1.4%	1.1%	0.7%	0.4%	0.1%
GDP per capita (ppp, k$'15)	2	3	5	7	11	16	23	2.6%	3.8%	4.2%	4.5%	3.8%	3.6%
Prices													
International/Regional ($'15/boe)													
Coal	3	1	3	4	5	8	9	-7.8%	10.3%	1.2%	2.5%	6.1%	0.7%
Oil	39	38	86	88	89	79	81	-0.2%	8.4%	0.2%	0.1%	-1.2%	0.3%
Gas	28	26	46	74	88	90	91	-0.7%	5.8%	4.7%	1.8%	0.2%	0.1%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**1 331**	**895**	**1 190**	**1 314**	**974**	**549**	**325**	**-3.9%**	**2.9%**	**1.0%**	**-3.0%**	**-5.6%**	**-5.1%**
Total GHG (energy, industry, agriculture)	**429**	**573**	**786**	**956**	**817**	**450**	**247**	**2.9%**	**3.2%**	**2.0%**	**-1.6%**	**-5.8%**	**-5.8%**
CO_2	163	300	431	565	553	269	108	6.3%	3.7%	2.7%	-0.2%	-6.9%	-8.7%
CH_4	207	208	279	305	185	113	74	0.1%	2.9%	0.9%	-4.9%	-4.8%	-4.1%
N_2O	58	64	75	84	78	67	64	0.9%	1.6%	1.2%	-0.7%	-1.5%	-0.5%
F gases	2	1	2	2	1	1	0	-3.6%	3.0%	2.8%	-4.9%	-5.7%	-4.1%
Total GHG from Energy and Industry	**283**	**430**	**612**	**768**	**676**	**347**	**150**	**4.3%**	**3.6%**	**2.3%**	**-1.3%**	**-6.4%**	**-8.1%**
CO_2 Emissions from Fuel Comb.	**137**	**267**	**395**	**514**	**490**	**250**	**106**	**6.9%**	**4.0%**	**2.7%**	**-0.5%**	**-6.5%**	**-8.3%**
Power generation/District heating	22	62	122	184	145	45	19	10.7%	7.1%	4.2%	-2.3%	-11.1%	-8.2%
Industry	31	58	92	105	99	32	6	6.6%	4.7%	1.3%	-0.6%	-10.7%	-15.7%
Buildings	21	39	24	30	34	36	22	6.1%	-4.6%	2.1%	1.1%	0.7%	-5.0%
Agriculture	3	9	9	5	5	3	2	10.5%	1.0%	-5.8%	-0.6%	-3.8%	-4.0%
Transport	32	66	107	140	152	95	40	7.4%	5.0%	2.7%	0.8%	-4.6%	-8.3%
Other	27	34	40	50	56	39	17	2.1%	1.8%	2.1%	1.2%	-3.5%	-8.1%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**27.3%**	**25.3%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	27.3%	12.4%
Energy Balance, by fuel (Mtoe)													
Primary Production	**160**	**229**	**367**	**463**	**280**	**179**	**202**	**3.6%**	**4.8%**	**2.4%**	**-4.9%**	**-4.4%**	**1.2%**
Coal	6	45	186	286	83	2	0	22.5%	15.2%	4.4%	-11.6%	-32.6%	-47.2%
Oil	72	70	47	39	30	17	12	-0.3%	-4.0%	-1.9%	-2.5%	-5.5%	-3.5%
Natural gas	37	58	72	77	76	39	9	4.6%	2.1%	0.7%	-0.1%	-6.5%	-13.5%
Biomass	44	50	53	52	73	94	111	1.4%	0.5%	-0.1%	3.5%	2.5%	1.7%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	18.2%
Hydro	0	1	2	2	3	8	14	5.8%	5.7%	1.5%	7.2%	8.8%	5.3%
Other renewables	1	4	8	8	14	19	57	15.8%	6.8%	-0.1%	5.5%	3.6%	11.3%
Net Imports	**- 62**	**- 77**	**- 162**	**- 232**	**- 46**	**11**	**9**						
Coal	- 1	- 33	- 154	- 247	- 54	3	1						
Oil	- 38	- 12	26	31	42	21	2						
Natural gas	- 22	- 32	- 33	- 26	- 22	- 2	7						
Biomass	0	0	0	7	- 15	- 15	- 5						
Biofuels	0	0	0	- 1	0	1	1						
Electricity	0	0	0	3	3	3	3						
Primary Energy Demand[2]	**98**	**152**	**204**	**231**	**234**	**190**	**211**	4.5%	**3.0%**	**1.2%**	**0.1%**	**-2.0%**	**1.0%**
Coal	5	12	32	38	29	5	1	10.2%	10.2%	1.9%	-2.9%	-16.1%	-18.3%
Oil	34	58	72	70	72	38	14	5.6%	2.2%	-0.3%	0.3%	-6.2%	-9.5%
Natural gas	15	27	39	51	54	37	16	6.0%	3.9%	2.8%	0.6%	-3.8%	-8.1%
Biomass	44	50	53	59	59	79	106	1.4%	0.5%	1.2%	-0.1%	3.0%	3.0%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	18.2%
Hydro	0	1	2	2	3	8	14	5.8%	5.7%	1.5%	7.2%	8.8%	5.3%
Other renewables	1	4	8	8	14	19	57	15.8%	6.8%	-0.1%	5.5%	3.6%	11.3%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**98**	**152**	**204**	**231**	**234**	**190**	**211**	**4.5%**	**3.0%**	**1.2%**	**0.1%**	**-2.0%**	**1.0%**
Energy for Power Generation	**8**	**24**	**46**	**67**	**64**	**46**	**88**	**11.7%**	**6.7%**	**3.7%**	**-0.3%**	**-3.3%**	**6.7%**
Other Energy Transformation & Losses	**12**	**14**	**22**	**14**	**16**	**24**	**35**	**1.2%**	**4.6%**	**-4.4%**	**1.3%**	**4.3%**	**3.8%**
Final consumption	**80**	**120**	**149**	**174**	**177**	**150**	**145**	**4.2%**	**2.2%**	**1.5%**	**0.2%**	**-1.6%**	**-0.4%**
Steel, Non-Met. Minerals and Chem.	3	5	10	10	9	4	3	6.1%	6.4%	0.7%	-1.6%	-8.5%	-3.1%
Other Industry	15	25	32	39	39	25	20	5.0%	2.3%	2.0%	0.0%	-4.2%	-2.1%
Non-Energy Use	7	10	10	7	6	5	5	2.9%	0.4%	-3.8%	-1.8%	-1.0%	-0.4%
Residential	42	53	56	62	62	62	62	2.4%	0.5%	1.1%	0.0%	0.0%	0.1%
Services	1	4	5	6	8	11	18	13.9%	2.5%	1.8%	2.7%	3.2%	5.6%
Agriculture	1	3	3	2	2	3	3	11.1%	1.1%	-4.9%	1.9%	1.2%	0.9%
Road	10	19	30	41	41	31	24	6.8%	4.8%	3.3%	-0.1%	-2.8%	-2.3%
Rail	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Aviation	0	1	2	4	7	8	7	7.4%	14.1%	5.6%	6.4%	0.8%	-1.4%
Other Transport	1	2	2	3	4	3	2	7.9%	2.0%	3.2%	2.4%	-3.1%	-1.8%

[1] Nuclear energy is accounted as primary electricity

Indonesia	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**7**	**19**	**37**	**57**	**47**	**19**	**18**	**11.3%**	**6.7%**	**4.4%**	**-1.8%**	**-8.9%**	**-0.5%**
Coal	2	8	19	27	17	2	0	13.7%	8.4%	3.7%	-4.4%	-17.9%	-19.4%
Oil	4	5	8	12	11	4	3	1.5%	6.3%	3.1%	-0.1%	-10.8%	-1.7%
Gas	0	6	9	17	17	10	4	39.3%	4.1%	7.1%	0.1%	-5.1%	-9.8%
Biomass & Waste	0	0	0	0	0	1	8	n.s.	31.8%	22.1%	0.0%	17.1%	18.2%
Other	0	0	1	1	1	1	3	15.8%	6.8%	-0.2%	3.4%	-2.0%	12.4%
Gross Elec. Generation (TWh_e)	**33**	**93**	**170**	**258**	**276**	**294**	**549**	**11.1%**	**6.2%**	**4.3%**	**0.7%**	**0.6%**	**6.5%**
Coal	10	34	68	105	68	10	1	13.3%	7.2%	4.3%	-4.3%	-17.6%	-18.6%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	15	18	34	48	48	16	13	1.8%	6.4%	3.4%	0.0%	-10.4%	-1.7%
Gas	1	26	40	72	73	42	16	42.9%	4.4%	6.0%	0.1%	-5.3%	-9.4%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	0	0	1	1	7	40	n.s.	31.8%	28.5%	0.7%	18.9%	19.1%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	22.3%
Hydro	6	10	17	23	43	104	177	5.8%	5.7%	2.6%	6.7%	9.2%	5.5%
Wind	0	0	0	0	10	20	60	n.s.	n.s.	53.2%	42.7%	7.5%	11.4%
Solar	0	0	0	1	20	72	160	n.s.	n.s.	n.s.	43.2%	13.8%	8.3%
Other	1	5	9	9	14	22	80	15.8%	6.8%	0.0%	4.2%	4.5%	13.7%
Generation Capacity (GW_e)	**13**	**25**	**34**	**60**	**81**	**127**	**232**	**6.9%**	**3.1%**	**5.9%**	**3.0%**	**4.6%**	**6.1%**
Coal	2	8	13	28	25	14	0	16.1%	5.4%	7.8%	-0.9%	-5.6%	-35.2%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	7	5	6	7	8	4	4	-4.6%	2.2%	2.6%	0.8%	-5.9%	-0.9%
Gas	1	8	10	14	13	7	3	32.6%	2.1%	3.4%	-1.4%	-5.2%	-8.1%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	0	0	0	0	1	5	n.s.	30.5%	2.0%	0.5%	19.2%	19.9%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	22.0%
Hydro	3	4	4	9	17	44	79	2.9%	-1.2%	8.8%	7.1%	9.9%	6.0%
Wind	0	0	0	0	4	7	20	n.s.	n.s.	n.s.	41.5%	7.1%	10.6%
Solar	0	0	0	0	12	47	112	n.s.	n.s.	n.s.	43.5%	14.6%	9.0%
Other	0	0	1	2	2	2	7	9.9%	12.7%	2.7%	3.4%	-1.6%	14.9%
Total Final Consumption[2] (Mtoe)	**80**	**120**	**149**	**174**	**177**	**150**	**145**	**4.2%**	**2.2%**	**1.5%**	**0.2%**	**-1.6%**	**-0.4%**
Coal	2	5	8	12	11	3	1	7.7%	5.7%	3.6%	-0.2%	-13.5%	-14.9%
Oil	27	48	61	64	66	41	18	5.8%	2.5%	0.5%	0.3%	-4.7%	-7.7%
Gas	6	12	16	21	22	18	10	6.7%	3.2%	2.8%	0.5%	-2.2%	-5.1%
Electricity	2	7	13	19	21	21	38	10.8%	6.5%	4.3%	0.6%	0.1%	6.3%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	42	49	51	57	57	68	77	1.6%	0.4%	1.1%	-0.2%	1.9%	1.3%
Industry (incl. non-energy use)	**26**	**40**	**51**	**56**	**53**	**34**	**28**	**4.6%**	**2.5%**	**0.8%**	**-0.5%**	**-4.4%**	**-1.9%**
Coal	2	5	8	12	11	3	1	7.7%	5.7%	3.6%	-0.2%	-13.5%	-14.9%
Oil	9	12	17	11	10	5	3	3.3%	3.2%	-4.5%	-0.2%	-6.9%	-4.3%
Gas	6	12	16	19	16	9	3	6.7%	3.2%	2.0%	-1.6%	-6.2%	-9.1%
Electricity	1	3	4	7	7	5	4	8.9%	4.2%	4.3%	0.9%	-3.5%	-2.7%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	7	9	6	8	8	12	17	1.8%	-3.0%	2.1%	0.0%	4.8%	3.1%
Buildings	**43**	**57**	**61**	**68**	**70**	**73**	**81**	**2.9%**	**0.7%**	**1.2%**	**0.3%**	**0.4%**	**1.1%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	7	12	8	8	7	6	3	6.1%	-4.7%	0.8%	-2.0%	-1.7%	-6.0%
Gas	0	0	0	2	5	8	5	8.1%	14.4%	27.6%	11.9%	3.9%	-4.1%
Electricity	1	4	8	12	12	14	32	12.2%	8.1%	4.2%	0.0%	1.3%	8.6%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	35	41	45	46	45	45	41	1.6%	1.0%	0.2%	-0.1%	0.0%	-1.1%
Agriculture	**1**	**3**	**3**	**2**	**2**	**3**	**3**	**11.1%**	**1.1%**	**-4.9%**	**1.9%**	**1.2%**	**0.9%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	1	3	3	2	2	1	1	10.5%	1.0%	-5.8%	-0.6%	-3.8%	-4.0%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Electricity	0	0	0	0	0	1	1	n.s.	2.5%	3.0%	5.3%	3.9%	2.9%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	52.7%	10.8%	3.6%
Transport	**11**	**21**	**34**	**48**	**52**	**41**	**33**	**6.9%**	**5.1%**	**3.5%**	**0.7%**	**-2.2%**	**-2.1%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	11	21	34	44	48	29	11	6.9%	5.0%	2.7%	0.8%	-4.8%	-9.0%
Gas	0	0	0	0	0	1	2	n.s.	9.0%	-0.1%	50.7%	12.9%	5.3%
Electricity	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	36.8%	8.6%	2.8%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	4	3	10	19	n.s.	n.s.	36.2%	-2.5%	12.6%	6.8%
Other Energy Transformation & Losses[3]	**12**	**14**	**22**	**14**	**16**	**24**	**35**	**1.2%**	**4.6%**	**-4.4%**	**1.3%**	**4.3%**	**3.8%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Malaysia	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	18	23	28	33	37	41	44	2.5%	1.9%	1.6%	1.3%	0.9%	0.7%
GDP per capita (ppp, k$'15)	8	13	17	23	32	42	53	4.5%	2.6%	3.5%	3.2%	2.7%	2.3%
Prices													
International/Regional ($'15/boe)													
Coal	3	1	3	4	5	8	9	-7.8%	10.3%	1.2%	2.5%	6.1%	0.7%
Oil	39	38	86	88	89	79	81	-0.2%	8.4%	0.2%	0.1%	-1.2%	0.3%
Gas	28	26	46	74	88	90	91	-0.7%	5.8%	4.7%	1.8%	0.2%	0.1%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**224**	**358**	**369**	**414**	**306**	**132**	**72**	**4.8%**	**0.3%**	**1.2%**	**-3.0%**	**-8.1%**	**-5.8%**
Total GHG (energy, industry, agriculture)	**100**	**179**	**275**	**344**	**278**	**109**	**52**	**6.0%**	**4.4%**	**2.3%**	**-2.1%**	**-8.9%**	**-7.1%**
CO_2	64	131	218	287	241	88	36	7.4%	5.2%	2.8%	-1.7%	-9.6%	-8.6%
CH_4	27	38	43	41	24	11	7	3.2%	1.4%	-0.5%	-5.3%	-7.7%	-4.5%
N_2O	8	10	12	13	12	10	9	2.2%	2.5%	0.8%	-1.1%	-1.8%	-0.7%
F gases	1	1	1	2	1	1	0	-0.7%	9.1%	3.9%	-3.6%	-6.2%	-8.3%
Total GHG from Energy and Industry	**86**	**165**	**260**	**328**	**265**	**99**	**42**	**6.8%**	**4.6%**	**2.4%**	**-2.1%**	**-9.4%**	**-8.2%**
CO_2 Emissions from Fuel Comb.	**58**	**117**	**196**	**260**	**211**	**81**	**35**	**7.3%**	**5.3%**	**2.9%**	**-2.1%**	**-9.1%**	**-8.1%**
Power generation/District heating	16	37	96	108	67	16	7	8.9%	9.9%	1.1%	-4.6%	-13.2%	-8.8%
Industry	14	26	31	39	35	11	2	6.4%	1.6%	2.6%	-1.1%	-11.2%	-16.4%
Buildings	2	4	6	5	5	4	2	7.0%	3.5%	-1.5%	0.2%	-2.6%	-6.7%
Agriculture	0	0	3	4	3	2	1	n.s.	25.9%	0.6%	-2.6%	-4.1%	-4.3%
Transport	15	32	44	73	68	34	20	8.3%	3.2%	5.2%	-0.7%	-6.6%	-5.3%
Other	11	17	16	31	32	13	3	4.2%	-0.8%	7.1%	0.2%	-8.4%	-13.4%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**1**	**4**	**n.s.**	**n.s.**	**n.s.**	**32.7%**	**41.4%**	**18.6%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	0.4%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	-1.3%
Biomass	0	0	0	0	0	0	3	n.s.	n.s.	n.s.	n.s.	n.s.	28.4%
Direct Air Capture	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	32.7%	24.8%	13.8%
Energy Balance, by fuel (Mtoe)													
Primary Production	**48**	**73**	**84**	**108**	**103**	**57**	**57**	**4.3%**	**1.5%**	**2.5%**	**-0.5%**	**-5.8%**	**0.0%**
Coal	0	0	2	2	2	1	1	14.1%	20.3%	3.2%	-1.2%	-8.2%	-3.6%
Oil	31	31	33	30	20	1	3	0.0%	0.6%	-0.9%	-3.8%	-26.3%	11.4%
Natural gas	15	39	47	65	62	25	8	10.4%	1.9%	3.2%	-0.4%	-8.7%	-10.5%
Biomass	2	2	2	8	13	19	26	0.0%	-0.2%	16.7%	4.2%	4.1%	3.2%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	-0.2%
Hydro	0	1	1	2	3	4	5	5.7%	-0.7%	14.6%	3.9%	3.0%	1.4%
Other renewables	0	0	0	0	2	6	14	n.s.	n.s.	n.s.	33.2%	10.6%	7.9%
Net Imports	**- 25**	**- 24**	**- 10**	**- 3**	**- 8**	**11**	**5**						
Coal	1	2	13	15	8	2	1						
Oil	- 18	- 11	- 7	12	17	18	9						
Natural gas	- 8	- 14	- 16	- 27	- 28	- 10	- 1						
Biomass	0	0	0	- 4	- 6	1	- 5						
Biofuels	0	0	0	0	0	1	0						
Electricity	0	0	0	0	0	0	0						
Primary Energy Demand[2]	**23**	**49**	**74**	**105**	**95**	**68**	**61**	8.0%	**4.2%**	**3.5%**	**-1.0%**	**-3.2%**	**-1.1%**
Coal	1	2	15	17	10	3	2	5.7%	20.3%	1.6%	-5.3%	-12.1%	-4.4%
Oil	12	20	26	42	38	19	12	4.6%	3.0%	4.9%	-1.2%	-6.5%	-4.8%
Natural gas	7	25	31	38	35	15	7	13.6%	2.3%	2.1%	-1.0%	-8.2%	-6.6%
Biomass	2	2	2	5	7	20	21	0.0%	-0.2%	10.4%	3.7%	11.0%	0.5%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	-0.2%
Hydro	0	1	1	2	3	4	5	5.7%	-0.7%	14.6%	3.9%	3.0%	1.4%
Other renewables	0	0	0	0	2	6	14	n.s.	n.s.	n.s.	33.2%	10.6%	7.9%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**23**	**49**	**74**	**105**	**95**	**68**	**61**	**8.0%**	**4.2%**	**3.5%**	**-1.0%**	**-3.2%**	**-1.1%**
Energy for Power Generation	**6**	**15**	**33**	**40**	**32**	**20**	**24**	**10.7%**	**8.0%**	**2.2%**	**-2.3%**	**-4.6%**	**1.9%**
Other Energy Transformation & Losses	**5**	**9**	**9**	**17**	**19**	**21**	**17**	**5.9%**	**-0.9%**	**7.2%**	**0.9%**	**1.2%**	**-2.0%**
Final consumption	**14**	**30**	**42**	**62**	**58**	**43**	**38**	**8.0%**	**3.6%**	**3.9%**	**-0.6%**	**-3.0%**	**-1.2%**
Steel, Non-Met. Minerals and Chem.	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	n.s.	54.5%	-0.3%
Other Industry	6	12	15	20	19	13	11	7.9%	2.4%	3.0%	-0.5%	-4.0%	-1.8%
Non-Energy Use	1	2	4	6	5	4	4	10.4%	5.1%	4.7%	-1.7%	-1.2%	-0.6%
Residential	2	3	4	4	4	3	3	3.8%	3.0%	2.1%	-1.1%	-2.8%	0.4%
Services	1	2	4	5	5	5	7	10.9%	6.9%	2.4%	0.0%	-1.1%	3.1%
Agriculture	0	0	1	1	1	1	2	n.s.	26.2%	0.9%	1.3%	0.8%	0.6%
Road	5	10	14	24	23	15	11	8.5%	3.2%	5.4%	-0.7%	-3.8%	-3.2%
Rail	0	0	0	0	0	0	0	n.s.	15.1%	4.8%	3.3%	2.5%	2.0%
Aviation	0	0	0	1	1	1	1	10.0%	4.2%	5.0%	2.2%	-2.8%	-2.9%
Other Transport	0	0	0	0	0	0	0	-20.8%	11.6%	18.2%	1.3%	-3.8%	-2.4%

