
Annex

Table 1 Regional groupings

Asia	People's Republic of China	
	Hong Kong	
	India	
	Japan	
	Korea	
	Chinese Taipei	
	ASEAN	Brunei Darussalam
		Indonesia
		Malaysia
		Myanmar
		Philippines
	Singapore	
	Thailand	
	Viet Nam	
	Others	Bangladesh, Cambodia, D. P. R. Korea, Mongolia, Nepal, Pakistan, Sri Lanka, and Other Asia in IEA statistics
North America	United States	
	Canada	
Latin America	Brazil	
	Chile	
	Mexico	
	Others	Argentina, Bolivia, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Jamaica, Netherland Antilles, Nicaragua, Panama, Paraguay, Peru, Trinidad and Tobago, Uruguay, and Other Non-OECD Americas in IEA statistics
Europe	OECD Europe	France
		Germany
		Italy
		United Kingdom
	Others	Austria, Belgium, the Czech Republic, Denmark, Estonia, Finland, Greece, Hungary, Iceland, Ireland, Luxembourg, the Netherlands, Norway, Poland, Portugal, the Slovak Republic, Slovenia, Spain, Sweden, Switzerland, and Turkey

Non-OECD Europe	Russia	
	Other non-OECD former Soviet Union	Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Moldova, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan
	Others	Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Gibraltar, Kosovo, Former Yugoslav Republic of Macedonia, Malta, Montenegro, Romania, and Serbia
Africa	Republic of South Africa	
	North Africa	Algeria, Egypt, Libya, Morocco, and Tunisia
	Others	Angola, Benin, Botswana, Cameroon, Democratic Republic of Congo, Congo, Côte d'Ivoire, Eritrea, Ethiopia, Gabon, Ghana, Kenya, Mozambique, Namibia, Nigeria, Senegal, Sudan, Togo, United Republic of Tanzania, Zambia, Zimbabwe, and Other Africa in IEA statistics
Middle East	Iran	
	Iraq	
	Kuwait	
	Oman	
	Qatar	
	Saudi Arabia	
	United Arab Emirates	
	Others	Bahrain, Israel, Jordan, Lebanon, Syrian Arab Republic, and Yemen
Oceania	Australia	
	New Zealand	
International bunkers		
European Union	Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, the Slovak Republic, Slovenia, Spain, Sweden, and the United Kingdom	
OECD	Australia, Austria, Belgium, Canada, Chile, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Korea, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, the Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, United Kingdom, and United States	

Notes: (1) ASEAN includes neither Cambodia nor Lao P.D.R., (2) Other non-OECD former Soviet Union includes energy data of Estonia before 1990, and (3) OECD does not include Israel.

Table 2 Major energy and economic indicators

		1990	2012	2040		CAGR (%)		
				Reference	Advanced Technologies	1990/2012	Reference	Advanced Technologies
Population (Million)	World	8,780	13,371	19,276	16,374	1.9	1.3	0.7
	Asia	2,119	5,268	8,794	7,398	4.2	1.8	1.2
	China	871	2,894	4,474	3,684	5.6	1.6	0.9
	India	316	788	1,814	1,519	4.2	3.0	2.4
	Japan	439	452	416	362	0.1	-0.3	-0.8
GDP (\$2010 billion)	World	3,231	4,205	5,639	4,657	1.2	1.1	0.4
	Asia	618	1,243	2,096	1,748	3.2	1.9	1.2
	China	119	464	877	752	6.4	2.3	1.7
	India	61	177	445	377	5.0	3.3	2.7
	Japan	250	210	139	113	-0.8	-1.5	-2.2
Total primary energy consumption (Mtoe)	World	1,667	2,844	4,856	3,817	2.5	1.9	1.1
	Asia	116	507	1,434	1,152	6.9	3.8	3.0
	China	13	121	622	531	10.7	6.0	5.4
	India	11	49	220	195	7.2	5.5	5.1
	Japan	44	105	106	59	4.0	0.0	-2.0
Oil consumption (Mtoe)	World	2,231	3,879	4,705	3,150	2.5	0.7	-0.7
	Asia	796	2,669	3,605	2,383	5.7	1.1	-0.4
	China	528	1,969	2,274	1,543	6.2	0.5	-0.9
	India	103	354	776	448	5.8	2.8	0.8
	Japan	77	112	99	69	1.7	-0.4	-1.7
Natural gas consumption (Mtoe)	World	11,825	22,668	40,217	35,025	3.0	2.1	1.6
	Asia	2,215	8,921	19,630	16,795	6.5	2.9	2.3
	China	621	4,985	10,294	8,907	9.9	2.6	2.1
	India	293	1,128	4,230	3,652	