[1] Nuclear energy is accounted as primary electricity

Malaysia	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**5**	**15**	**32**	**38**	**26**	**9**	**5**	**10.9%**	**8.2%**	**1.7%**	**-3.6%**	**-10.2%**	**-5.5%**
Coal	1	1	13	13	6	1	0	6.3%	24.1%	0.1%	-7.2%	-18.8%	-11.1%
Oil	3	1	1	3	3	1	1	-10.7%	-2.6%	16.5%	-3.0%	-9.2%	-5.7%
Gas	1	12	18	19	15	5	2	24.4%	4.1%	0.6%	-2.6%	-11.2%	-9.0%
Biomass & Waste	0	0	0	2	3	3	3	n.s.	n.s.	21.6%	1.6%	-0.3%	-0.7%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**23**	**69**	**125**	**183**	**176**	**156**	**193**	**11.6%**	**6.1%**	**3.9%**	**-0.3%**	**-1.2%**	**2.1%**
Coal	3	8	43	53	26	3	1	10.1%	18.7%	2.2%	-7.1%	-18.2%	-11.1%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	-2.6%
Oil	11	4	4	14	11	4	2	-10.2%	0.2%	14.3%	-2.6%	-8.8%	-5.5%
Gas	6	51	71	81	65	19	8	24.9%	3.3%	1.3%	-2.2%	-11.5%	-8.9%
of which CCS	0	0	0	0	0	1	0	n.s.	n.s.	n.s.	n.s.	n.s.	-2.6%
Biomass & Waste	0	0	1	7	9	10	11	n.s.	n.s.	21.8%	2.5%	0.3%	0.9%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	-2.6%
Nuclear	0	0	0	0	0	3	2	n.s.	n.s.	n.s.	n.s.	n.s.	-1.5%
Hydro	4	7	6	25	37	51	59	5.7%	-0.7%	14.6%	3.9%	3.2%	1.5%
Wind	0	0	0	0	12	23	35	n.s.	n.s.	n.s.	47.9%	7.0%	4.2%
Solar	0	0	0	1	16	37	53	n.s.	n.s.	n.s.	27.9%	9.1%	3.5%
Other	0	0	0	0	1	6	22	n.s.	n.s.	n.s.	12.1%	17.4%	14.8%
Generation Capacity (GW_e)	**5**	**14**	**27**	**40**	**54**	**69**	**89**	**11.4%**	**7.0%**	**3.8%**	**3.1%**	**2.5%**	**2.6%**
Coal	1	1	8	8	7	5	3	0.8%	19.4%	1.0%	-1.9%	-2.6%	-5.1%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	0.0%
Oil	1	2	2	3	3	3	4	4.7%	-3.6%	6.3%	0.7%	0.5%	1.5%
Gas	1	8	15	17	14	4	3	24.4%	6.6%	0.9%	-2.0%	-10.8%	-4.7%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	0.0%
Biomass & Waste	0	0	1	1	1	1	2	n.s.	20.9%	4.2%	1.9%	1.5%	4.2%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	0.0%
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	-1.7%
Hydro	1	2	2	9	14	19	23	6.6%	0.1%	16.2%	4.0%	3.2%	1.6%
Wind	0	0	0	0	4	8	14	n.s.	n.s.	55.2%	46.8%	6.9%	4.9%
Solar	0	0	0	1	11	26	39	n.s.	n.s.	n.s.	28.6%	9.5%	3.9%
Other	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	19.8%	43.3%
Total Final Consumption[2] (Mtoe)	**14**	**30**	**42**	**62**	**58**	**43**	**38**	**8.0%**	**3.6%**	**3.9%**	**-0.6%**	**-3.0%**	**-1.2%**
Coal	1	1	2	3	2	1	0	6.8%	6.3%	4.4%	-1.5%	-11.8%	-10.0%
Oil	9	18	24	35	31	15	9	7.2%	2.7%	3.8%	-1.1%	-6.9%	-5.1%
Gas	1	4	6	9	9	6	4	13.4%	4.7%	3.7%	0.3%	-3.9%	-5.0%
Electricity	2	5	10	14	14	12	14	11.9%	6.1%	4.1%	-0.3%	-1.6%	2.0%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	2.7%
Biomass & Other	1	1	1	1	2	9	11	0.5%	-3.8%	4.6%	3.6%	16.4%	1.7%
Industry (incl. non-energy use)	**6**	**14**	**19**	**26**	**24**	**18**	**15**	**8.2%**	**2.9%**	**3.4%**	**-0.8%**	**-3.0%**	**-1.4%**
Coal	1	1	2	3	2	1	0	6.8%	6.3%	4.4%	-1.5%	-11.8%	-10.0%
Oil	4	6	6	8	7	3	2	5.1%	0.3%	2.2%	-1.5%	-7.3%	-2.4%
Gas	1	4	6	8	8	4	2	13.5%	4.5%	3.4%	-0.8%	-5.6%	-6.9%
Electricity	1	3	5	7	7	6	5	12.9%	4.9%	4.4%	0.1%	-1.6%	-1.3%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	3	5	2.5%	n.s.	n.s.	n.s.	38.6%	4.2%
Buildings	**3**	**5**	**8**	**10**	**9**	**8**	**10**	**6.5%**	**4.9%**	**2.3%**	**-0.5%**	**-1.7%**	**2.2%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	1	1	2	1	1	1	0	7.0%	3.4%	-2.9%	-4.3%	-4.6%	-7.1%
Gas	0	0	0	0	1	1	1	7.4%	8.2%	24.5%	12.7%	-0.6%	-6.5%
Electricity	1	2	5	7	6	5	8	10.7%	7.3%	3.8%	-1.1%	-2.5%	4.6%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	2.7%
Biomass & Other	1	1	1	1	1	1	1	0.0%	-1.0%	-0.7%	0.9%	2.6%	-1.9%
Agriculture	**0**	**0**	**1**	**1**	**1**	**1**	**2**	**n.s.**	**26.2%**	**0.9%**	**1.3%**	**0.8%**	**0.6%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	0	0	1	1	1	1	0	n.s.	25.9%	0.6%	-2.6%	-4.1%	-4.3%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Electricity	0	0	0	0	0	0	0	n.s.	n.s.	7.3%	13.2%	5.1%	3.1%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	42.0%	7.0%	2.8%
Transport	**5**	**11**	**15**	**25**	**24**	**16**	**12**	**8.5%**	**3.2%**	**5.5%**	**-0.6%**	**-3.8%**	**-3.2%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	5	11	15	25	23	11	6	8.4%	3.2%	5.2%	-0.7%	-7.0%	-6.0%
Gas	0	0	0	0	0	1	1	n.s.	32.0%	-5.6%	15.7%	13.4%	3.8%
Electricity	0	0	0	0	0	0	1	n.s.	15.1%	6.3%	17.8%	11.3%	5.0%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	1	1	4	4	n.s.	n.s.	n.s.	1.7%	19.5%	0.0%
Other Energy Transformation & Losses[3]	**5**	**9**	**9**	**17**	**19**	**21**	**17**	**5.9%**	**-0.9%**	**7.2%**	**0.9%**	**1.2%**	**-2.0%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Thailand	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	57	63	67	70	71	70	67	1.1%	0.7%	0.4%	0.1%	-0.1%	-0.4%
GDP per capita (ppp, k$'15)	5	7	9	13	18	25	33	3.3%	3.6%	2.9%	3.6%	3.5%	2.8%
Prices													
International/Regional ($'15/boe)													
Coal	3	1	3	4	5	8	9	-7.8%	10.3%	1.2%	2.5%	6.1%	0.7%
Oil	39	38	86	88	89	79	81	-0.2%	8.4%	0.2%	0.1%	-1.2%	0.3%
Gas	28	26	46	74	88	90	91	-0.7%	5.8%	4.7%	1.8%	0.2%	0.1%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**217**	**328**	**468**	**484**	**357**	**177**	**100**	**4.2%**	**3.6%**	**0.3%**	**-3.0%**	**-6.8%**	**-5.5%**
Total GHG (energy, industry, agriculture)	**206**	**282**	**398**	**424**	**336**	**155**	**82**	**3.2%**	**3.5%**	**0.6%**	**-2.3%**	**-7.5%**	**-6.1%**
CO_2	93	171	255	290	247	93	33	6.3%	4.0%	1.3%	-1.6%	-9.3%	-9.9%
CH_4	96	94	120	108	67	43	32	-0.3%	2.5%	-1.0%	-4.7%	-4.4%	-2.7%
N_2O	15	17	22	24	22	18	17	1.2%	2.8%	1.1%	-1.1%	-1.8%	-0.9%
F gases	1	0	1	1	0	0	0	-10.8%	11.8%	-0.6%	-8.8%	-1.4%	0.1%
Total GHG from Energy and Industry	**122**	**205**	**304**	**333**	**275**	**112**	**43**	**5.3%**	**4.0%**	**0.9%**	**-1.9%**	**-8.6%**	**-9.1%**
CO_2 Emissions from Fuel Comb.	**82**	**154**	**230**	**261**	**215**	**87**	**32**	**6.5%**	**4.1%**	**1.3%**	**-1.9%**	**-8.7%**	**-9.4%**
Power generation/District heating	27	54	81	86	47	10	7	7.1%	4.2%	0.5%	-5.9%	-13.9%	-4.0%
Industry	14	32	50	60	54	16	3	8.3%	4.7%	1.8%	-1.1%	-11.6%	-16.2%
Buildings	3	5	9	7	8	5	2	6.0%	5.8%	-2.0%	0.8%	-4.1%	-8.9%
Agriculture	6	9	11	14	11	7	5	4.5%	2.1%	2.4%	-2.0%	-4.2%	-4.5%
Transport	27	44	60	71	73	35	12	4.9%	3.0%	1.8%	0.2%	-6.9%	-10.2%
Other	5	11	19	22	22	12	4	8.8%	5.7%	1.8%	-0.1%	-5.8%	-10.7%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**1**	**4**	**n.s.**	**n.s.**	**n.s.**	**25.0%**	**55.2%**	**16.4%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	5.2%
Gas	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	n.s.	n.s.	7.8%
Biomass	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	25.0%	37.1%	18.0%
Energy Balance, by fuel (Mtoe)													
Primary Production	**26**	**43**	**71**	**56**	**72**	**75**	**76**	**5.0%**	**5.2%**	**-2.3%**	**2.6%**	**0.4%**	**0.1%**
Coal	3	5	5	5	4	1	1	4.6%	0.5%	-0.6%	-1.6%	-11.3%	-7.6%
Oil	2	6	12	5	3	2	1	9.5%	8.1%	-9.0%	-5.0%	-5.6%	-5.3%
Natural gas	5	17	30	20	30	20	9	11.8%	6.1%	-4.2%	4.2%	-3.7%	-8.2%
Biomass	15	15	23	24	29	38	43	-0.1%	4.5%	0.5%	2.0%	2.7%	1.3%
Nuclear[1]	0	0	0	0	0	1	2	n.s.	n.s.	n.s.	n.s.	n.s.	6.5%
Hydro	0	1	0	1	2	3	4	1.9%	-0.8%	7.2%	5.0%	5.3%	3.4%
Other renewables	0	0	0	2	5	10	17	n.s.	7.0%	n.s.	9.6%	7.5%	5.0%
Net Imports	**17**	**32**	**52**	**98**	**71**	**38**	**30**						
Coal	1	3	11	9	4	0	0						
Oil	16	26	33	63	55	32	22						
Natural gas	0	1	2	9	- 2	- 8	- 3						
Biomass	0	0	0	5	1	0	- 2						
Biofuels	0	0	0	0	0	0	0						
Electricity	1	3	6	13	13	13	13						
Primary Energy Demand[2]	**43**	**75**	**123**	**155**	**143**	**113**	**106**	5.7%	**5.1%**	**2.3%**	**-0.8%**	**-2.3%**	**-0.7%**
Coal	4	8	16	14	8	1	1	7.0%	7.8%	-1.8%	-5.5%	-15.2%	-8.2%
Oil	18	32	45	68	58	34	23	5.8%	3.5%	4.2%	-1.6%	-5.2%	-3.9%
Natural gas	5	17	33	29	28	13	6	13.3%	6.5%	-1.2%	-0.4%	-7.5%	-7.8%
Biomass	15	15	23	29	30	38	41	-0.1%	4.5%	2.4%	0.6%	2.2%	0.9%
Nuclear[1]	0	0	0	0	0	1	2	n.s.	n.s.	n.s.	n.s.	n.s.	6.5%
Hydro	0	1	0	1	2	3	4	1.9%	-0.8%	7.2%	5.0%	5.3%	3.4%
Other renewables	0	0	0	2	5	10	17	n.s.	7.0%	n.s.	9.6%	7.5%	5.0%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**43**	**75**	**123**	**155**	**143**	**113**	**106**	**5.7%**	**5.1%**	**2.3%**	**-0.8%**	**-2.3%**	**-0.7%**
Energy for Power Generation	**9**	**20**	**33**	**39**	**32**	**23**	**30**	**8.0%**	**4.9%**	**1.9%**	**-2.1%**	**-3.2%**	**2.6%**
Other Energy Transformation & Losses	**8**	**11**	**19**	**26**	**27**	**32**	**33**	**3.5%**	**5.5%**	**3.3%**	**0.3%**	**1.8%**	**0.0%**
Final consumption	**29**	**51**	**84**	**107**	**102**	**79**	**69**	**5.9%**	**5.2%**	**2.4%**	**-0.5%**	**-2.6%**	**-1.3%**
Steel, Non-Met. Minerals and Chem.	2	6	12	12	11	6	5	8.7%	7.6%	0.5%	-1.4%	-5.4%	-1.7%
Other Industry	6	12	15	23	23	15	12	6.5%	2.4%	4.7%	-0.2%	-4.1%	-2.1%
Non-Energy Use	0	6	18	24	20	17	16	29.3%	12.4%	2.8%	-1.7%	-1.4%	-0.6%
Residential	8	8	11	13	12	11	10	0.2%	3.9%	1.2%	-0.4%	-0.9%	-0.8%
Services	1	3	6	6	6	6	7	8.2%	6.1%	0.8%	0.1%	0.1%	1.5%
Agriculture	2	3	3	4	5	5	5	4.5%	2.1%	2.5%	1.0%	0.7%	0.4%
Road	9	14	19	23	23	16	11	5.3%	2.7%	2.1%	0.1%	-3.5%	-3.6%
Rail	0	0	0	0	0	0	0	-0.6%	-1.1%	1.0%	1.1%	0.7%	0.6%
Aviation	0	0	0	1	1	1	0	n.s.	n.s.	4.3%	3.5%	-5.2%	-3.4%
Other Transport	0	0	0	0	0	0	0	-16.2%	2.7%	6.8%	0.6%	-3.7%	-2.9%

[1] Nuclear energy is accounted as primary electricity

Thailand	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**9**	**20**	**32**	**36**	**25**	**9**	**7**	**8.2%**	**5.0%**	**1.2%**	**-3.6%**	**-9.6%**	**-2.0%**
Coal	3	4	7	7	3	0	0	5.0%	5.2%	0.1%	-9.4%	-16.8%	-9.7%
Oil	3	2	0	6	2	0	1	-0.8%	-19.6%	36.4%	-10.5%	-19.6%	19.1%
Gas	4	13	23	17	13	4	2	12.8%	5.9%	-3.0%	-2.6%	-11.6%	-7.5%
Biomass & Waste	0	0	2	7	8	5	4	n.s.	17.5%	11.4%	1.3%	-4.8%	-0.9%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**44**	**98**	**162**	**200**	**190**	**187**	**234**	**8.3%**	**5.2%**	**2.1%**	**-0.5%**	**-0.2%**	**2.3%**
Coal	11	18	30	29	11	2	1	4.9%	5.4%	-0.3%	-9.2%	-16.2%	-9.1%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	5.1%
Oil	10	10	1	27	9	1	6	-0.3%	-19.3%	36.6%	-10.5%	-19.7%	19.3%
Gas	18	62	119	87	67	20	10	13.2%	6.8%	-3.1%	-2.5%	-11.6%	-6.6%
of which CCS	0	0	0	0	0	2	3	n.s.	n.s.	n.s.	n.s.	n.s.	7.7%
Biomass & Waste	0	1	3	19	23	15	17	n.s.	20.9%	19.1%	1.6%	-4.1%	1.0%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	10	19	n.s.	n.s.	n.s.	n.s.	n.s.	6.4%
Hydro	5	6	6	14	21	33	45	1.9%	-0.8%	9.8%	4.0%	4.7%	3.3%
Wind	0	0	0	18	42	57	37	n.s.	n.s.	n.s.	8.8%	3.0%	-4.1%
Solar	0	0	0	5	16	45	80	n.s.	n.s.	n.s.	12.0%	10.8%	6.1%
Other	0	2	3	0	1	5	19	n.s.	5.0%	-22.0%	15.4%	16.9%	15.0%
Generation Capacity (GW_e)	**10**	**28**	**42**	**61**	**76**	**101**	**121**	**11.2%**	**4.2%**	**3.7%**	**2.2%**	**2.9%**	**1.8%**
Coal	1	3	4	4	3	0	0	5.7%	4.3%	1.2%	-5.4%	-15.8%	-12.2%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	4.5%
Oil	3	6	10	8	8	5	7	7.0%	5.6%	-1.9%	-1.0%	-3.3%	2.0%
Gas	3	15	21	23	18	9	2	17.7%	3.4%	1.0%	-2.4%	-7.3%	-12.5%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	6.7%
Biomass & Waste	0	0	1	3	3	3	3	n.s.	9.8%	11.1%	-0.2%	-1.2%	0.2%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	2	3	n.s.	n.s.	n.s.	n.s.	n.s.	6.2%
Hydro	2	4	6	10	15	25	34	6.1%	4.0%	4.8%	4.3%	5.2%	3.2%
Wind	0	0	0	8	18	24	14	n.s.	n.s.	n.s.	8.9%	3.2%	-5.3%
Solar	0	0	0	4	12	33	58	n.s.	n.s.	n.s.	10.6%	10.7%	5.7%
Other	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	16.5%	42.2%
Total Final Consumption[2] (Mtoe)	**29**	**51**	**84**	**107**	**102**	**79**	**69**	**5.9%**	**5.2%**	**2.4%**	**-0.5%**	**-2.6%**	**-1.3%**
Coal	1	4	9	7	5	1	1	10.3%	10.0%	-3.0%	-2.5%	-13.3%	-5.9%
Oil	15	29	44	58	52	31	19	6.9%	4.2%	2.9%	-1.0%	-5.2%	-4.6%
Gas	0	2	4	6	9	6	4	27.8%	10.0%	3.7%	3.8%	-3.0%	-5.2%
Electricity	3	8	13	16	16	15	18	8.7%	5.4%	2.5%	-0.4%	-0.3%	1.6%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	4.4%
Biomass & Other	9	9	14	20	20	24	27	0.2%	4.4%	3.1%	0.0%	2.3%	0.9%
Industry (incl. non-energy use)	**9**	**23**	**45**	**60**	**54**	**39**	**34**	**9.7%**	**6.9%**	**2.9%**	**-1.0%**	**-3.2%**	**-1.4%**
Coal	1	4	9	7	5	1	1	10.3%	10.0%	-3.0%	-2.5%	-13.3%	-5.9%
Oil	3	10	20	30	25	17	15	12.1%	7.1%	4.2%	-1.7%	-3.7%	-1.5%
Gas	0	2	3	5	7	4	2	27.8%	6.9%	5.1%	2.8%	-4.1%	-8.7%
Electricity	2	3	5	7	7	6	6	8.4%	4.7%	3.1%	-0.1%	-1.4%	-1.0%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	3	4	7	10	9	9	11	4.0%	5.0%	3.9%	-1.1%	0.2%	1.3%
Buildings	**9**	**11**	**17**	**19**	**18**	**17**	**18**	**1.9%**	**4.6%**	**1.1%**	**-0.3%**	**-0.6%**	**0.1%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	1	2	3	2	1	1	0	6.0%	5.8%	-3.4%	-4.0%	-5.7%	-9.0%
Gas	0	0	0	0	2	1	1	n.s.	n.s.	n.s.	14.2%	-2.5%	-8.8%
Electricity	2	4	7	9	8	8	10	8.9%	6.0%	2.0%	-1.2%	-0.4%	2.9%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	4.4%
Biomass & Other	6	5	7	8	8	8	6	-2.1%	2.9%	1.1%	0.1%	-0.1%	-1.8%
Agriculture	**2**	**3**	**3**	**4**	**5**	**5**	**5**	**4.5%**	**2.1%**	**2.5%**	**1.0%**	**0.7%**	**0.4%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	2	3	3	4	4	2	1	4.5%	2.1%	2.4%	-2.0%	-4.2%	-4.5%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Electricity	0	0	0	0	0	1	1	4.8%	8.1%	1.6%	24.4%	8.6%	4.3%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	1	2	3	n.s.	n.s.	n.s.	37.6%	8.0%	2.9%
Transport	**9**	**15**	**20**	**24**	**25**	**17**	**12**	**4.9%**	**2.9%**	**2.2%**	**0.2%**	**-3.5%**	**-3.5%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	9	15	18	22	22	11	3	4.9%	2.0%	2.1%	0.2%	-7.3%	-12.8%
Gas	0	0	1	0	0	1	1	n.s.	n.s.	-7.9%	-3.1%	8.0%	7.6%
Electricity	0	0	0	0	0	1	1	n.s.	6.6%	16.0%	20.7%	13.2%	4.5%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	1	2	2	5	7	n.s.	n.s.	9.9%	0.0%	12.1%	2.6%
Other Energy Transformation & Losses[3]	**8**	**11**	**19**	**26**	**27**	**32**	**33**	**3.5%**	**5.5%**	**3.3%**	**0.3%**	**1.8%**	**0.0%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Vietnam	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	68	80	88	98	104	106	106	1.6%	1.0%	1.0%	0.6%	0.2%	0.0%
GDP per capita (ppp, k$'15)	1	2	4	6	10	15	21	5.8%	5.6%	5.1%	5.4%	4.3%	3.5%
Prices													
International/Regional ($'15/boe)													
Coal	3	1	3	4	5	8	9	-7.8%	10.3%	1.2%	2.5%	6.1%	0.7%
Oil	39	38	86	88	89	79	81	-0.2%	8.4%	0.2%	0.1%	-1.2%	0.3%
Gas	28	26	46	74	88	90	91	-0.7%	5.8%	4.7%	1.8%	0.2%	0.1%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**52**	**141**	**326**	**455**	**403**	**188**	**92**	**10.5%**	**8.8%**	**3.4%**	**-1.2%**	**-7.4%**	**-6.9%**
Total GHG (energy, industry, agriculture)	**97**	**153**	**266**	**396**	**378**	**167**	**73**	**4.6%**	**5.7%**	**4.1%**	**-0.5%**	**-7.8%**	**-8.0%**
CO_2	19	53	153	271	287	107	25	10.7%	11.1%	5.9%	0.6%	-9.4%	-13.5%
CH_4	68	81	93	102	68	42	31	1.8%	1.4%	0.9%	-3.9%	-4.7%	-3.1%
N_2O	10	19	20	24	22	18	17	6.1%	0.9%	1.6%	-0.7%	-2.1%	-0.7%
F gases	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Total GHG from Energy and Industry	**34**	**76**	**182**	**309**	**318**	**127**	**35**	**8.4%**	**9.1%**	**5.5%**	**0.3%**	**-8.8%**	**-12.1%**
CO_2 Emissions from Fuel Comb.	**17**	**44**	**125**	**231**	**237**	**92**	**23**	**9.9%**	**11.1%**	**6.3%**	**0.2%**	**-9.0%**	**-12.8%**
Power generation/District heating	5	11	41	80	81	22	4	9.0%	13.7%	7.0%	0.1%	-12.3%	-14.8%
Industry	6	14	39	80	79	21	3	9.9%	10.8%	7.4%	-0.1%	-12.5%	-16.5%
Buildings	2	7	11	13	10	7	3	12.9%	5.4%	1.2%	-2.3%	-3.9%	-8.3%
Agriculture	1	1	2	2	2	1	1	5.0%	3.8%	2.1%	-0.5%	-3.8%	-4.2%
Transport	4	11	31	49	52	33	10	9.8%	11.2%	4.8%	0.6%	-4.5%	-10.9%
Other	0	0	1	6	11	8	1	8.3%	49.0%	15.9%	5.8%	-3.1%	-16.9%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**31.5%**	**37.7%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gas	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass	0	0	0	0	0	0	4	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	31.0%	16.0%
Energy Balance, by fuel (Mtoe)													
Primary Production	**18**	**39**	**65**	**64**	**54**	**64**	**85**	**8.1%**	**5.2%**	**-0.2%**	**-1.6%**	**1.7%**	**2.8%**
Coal	2	6	25	13	0	0	0	10.1%	14.5%	-6.6%	n.s.	n.s.	n.s.
Oil	3	16	15	22	16	10	6	19.7%	-0.5%	3.9%	-3.2%	-5.1%	-5.0%
Natural gas	0	1	8	9	10	13	15	44.5%	19.4%	0.8%	1.8%	2.1%	1.7%
Biomass	12	14	15	15	20	23	31	1.3%	0.4%	0.1%	2.8%	1.7%	3.1%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	15.1%
Hydro	0	1	2	5	6	7	8	10.5%	6.6%	7.8%	1.5%	2.6%	0.8%
Other renewables	0	0	0	0	3	11	24	n.s.	n.s.	52.8%	23.9%	16.1%	7.9%
Net Imports	**0**	**- 11**	**- 2**	**33**	**52**	**17**	**- 5**						
Coal	0	- 2	- 10	20	28	5	1						
Oil	0	- 8	3	3	16	8	- 1						
Natural gas	0	0	0	3	4	- 5	- 13						
Biomass	0	0	0	5	2	8	6						
Biofuels	0	0	0	0	0	0	0						
Electricity	0	0	5	2	2	2	2						
Primary Energy Demand[2]	**18**	**29**	**63**	**96**	**106**	**82**	**80**	4.9%	**8.2%**	**4.3%**	**1.0%**	**-2.6%**	**-0.2%**
Coal	2	4	15	33	28	5	1	7.0%	12.9%	8.4%	-1.7%	-16.0%	-13.0%
Oil	3	8	19	25	32	18	5	11.2%	9.1%	3.1%	2.4%	-5.7%	-12.2%
Natural gas	0	1	8	11	14	7	3	n.s.	21.9%	3.2%	2.5%	-6.5%	-10.0%
Biomass	12	14	15	20	22	31	37	1.3%	0.4%	3.1%	0.9%	3.5%	1.8%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	15.1%
Hydro	0	1	2	5	6	7	8	10.5%	6.6%	7.8%	1.5%	2.6%	0.8%
Other renewables	0	0	0	0	3	11	24	n.s.	n.s.	52.8%	23.9%	16.1%	7.9%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**18**	**29**	**63**	**96**	**106**	**82**	**80**	**4.9%**	**8.2%**	**4.3%**	**1.0%**	**-2.6%**	**-0.2%**
Energy for Power Generation	**2**	**5**	**16**	**30**	**34**	**28**	**40**	**10.7%**	**12.8%**	**6.3%**	**1.5%**	**-2.0%**	**3.6%**
Other Energy Transformation & Losses	**1**	**1**	**6**	**5**	**9**	**16**	**18**	**2.4%**	**23.6%**	**-2.5%**	**5.7%**	**6.2%**	**1.5%**
Final consumption	**16**	**25**	**48**	**76**	**81**	**60**	**50**	**4.6%**	**6.8%**	**4.7%**	**0.6%**	**-3.1%**	**-1.8%**
Steel, Non-Met. Minerals and Chem.	0	0	6	16	17	9	8	n.s.	n.s.	10.0%	0.5%	-5.5%	-2.0%
Other Industry	5	8	11	19	22	15	13	5.7%	3.8%	5.0%	1.5%	-3.6%	-1.2%
Non-Energy Use	0	0	2	4	5	2	1	16.9%	32.8%	6.5%	1.8%	-9.2%	-9.4%
Residential	10	12	16	20	18	14	11	2.4%	2.9%	2.3%	-1.2%	-2.1%	-2.2%
Services	0	1	2	3	3	4	6	12.6%	4.8%	4.2%	2.8%	2.6%	3.5%
Agriculture	0	0	1	1	1	1	1	5.4%	3.8%	3.4%	2.3%	1.4%	1.1%
Road	1	3	10	14	15	13	8	10.3%	11.4%	3.5%	0.9%	-1.9%	-3.9%
Rail	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Aviation	0	0	0	0	1	1	1	1.4%	3.9%	8.3%	6.9%	-0.3%	-2.3%
Other Transport	0	0	0	0	0	0	0	17.8%	8.3%	-7.4%	3.3%	-2.7%	-1.9%

[1] Nuclear energy is accounted as primary electricity

Vietnam	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**1**	**4**	**14**	**24**	**26**	**9**	**8**	**10.8%**	**14.4%**	**5.9%**	**0.7%**	**-9.9%**	**-1.9%**
Coal	1	1	5	14	11	1	1	2.6%	15.5%	11.3%	-2.6%	-18.3%	-7.2%
Oil	0	1	1	1	4	2	1	13.1%	-1.2%	-1.7%	16.1%	-5.9%	-12.1%
Gas	0	1	8	9	11	4	2	n.s.	21.4%	1.7%	1.6%	-10.0%	-8.6%
Biomass & Waste	0	0	0	0	0	2	4	n.s.	n.s.	23.4%	5.1%	22.5%	10.9%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	5.9%	10.7%	13.4%
Gross Elec. Generation (TWh_e)	**9**	**27**	**95**	**183**	**225**	**241**	**311**	**11.8%**	**13.6%**	**6.8%**	**2.1%**	**0.7%**	**2.6%**
Coal	2	3	20	65	50	7	3	4.6%	20.2%	12.6%	-2.6%	-18.3%	-6.9%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	1	5	3	4	17	10	3	13.2%	-2.8%	1.2%	16.3%	-5.8%	-11.7%
Gas	0	4	44	54	63	21	9	n.s.	26.1%	2.1%	1.5%	-10.6%	-7.9%
of which CCS	0	0	0	0	0	0	3	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	0	0	0	1	8	23	n.s.	n.s.	23.8%	6.3%	24.7%	11.3%
of which CCS	0	0	0	0	0	0	3	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	5	15	28	58	67	88	95	10.5%	6.6%	7.8%	1.5%	2.7%	0.8%
Wind	0	0	0	1	12	38	54	n.s.	n.s.	33.1%	29.6%	12.4%	3.7%
Solar	0	0	0	0	13	62	98	n.s.	n.s.	n.s.	n.s.	16.6%	4.6%
Other	0	0	0	0	2	9	27	n.s.	n.s.	n.s.	14.7%	16.7%	11.3%
Generation Capacity (GW_e)	**2**	**6**	**20**	**42**	**58**	**102**	**135**	**11.7%**	**11.7%**	**7.9%**	**3.3%**	**5.9%**	**2.8%**
Coal	1	1	3	14	13	12	1	-1.0%	17.4%	15.8%	-0.3%	-1.4%	-19.9%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	55.1%
Oil	1	2	2	4	4	4	5	8.2%	2.2%	7.7%	1.0%	-1.3%	2.0%
Gas	0	1	6	9	9	4	2	n.s.	19.4%	3.3%	0.5%	-8.6%	-5.0%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	0	0	0	0	0	1	4	n.s.	n.s.	16.4%	6.3%	26.3%	14.0%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	1	3	8	15	17	22	24	16.6%	9.7%	6.3%	1.4%	2.8%	1.0%
Wind	0	0	0	0	4	14	20	n.s.	n.s.	46.3%	28.3%	12.5%	3.8%
Solar	0	0	0	0	9	45	75	n.s.	n.s.	n.s.	n.s.	17.2%	5.2%
Other	0	0	0	0	0	1	3	3.4%	0.0%	3.2%	6.3%	12.1%	19.3%
Total Final Consumption[2] (Mtoe)	**16**	**25**	**48**	**76**	**81**	**60**	**50**	**4.6%**	**6.8%**	**4.7%**	**0.6%**	**-3.1%**	**-1.8%**
Coal	1	3	10	19	17	3	1	9.2%	11.8%	6.7%	-1.1%	-14.7%	-17.1%
Oil	2	7	17	23	25	14	4	10.8%	9.8%	3.5%	0.8%	-6.0%	-11.9%
Gas	0	0	0	2	4	4	2	n.s.	39.2%	15.7%	5.4%	0.0%	-5.0%
Electricity	1	2	7	14	17	18	23	13.7%	14.5%	6.7%	2.1%	0.4%	2.3%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	2.3%
Biomass & Other	12	13	14	18	18	20	20	1.2%	0.3%	2.5%	0.2%	1.2%	-0.1%
Industry (incl. non-energy use)	**5**	**8**	**20**	**38**	**43**	**26**	**22**	**5.8%**	**9.4%**	**6.9%**	**1.2%**	**-4.9%**	**-2.0%**
Coal	1	2	8	17	16	3	0	8.5%	13.4%	7.6%	-0.6%	-14.7%	-17.2%
Oil	0	2	4	7	8	3	1	13.2%	10.3%	4.7%	1.9%	-9.5%	-11.5%
Gas	0	0	0	2	2	2	0	n.s.	39.2%	12.9%	2.9%	-2.5%	-14.4%
Electricity	0	1	4	8	12	11	10	12.3%	17.7%	7.6%	3.4%	-0.8%	-0.4%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	3	3	3	4	5	7	9	1.3%	-2.1%	5.4%	1.2%	4.1%	2.5%
Buildings	**10**	**13**	**18**	**23**	**21**	**19**	**18**	**2.9%**	**3.1%**	**2.5%**	**-0.7%**	**-1.2%**	**-0.6%**
Coal	0	1	2	2	1	0	0	14.3%	6.2%	0.6%	-7.7%	-15.6%	-15.8%
Oil	0	1	2	2	1	1	0	11.7%	4.6%	0.1%	-1.9%	-3.1%	-8.2%
Gas	0	0	0	0	1	1	1	n.s.	n.s.	n.s.	10.9%	0.8%	-7.4%
Electricity	0	1	3	6	5	7	11	15.9%	12.1%	5.4%	-0.5%	1.9%	5.4%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	2.3%
Biomass & Other	9	10	11	13	12	10	5	1.2%	1.0%	1.7%	-0.7%	-2.5%	-5.6%
Agriculture	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**5.4%**	**3.8%**	**3.4%**	**2.3%**	**1.4%**	**1.1%**
Coal	0	0	0	0	0	0	0	-9.4%	-2.0%	2.0%	-3.6%	-7.5%	-7.5%
Oil	0	0	1	1	1	0	0	8.8%	4.2%	2.1%	-0.3%	-3.7%	-4.1%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Electricity	0	0	0	0	0	0	1	4.0%	3.5%	9.6%	4.8%	3.9%	2.7%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	53.4%	10.4%	3.5%
Transport	**1**	**3**	**10**	**14**	**16**	**13**	**9**	**9.7%**	**11.2%**	**3.5%**	**1.1%**	**-1.8%**	**-3.8%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	1	3	10	14	15	9	2	9.9%	11.2%	3.5%	0.6%	-4.8%	-13.2%
Gas	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	17.0%	8.8%
Electricity	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	41.4%	15.6%	5.7%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	1	3	5	n.s.	n.s.	n.s.	20.1%	17.9%	4.8%
Other Energy Transformation & Losses[3]	**1**	**1**	**6**	**5**	**9**	**16**	**18**	**2.4%**	**23.6%**	**-2.5%**	**5.7%**	**6.2%**	**1.5%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Rest South Asia	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	263	334	400	472	542	602	651	2.4%	1.8%	1.7%	1.4%	1.1%	0.8%
GDP per capita (ppp, k$'15)	1	2	2	3	6	9	14	1.9%	3.4%	3.6%	5.4%	5.1%	4.4%
Prices													
International/Regional ($'15/boe)													
Coal	3	1	3	4	5	8	8	-7.8%	10.3%	1.0%	2.6%	5.6%	-0.1%
Oil	39	38	86	88	89	79	81	-0.2%	8.4%	0.2%	0.1%	-1.2%	0.3%
Gas	28	26	46	74	88	90	91	-0.7%	5.8%	4.7%	1.8%	0.2%	0.1%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**463**	**572**	**718**	**882**	**888**	**543**	**368**	**2.1%**	**2.3%**	**2.1%**	**0.1%**	**-4.8%**	**-3.8%**
Total GHG (energy, industry, agriculture)	**373**	**481**	**668**	**858**	**861**	**534**	**364**	**2.6%**	**3.3%**	**2.5%**	**0.0%**	**-4.7%**	**-3.8%**
CO_2	84	152	245	402	490	234	105	6.1%	4.9%	5.1%	2.0%	-7.1%	-7.7%
CH_4	249	279	344	370	288	224	184	1.1%	2.1%	0.7%	-2.5%	-2.5%	-1.9%
N_2O	38	50	78	84	83	75	74	2.7%	4.6%	0.8%	-0.2%	-1.0%	-0.2%
F gases	1	0	1	1	1	1	1	-10.1%	11.6%	2.4%	-6.5%	1.8%	3.5%
Total GHG from Energy and Industry	**144**	**234**	**348**	**524**	**591**	**310**	**147**	**5.0%**	**4.0%**	**4.2%**	**1.2%**	**-6.3%**	**-7.2%**
CO_2 Emissions from Fuel Comb.	**75**	**135**	**217**	**364**	**434**	**218**	**104**	**6.1%**	**4.8%**	**5.3%**	**1.8%**	**-6.6%**	**-7.2%**
Power generation/District heating	20	45	68	154	160	67	35	8.4%	4.3%	8.5%	0.4%	-8.4%	-6.4%
Industry	19	28	49	60	62	19	4	3.7%	6.0%	1.9%	0.4%	-11.4%	-14.8%
Buildings	12	18	26	42	63	62	40	3.5%	4.1%	4.9%	4.0%	-0.2%	-4.2%
Agriculture	2	3	3	4	5	4	3	3.2%	2.8%	2.8%	0.8%	-2.6%	-3.2%
Transport	20	38	63	90	124	56	22	6.9%	5.3%	3.5%	3.3%	-7.7%	-9.1%
Other	2	5	7	13	20	12	1	10.4%	3.0%	7.2%	4.2%	-5.4%	-19.2%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**2**	**11**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**49.3%**	**21.2%**
Coal	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	n.s.	n.s.	2.2%
Gas	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	8.3%
Biomass	0	0	0	0	0	0	6	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	3	n.s.	n.s.	n.s.	n.s.	27.6%	23.1%
Energy Balance, by fuel (Mtoe)													
Primary Production	**56**	**77**	**116**	**122**	**124**	**151**	**180**	**3.1%**	**4.2%**	**0.5%**	**0.1%**	**2.0%**	**1.8%**
Coal	1	1	2	3	4	2	1	2.0%	5.1%	2.6%	3.4%	-4.4%	-8.9%
Oil	3	3	3	3	2	1	1	0.8%	1.2%	-2.5%	-1.1%	-4.4%	-4.0%
Natural gas	15	26	52	66	60	49	32	6.0%	7.2%	2.3%	-0.9%	-2.1%	-4.1%
Biomass	36	44	53	45	44	50	52	2.1%	1.9%	-1.7%	-0.3%	1.3%	0.3%
Nuclear[1]	0	0	0	1	2	5	6	21.2%	5.5%	7.1%	10.9%	11.0%	3.2%
Hydro	2	2	4	5	6	10	13	0.4%	7.0%	0.9%	3.3%	4.4%	2.7%
Other renewables	0	0	0	0	5	34	75	n.s.	n.s.	51.4%	30.4%	20.3%	8.2%
Net Imports	**10**	**22**	**21**	**64**	**89**	**41**	**28**						
Coal	1	1	4	8	10	3	0						
Oil	12	25	29	60	79	35	17						
Natural gas	- 1	- 2	- 9	- 7	1	- 6	- 5						
Biomass	0	0	0	3	0	10	16						
Biofuels	0	0	0	0	0	0	0						
Electricity	- 1	- 1	- 3	0	0	0	0						
Primary Energy Demand[2]	**67**	**99**	**136**	**186**	**213**	**192**	**208**	4.0%	**3.3%**	**3.1%**	**1.4%**	**-1.0%**	**0.8%**
Coal	2	2	6	11	14	5	1	0.7%	9.1%	7.0%	2.3%	-9.5%	-12.8%
Oil	14	27	32	63	81	36	17	6.7%	1.5%	7.0%	2.6%	-7.8%	-7.0%
Natural gas	13	24	43	59	61	42	27	5.9%	6.2%	3.0%	0.4%	-3.5%	-4.3%
Biomass	36	44	53	48	44	60	68	2.1%	1.9%	-1.1%	-0.8%	3.1%	1.3%
Nuclear[1]	0	0	0	1	2	5	6	21.2%	5.5%	7.1%	10.9%	11.0%	3.2%
Hydro	2	2	4	5	6	10	13	0.4%	7.0%	0.9%	3.3%	4.4%	2.7%
Other renewables	0	0	0	0	5	34	75	n.s.	n.s.	51.4%	30.4%	20.3%	8.2%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**67**	**99**	**136**	**186**	**213**	**192**	**208**	**4.0%**	**3.3%**	**3.1%**	**1.4%**	**-1.0%**	**0.8%**
Energy for Power Generation	**10**	**19**	**30**	**59**	**68**	**79**	**125**	**6.6%**	**4.9%**	**7.1%**	**1.3%**	**1.5%**	**4.7%**
Other Energy Transformation & Losses	**0**	**2**	**2**	**8**	**16**	**21**	**22**	**n.s.**	**-4.4%**	**17.5%**	**7.8%**	**2.8%**	**0.3%**
Final consumption	**60**	**84**	**116**	**140**	**161**	**145**	**149**	**3.4%**	**3.3%**	**1.9%**	**1.4%**	**-1.0%**	**0.3%**
Steel, Non-Met. Minerals and Chem.	3	4	7	9	9	4	3	2.7%	5.0%	2.4%	0.2%	-6.8%	-2.5%
Other Industry	7	11	19	23	28	24	20	5.0%	5.4%	1.8%	2.0%	-1.5%	-1.9%
Non-Energy Use	4	5	5	5	6	6	6	4.2%	-0.4%	0.2%	0.7%	-0.1%	0.2%
Residential	38	48	60	64	58	57	61	2.4%	2.4%	0.6%	-1.1%	-0.1%	0.7%
Services	1	2	3	6	10	16	28	5.1%	5.1%	5.8%	4.6%	5.2%	5.8%
Agriculture	1	1	2	2	4	5	6	2.0%	4.1%	2.8%	3.6%	2.5%	1.9%
Road	6	10	17	28	44	30	23	6.0%	5.0%	5.2%	4.5%	-3.7%	-2.8%
Rail	0	0	0	1	1	1	1	1.5%	0.4%	2.9%	1.8%	1.6%	1.8%
Aviation	0	1	1	1	1	1	1	16.2%	0.1%	-0.8%	2.6%	-0.7%	-2.1%
Other Transport	0	0	1	1	1	1	1	5.2%	10.5%	2.5%	4.5%	-0.7%	0.1%

[1] Nuclear energy is accounted as primary electricity

Rest South Asia	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**8**	**16**	**25**	**54**	**54**	**30**	**30**	**7.8%**	**4.6%**	**7.8%**	**0.1%**	**-5.7%**	**0.1%**
Coal	0	0	0	5	7	4	1	17.8%	12.7%	31.9%	3.9%	-6.1%	-12.7%
Oil	2	8	10	25	27	7	5	12.5%	2.1%	9.8%	0.8%	-12.2%	-4.5%
Gas	5	8	16	24	20	13	9	4.8%	6.3%	4.6%	-1.8%	-4.5%	-3.1%
Biomass & Waste	0	0	0	0	0	6	16	n.s.	n.s.	15.4%	13.9%	34.4%	9.3%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**52**	**95**	**157**	**321**	**419**	**598**	**1 092**	**6.2%**	**5.2%**	**7.4%**	**2.7%**	**3.6%**	**6.2%**
Coal	0	0	1	18	31	17	5	20.3%	13.6%	35.6%	5.4%	-5.4%	-11.9%
of which CCS	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	n.s.	n.s.	1.9%
Oil	8	32	40	123	129	35	22	14.2%	2.3%	11.8%	0.5%	-12.1%	-4.5%
Gas	19	36	64	104	91	59	50	6.4%	5.9%	5.1%	-1.3%	-4.2%	-1.7%
of which CCS	0	0	0	0	0	1	3	n.s.	n.s.	n.s.	n.s.	n.s.	8.2%
Biomass & Waste	0	0	0	0	1	32	80	n.s.	n.s.	19.8%	21.0%	37.4%	9.5%
of which CCS	0	0	0	0	0	0	5	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	2	3	7	19	54	73	21.2%	5.5%	7.1%	10.9%	10.9%	3.2%
Hydro	24	25	49	59	80	126	177	0.4%	7.0%	1.9%	3.1%	4.6%	3.5%
Wind	0	0	0	3	39	103	241	n.s.	33.3%	51.7%	27.4%	10.3%	8.9%
Solar	0	0	0	1	22	154	365	n.s.	7.8%	50.4%	36.1%	21.5%	9.1%
Other	0	0	0	5	7	18	79	n.s.	n.s.	n.s.	4.3%	9.4%	16.2%
Generation Capacity (GW_e)	**13**	**24**	**34**	**63**	**110**	**235**	**437**	**6.5%**	**3.7%**	**6.3%**	**5.7%**	**7.9%**	**6.4%**
Coal	0	0	0	2	4	3	1	0.0%	10.7%	19.4%	6.0%	-3.6%	-10.7%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	2.9%
Oil	3	5	7	21	34	31	40	4.7%	3.4%	11.8%	5.2%	-1.1%	2.5%
Gas	4	11	16	21	17	11	16	9.9%	3.6%	3.0%	-2.4%	-3.8%	3.8%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	9.2%
Biomass & Waste	0	0	0	0	0	4	12	n.s.	n.s.	9.4%	19.0%	38.2%	11.3%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	1	3	8	11	13.7%	0.0%	9.1%	10.6%	10.7%	3.0%
Hydro	5	7	11	15	20	31	52	3.7%	4.0%	3.3%	2.8%	4.7%	5.2%
Wind	0	0	0	1	14	36	80	n.s.	29.9%	42.4%	26.1%	9.7%	8.3%
Solar	0	0	0	1	17	109	223	n.s.	n.s.	35.2%	30.4%	20.3%	7.4%
Other	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	17.1%	40.1%
Total Final Consumption[2] (Mtoe)	**60**	**84**	**116**	**140**	**161**	**145**	**149**	**3.4%**	**3.3%**	**1.9%**	**1.4%**	**-1.0%**	**0.3%**
Coal	2	2	5	6	6	1	0	0.3%	9.0%	1.5%	-0.3%	-14.8%	-12.7%
Oil	11	18	22	37	52	28	13	5.0%	1.5%	5.5%	3.5%	-6.1%	-7.6%
Gas	8	14	26	31	36	27	18	5.7%	6.5%	1.8%	1.7%	-2.9%	-4.0%
Electricity	3	6	11	21	28	41	70	6.1%	6.5%	6.9%	2.8%	3.8%	5.6%
Heat	0	0	0	0	0	6	8	n.s.	n.s.	n.s.	n.s.	43.5%	3.2%
Biomass & Other	36	43	52	45	38	42	40	2.0%	1.9%	-1.5%	-1.8%	1.1%	-0.5%
Industry (incl. non-energy use)	**14**	**21**	**31**	**37**	**42**	**34**	**29**	**4.3%**	**4.1%**	**1.7%**	**1.4%**	**-2.2%**	**-1.6%**
Coal	2	2	5	6	6	1	0	0.5%	8.5%	1.6%	0.1%	-14.8%	-12.6%
Oil	2	3	2	4	4	2	2	6.0%	-4.1%	5.0%	1.4%	-8.8%	-0.2%
Gas	6	9	15	16	17	10	5	4.8%	4.9%	0.7%	0.4%	-5.5%	-5.9%
Electricity	1	2	4	6	8	7	6	4.6%	7.4%	4.7%	1.6%	-1.0%	-0.6%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	3	4	5	5	8	15	15	4.2%	2.0%	-0.4%	5.6%	6.3%	0.4%
Buildings	**39**	**50**	**64**	**71**	**68**	**73**	**89**	**2.5%**	**2.6%**	**1.0%**	**-0.4%**	**0.8%**	**2.0%**
Coal	0	0	0	0	0	0	0	-11.7%	31.8%	-0.1%	-8.1%	-16.0%	-16.2%
Oil	2	2	2	3	6	8	5	-0.1%	-2.0%	5.0%	7.4%	2.5%	-4.5%
Gas	2	4	8	13	18	16	10	7.8%	6.4%	5.2%	3.1%	-1.5%	-4.0%
Electricity	2	3	6	14	17	24	52	8.4%	6.0%	8.5%	2.1%	3.7%	8.0%
Heat	0	0	0	0	0	6	8	n.s.	n.s.	n.s.	n.s.	43.5%	3.2%
Biomass & Other	33	40	48	40	26	20	14	1.9%	1.9%	-1.7%	-4.2%	-2.8%	-3.5%
Agriculture	**1**	**1**	**2**	**2**	**4**	**5**	**6**	**2.0%**	**4.1%**	**2.8%**	**3.6%**	**2.5%**	**1.9%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	1	1	1	1	1	1	1	3.1%	2.8%	2.8%	0.8%	-2.6%	-3.3%
Gas	0	0	0	0	0	0	0	n.s.	2.9%	2.9%	1.4%	-1.3%	-1.9%
Electricity	0	0	1	1	2	2	3	0.1%	6.0%	2.9%	4.8%	3.7%	3.0%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	n.s.	12.1%	3.9%
Transport	**7**	**12**	**19**	**30**	**47**	**33**	**25**	**6.3%**	**4.7%**	**4.8%**	**4.4%**	**-3.5%**	**-2.6%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	7	12	16	29	40	17	5	6.3%	3.2%	5.8%	3.4%	-8.3%	-11.3%
Gas	0	0	3	1	1	2	3	n.s.	n.s.	-7.6%	1.6%	4.1%	2.3%
Electricity	0	0	0	0	2	7	8	-7.2%	n.s.	n.s.	33.1%	13.7%	1.4%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	3	7	10	n.s.	n.s.	n.s.	27.4%	7.3%	3.5%
Other Energy Transformation & Losses[3]	**0**	**2**	**2**	**8**	**16**	**21**	**22**	**n.s.**	**-4.4%**	**17.5%**	**7.8%**	**2.8%**	**0.3%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Rest South East Asia	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	163	194	221	248	269	284	293	1.8%	1.3%	1.1%	0.8%	0.6%	0.3%
GDP per capita (ppp, k$'15)	2	3	4	5	6	8	9	2.8%	4.0%	2.9%	2.0%	2.1%	2.2%
Prices													
International/Regional ($'15/boe)													
Coal	3	1	3	4	5	8	9	-7.8%	10.3%	1.2%	2.5%	6.1%	0.7%
Oil	39	38	86	88	89	79	81	-0.2%	8.4%	0.2%	0.1%	-1.2%	0.3%
Gas	28	26	46	74	88	90	91	-0.7%	5.8%	4.7%	1.8%	0.2%	0.1%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**737**	**991**	**1 237**	**1 202**	**884**	**416**	**231**	**3.0%**	**2.2%**	**-0.3%**	**-3.0%**	**-7.3%**	**-5.7%**
Total GHG (energy, industry, agriculture)	**558**	**703**	**825**	**901**	**726**	**324**	**164**	**2.3%**	**1.6%**	**0.9%**	**-2.1%**	**-7.8%**	**-6.6%**
CO_2	353	463	530	583	482	168	49	2.8%	1.4%	1.0%	-1.9%	-10.0%	-11.5%
CH_4	169	185	233	248	180	107	76	0.9%	2.4%	0.6%	-3.1%	-5.1%	-3.4%
N_2O	35	44	45	48	44	37	35	2.5%	0.1%	0.7%	-0.9%	-1.6%	-0.6%
F gases	3	11	17	22	20	12	4	15.0%	4.7%	2.6%	-1.1%	-4.8%	-11.0%
Total GHG from Energy and Industry	**414**	**545**	**635**	**707**	**586**	**232**	**79**	**2.8%**	**1.6%**	**1.1%**	**-1.9%**	**-8.8%**	**-10.2%**
CO_2 Emissions from Fuel Comb.	**317**	**431**	**491**	**532**	**428**	**152**	**47**	**3.1%**	**1.3%**	**0.8%**	**-2.2%**	**-9.8%**	**-11.1%**
Power generation/District heating	88	180	228	242	156	36	8	7.4%	2.4%	0.6%	-4.3%	-13.6%	-13.7%
Industry	127	110	121	126	120	29	5	-1.4%	1.0%	0.4%	-0.5%	-13.1%	-16.2%
Buildings	30	31	32	34	29	18	7	0.4%	0.3%	0.5%	-1.4%	-4.8%	-9.2%
Agriculture	4	4	2	3	3	2	1	-0.6%	-5.7%	3.4%	-1.3%	-4.1%	-4.2%
Transport	47	74	78	96	91	48	18	4.5%	0.6%	2.0%	-0.5%	-6.2%	-9.1%
Other	20	31	28	31	29	19	7	4.7%	-1.2%	1.0%	-0.8%	-3.8%	-9.2%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**n.s.**	**n.s.**	**n.s.**	**28.3%**	**33.5%**	**27.6%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	21.1%
Biomass	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	28.3%	32.9%	19.4%
Energy Balance, by fuel (Mtoe)													
Primary Production	**80**	**82**	**114**	**120**	**220**	**143**	**157**	**0.2%**	**3.4%**	**0.5%**	**6.3%**	**-4.2%**	**0.9%**
Coal	27	20	39	33	97	3	2	-3.2%	7.1%	-1.6%	11.3%	-28.6%	-7.4%
Oil	8	10	10	6	5	3	2	2.1%	-0.3%	-5.0%	-1.1%	-4.6%	-3.9%
Natural gas	9	13	24	31	29	19	11	3.3%	6.4%	2.4%	-0.5%	-4.3%	-5.4%
Biomass	25	23	26	35	61	80	86	-0.8%	1.0%	3.0%	5.9%	2.7%	0.7%
Nuclear[1]	3	3	4	3	3	0	0	1.6%	0.8%	-2.5%	0.9%	-20.3%	3.3%
Hydro	3	2	3	5	8	15	17	-0.7%	1.8%	4.8%	6.1%	6.3%	1.0%
Other renewables	5	10	9	8	16	22	39	7.9%	-1.4%	-1.2%	7.6%	3.3%	5.8%
Net Imports	**54**	**94**	**103**	**129**	**17**	**35**	**7**						
Coal	15	34	28	28	- 56	5	0						
Oil	44	67	71	95	83	51	33						
Natural gas	- 6	- 3	3	7	6	- 4	- 8						
Biomass	0	0	0	- 1	- 18	- 17	- 20						
Biofuels	0	0	0	0	- 1	0	0						
Electricity	0	- 3	1	1	1	1	1						
Primary Energy Demand[2]	**134**	**176**	**217**	**248**	**237**	**179**	**164**	2.8%	**2.1%**	**1.3%**	**-0.5%**	**-2.8%**	**-0.9%**
Coal	43	53	68	61	41	8	2	2.3%	2.4%	-1.0%	-3.8%	-15.3%	-12.7%
Oil	53	77	81	101	89	54	35	3.8%	0.5%	2.2%	-1.2%	-4.8%	-4.2%
Natural gas	4	10	27	37	35	15	3	10.0%	10.9%	3.1%	-0.5%	-8.5%	-15.4%
Biomass	25	23	26	34	43	63	66	-0.8%	1.0%	2.7%	2.6%	3.8%	0.4%
Nuclear[1]	3	3	4	3	3	0	0	1.6%	0.8%	-2.5%	0.9%	-20.3%	3.3%
Hydro	3	2	3	5	8	15	17	-0.7%	1.8%	4.8%	6.1%	6.3%	1.0%
Other renewables	5	10	9	8	16	22	39	7.9%	-1.4%	-1.2%	7.6%	3.3%	5.8%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**134**	**176**	**217**	**248**	**237**	**179**	**164**	**2.8%**	**2.1%**	**1.3%**	**-0.5%**	**-2.8%**	**-0.9%**
Energy for Power Generation	**36**	**69**	**85**	**94**	**82**	**54**	**64**	**6.6%**	**2.2%**	**1.0%**	**-1.4%**	**-4.2%**	**1.8%**
Other Energy Transformation & Losses	**10**	**11**	**13**	**19**	**26**	**38**	**38**	**0.7%**	**2.3%**	**3.6%**	**3.3%**	**3.8%**	**0.1%**
Final consumption	**101**	**119**	**150**	**173**	**169**	**127**	**109**	**1.6%**	**2.4%**	**1.5%**	**-0.2%**	**-2.9%**	**-1.4%**
Steel, Non-Met. Minerals and Chem.	14	18	23	28	28	16	12	2.4%	2.4%	2.0%	0.2%	-5.7%	-2.6%
Other Industry	27	25	28	30	31	20	17	-0.9%	1.3%	0.6%	0.2%	-4.2%	-1.7%
Non-Energy Use	6	11	28	31	26	23	22	5.7%	9.8%	1.0%	-1.6%	-1.2%	-0.4%
Residential	26	28	29	33	31	26	22	0.5%	0.6%	1.1%	-0.5%	-1.8%	-1.5%
Services	9	11	14	16	16	15	16	2.0%	2.4%	1.3%	0.1%	-1.0%	0.7%
Agriculture	1	1	1	1	2	2	2	-0.1%	-3.2%	3.6%	1.5%	1.2%	1.1%
Road	14	22	24	30	31	21	15	4.4%	0.8%	2.4%	0.1%	-3.7%	-3.7%
Rail	0	0	1	1	1	1	1	0.5%	11.1%	4.7%	0.8%	0.3%	0.5%
Aviation	1	1	1	1	2	2	2	5.4%	-4.5%	9.1%	4.1%	0.3%	-1.3%
Other Transport	1	1	1	1	1	1	1	5.6%	-0.8%	0.3%	0.2%	-4.6%	-3.0%

[1] Nuclear energy is accounted as primary electricity

Rest South East Asia	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**26**	**53**	**70**	**79**	**54**	**16**	**8**	**7.4%**	**2.9%**	**1.2%**	**-3.6%**	**-11.8%**	**-6.7%**
Coal	12	29	40	34	18	2	0	9.6%	3.1%	-1.4%	-6.0%	-18.6%	-20.3%
Oil	12	16	7	11	8	3	1	2.4%	-7.6%	4.9%	-3.7%	-9.4%	-6.8%
Gas	1	6	21	30	25	7	1	18.2%	12.9%	3.6%	-1.9%	-11.3%	-16.1%
Biomass & Waste	0	1	2	3	2	2	4	11.5%	9.0%	3.8%	-0.9%	-1.1%	6.6%
Other	0	1	1	1	1	1	1	7.8%	-1.6%	-2.6%	3.7%	-4.5%	-0.4%
Gross Elec. Generation (TWh_e)	**168**	**297**	**405**	**479**	**474**	**404**	**514**	**5.9%**	**3.2%**	**1.7%**	**-0.1%**	**-1.6%**	**2.4%**
Coal	41	116	161	138	75	9	1	11.1%	3.3%	-1.5%	-6.0%	-18.7%	-19.7%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	53	67	29	53	36	13	7	2.3%	-8.0%	6.2%	-3.7%	-9.4%	-6.8%
Gas	3	28	117	174	145	43	8	23.7%	15.2%	4.0%	-1.8%	-11.5%	-15.8%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	19.7%
Biomass & Waste	1	2	5	6	6	6	22	13.8%	8.4%	2.6%	-0.5%	-0.4%	14.5%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	33	39	42	32	35	3	4	1.6%	0.8%	-2.5%	0.9%	-20.8%	2.0%
Hydro	32	32	37	61	101	182	205	0.2%	1.3%	5.1%	5.3%	6.0%	1.2%
Wind	0	0	1	6	33	42	65	n.s.	n.s.	18.5%	19.3%	2.3%	4.6%
Solar	0	0	0	2	31	95	163	n.s.	41.4%	47.3%	34.9%	12.0%	5.5%
Other	6	13	14	8	12	11	39	8.7%	0.7%	-5.3%	4.4%	-1.3%	13.9%
Generation Capacity (GW_e)	**41**	**69**	**93**	**111**	**153**	**195**	**248**	**5.3%**	**3.1%**	**1.8%**	**3.2%**	**2.5%**	**2.4%**
Coal	11	22	28	28	24	6	0	7.3%	2.2%	0.1%	-1.6%	-12.3%	-28.3%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	13	19	12	11	8	5	3	4.1%	-4.7%	-0.7%	-3.6%	-4.1%	-5.3%
Gas	2	7	26	31	30	8	2	16.5%	14.0%	1.7%	-0.3%	-12.0%	-13.2%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	21.9%
Biomass & Waste	0	1	1	1	1	1	3	23.2%	4.2%	-2.6%	-0.7%	-0.6%	17.4%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	5	5	5	5	6	1	1	0.0%	0.2%	0.3%	0.7%	-21.0%	1.8%
Hydro	10	13	19	29	48	86	97	2.4%	3.9%	4.3%	5.4%	5.9%	1.3%
Wind	0	0	1	2	13	16	23	n.s.	n.s.	17.0%	18.1%	2.0%	3.8%
Solar	0	0	0	3	21	71	115	n.s.	n.s.	28.4%	23.6%	12.7%	4.9%
Other	1	2	2	2	2	2	4	8.0%	0.2%	-2.3%	3.7%	-3.8%	9.4%
Total Final Consumption[2] (Mtoe)	**101**	**119**	**150**	**173**	**169**	**127**	**109**	**1.6%**	**2.4%**	**1.5%**	**-0.2%**	**-2.9%**	**-1.4%**
Coal	30	23	27	25	21	5	1	-2.7%	1.7%	-1.0%	-1.6%	-13.8%	-11.7%
Oil	34	51	66	79	71	43	28	4.0%	2.5%	1.8%	-1.0%	-5.0%	-4.3%
Gas	1	2	4	7	10	8	4	5.5%	8.0%	4.6%	3.9%	-2.3%	-6.6%
Electricity	12	21	30	35	35	31	37	5.8%	3.5%	1.6%	0.0%	-1.4%	2.0%
Heat	1	1	1	2	2	2	2	-2.9%	4.0%	5.8%	3.5%	0.3%	0.0%
Biomass & Other	22	21	22	26	30	38	37	-0.7%	0.5%	1.9%	1.4%	2.5%	-0.4%
Industry (incl. non-energy use)	**48**	**54**	**79**	**89**	**85**	**59**	**51**	**1.2%**	**3.9%**	**1.2%**	**-0.4%**	**-3.6%**	**-1.4%**
Coal	26	19	23	22	20	5	1	-2.9%	2.0%	-0.5%	-1.0%	-13.7%	-11.5%
Oil	14	21	35	40	35	24	21	4.2%	5.2%	1.3%	-1.2%	-3.7%	-1.2%
Gas	1	1	3	4	5	3	1	6.6%	10.6%	3.8%	2.4%	-4.8%	-10.8%
Electricity	6	10	15	18	20	16	15	5.0%	3.6%	2.1%	0.7%	-2.1%	-0.7%
Heat	0	0	0	0	0	0	0	-3.6%	0.7%	1.3%	-0.2%	-0.3%	-0.2%
Biomass & Other	1	2	2	4	5	11	12	7.7%	2.8%	4.5%	2.2%	8.3%	1.4%
Buildings	**36**	**39**	**44**	**49**	**47**	**41**	**38**	**0.9%**	**1.2%**	**1.2%**	**-0.3%**	**-1.5%**	**-0.6%**
Coal	5	4	4	3	1	0	0	-1.6%	0.4%	-4.4%	-7.6%	-15.6%	-15.8%
Oil	3	4	4	6	5	3	1	2.6%	-0.3%	3.0%	-1.8%	-5.4%	-9.4%
Gas	1	1	1	2	4	4	1	4.3%	3.4%	6.7%	5.5%	-1.5%	-8.5%
Electricity	5	11	14	16	14	12	19	6.9%	3.2%	1.0%	-1.3%	-1.7%	4.6%
Heat	1	0	1	1	2	2	2	-2.5%	5.3%	6.9%	4.1%	0.3%	0.1%
Biomass & Other	21	19	19	21	21	20	15	-1.2%	0.1%	1.0%	0.2%	-0.5%	-3.0%
Agriculture	**1**	**1**	**1**	**1**	**2**	**2**	**2**	**-0.1%**	**-3.2%**	**3.6%**	**1.5%**	**1.2%**	**1.1%**
Coal	0	0	0	0	0	0	0	-32.8%	12.8%	4.6%	-3.6%	-7.5%	n.s.
Oil	1	1	1	1	1	1	0	0.0%	-5.7%	3.4%	-1.3%	-4.1%	-4.2%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Electricity	0	0	0	1	1	1	1	1.5%	4.7%	4.0%	2.8%	2.8%	2.4%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	1	4.3%	7.0%	6.6%	23.3%	9.2%	3.1%
Transport	**16**	**25**	**26**	**34**	**35**	**25**	**18**	**4.4%**	**0.7%**	**2.6%**	**0.3%**	**-3.3%**	**-3.2%**
Coal	0	0	0	0	0	0	0	-4.4%	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	16	24	26	32	31	15	5	4.4%	0.5%	2.3%	-0.6%	-6.6%	-10.6%
Gas	0	0	0	0	0	1	1	n.s.	n.s.	-11.9%	26.6%	12.7%	4.5%
Electricity	0	0	0	0	1	2	3	7.5%	15.5%	3.9%	7.7%	7.8%	3.5%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	1	4	7	9	n.s.	n.s.	19.1%	11.9%	6.8%	2.7%
Other Energy Transformation & Losses[3]	**10**	**11**	**13**	**19**	**26**	**38**	**38**	**0.7%**	**2.3%**	**3.6%**	**3.3%**	**3.8%**	**0.1%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Australia	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	17	19	22	25	28	30	33	1.1%	1.5%	1.3%	1.0%	0.8%	0.8%
GDP per capita (ppp, k$'15)	29	35	41	48	57	68	80	2.2%	1.5%	1.5%	1.7%	1.9%	1.6%
Prices													
International/Regional ($'15/boe)													
Coal	3	1	3	4	4	7	9	-7.8%	10.3%	1.7%	1.1%	5.3%	2.5%
Oil	39	38	86	88	89	79	81	-0.2%	8.4%	0.2%	0.1%	-1.2%	0.3%
Gas	28	26	46	74	88	90	91	-0.7%	5.8%	4.7%	1.8%	0.2%	0.1%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**575**	**505**	**467**	**451**	**226**	**11**	**- 52**	**-1.3%**	**-0.8%**	**-0.4%**	**-6.7%**	**-26.2%**	**n.s.**
Total GHG (energy, industry, agriculture)	**435**	**504**	**556**	**542**	**377**	**165**	**86**	**1.5%**	**1.0%**	**-0.3%**	**-3.6%**	**-7.9%**	**-6.3%**
CO_2	274	352	409	408	283	92	24	2.5%	1.5%	0.0%	-3.6%	-10.6%	-12.6%
CH_4	133	124	112	99	68	53	45	-0.7%	-1.0%	-1.3%	-3.7%	-2.4%	-1.7%
N_2O	22	25	27	23	20	18	17	1.4%	0.5%	-1.5%	-1.1%	-1.3%	-0.7%
F gases	6	3	9	12	6	2	1	-6.8%	10.7%	3.6%	-6.3%	-10.2%	-12.6%
Total GHG from Energy and Industry	**336**	**410**	**475**	**464**	**307**	**102**	**26**	**2.0%**	**1.5%**	**-0.2%**	**-4.0%**	**-10.4%**	**-12.6%**
CO_2 Emissions from Fuel Comb.	**256**	**331**	**385**	**385**	**263**	**87**	**23**	**2.6%**	**1.5%**	**0.0%**	**-3.7%**	**-10.5%**	**-12.5%**
Power generation/District heating	129	180	206	182	96	21	3	3.4%	1.4%	-1.2%	-6.2%	-14.0%	-17.7%
Industry	43	48	42	45	38	12	2	1.2%	-1.4%	0.8%	-1.7%	-11.2%	-15.7%
Buildings	9	11	13	15	14	9	4	2.1%	1.8%	1.2%	-0.4%	-4.5%	-8.2%
Agriculture	3	4	6	7	5	3	2	2.2%	3.9%	0.6%	-2.4%	-4.1%	-4.2%
Transport	59	71	87	94	78	28	9	1.9%	2.0%	0.8%	-1.9%	-9.8%	-10.8%
Other	13	17	32	42	32	14	3	2.9%	6.6%	2.8%	-2.6%	-7.9%	-14.5%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**n.s.**	**n.s.**	**n.s.**	**18.6%**	**33.6%**	**33.3%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	26.4%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	33.3%
Biomass	0	0	0	0	0	0	5	n.s.	n.s.	n.s.	n.s.	n.s.	39.4%
Direct Air Capture	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	18.6%	22.5%	21.1%
Energy Balance, by fuel (Mtoe)													
Primary Production	**173**	**219**	**306**	**355**	**291**	**134**	**97**	**2.4%**	**3.4%**	**1.5%**	**-2.0%**	**-7.5%**	**-3.1%**
Coal	126	163	236	271	194	64	9	2.6%	3.7%	1.4%	-3.3%	-10.5%	-17.5%
Oil	25	24	20	29	20	3	17	-0.6%	-1.5%	3.6%	-3.7%	-17.6%	19.8%
Natural gas	17	25	42	36	44	14	1	4.2%	5.4%	-1.5%	2.0%	-11.1%	-20.5%
Biomass	4	5	5	13	22	35	43	2.4%	0.4%	9.9%	5.1%	4.8%	1.9%
Nuclear[1]	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	20.0%	11.4%	24.3%
Hydro	1	1	1	1	2	2	2	1.5%	-1.9%	2.5%	1.7%	3.0%	0.2%
Other renewables	0	0	1	4	9	15	23	-1.4%	23.2%	17.4%	9.7%	5.3%	4.1%
Net Imports	**- 86**	**- 111**	**- 179**	**- 233**	**- 192**	**- 72**	**- 47**						
Coal	- 91	- 116	- 186	- 224	- 173	- 61	- 9						
Oil	7	10	21	15	17	8	- 15						
Natural gas	- 2	- 6	- 14	- 16	- 24	- 6	- 3						
Biomass	0	0	0	- 6	- 11	- 13	- 19						
Biofuels	0	0	0	0	0	0	0						
Electricity	0	0	0	0	0	0	0						
Primary Energy Demand[2]	**88**	**108**	**127**	**122**	**99**	**61**	**50**	2.1%	**1.7%**	**-0.4%**	**-2.1%**	**-4.7%**	**-2.0%**
Coal	35	48	50	47	21	3	0	3.0%	0.4%	-0.7%	-7.7%	-18.1%	-20.4%
Oil	33	34	42	44	37	11	2	0.5%	2.0%	0.5%	-1.8%	-11.2%	-15.5%
Natural gas	14	19	28	20	20	8	- 2	2.9%	4.0%	-3.5%	0.0%	-9.0%	n.s.
Biomass	4	5	5	7	11	22	24	2.4%	0.4%	3.4%	4.3%	7.2%	0.7%
Nuclear[1]	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	20.0%	11.4%	24.3%
Hydro	1	1	1	1	2	2	2	1.5%	-1.9%	2.5%	1.7%	3.0%	0.2%
Other renewables	0	0	1	4	9	15	23	-1.4%	23.2%	17.4%	9.7%	5.3%	4.1%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**88**	**108**	**127**	**122**	**99**	**61**	**50**	**2.1%**	**1.7%**	**-0.4%**	**-2.1%**	**-4.7%**	**-2.0%**
Energy for Power Generation	**36**	**49**	**59**	**56**	**40**	**29**	**34**	**3.1%**	**1.8%**	**-0.5%**	**-3.2%**	**-3.2%**	**1.6%**
Other Energy Transformation & Losses	**5**	**3**	**9**	**3**	**3**	**2**	**- 3**	**-5.3%**	**11.8%**	**-11.9%**	**3.0%**	**-7.3%**	**n.s.**
Final consumption	**58**	**70**	**78**	**84**	**76**	**52**	**44**	**2.0%**	**1.0%**	**0.8%**	**-1.0%**	**-3.8%**	**-1.7%**
Steel, Non-Met. Minerals and Chem.	7	8	7	6	6	3	3	0.4%	-0.5%	-0.9%	-1.1%	-5.4%	-2.5%
Other Industry	13	17	17	19	18	12	11	2.9%	-0.2%	1.2%	-0.9%	-3.7%	-0.7%
Non-Energy Use	4	4	4	4	4	3	3	1.2%	0.0%	-0.3%	-0.8%	-2.1%	-1.0%
Residential	7	9	10	11	9	8	7	1.9%	1.2%	0.6%	-1.4%	-1.8%	-0.9%
Services	3	5	7	8	7	5	5	3.8%	3.3%	1.6%	-1.6%	-3.8%	-0.3%
Agriculture	1	2	2	2	3	3	3	2.1%	3.2%	0.9%	0.9%	0.7%	0.5%
Road	19	22	25	27	24	13	8	1.7%	1.3%	0.8%	-1.2%	-5.9%	-4.8%
Rail	1	1	1	1	1	1	1	0.9%	3.3%	2.7%	0.2%	-0.3%	-0.2%
Aviation	1	2	2	3	4	3	2	5.9%	2.8%	2.7%	1.1%	-3.0%	-1.9%
Other Transport	1	0	1	1	1	0	0	-3.9%	7.6%	-2.6%	0.0%	-3.8%	-2.5%

[1] Nuclear energy is accounted as primary electricity

Australia	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**35**	**48**	**57**	**51**	**30**	**12**	**8**	**3.2%**	**1.8%**	**-1.1%**	**-5.3%**	**-9.0%**	**-3.5%**
Coal	30	42	45	39	18	2	0	3.6%	0.6%	-1.3%	-7.7%	-18.8%	-19.0%
Oil	1	1	1	2	2	1	0	-5.7%	10.4%	5.5%	-2.5%	-11.4%	-6.5%
Gas	3	4	10	8	9	5	2	1.6%	9.2%	-2.0%	0.9%	-6.0%	-9.3%
Biomass & Waste	1	1	1	1	1	4	6	-0.2%	0.5%	5.9%	0.7%	11.5%	3.4%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**157**	**214**	**257**	**273**	**252**	**212**	**247**	**3.1%**	**1.8%**	**0.6%**	**-0.8%**	**-1.7%**	**1.6%**
Coal	121	174	180	158	71	8	1	3.7%	0.3%	-1.3%	-7.7%	-19.2%	-18.5%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	25.6%
Oil	4	2	6	11	8	3	1	-6.7%	13.1%	5.9%	-2.6%	-11.1%	-6.5%
Gas	14	16	45	38	43	24	10	1.2%	10.6%	-1.5%	1.2%	-5.9%	-8.3%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	32.6%
Biomass & Waste	1	1	3	5	6	19	28	4.2%	9.4%	6.6%	0.7%	12.8%	3.8%
of which CCS	0	0	0	0	0	0	3	n.s.	n.s.	n.s.	n.s.	n.s.	44.5%
Nuclear	0	0	0	0	0	1	11	n.s.	n.s.	n.s.	19.8%	9.4%	26.1%
Hydro	15	17	14	23	24	29	31	1.2%	-2.1%	5.2%	0.5%	2.0%	0.7%
Wind	0	0	5	26	84	99	103	n.s.	56.3%	18.0%	12.3%	1.6%	0.4%
Solar	0	0	0	10	14	28	45	n.s.	27.5%	37.4%	3.4%	6.8%	5.0%
Other	2	4	4	0	1	1	17	6.2%	1.0%	-19.0%	7.8%	4.1%	27.6%
Generation Capacity (GW_e)	**40**	**47**	**62**	**76**	**87**	**95**	**98**	**1.7%**	**2.8%**	**2.0%**	**1.4%**	**0.8%**	**0.3%**
Coal	24	27	30	26	16	10	0	0.9%	1.1%	-1.2%	-5.0%	-4.8%	-26.6%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	25.7%
Oil	2	4	3	3	4	3	2	9.3%	-3.1%	0.3%	3.7%	-3.9%	-1.8%
Gas	4	6	16	18	17	10	5	4.6%	10.6%	0.7%	-0.6%	-4.9%	-7.4%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	32.8%
Biomass & Waste	0	0	1	1	1	3	5	4.5%	5.7%	1.8%	0.4%	15.6%	5.2%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	44.5%
Nuclear	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	19.5%	9.2%	25.9%
Hydro	10	10	11	11	12	16	16	0.3%	0.3%	0.2%	1.2%	2.6%	0.4%
Wind	0	0	2	9	27	32	33	n.s.	49.7%	16.9%	11.6%	2.0%	0.1%
Solar	0	0	0	9	11	21	32	13.6%	22.3%	46.9%	2.4%	6.4%	4.6%
Other	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	23.0%	40.5%
Total Final Consumption[2] (Mtoe)	**58**	**70**	**78**	**84**	**76**	**52**	**44**	**2.0%**	**1.0%**	**0.8%**	**-1.0%**	**-3.8%**	**-1.7%**
Coal	5	5	4	3	3	1	0	-0.2%	-3.5%	-0.9%	-0.7%	-12.3%	-10.1%
Oil	29	35	39	43	35	14	6	1.8%	1.2%	1.0%	-1.9%	-8.9%	-7.8%
Gas	9	11	12	13	11	7	2	2.4%	1.0%	0.3%	-1.3%	-5.3%	-9.4%
Electricity	11	15	18	19	18	15	17	2.9%	2.0%	0.5%	-0.6%	-1.5%	1.2%
Heat	0	0	0	1	1	1	1	0.0%	11.9%	9.5%	2.2%	4.0%	2.3%
Biomass & Other	3	4	5	6	8	14	16	2.9%	0.4%	2.1%	3.7%	5.9%	1.3%
Industry (incl. non-energy use)	**24**	**29**	**29**	**30**	**27**	**19**	**17**	**1.9%**	**-0.2%**	**0.5%**	**-0.9%**	**-3.8%**	**-1.0%**
Coal	5	5	4	3	3	1	0	0.0%	-3.4%	-0.8%	-0.7%	-12.3%	-10.1%
Oil	6	8	7	8	7	4	3	1.8%	-1.0%	1.8%	-1.6%	-6.5%	-3.3%
Gas	6	8	8	8	7	3	1	2.1%	0.8%	0.1%	-2.0%	-8.3%	-11.2%
Electricity	5	7	7	7	8	6	7	2.7%	0.6%	0.0%	0.9%	-1.8%	0.4%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	1	2	3	3	3	5	6	5.2%	1.9%	1.1%	-1.1%	5.4%	2.6%
Buildings	**11**	**14**	**17**	**19**	**16**	**13**	**12**	**2.5%**	**2.0%**	**1.0%**	**-1.5%**	**-2.6%**	**-0.6%**
Coal	0	0	0	0	0	0	0	-10.4%	-11.9%	n.s.	n.s.	n.s.	n.s.
Oil	1	1	1	1	2	1	0	0.4%	4.1%	2.8%	2.5%	-3.6%	-8.5%
Gas	3	4	4	4	4	2	1	3.1%	1.3%	0.7%	-1.8%	-5.1%	-8.0%
Electricity	6	8	10	11	8	5	7	3.2%	3.0%	0.7%	-3.1%	-4.7%	2.8%
Heat	0	0	0	1	1	1	1	0.0%	11.9%	9.5%	2.2%	4.0%	2.3%
Biomass & Other	2	2	1	1	2	3	2	0.6%	-3.3%	0.5%	4.0%	3.8%	-2.8%
Agriculture	**1**	**2**	**2**	**2**	**3**	**3**	**3**	**2.1%**	**3.2%**	**0.9%**	**0.9%**	**0.7%**	**0.5%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	1	1	2	2	2	1	1	2.2%	3.9%	0.5%	-2.4%	-4.1%	-4.2%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	26.9%	-1.6%	-2.8%	-2.9%
Electricity	0	0	0	0	0	1	1	2.0%	-2.1%	2.1%	4.8%	3.5%	2.6%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	1	1	2	n.s.	n.s.	n.s.	30.7%	7.2%	2.7%
Transport	**21**	**25**	**30**	**33**	**30**	**18**	**12**	**1.9%**	**1.6%**	**1.0%**	**-0.9%**	**-5.1%**	**-3.8%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	21	25	29	31	25	8	2	1.8%	1.5%	0.7%	-2.2%	-10.7%	-11.2%
Gas	0	0	0	0	1	1	1	n.s.	n.s.	-3.4%	30.9%	5.8%	-8.7%
Electricity	0	0	0	1	2	3	3	2.6%	4.5%	5.4%	11.8%	7.2%	-0.4%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	1	2	5	6	n.s.	n.s.	16.4%	11.5%	7.7%	1.7%
Other Energy Transformation & Losses[3]	**5**	**3**	**9**	**3**	**3**	**2**	**- 3**	**-5.3%**	**11.8%**	**-11.9%**	**3.0%**	**-7.3%**	**n.s.**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Japan	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	125	128	129	126	121	114	107	0.2%	0.1%	-0.2%	-0.4%	-0.6%	-0.6%
GDP per capita (ppp, k$'15)	31	34	37	41	47	56	66	0.9%	0.7%	1.2%	1.3%	1.8%	1.7%
Prices													
International/Regional ($'15/boe)													
Coal	3	1	3	4	4	7	10	-7.8%	10.3%	1.4%	1.8%	5.3%	2.5%
Oil	39	38	86	88	89	79	81	-0.2%	8.4%	0.2%	0.1%	-1.2%	0.3%
Gas	28	26	46	74	88	90	91	-0.7%	5.8%	4.7%	1.8%	0.2%	0.1%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**1 153**	**1 222**	**1 157**	**1 027**	**700**	**194**	**72**	**0.6%**	**-0.5%**	**-1.2%**	**-3.8%**	**-12.1%**	**-9.4%**
Total GHG (energy, industry, agriculture)	**1 217**	**1 318**	**1 240**	**1 099**	**755**	**230**	**71**	**0.8%**	**-0.6%**	**-1.2%**	**-3.7%**	**-11.2%**	**-11.1%**
CO_2	1 112	1 221	1 171	1 038	720	205	51	0.9%	-0.4%	-1.2%	-3.6%	-11.8%	-13.0%
CH_4	44	38	35	27	15	12	11	-1.6%	-0.8%	-2.4%	-6.1%	-1.7%	-1.5%
N_2O	32	30	22	18	13	10	9	-0.6%	-2.8%	-2.1%	-3.6%	-2.3%	-0.9%
F gases	29	29	12	16	8	3	1	0.0%	-8.5%	2.9%	-6.5%	-10.3%	-12.3%
Total GHG from Energy and Industry	**1 180**	**1 283**	**1 205**	**1 069**	**736**	**212**	**53**	**0.8%**	**-0.6%**	**-1.2%**	**-3.7%**	**-11.7%**	**-12.9%**
CO_2 Emissions from Fuel Comb.	**1 027**	**1 137**	**1 104**	**973**	**667**	**193**	**46**	**1.0%**	**-0.3%**	**-1.3%**	**-3.7%**	**-11.7%**	**-13.3%**
Power generation/District heating	358	414	446	354	186	33	2	1.5%	0.8%	-2.3%	-6.2%	-16.0%	-24.6%
Industry	290	273	256	253	194	49	10	-0.6%	-0.6%	-0.1%	-2.6%	-12.9%	-14.8%
Buildings	126	155	124	114	88	47	17	2.1%	-2.2%	-0.9%	-2.5%	-6.1%	-9.9%
Agriculture	6	3	3	2	2	1	1	-7.3%	-1.5%	-0.5%	-3.1%	-4.6%	-4.7%
Transport	202	249	219	193	147	47	17	2.1%	-1.3%	-1.2%	-2.7%	-10.7%	-9.7%
Other	44	43	56	57	49	16	0	-0.2%	2.6%	0.2%	-1.5%	-10.4%	-31.8%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**1**	**15**	**n.s.**	**n.s.**	**n.s.**	**37.9%**	**30.8%**	**33.3%**
Coal	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gas	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass	0	0	0	0	0	0	9	n.s.	n.s.	n.s.	n.s.	n.s.	48.2%
Direct Air Capture	0	0	0	0	0	1	4	n.s.	n.s.	n.s.	37.9%	27.7%	18.9%
Energy Balance, by fuel (Mtoe)													
Primary Production	**39**	**48**	**48**	**53**	**66**	**106**	**141**	**2.0%**	**0.0%**	**1.0%**	**2.2%**	**4.9%**	**2.9%**
Coal	4	2	0	0	0	0	0	-9.3%	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	0	0	0	0	0	0	0	-0.5%	-6.0%	0.8%	3.4%	-4.2%	-4.9%
Natural gas	2	2	3	2	1	0	0	1.5%	3.0%	-3.7%	-7.4%	-8.4%	-5.2%
Biomass	5	5	9	13	18	31	41	0.4%	7.0%	3.6%	3.0%	5.5%	2.9%
Nuclear[1]	17	28	25	20	19	17	16	4.8%	-1.1%	-2.3%	-0.6%	-0.6%	-0.6%
Hydro	7	7	7	7	7	8	8	-0.2%	-0.4%	0.4%	0.2%	0.5%	-0.2%
Other renewables	3	4	3	10	21	49	76	1.6%	-1.1%	11.7%	7.2%	9.1%	4.4%
Net Imports	**359**	**412**	**399**	**342**	**246**	**96**	**38**						
Coal	73	94	114	98	58	9	2						
Oil	239	254	202	179	126	56	31						
Natural gas	47	63	83	66	57	23	4						
Biomass	0	0	0	- 1	5	8	0						
Biofuels	0	0	0	0	0	0	0						
Electricity	0	0	0	0	0	0	0						
Primary Energy Demand[2]	**398**	**460**	**447**	**395**	**312**	**202**	**179**	1.4%	**-0.3%**	**-1.2%**	**-2.3%**	**-4.2%**	**-1.2%**
Coal	77	96	114	98	58	9	2	2.2%	1.8%	-1.5%	-5.1%	-17.2%	-11.9%
Oil	240	255	202	180	127	56	31	0.6%	-2.3%	-1.2%	-3.4%	-7.8%	-5.7%
Natural gas	49	66	86	68	58	23	4	2.9%	2.7%	-2.4%	-1.6%	-8.8%	-16.4%
Biomass	5	5	9	12	23	39	41	0.4%	7.0%	2.9%	6.3%	5.5%	0.6%
Nuclear[1]	17	28	25	20	19	17	16	4.8%	-1.1%	-2.3%	-0.6%	-0.6%	-0.6%
Hydro	7	7	7	7	7	8	8	-0.2%	-0.4%	0.4%	0.2%	0.5%	-0.2%
Other renewables	3	4	3	10	21	49	76	1.6%	-1.1%	11.7%	7.2%	9.1%	4.4%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**398**	**460**	**447**	**395**	**312**	**202**	**179**	**1.4%**	**-0.3%**	**-1.2%**	**-2.3%**	**-4.2%**	**-1.2%**
Energy for Power Generation	**145**	**172**	**183**	**156**	**117**	**97**	**118**	**1.7%**	**0.6%**	**-1.6%**	**-2.8%**	**-1.8%**	**1.9%**
Other Energy Transformation & Losses	**16**	**24**	**24**	**17**	**16**	**7**	**0**	**4.0%**	**0.1%**	**-3.1%**	**-0.6%**	**-8.5%**	**n.s.**
Final consumption	**305**	**349**	**329**	**301**	**248**	**163**	**132**	**1.4%**	**-0.6%**	**-0.9%**	**-1.9%**	**-4.2%**	**-2.1%**
Steel, Non-Met. Minerals and Chem.	74	70	66	67	57	33	24	-0.5%	-0.7%	0.1%	-1.5%	-5.5%	-2.9%
Other Industry	48	46	41	35	33	26	24	-0.5%	-0.9%	-1.8%	-0.6%	-2.4%	-0.7%
Non-Energy Use	40	46	45	37	26	23	21	1.5%	-0.3%	-1.7%	-3.4%	-1.4%	-1.1%
Residential	39	49	50	42	34	25	20	2.5%	0.2%	-1.8%	-2.1%	-3.2%	-2.2%
Services	34	52	51	51	41	29	26	4.3%	-0.1%	-0.1%	-2.0%	-3.4%	-1.0%
Agriculture	2	1	1	1	1	1	1	-6.6%	-0.8%	0.1%	0.4%	0.4%	0.3%
Road	60	74	65	60	48	21	12	2.2%	-1.3%	-0.9%	-2.1%	-7.9%	-6.0%
Rail	2	2	2	2	2	2	2	0.5%	0.0%	-0.6%	-0.1%	0.0%	-0.3%
Aviation	3	4	4	4	3	2	1	2.1%	1.0%	-1.7%	-2.7%	-3.6%	-2.9%
Other Transport	4	5	3	3	3	2	1	0.9%	-3.3%	-0.7%	-1.4%	-4.9%	-3.6%

[1] Nuclear energy is accounted as primary electricity

Japan	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**117**	**133**	**148**	**118**	**70**	**22**	**18**	**1.3%**	**1.0%**	**-2.2%**	**-5.1%**	**-10.8%**	**-2.4%**
Coal	25	48	61	47	20	2	0	6.8%	2.5%	-2.6%	-8.0%	-21.0%	-15.3%
Oil	57	35	19	22	9	1	0	-4.8%	-6.0%	1.7%	-8.9%	-19.5%	-8.9%
Gas	33	48	61	41	33	9	3	3.8%	2.3%	-3.9%	-2.2%	-11.9%	-12.2%
Biomass & Waste	2	2	7	8	8	10	13	0.7%	12.3%	1.7%	0.0%	2.1%	3.1%
Other	0	0	0	0	0	0	1	6.8%	-2.3%	-2.3%	-2.1%	11.6%	11.0%
Gross Elec. Generation (TWh_e)	**893**	**1 118**	**1 168**	**1 046**	**896**	**758**	**829**	**2.3%**	**0.4%**	**-1.1%**	**-1.5%**	**-1.7%**	**0.9%**
Coal	118	234	310	235	102	10	2	7.1%	2.8%	-2.7%	-8.0%	-21.0%	-15.4%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	284	179	100	126	50	6	2	-4.5%	-5.7%	2.4%	-8.8%	-19.8%	-9.1%
Gas	171	254	319	213	169	47	15	4.0%	2.3%	-4.0%	-2.3%	-12.0%	-10.7%
of which CCS	0	0	0	0	0	0	4	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	10	10	30	36	36	46	64	0.7%	11.4%	1.7%	0.0%	2.6%	3.5%
of which CCS	0	0	0	0	0	0	6	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	202	322	288	229	217	202	189	4.8%	-1.1%	-2.3%	-0.6%	-0.7%	-0.7%
Hydro	96	97	91	111	109	118	114	0.1%	-0.7%	2.0%	-0.2%	0.8%	-0.4%
Wind	0	0	4	25	123	177	196	n.s.	43.4%	20.3%	17.2%	3.7%	1.0%
Solar	0	0	4	68	89	141	184	n.s.	27.0%	33.5%	2.7%	4.8%	2.7%
Other	14	22	22	3	3	12	63	4.7%	0.3%	-19.6%	2.7%	13.7%	18.2%
Generation Capacity (GW_e)	**223**	**258**	**287**	**341**	**359**	**355**	**385**	**1.5%**	**1.0%**	**1.8%**	**0.5%**	**-0.1%**	**0.8%**
Coal	31	63	63	67	54	8	1	7.4%	0.1%	0.6%	-2.2%	-17.4%	-20.2%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	78	66	56	45	35	31	26	-1.6%	-1.6%	-2.1%	-2.6%	-1.3%	-1.7%
Gas	45	37	55	53	47	22	13	-1.9%	4.1%	-0.4%	-1.3%	-7.2%	-4.8%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Waste	3	3	8	5	5	8	18	1.8%	9.6%	-4.0%	0.6%	3.9%	8.9%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	29	42	46	37	34	31	29	4.0%	0.9%	-2.2%	-0.8%	-0.9%	-0.9%
Hydro	38	46	51	58	54	51	45	2.0%	1.0%	1.2%	-0.7%	-0.6%	-1.1%
Wind	0	0	2	11	53	80	86	n.s.	32.7%	17.2%	16.6%	4.2%	0.7%
Solar	0	0	4	64	77	123	159	43.4%	27.1%	33.3%	1.9%	4.8%	2.6%
Other	0	1	1	1	0	2	8	7.0%	0.1%	-0.3%	-1.6%	14.3%	16.6%
Total Final Consumption[2] (Mtoe)	**305**	**349**	**329**	**301**	**248**	**163**	**132**	**1.4%**	**-0.6%**	**-0.9%**	**-1.9%**	**-4.2%**	**-2.1%**
Coal	48	45	44	46	34	8	4	-0.7%	-0.3%	0.6%	-3.2%	-13.5%	-7.6%
Oil	171	194	164	143	106	48	26	1.3%	-1.7%	-1.3%	-2.9%	-7.6%	-6.0%
Gas	15	22	30	28	26	16	7	3.6%	3.3%	-0.7%	-0.7%	-4.7%	-8.4%
Electricity	66	83	88	78	67	56	59	2.3%	0.5%	-1.2%	-1.5%	-1.8%	0.6%
Heat	2	2	1	1	2	3	5	-0.3%	-3.0%	-0.1%	2.9%	8.0%	4.3%
Biomass & Other	3	3	3	5	14	31	31	0.2%	0.3%	5.2%	12.2%	8.1%	0.0%
Industry (incl. non-energy use)	**161**	**162**	**152**	**139**	**116**	**81**	**69**	**0.0%**	**-0.6%**	**-0.9%**	**-1.7%**	**-3.6%**	**-1.6%**
Coal	47	45	44	46	34	8	4	-0.6%	-0.2%	0.5%	-3.1%	-13.5%	-7.6%
Oil	71	72	62	52	38	25	19	0.2%	-1.5%	-1.8%	-3.1%	-4.2%	-2.6%
Gas	4	8	14	13	12	6	1	7.1%	6.1%	-0.6%	-0.8%	-7.1%	-14.1%
Electricity	36	34	29	25	26	24	24	-0.6%	-1.7%	-1.4%	0.5%	-0.9%	0.1%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	3	3	3	3	6	19	21	0.5%	0.4%	-0.5%	9.3%	11.4%	1.1%
Buildings	**73**	**101**	**102**	**93**	**76**	**54**	**46**	**3.4%**	**0.0%**	**-0.9%**	**-2.1%**	**-3.3%**	**-1.5%**
Coal	1	0	0	0	0	0	0	-5.7%	-9.8%	10.5%	-12.3%	-17.3%	-17.5%
Oil	30	38	28	25	19	9	3	2.3%	-3.2%	-1.1%	-2.6%	-7.1%	-10.4%
Gas	11	14	16	14	12	8	3	2.0%	1.3%	-0.8%	-1.8%	-4.3%	-9.2%
Electricity	28	47	57	51	37	27	31	5.2%	1.9%	-1.2%	-3.2%	-3.2%	1.6%
Heat	2	2	1	1	2	3	5	-0.3%	-3.0%	-0.1%	2.9%	8.0%	4.3%
Biomass & Other	0	0	0	1	6	7	4	-7.5%	-6.7%	51.0%	15.6%	1.5%	-5.6%
Agriculture	**2**	**1**	**1**	**1**	**1**	**1**	**1**	**-6.6%**	**-0.8%**	**0.1%**	**0.4%**	**0.4%**	**0.3%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	2	1	1	1	1	0	0	-7.3%	-1.5%	-0.5%	-3.1%	-4.6%	-4.7%
Gas	0	0	0	0	0	0	0	n.s.	0.0%	-0.9%	-2.2%	n.s.	n.s.
Electricity	0	0	0	0	0	0	0	0.3%	2.6%	1.7%	2.2%	2.4%	1.8%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	32.5%	6.6%	2.3%
Transport	**69**	**85**	**75**	**68**	**55**	**27**	**16**	**2.1%**	**-1.2%**	**-0.9%**	**-2.1%**	**-7.1%**	**-5.1%**
Coal	0	0	0	0	0	0	0	n.s.	-0.3%	0.2%	0.0%	0.0%	0.0%
Oil	67	83	73	66	49	14	4	2.1%	-1.3%	-1.0%	-3.0%	-11.6%	-12.3%
Gas	0	0	0	0	2	2	2	n.s.	n.s.	-5.4%	40.3%	4.2%	0.1%
Electricity	1	2	2	2	3	5	3	1.0%	0.3%	0.0%	7.4%	3.8%	-3.7%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	1	2	5	6	n.s.	n.s.	n.s.	12.8%	11.9%	1.8%
Other Energy Transformation & Losses[3]	**16**	**24**	**24**	**17**	**16**	**7**	**0**	**4.0%**	**0.1%**	**-3.1%**	**-0.6%**	**-8.5%**	**n.s.**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

South Korea	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	43	47	50	51	52	51	48	1.0%	0.4%	0.3%	0.1%	-0.2%	-0.5%
GDP per capita (ppp, k$'15)	14	22	32	41	52	65	80	5.0%	3.7%	2.6%	2.4%	2.1%	2.1%
Prices													
International/Regional ($'15/boe)													
Coal	3	1	3	4	4	8	9	-7.8%	10.3%	1.4%	1.9%	5.3%	2.3%
Oil	39	38	86	88	89	79	81	-0.2%	8.4%	0.2%	0.1%	-1.2%	0.3%
Gas	28	26	46	74	88	90	91	-0.7%	5.8%	4.7%	1.8%	0.2%	0.1%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**288**	**520**	**645**	**663**	**543**	**197**	**68**	**6.1%**	**2.2%**	**0.3%**	**-2.0%**	**-9.6%**	**-10.1%**
Total GHG (energy, industry, agriculture)	**323**	**535**	**653**	**672**	**544**	**203**	**71**	**5.2%**	**2.0%**	**0.3%**	**-2.1%**	**-9.4%**	**-10.0%**
CO_2	268	463	594	616	501	174	48	5.6%	2.5%	0.4%	-2.0%	-10.1%	-12.1%
CH_4	39	37	37	34	26	18	15	-0.4%	-0.1%	-0.9%	-2.6%	-3.6%	-2.0%
N_2O	9	18	13	13	11	9	7	6.5%	-3.0%	0.0%	-1.5%	-2.2%	-1.8%
F gases	7	17	9	9	5	3	1	9.9%	-5.9%	0.0%	-5.2%	-6.1%	-8.1%
Total GHG from Energy and Industry	**299**	**514**	**630**	**650**	**522**	**186**	**53**	**5.6%**	**2.1%**	**0.3%**	**-2.2%**	**-9.8%**	**-11.8%**
CO_2 Emissions from Fuel Comb.	**229**	**411**	**538**	**557**	**448**	**162**	**46**	**6.0%**	**2.7%**	**0.3%**	**-2.2%**	**-9.7%**	**-11.8%**
Power generation/District heating	42	133	264	251	186	53	15	12.1%	7.1%	-0.5%	-3.0%	-11.8%	-12.0%
Industry	60	97	98	106	88	23	4	4.9%	0.2%	0.8%	-1.8%	-12.4%	-16.3%
Buildings	69	65	55	48	35	19	8	-0.6%	-1.7%	-1.2%	-3.2%	-6.2%	-8.5%
Agriculture	5	10	7	6	5	3	2	7.5%	-3.7%	-0.9%	-2.6%	-4.4%	-4.6%
Transport	44	80	90	112	99	45	17	6.2%	1.2%	2.2%	-1.2%	-7.5%	-9.5%
Other	9	27	24	34	36	18	1	11.0%	-0.9%	3.5%	0.3%	-6.4%	-24.9%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**1**	**10**	**n.s.**	**n.s.**	**n.s.**	**28.2%**	**42.3%**	**21.4%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	9.3%
Gas	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	10.7%
Biomass	0	0	0	0	0	0	6	n.s.	n.s.	n.s.	n.s.	n.s.	31.6%
Direct Air Capture	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	28.2%	26.0%	15.8%
Energy Balance, by fuel (Mtoe)													
Primary Production	**14**	**17**	**24**	**28**	**34**	**53**	**64**	**2.3%**	**3.6%**	**1.3%**	**2.1%**	**4.4%**	**2.0%**
Coal	7	4	1	1	0	0	0	-6.4%	-12.2%	-4.0%	-4.9%	-13.2%	-10.0%
Oil	0	1	1	0	0	0	0	n.s.	0.4%	n.s.	n.s.	n.s.	n.s.
Natural gas	0	0	0	0	1	1	1	n.s.	n.s.	-6.7%	9.3%	2.0%	1.2%
Biomass	2	3	9	11	12	12	12	5.7%	10.7%	1.9%	0.4%	0.5%	0.2%
Nuclear[1]	5	9	13	14	14	9	5	7.5%	3.2%	0.9%	-0.1%	-4.1%	-5.9%
Hydro	0	0	0	0	0	0	1	-1.7%	-0.8%	-0.3%	2.7%	1.7%	1.2%
Other renewables	0	0	0	2	7	30	45	13.1%	14.3%	25.1%	16.8%	15.1%	4.2%
Net Imports	**69**	**152**	**202**	**225**	**185**	**101**	**63**						
Coal	16	37	70	67	42	8	2						
Oil	50	98	94	109	88	47	18						
Natural gas	3	17	38	40	43	23	9						
Biomass	0	0	0	9	11	23	33						
Biofuels	0	0	0	0	0	1	1						
Electricity	0	0	0	0	0	0	0						
Primary Energy Demand[2]	**83**	**169**	**227**	**253**	**219**	**153**	**128**	7.4%	**3.0%**	**1.1%**	**-1.4%**	**-3.5%**	**-1.8%**
Coal	23	40	71	67	43	8	2	5.8%	5.9%	-0.6%	-4.4%	-15.5%	-12.3%
Oil	50	99	95	109	88	47	18	7.0%	-0.4%	1.4%	-2.1%	-6.1%	-9.0%
Natural gas	3	17	38	40	43	24	10	20.1%	8.5%	0.5%	0.7%	-5.8%	-8.4%
Biomass	2	3	9	20	23	35	46	5.7%	10.6%	8.0%	1.5%	4.2%	2.8%
Nuclear[1]	5	9	13	14	14	9	5	7.5%	3.2%	0.9%	-0.1%	-4.1%	-5.9%
Hydro	0	0	0	0	0	0	1	-1.7%	-0.8%	-0.3%	2.7%	1.7%	1.2%
Other renewables	0	0	0	2	7	30	45	13.1%	14.3%	25.1%	16.8%	15.1%	4.2%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**83**	**169**	**227**	**253**	**219**	**153**	**128**	**7.4%**	**3.0%**	**1.1%**	**-1.4%**	**-3.5%**	**-1.8%**
Energy for Power Generation	**17**	**47**	**88**	**91**	**83**	**65**	**70**	**10.5%**	**6.5%**	**0.3%**	**-0.9%**	**-2.5%**	**0.7%**
Other Energy Transformation & Losses	**4**	**13**	**10**	**14**	**14**	**14**	**14**	**13.6%**	**-2.1%**	**2.9%**	**0.1%**	**0.0%**	**0.2%**
Final consumption	**70**	**135**	**171**	**197**	**173**	**124**	**95**	**6.8%**	**2.4%**	**1.4%**	**-1.3%**	**-3.3%**	**-2.6%**
Steel, Non-Met. Minerals and Chem.	13	25	32	38	35	23	18	6.5%	2.7%	1.5%	-0.8%	-4.2%	-2.5%
Other Industry	10	21	26	34	37	28	24	7.7%	2.0%	2.9%	0.8%	-2.7%	-1.5%
Non-Energy Use	7	25	38	44	30	23	12	14.0%	4.4%	1.5%	-3.7%	-2.8%	-6.0%
Residential	14	15	20	20	16	12	10	0.8%	2.8%	-0.2%	-2.3%	-2.8%	-1.6%
Services	10	18	22	21	17	12	11	6.4%	1.8%	-0.5%	-2.1%	-3.4%	-1.1%
Agriculture	2	4	3	3	4	4	4	8.1%	-1.8%	0.9%	1.1%	0.9%	0.8%
Road	11	22	28	35	33	21	15	7.7%	2.4%	2.2%	-0.6%	-4.4%	-3.5%
Rail	0	0	0	0	0	1	1	2.9%	-2.7%	0.6%	1.5%	1.0%	0.9%
Aviation	2	3	1	2	1	1	1	3.9%	-11.6%	7.5%	-2.0%	-3.9%	-2.8%
Other Transport	2	1	1	0	0	0	0	-1.4%	-6.1%	-15.2%	0.1%	-4.4%	-3.2%

[1] Nuclear energy is accounted as primary electricity

South Korea	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**12**	**37**	**75**	**76**	**62**	**25**	**19**	**11.7%**	**7.2%**	**0.1%**	**-2.0%**	**-8.5%**	**-2.8%**
Coal	6	24	52	45	26	4	0	15.2%	8.1%	-1.5%	-5.3%	-17.5%	-23.0%
Oil	5	8	5	9	9	4	1	5.4%	-4.7%	6.5%	-0.2%	-8.6%	-10.3%
Gas	2	6	18	19	24	12	5	10.9%	12.0%	0.7%	2.1%	-6.7%	-7.9%
Biomass & Waste	0	0	0	3	3	6	12	n.s.	34.9%	21.4%	1.6%	5.9%	7.3%
Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gross Elec. Generation (TWh_e)	**105**	**291**	**503**	**572**	**572**	**486**	**517**	**10.7%**	**5.6%**	**1.3%**	**0.0%**	**-1.6%**	**0.6%**
Coal	18	111	219	201	118	18	1	20.2%	7.0%	-0.9%	-5.1%	-17.2%	-22.5%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	7.8%
Oil	19	35	19	45	43	17	6	6.3%	-5.8%	9.0%	-0.4%	-8.7%	-10.4%
Gas	10	29	103	127	154	75	32	11.9%	13.4%	2.1%	1.9%	-6.9%	-8.1%
of which CCS	0	0	0	0	0	1	3	n.s.	n.s.	n.s.	n.s.	n.s.	10.5%
Biomass & Waste	0	0	1	9	11	25	54	n.s.	28.1%	23.7%	2.2%	8.1%	8.0%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	14.0%
Nuclear	53	109	149	163	162	105	56	7.5%	3.2%	0.9%	-0.1%	-4.2%	-6.1%
Hydro	6	6	6	12	11	12	10	-1.2%	1.4%	6.5%	-0.7%	0.5%	-1.8%
Wind	0	0	1	11	36	94	121	n.s.	47.3%	29.9%	12.5%	10.0%	2.6%
Solar	0	0	1	4	34	125	161	17.5%	n.s.	17.2%	24.7%	13.8%	2.6%
Other	0	1	4	1	2	14	76	n.s.	13.1%	-16.2%	11.6%	21.6%	18.0%
Generation Capacity (GW_e)	**20**	**49**	**77**	**126**	**161**	**230**	**242**	**9.4%**	**4.6%**	**5.0%**	**2.5%**	**3.6%**	**0.5%**
Coal	4	14	28	31	28	6	0	14.3%	7.1%	1.2%	-1.2%	-14.6%	-26.1%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	6.6%
Oil	4	4	4	9	9	9	8	2.1%	0.0%	6.9%	0.2%	0.0%	-0.7%
Gas	3	13	20	43	48	32	14	17.5%	4.6%	7.9%	1.1%	-3.9%	-7.9%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	9.4%
Biomass & Waste	0	1	0	1	1	4	11	n.s.	-12.0%	24.4%	0.2%	11.2%	9.8%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	12.6%
Nuclear	8	14	18	23	22	14	7	6.1%	2.6%	2.6%	-0.3%	-4.3%	-6.3%
Hydro	2	3	6	7	7	6	6	3.0%	5.8%	2.0%	-0.2%	-0.5%	-0.7%
Wind	0	0	0	6	19	50	62	n.s.	40.3%	32.6%	11.5%	10.2%	2.2%
Solar	0	0	1	5	27	108	129	n.s.	n.s.	22.7%	18.3%	14.8%	1.8%
Other	0	0	0	0	0	0	4	n.s.	n.s.	n.s.	21.7%	20.7%	46.3%
Total Final Consumption[2] (Mtoe)	**70**	**135**	**171**	**197**	**173**	**124**	**95**	**6.8%**	**2.4%**	**1.4%**	**-1.3%**	**-3.3%**	**-2.6%**
Coal	16	15	18	20	14	3	1	-0.5%	1.8%	1.1%	-3.6%	-14.5%	-11.1%
Oil	44	80	82	93	73	40	17	6.2%	0.2%	1.3%	-2.4%	-5.8%	-8.2%
Gas	1	11	20	20	18	11	5	32.1%	6.4%	-0.2%	-1.0%	-4.9%	-7.2%
Electricity	8	23	39	44	44	37	36	10.8%	5.5%	1.3%	0.0%	-1.9%	-0.2%
Heat	0	3	4	5	6	7	7	n.s.	2.8%	1.8%	1.4%	1.6%	0.4%
Biomass & Other	2	3	8	15	18	26	29	5.3%	9.9%	6.3%	1.9%	3.6%	1.0%
Industry (incl. non-energy use)	**30**	**71**	**96**	**116**	**102**	**74**	**54**	**9.0%**	**3.1%**	**1.9%**	**-1.3%**	**-3.2%**	**-3.1%**
Coal	7	14	17	19	14	3	1	8.1%	1.7%	1.4%	-3.5%	-14.5%	-11.0%
Oil	18	36	44	49	36	24	12	7.4%	2.0%	1.1%	-3.1%	-3.9%	-6.6%
Gas	0	3	7	8	8	4	1	44.4%	9.4%	0.6%	1.0%	-7.1%	-16.2%
Electricity	5	13	20	24	27	23	21	10.0%	4.3%	2.2%	1.1%	-1.6%	-1.1%
Heat	0	2	2	3	3	3	3	n.s.	1.0%	1.4%	-0.2%	-0.3%	-0.2%
Biomass & Other	1	3	7	13	15	17	17	13.8%	9.4%	7.2%	1.2%	1.4%	0.0%
Buildings	**24**	**33**	**42**	**40**	**32**	**23**	**20**	**3.4%**	**2.3%**	**-0.4%**	**-2.2%**	**-3.1%**	**-1.3%**
Coal	9	1	1	1	0	0	0	-24.1%	4.5%	-4.7%	-11.1%	-16.2%	-16.3%
Oil	10	14	7	6	4	2	1	3.3%	-6.7%	-1.9%	-2.8%	-5.6%	-8.7%
Gas	1	8	12	12	9	5	2	29.6%	4.5%	-0.4%	-3.0%	-6.3%	-8.3%
Electricity	3	9	18	18	14	9	11	11.9%	7.1%	0.0%	-2.5%	-3.8%	1.5%
Heat	0	1	2	3	3	4	5	n.s.	5.5%	2.3%	2.8%	2.8%	0.8%
Biomass & Other	1	0	1	1	1	2	2	-8.4%	9.7%	0.3%	1.2%	5.1%	-2.9%
Agriculture	**2**	**4**	**3**	**3**	**4**	**4**	**4**	**8.1%**	**-1.8%**	**0.9%**	**1.1%**	**0.9%**	**0.8%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	2	3	2	2	2	1	1	7.5%	-3.7%	-0.9%	-2.6%	-4.4%	-4.6%
Gas	0	0	0	0	0	0	0	n.s.	-9.6%	-2.5%	-1.8%	-3.1%	-3.3%
Electricity	0	0	1	1	2	2	3	13.8%	6.6%	4.2%	3.3%	2.4%	1.6%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	33.1%	8.2%	3.2%
Transport	**15**	**27**	**30**	**37**	**35**	**23**	**16**	**6.3%**	**1.1%**	**2.1%**	**-0.6%**	**-4.3%**	**-3.3%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	14	27	29	36	32	13	3	6.3%	0.7%	2.2%	-1.3%	-8.5%	-12.3%
Gas	0	0	1	0	1	2	3	n.s.	n.s.	-7.0%	8.6%	10.0%	0.7%
Electricity	0	0	0	0	1	2	1	7.2%	0.7%	5.1%	15.1%	3.4%	-1.6%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	1	1	6	9	n.s.	n.s.	6.2%	8.9%	14.6%	4.4%
Other Energy Transformation & Losses[3]	**4**	**13**	**10**	**14**	**14**	**14**	**14**	**13.6%**	**-2.1%**	**2.9%**	**0.1%**	**0.0%**	**0.2%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

New Zealand	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	3	4	4	5	5	5	6	1.3%	1.3%	0.9%	0.7%	0.6%	0.4%
GDP per capita (ppp, k$'15)	23	27	30	37	44	52	62	1.7%	1.1%	2.0%	1.7%	1.8%	1.7%
Prices													
International/Regional ($'15/boe)													
Coal	3	1	3	4	4	7	9	-7.8%	10.3%	1.7%	1.1%	5.3%	2.5%
Oil	39	38	86	88	89	79	81	-0.2%	8.4%	0.2%	0.1%	-1.2%	0.3%
Gas	28	26	46	74	88	90	91	-0.7%	5.8%	4.7%	1.8%	0.2%	0.1%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**34**	**54**	**70**	**72**	**54**	**29**	**20**	**4.8%**	**2.7%**	**0.2%**	**-2.7%**	**-6.0%**	**-3.7%**
Total GHG (energy, industry, agriculture)	**64**	**75**	**78**	**78**	**66**	**41**	**30**	**1.6%**	**0.4%**	**0.1%**	**-1.6%**	**-4.7%**	**-3.0%**
CO_2	25	32	34	36	31	11	3	2.5%	0.8%	0.6%	-1.5%	-10.1%	-12.6%
CH_4	33	35	34	32	27	23	21	0.8%	-0.4%	-0.6%	-1.8%	-1.5%	-1.1%
N_2O	6	7	8	8	8	7	7	2.3%	0.8%	0.4%	-0.5%	-0.8%	-0.5%
F gases	1	0	1	2	1	0	0	-9.7%	13.9%	3.0%	-6.3%	-10.0%	-12.3%
Total GHG from Energy and Industry	**31**	**38**	**41**	**42**	**34**	**12**	**3**	**2.1%**	**0.8%**	**0.1%**	**-2.0%**	**-9.6%**	**-12.5%**
CO_2 Emissions from Fuel Comb.	**23**	**29**	**31**	**33**	**28**	**10**	**3**	**2.6%**	**0.5%**	**0.6%**	**-1.6%**	**-9.9%**	**-12.7%**
Power generation/District heating	4	6	6	1	0	0	0	5.1%	0.2%	-17.8%	-6.6%	-8.7%	n.s.
Industry	7	7	6	10	9	2	0	-0.1%	-0.5%	4.8%	-1.1%	-13.2%	-17.0%
Buildings	1	1	1	2	2	1	0	0.7%	-0.2%	1.4%	1.5%	-6.5%	-10.4%
Agriculture	1	2	1	2	1	1	0	2.2%	-0.6%	0.9%	-3.3%	-4.3%	-4.3%
Transport	9	12	14	15	12	4	2	3.6%	1.4%	0.8%	-2.3%	-10.0%	-9.0%
Other	1	2	2	4	4	2	0	3.0%	1.1%	7.4%	0.1%	-7.3%	n.s.
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**48.4%**	**23.8%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	13.1%
Biomass	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	30.1%
Direct Air Capture	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	42.2%	19.7%
Energy Balance, by fuel (Mtoe)													
Primary Production	**12**	**15**	**18**	**22**	**22**	**31**	**34**	**1.7%**	**1.8%**	**2.2%**	**0.0%**	**3.3%**	**1.0%**
Coal	1	2	3	2	3	2	0	4.7%	2.3%	-1.6%	1.9%	-3.4%	-17.1%
Oil	2	2	2	3	7	4	3	-3.9%	4.2%	2.6%	8.0%	-4.4%	-4.9%
Natural gas	4	5	4	4	3	3	2	2.5%	-2.6%	-0.8%	-1.6%	-1.0%	-1.7%
Biomass	1	1	1	1	1	3	4	4.0%	0.7%	-1.4%	3.1%	6.8%	2.9%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	5.5%
Hydro	2	2	2	2	2	2	2	0.5%	0.1%	0.2%	1.3%	-0.2%	0.3%
Other renewables	2	3	5	10	6	16	23	3.2%	7.5%	6.4%	-5.5%	11.5%	3.2%
Net Imports	**1**	**3**	**2**	**3**	**- 2**	**- 4**	**- 4**						
Coal	0	- 1	- 1	- 1	- 1	- 2	0						
Oil	2	4	4	4	- 1	- 2	- 1						
Natural gas	- 1	0	0	0	0	- 1	- 2						
Biomass	0	0	0	0	0	0	- 1						
Biofuels	0	0	0	0	0	0	0						
Electricity	0	0	0	0	0	0	0						
Primary Energy Demand[2]	**13**	**18**	**20**	**25**	**20**	**26**	**30**	2.9%	**1.1%**	**2.6%**	**-2.2%**	**2.6%**	**1.3%**
Coal	1	1	1	1	1	0	0	-1.1%	1.6%	2.1%	-1.4%	-21.0%	n.s.
Oil	4	6	6	7	6	2	1	2.7%	0.8%	1.5%	-2.0%	-8.2%	-5.9%
Natural gas	3	5	4	4	4	2	1	5.2%	-3.0%	-0.1%	-0.1%	-5.8%	-7.6%
Biomass	1	1	1	1	2	3	3	4.0%	0.7%	0.6%	2.8%	5.8%	-0.2%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	5.5%
Hydro	2	2	2	2	2	2	2	0.5%	0.1%	0.2%	1.3%	-0.2%	0.3%
Other renewables	2	3	5	10	6	16	23	3.2%	7.5%	6.4%	-5.5%	11.5%	3.2%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**13**	**18**	**20**	**25**	**20**	**26**	**30**	**2.9%**	**1.1%**	**2.6%**	**-2.2%**	**2.6%**	**1.3%**
Energy for Power Generation	**6**	**7**	**10**	**13**	**9**	**20**	**27**	**2.8%**	**3.4%**	**2.5%**	**-4.0%**	**8.9%**	**2.9%**
Other Energy Transformation & Losses	**0**	**0**	**0**	**0**	**1**	**0**	**- 1**	**-2.3%**	**n.s.**	**n.s.**	**18.2%**	**-24.1%**	**n.s.**
Final consumption	**10**	**13**	**13**	**16**	**15**	**12**	**12**	**2.9%**	**0.0%**	**1.9%**	**-0.7%**	**-2.2%**	**-0.2%**
Steel, Non-Met. Minerals and Chem.	1	1	1	2	2	2	4	0.4%	-2.5%	7.3%	1.3%	0.1%	4.8%
Other Industry	3	3	3	4	3	2	2	2.1%	0.6%	1.4%	-1.4%	-3.2%	-3.1%
Non-Energy Use	1	2	1	2	2	1	1	10.3%	-5.2%	4.9%	-0.2%	-1.0%	-0.5%
Residential	1	1	1	1	1	1	1	1.1%	0.7%	-0.3%	-0.8%	-1.5%	-1.4%
Services	1	1	1	1	1	1	1	1.7%	1.8%	0.6%	-0.1%	-0.6%	-0.7%
Agriculture	0	1	1	1	1	1	1	2.8%	0.5%	1.5%	0.9%	0.7%	0.7%
Road	3	3	4	5	4	2	1	3.2%	1.7%	1.2%	-1.6%	-5.5%	-4.3%
Rail	0	0	0	0	0	0	0	10.4%	-4.8%	0.5%	0.1%	-0.4%	-0.1%
Aviation	0	0	0	0	0	0	0	2.4%	-1.6%	-1.0%	-0.3%	-3.0%	-2.4%
Other Transport	0	0	0	0	0	0	0	4.7%	-3.9%	4.0%	-0.2%	-4.4%	-2.6%

[1] Nuclear energy is accounted as primary electricity

New Zealand	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**2**	**3**	**3**	**1**	**1**	**1**	**2**	**4.4%**	**0.9%**	**-8.4%**	**-6.1%**	**8.8%**	**2.5%**
Coal	0	0	0	0	0	0	0	8.2%	2.7%	-16.7%	n.s.	n.s.	n.s.
Oil	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	5.8%
Gas	1	2	2	0	0	0	0	4.3%	-0.7%	-18.6%	-2.0%	-7.7%	-4.7%
Biomass & Waste	0	0	0	0	0	0	0	1.3%	0.2%	n.s.	n.s.	n.s.	9.8%
Other	0	0	1	1	0	1	2	3.2%	7.2%	6.0%	-6.5%	11.5%	2.5%
Gross Elec. Generation (TWh_e)	**32**	**39**	**45**	**45**	**45**	**66**	**92**	**2.0%**	**1.4%**	**-0.1%**	**0.2%**	**3.8%**	**3.3%**
Coal	1	2	2	0	0	0	0	8.8%	2.9%	-17.0%	n.s.	n.s.	20.5%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	0	0	0	0	0	0	0	n.s.	n.s.	29.6%	n.s.	n.s.	4.4%
Gas	6	10	10	1	1	0	0	5.3%	0.4%	-18.4%	-1.9%	-7.7%	-4.2%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	13.3%
Biomass & Waste	1	1	1	0	0	0	1	1.6%	0.2%	n.s.	n.s.	n.s.	11.2%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	31.7%
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	23	24	25	25	29	28	29	0.5%	0.1%	0.2%	1.3%	-0.2%	0.3%
Wind	0	0	2	7	10	19	36	n.s.	29.8%	15.3%	3.6%	7.2%	6.3%
Solar	0	0	0	0	0	2	6	n.s.	n.s.	n.s.	10.2%	15.8%	10.1%
Other	2	3	6	11	5	16	21	3.2%	7.2%	6.1%	-6.6%	11.5%	2.8%
Generation Capacity (GW_e)	**7**	**8**	**9**	**13**	**16**	**22**	**34**	**0.8%**	**1.7%**	**3.3%**	**2.1%**	**3.2%**	**4.4%**
Coal	1	1	1	0	0	0	0	-1.0%	-4.8%	-6.4%	-28.5%	-13.2%	5.7%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	12.0%
Oil	0	0	0	0	0	0	0	n.s.	n.s.	-5.6%	2.2%	1.0%	4.4%
Gas	1	1	2	2	2	1	0	2.7%	3.4%	-2.7%	1.6%	-9.4%	-3.7%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	20.3%
Biomass & Waste	0	0	0	0	0	0	0	0.9%	9.0%	1.2%	-10.0%	-1.3%	0.9%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	33.0%
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	5	5	5	6	6	7	7	0.9%	0.1%	0.6%	1.4%	1.1%	0.2%
Wind	0	0	1	3	4	7	12	n.s.	30.8%	18.6%	3.3%	6.2%	5.3%
Solar	0	0	0	0	1	3	8	n.s.	n.s.	43.2%	11.0%	16.2%	10.6%
Other	0	0	1	2	3	4	6	3.4%	7.1%	11.6%	3.6%	2.6%	4.4%
Total Final Consumption[2] (Mtoe)	**10**	**13**	**13**	**16**	**15**	**12**	**12**	**2.9%**	**0.0%**	**1.9%**	**-0.7%**	**-2.2%**	**-0.2%**
Coal	1	1	1	1	1	0	0	-2.3%	1.9%	4.4%	-0.8%	-13.9%	-9.2%
Oil	4	5	6	6	5	2	1	2.8%	1.1%	1.0%	-2.2%	-8.8%	-6.1%
Gas	2	3	2	3	3	2	1	5.6%	-5.1%	5.9%	-0.2%	-5.2%	-4.9%
Electricity	2	3	3	3	4	5	7	2.0%	1.3%	0.2%	0.3%	3.5%	2.8%
Heat	0	0	0	0	0	0	0	1.4%	1.6%	2.5%	0.2%	3.0%	1.6%
Biomass & Other	1	1	1	1	2	2	2	4.5%	0.7%	1.9%	2.4%	4.2%	-0.2%
Industry (incl. non-energy use)	**4**	**6**	**5**	**7**	**7**	**6**	**7**	**3.2%**	**-1.4%**	**3.4%**	**-0.3%**	**-1.5%**	**1.2%**
Coal	1	1	1	1	1	0	0	-2.0%	2.1%	5.0%	-0.5%	-14.0%	-9.3%
Oil	1	1	1	1	1	0	1	1.0%	1.8%	0.7%	-1.4%	-3.8%	2.3%
Gas	2	3	1	3	3	1	1	5.8%	-5.8%	6.6%	-1.0%	-5.8%	-6.3%
Electricity	1	1	1	1	2	3	4	2.3%	0.5%	0.8%	1.7%	4.7%	4.8%
Heat	0	0	0	0	0	0	0	2.1%	0.7%	3.2%	-0.2%	-0.3%	-0.2%
Biomass & Other	0	1	1	1	1	1	1	5.6%	0.9%	1.0%	-0.7%	3.3%	-0.7%
Buildings	**2**	**2**	**3**	**3**	**3**	**2**	**2**	**1.4%**	**1.2%**	**0.1%**	**-0.5%**	**-1.1%**	**-1.0%**
Coal	0	0	0	0	0	0	0	-5.8%	-4.0%	-2.8%	-14.4%	-17.5%	n.s.
Oil	0	0	0	0	0	0	0	0.6%	1.7%	1.8%	2.2%	-6.5%	-10.5%
Gas	0	0	0	0	0	0	0	5.6%	-0.5%	2.1%	2.2%	-6.4%	-10.2%
Electricity	1	2	2	2	1	1	2	1.5%	1.7%	-0.6%	-2.4%	0.2%	0.4%
Heat	0	0	0	0	0	0	0	-0.4%	3.8%	0.8%	1.0%	8.2%	3.1%
Biomass & Other	0	0	0	0	0	0	0	0.1%	-0.5%	2.4%	5.8%	-1.1%	-4.2%
Agriculture	**0**	**1**	**1**	**1**	**1**	**1**	**1**	**2.8%**	**0.5%**	**1.5%**	**0.9%**	**0.7%**	**0.7%**
Coal	0	0	0	0	0	0	0	4.6%	12.4%	-4.0%	-6.1%	-7.5%	-7.5%
Oil	0	0	0	0	0	0	0	2.3%	-1.4%	1.5%	-3.2%	-4.2%	-4.3%
Gas	0	0	0	0	0	0	0	0.5%	-3.5%	0.8%	-2.2%	-2.9%	-3.0%
Electricity	0	0	0	0	0	0	0	6.6%	5.1%	2.4%	2.4%	2.6%	2.1%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	34.7%	5.1%	1.9%
Transport	**3**	**4**	**5**	**5**	**4**	**3**	**2**	**3.3%**	**1.2%**	**1.1%**	**-1.5%**	**-5.2%**	**-4.0%**
Coal	0	0	0	0	0	0	0	0.0%	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	3	4	5	5	4	1	0	3.3%	1.2%	0.9%	-2.5%	-10.8%	-12.9%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	51.7%	4.2%	4.3%
Electricity	0	0	0	0	0	1	0	1.8%	-0.8%	13.3%	26.6%	11.0%	-2.2%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	1	1	n.s.	n.s.	33.7%	10.7%	12.0%	1.4%
Other Energy Transformation & Losses[3]	**0**	**0**	**0**	**0**	**1**	**0**	**- 1**	**-2.3%**	**n.s.**	**n.s.**	**18.2%**	**-24.1%**	**n.s.**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

Rest Pacific	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Main Economic Indicators													
Population (Million)	6	8	9	11	13	14	15	2.3%	2.2%	1.8%	1.4%	1.1%	0.7%
GDP per capita (ppp, k$'15)	2	3	3	4	5	8	13	1.2%	1.0%	3.1%	3.0%	4.2%	4.7%
Prices													
International/Regional ($'15/boe)													
Coal	3	1	3	4	4	7	9	-7.8%	10.3%	1.7%	1.1%	5.3%	2.5%
Oil	39	38	86	88	89	79	81	-0.2%	8.4%	0.2%	0.1%	-1.2%	0.3%
Gas	28	26	46	74	88	90	91	-0.7%	5.8%	4.7%	1.8%	0.2%	0.1%
GHG emissions (Mt CO_2 eq.)													
Total GHG	**62**	**17**	**- 15**	**1**	**- 26**	**- 38**	**- 40**	**-12.4%**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**
Total GHG (energy, industry, agriculture)	**7**	**10**	**12**	**16**	**16**	**11**	**4**	**2.6%**	**1.9%**	**2.9%**	**0.2%**	**-4.0%**	**-10.0%**
CO_2	3	5	6	10	12	7	1	4.1%	2.6%	5.1%	1.5%	-4.8%	-17.7%
CH_4	3	3	4	4	2	2	2	1.8%	0.9%	-0.6%	-3.4%	-2.1%	-2.6%
N_2O	1	2	2	2	1	1	1	0.4%	1.3%	0.1%	-1.8%	-1.2%	-1.8%
F gases	0	0	0	0	0	0	0	n.s.	n.s.	5.7%	3.1%	-3.3%	-11.8%
Total GHG from Energy and Industry	**5**	**7**	**9**	**13**	**13**	**8**	**1**	**3.7%**	**2.4%**	**3.6%**	**0.6%**	**-4.6%**	**-15.9%**
CO_2 Emissions from Fuel Comb.	**3**	**4**	**6**	**10**	**11**	**7**	**1**	**3.4%**	**3.1%**	**5.2%**	**1.2%**	**-5.0%**	**-20.3%**
Power generation/District heating	1	1	2	3	4	3	- 1	8.0%	2.4%	4.9%	1.9%	-3.6%	n.s.
Industry	1	1	2	3	3	1	0	6.7%	4.9%	5.4%	1.4%	-7.6%	-11.1%
Buildings	0	0	0	0	1	1	0	-4.1%	0.0%	6.2%	4.4%	-0.5%	-7.9%
Agriculture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Transport	1	2	2	3	3	2	1	2.1%	1.1%	6.1%	-0.5%	-5.9%	-6.0%
Other	0	0	0	0	1	0	0	1.4%	36.0%	0.5%	3.7%	-3.4%	-30.4%
CO_2 captured (CCS)	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**25.2%**
Coal	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	10.4%
Gas	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	23.6%
Biomass	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Direct Air Capture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	22.7%
Energy Balance, by fuel (Mtoe)													
Primary Production	**13**	**13**	**17**	**18**	**15**	**18**	**20**	**0.2%**	**3.0%**	**0.2%**	**-1.5%**	**1.5%**	**1.3%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	4	4	0	6	4	2	1	-2.1%	-21.0%	33.5%	-5.0%	-5.0%	-5.0%
Natural gas	6	7	15	7	6	5	4	1.4%	7.1%	-7.2%	-2.1%	-1.5%	-1.7%
Biomass	2	2	2	4	5	7	9	0.2%	-0.1%	8.9%	1.2%	3.4%	2.9%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	11.0%
Hydro	0	0	0	0	0	0	0	0.6%	0.4%	0.3%	1.4%	3.6%	-1.1%
Other renewables	0	0	0	0	1	4	6	n.s.	n.s.	-0.6%	15.3%	13.3%	4.3%
Net Imports	**- 10**	**- 10**	**- 13**	**- 12**	**- 9**	**- 8**	**- 8**						
Coal	0	0	0	0	0	0	0						
Oil	- 3	- 2	2	- 3	- 1	- 1	- 1						
Natural gas	- 6	- 7	- 15	- 7	- 5	- 4	- 4						
Biomass	0	0	0	- 2	- 3	- 3	- 3						
Biofuels	0	0	0	0	0	0	0						
Electricity	0	0	0	0	0	0	0						
Primary Energy Demand[2]	**3**	**3**	**4**	**5**	**7**	**10**	**13**	1.5%	**2.1%**	**2.6%**	**2.1%**	**3.9%**	**2.5%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	18.5%	17.9%	-0.9%	1.3%
Oil	1	1	2	3	3	2	0	3.0%	3.1%	4.4%	0.1%	-6.4%	-12.9%
Natural gas	0	0	0	0	0	1	0	55.8%	0.9%	9.1%	7.7%	2.6%	-3.0%
Biomass	2	2	2	2	2	3	5	0.2%	-0.1%	0.4%	-0.2%	6.6%	4.8%
Nuclear[1]	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	11.0%
Hydro	0	0	0	0	0	0	0	0.6%	0.4%	0.3%	1.4%	3.6%	-1.1%
Other renewables	0	0	0	0	1	4	6	n.s.	n.s.	-0.6%	15.3%	13.3%	4.3%
Primary Energy Demand, by sector (Mtoe)													
Primary Energy Demand	**3**	**3**	**4**	**5**	**7**	**10**	**13**	**1.5%**	**2.1%**	**2.6%**	**2.1%**	**3.9%**	**2.5%**
Energy for Power Generation	**0**	**1**	**1**	**1**	**3**	**6**	**9**	**6.4%**	**5.6%**	**3.1%**	**6.0%**	**8.4%**	**4.0%**
Other Energy Transformation & Losses	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**n.s.**	**n.s.**	**4.3%**	**2.4%**	**17.1%**	**4.1%**
Final consumption	**3**	**3**	**3**	**4**	**5**	**5**	**6**	**0.9%**	**1.1%**	**2.7%**	**0.8%**	**0.5%**	**2.5%**
Steel, Non-Met. Minerals and Chem.	0	0	0	0	0	1	1	n.s.	n.s.	11.0%	0.8%	42.0%	7.9%
Other Industry	1	1	1	2	2	1	2	3.2%	2.2%	3.7%	1.6%	-1.8%	0.6%
Non-Energy Use	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Residential	1	1	2	2	2	2	2	-0.1%	0.2%	0.5%	0.3%	0.8%	1.8%
Services	0	0	0	0	0	0	1	2.8%	3.5%	4.7%	2.1%	2.5%	9.3%
Agriculture	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Road	0	1	1	1	1	1	0	2.2%	0.9%	5.0%	-1.0%	-4.3%	-2.2%
Rail	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Aviation	0	0	0	0	0	0	0	1.4%	2.1%	5.1%	5.8%	2.4%	-0.3%
Other Transport	0	0	0	0	0	0	0	0.0%	0.0%	1.0%	2.0%	-1.6%	0.3%

[1] Nuclear energy is accounted as primary electricity

Rest Pacific	1990	2000	2010	2020	2030	2040	2050	'90-'00	'00-'10	'10-'20	'20-'30	'30-'40	'40-'50
Power Generation													
Fuel Inputs Therm. Power (Mtoe)	**0**	**1**	**1**	**1**	**1**	**2**	**3**	**8.4%**	**2.7%**	**4.8%**	**2.4%**	**2.8%**	**3.8%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	23.1%	4.7%	2.9%
Oil	0	0	1	1	1	0	0	6.4%	2.6%	4.3%	0.6%	-5.3%	n.s.
Gas	0	0	0	0	0	0	0	n.s.	0.9%	7.4%	3.7%	1.3%	0.6%
Biomass & Waste	0	0	0	0	0	1	2	5.4%	-0.1%	8.3%	2.8%	27.0%	12.8%
Other	0	0	0	0	0	0	0	n.s.	n.s.	-1.6%	14.5%	12.6%	0.6%
Gross Elec. Generation (TWh_e)	**2**	**3**	**5**	**7**	**10**	**21**	**45**	**3.3%**	**3.5%**	**3.9%**	**4.0%**	**7.4%**	**8.1%**
Coal	0	0	0	0	0	1	1	n.s.	n.s.	n.s.	24.1%	4.9%	3.4%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	10.7%
Oil	1	2	2	4	4	2	0	3.8%	4.4%	4.6%	0.6%	-5.3%	n.s.
Gas	0	0	0	1	2	2	2	n.s.	3.5%	8.9%	3.7%	1.4%	1.2%
of which CCS	0	0	0	0	0	0	1	n.s.	n.s.	n.s.	n.s.	n.s.	23.9%
Biomass & Waste	0	0	0	0	0	3	9	-0.2%	1.2%	9.7%	3.7%	31.3%	13.3%
of which CCS	0	0	0	0	0	0	2	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	1	1	1	2	2	3	2	0.6%	0.4%	0.3%	1.4%	3.9%	-0.2%
Wind	0	0	0	0	1	5	17	n.s.	n.s.	25.8%	32.1%	17.2%	13.2%
Solar	0	0	0	0	0	1	6	n.s.	n.s.	n.s.	31.7%	30.4%	15.9%
Other	0	0	0	0	1	4	7	n.s.	n.s.	-1.5%	14.9%	13.6%	4.7%
Generation Capacity (GW_e)	**1**	**1**	**1**	**2**	**3**	**7**	**21**	**1.6%**	**3.5%**	**3.1%**	**5.0%**	**10.6%**	**12.0%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	24.5%	6.0%	6.9%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	15.1%
Oil	0	0	1	1	1	1	0	-0.3%	4.5%	0.7%	1.9%	-2.7%	-2.4%
Gas	0	0	0	0	0	0	1	7.4%	0.0%	16.2%	2.0%	0.1%	2.9%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	29.1%
Biomass & Waste	0	0	0	0	0	0	2	0.0%	9.4%	0.6%	0.1%	32.0%	18.6%
of which CCS	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Nuclear	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Hydro	0	0	0	0	1	1	1	3.2%	1.2%	1.4%	1.4%	4.2%	0.7%
Wind	0	0	0	0	0	2	6	n.s.	n.s.	7.5%	30.4%	16.5%	13.1%
Solar	0	0	0	0	0	2	10	n.s.	n.s.	n.s.	32.8%	31.7%	17.1%
Other	0	0	0	0	0	1	1	0.0%	28.4%	0.0%	14.6%	13.0%	3.6%
Total Final Consumption[2] (Mtoe)	**3**	**3**	**3**	**4**	**5**	**5**	**6**	**0.9%**	**1.1%**	**2.7%**	**0.8%**	**0.5%**	**2.5%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	11.0%	13.2%	-4.8%	-6.8%
Oil	1	1	1	2	2	1	0	1.9%	2.3%	4.8%	-0.1%	-7.5%	-9.9%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	19.7%	5.2%	-2.6%
Electricity	0	0	0	1	1	2	3	3.8%	3.1%	3.9%	3.9%	7.0%	7.8%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	12.8%	6.8%	0.5%
Biomass & Other	2	2	2	2	2	2	2	0.2%	-0.1%	0.3%	-0.6%	2.0%	1.5%
Industry (incl. non-energy use)	**1**	**1**	**1**	**2**	**2**	**2**	**3**	**3.2%**	**2.2%**	**3.7%**	**1.6%**	**1.4%**	**3.1%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	11.0%	13.2%	-4.8%	-6.8%
Oil	0	0	1	1	1	0	0	8.1%	4.8%	5.3%	0.4%	-9.7%	-13.3%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	8.0%	-7.2%
Electricity	0	0	0	0	0	1	2	3.7%	2.4%	3.1%	3.1%	9.1%	6.1%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	1	1	0.6%	-0.8%	1.3%	0.5%	4.4%	3.7%
Buildings	**2**	**2**	**2**	**2**	**2**	**2**	**3**	**0.0%**	**0.4%**	**0.9%**	**0.5%**	**1.0%**	**3.2%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	0	0	0	0	0	0	0	-4.0%	0.0%	4.2%	1.7%	-2.5%	-8.3%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	12.5%	2.2%	-7.4%
Electricity	0	0	0	0	0	0	1	4.0%	4.4%	4.9%	3.1%	4.1%	11.5%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	12.8%	6.8%	0.5%
Biomass & Other	1	1	1	1	1	1	1	0.1%	0.1%	-0.2%	-1.0%	-0.3%	-0.4%
Agriculture	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**	**n.s.**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Electricity	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Transport	**0**	**1**	**1**	**1**	**1**	**1**	**1**	**2.1%**	**1.0%**	**5.0%**	**0.3%**	**-2.2%**	**-1.4%**
Coal	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Oil	0	1	1	1	1	1	0	2.1%	1.0%	4.6%	-0.7%	-6.5%	-8.6%
Gas	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	7.5%	6.9%
Electricity	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	34.0%	5.7%	1.4%
Heat	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Biomass & Other	0	0	0	0	0	0	0	n.s.	n.s.	n.s.	2.7%	17.4%	3.9%
Other Energy Transformation & Losses[3]	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**n.s.**	**n.s.**	**4.3%**	**2.4%**	**17.1%**	**4.1%**

[2] does not include international aviation and maritime bunkers; includes non-energy uses

[3] includes statistical differences

References

BGR (German Federal Institute for Geosciences and Natural Resources), 2015. *Energy Study 2015. Reserves, resources and availability of energy resources*. – 172 p., Hannover. https://www.bgr.bund.de/EN/Themen/Energie/Produkte/energy_study_2015_summary_en.html Last access: 01/09/2016

BP, 2017. *Statistical Review of World Energy*, June 2016. http://www.bp.com/en/global/corporate/energy-economics/statistical-review-of-world-energy.html Last access: 06/01/2017

Després, J., Keramidas, K., Schmitz, A., Kitous, A., Schade, B., *POLES-JRC model documentation – 2018 update*, EUR 29454 EN, Publications Office of the European Union, Luxembourg, 2018, ISBN 978-92-79-97300-0, doi:10.2760/814959, JRC113757.

EC (European Commission), 2016. *EU Reference Scenario 2016. Energy, Transport and GHG emissions Trends to 2050*. DG for Energy, DG for Climate Action and DG for Mobility and Transport. https://ec.europa.eu/energy/en/news/reference-scenario-energy Last access: 01/06/2017

EC (European Commission), Joint Research Centre, 2014. *ETRI 2014 Energy Technology Reference Indicator projections for 2010-2050*. Report EUR 26950 EN. ISBN 978-92-79-44403-6. doi: 10.2790/057687

EC (European Commission), Joint Research Centre, 2017. *Emissions Database for Global Atmospheric Research (EDGAR)*, v4.2 and v4.2 FT2010. http://edgar.jrc.ec.europa.eu/ Last access: 01/06/2017

EC (European Commission), 2018. *The 2018 Ageing Report: Economic and Budgetary Projections for the EU Member States (2016-2070),* Brussels: European Commission.

Enerdata, 2017. *Global Energy & CO_2 Data online database*. Enerdata, France. http://globaldata.enerdata.net/global-energy/database/ Last access: 05/05/2017

FAO (Food and Agriculture Organisation of the United Nations), 2017. *FAOSTAT*. http://www.fao.org/faostat/en/#data Last access: 01/06/2017

IEA (International Energy Agency), 2018. *IEA online energy statistics*. http://www.iea.org/statistics/ Last access: 01/12/2016

IIASA, 2018. *Global Biosphere Management Model (GLOBIOM) model description*. International Institute for Applied Statistical Analysis, Laxenburg, Austria. http://www.iiasa.ac.at/web/home/research/modelsData/GLOBIOM/GLOBIOM.en.html Last access: 01/06/2017

IMF (International Monetary Fund), 2018. *World Economic Outlook – Subdued Demand: Symptoms and Remedies*; April 2018. http://www.imf.org/en/Publications/WEO/Issues/2016/12/31/Subdued-Demand-Symptoms-and-Remedies Last access: 01/11/2016

IPCC, 1996. *Technical Summary*. In: Climate Change 1995: The Science of Climate Change. Contribution of Working Group I to the Second Assessment Report of the Intergovernmental Panel on Climate Change [J.T. Houghton, L.G. Meira Filho, B.A. Callander, N. Harris, A. Kattenberg and K. Maskell (eds.)]. Cambridge University Press, Cambridge, United Kingdom.

IPCC, 2007. *Climate change 2007-the physical science basis: Working group I contribution to the fourth assessment report of the IPCC*. s.l.:Cambridge University Press.

IPCC, 2014. *Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change,* Geneva, Switzerland: s.n.

IPCC, 2018. *Global Warming of 1.5 °C,* s.l.: s.n.

Keramidas, K., Tchung-Ming, S., Diaz-Vazquez, A. R., Weitzel, M., Vandyck, T., Després, J., Schmitz, A., Rey Los Santos, L., Wojtowicz, K., Schade, B., Saveyn, B., Soria-Ramirez, A., *Global Energy and Climate Outlook 2018: Sectoral mitigation options towards a low-emissions economy – Global context to the EU strategy for long-term greenhouse gas emissions reduction*, EUR 29462 EN, Publications Office of the European Union, Luxembourg, 2018, ISBN 978-92-79-97462-5, doi:10.2760/67475, JRC113446.

Meinshausen, M., Raper, S. C. B. & Wigley, T. M. L., 2011. *Emulating coupled atmosphere-ocean and carbon cycle models with a simpler model, MAGICC6: Part I – Model Description and Calibration*. Atmospheric Chemistry and Physics, Volume 11, pp. 1417-1456.

NEA, 2016, *Uranium 2016: Resources, Production and Demand*, OECD Publishing, Paris. DOI: http://dx.doi.org/10.1787/uranium-2016-en

NREL (National Renewable Energy Laboratory), 2013. *Global CFDDA-based Onshore and Offshore Wind Potential Supply Curves by Country, Class, and Depth (quantities in GW and PWh)*. DOE Opendata, OpenEI. http://en.openei.org/datasets/dataset/global-cfdda-based-onshore-and-offshore-wind-potential-supply-curves-by-country-class-and-depth-q Last access: 01/06/2016

OECD, 2014. *OECD Economic Outlook: Statistics and Projections - Long-term baseline projections, No. 95 (Edition 2014),* Paris: OECD.

Pietzcker, R.C., Stetter, D., Manger, S., Luderer, G., 2014. *Using the sun to decarbonize the power sector: The economic potential of photovoltaics and concentrating solar power*. Applied Energy 135, 704–720. doi:10.1016/j.apenergy.2014.08.011

Platts, 2014. *World Electric Power Plants Database (WEPP)*. December 2014. ISBN 1-56760-257-6. Copyright © 2015 Platts, a division of McGraw Hill Financial.

Rogelj, J. et al., 2015. *Energy system transformations for limiting end-of-century warming to below 1.5 °C*. *Nature Climate Change,* 21 5, Volume 5, p. 519.

UNFCCC (United Nations Framework Convention on Climate Change), 2015. *Greenhouse Gas Inventory Data, Flexible Queries*. http://unfccc.int/di/FlexibleQueries.do Last access: 01/12/2015

USGS (US Geological Survey), 2013. *World Petroleum Assessment*. http://energy.usgs.gov/OilGas/AssessmentsData/WorldPetroleumAssessment.aspx and http://pubs.usgs.gov/dds/dds-069/dds-069-ff/ Last access: 01/06/2016

WEC (World Energy Council), 2013a. *World Energy Resources: 2013 Survey*. ISBN: 978 0 946121 29 8. http://www.worldenergy.org/data/resources/resource/coal/ Last access: 01/06/2016

WEC (World Energy Council), 2013b. *World Energy Perspective, Cost of Energy Technologies: 2013 Survey*. ISBN: 978 0 94612 130 4. http://www.worldenergy.org/publications/2013/world-energy-perspective-cost-of-energy-technologies/ Last access: 01/06/2016

World Bank, 2017. *World data bank, World development indicators*. http://databank.worldbank.org/data/reports.aspx?source=world-development-indicators Last access: 01/03/2017

List of abbreviations and definitions

Country and regional codes

CIS: Commonwealth of Independent States

EU28: European Union with 28 Member States as of October 2018

Mediterranean Middle-East: Israel, Jordan, Lebanon, Palestine, Syria

Other Balkans: Albania, Bosnia-Herzegovina, Kosovo, Macedonia, Montenegro, Serbia

Other CIS: Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyz Rep., Moldova, Tajikistan, Turkmenistan, Uzbekistan

Rest Central America: Bahamas, Barbados, Belize, Bermuda, Costa Rica, Cuba, Dominica, Dominican Republic, El Salvador, Grenada, Guatemala, Haiti, Honduras, Jamaica, Nicaragua, NL Antilles and Aruba, Panama, St Lucia, St Vincent and Grenadines, Trinidad and Tobago

Rest Gulf: Bahrain, Iraq, Kuwait, Oman, Qatar, United Arab Emirates, Yemen

Rest Pacific: Fiji Islands, Kiribati, Papua New Guinea, Samoa (Western), Solomon Islands, Tonga, Vanuatu

Rest South America: Bolivia, Colombia, Ecuador, Guyana, Paraguay, Peru, Suriname, Uruguay, Venezuela

Rest South Asia: Afghanistan, Bangladesh, Bhutan, Maldives, Nepal, Pakistan, Sri Lanka

Rest South-East Asia: Brunei, Cambodia, Hong-Kong, Lao PDR, Macau, Mongolia, Myanmar, Korea (PR), Philippines, Singapore, Taiwan

Rest Sub-Saharan Africa: Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Comoros, Congo, Congo DR, Cote d'Ivoire, Djibouti, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mozambique, Namibia, Niger, Nigeria, Rwanda, Sao Tome and Principe, Seychelles, Senegal, Sierra Leone, Somalia, Sudan, Swaziland, Tanzania, Togo, Uganda, Zambia, Zimbabwe

Acronyms & Abbreviations

BGR: German Federal Institute for Geosciences and Natural Resources (Bundesanstalt für Geowissenschaften und Rohstoffe)

CCS: Carbon Capture and Sequestration

DOE: US Department Of Energy

EC: European Commission

EIA: US Energy Information Administration

GDP: Gross Domestic Product

GECO: Global Energy & Climate Outlook

GHG: Greenhouse Gases

IEA: International Energy Agency

IIASA: International Institute for Applied Statistical Analysis

IMF: International Monetary Fund

INDC: Intended Nationally Determined Contribution

JRC: Joint Research Centre of the European Commission

LULUCF: Land Use, Land Use Change and Forestry

NEA: Nuclear Energy Agency

OECD: Organisation of Economic Co-operation and Development

UN: United Nations

UNFCCC: United Nations Framework Convention on Climate Change

USGS: US Geological Survey

Units

Energy		
Mtoe	million tonnes of oil equivalent	1000 000 toe
Electricity		
GW	gigawatts	1000 000 000 W
TWh	terawatt-hours	1000 000 000 000 Wh
Prices		
$/boe	$ per barrel of oil equivalent	
Emissions		
$MtCO_2e$	million tonnes of CO_2 equivalent	1000 000 tCO_2e
Monetary units		
k$	thousand dollars	1000 $

Values are given in US dollars of 2005.

List of tables

Table 1: Energy and GHG balances provided 6
Table 2: POLES-JRC model historical data and projections 8

GETTING IN TOUCH WITH THE EU

In person

All over the European Union there are hundreds of Europe Direct information centres. You can find the address of the centre nearest you at: https://europa.eu/european-union/contact_en

On the phone or by email

Europe Direct is a service that answers your questions about the European Union. You can contact this service:

- by freephone: 00 800 6 7 8 9 10 11 (certain operators may charge for these calls),

- at the following standard number: +32 22999696, or

- by electronic mail via: https://europa.eu/european-union/contact_en

FINDING INFORMATION ABOUT THE EU

Online

Information about the European Union in all the official languages of the EU is available on the Europa website at: https://europa.eu/european-union/index_en

EU publications
You can download or order free and priced EU publications from EU Bookshop at: https://publications.europa.eu/en/publications. Multiple copies of free publications may be obtained by contacting Europe Direct or your local information centre (see https://europa.eu/european-union/contact_en).

KJ-NA-29573-EN-N

The European Commission's science and knowledge service

Joint Research Centre

JRC Mission

As the science and knowledge service of the European Commission, the Joint Research Centre's mission is to support EU policies with independent evidence throughout the whole policy cycle.

EU Science Hub
ec.europa.eu/jrc

@EU_ScienceHub

EU Science Hub - Joint Research Centre

Joint Research Centre

EU Science Hub

Publications Office

doi:10.2760/438139

ISBN 978-92-79-98399-3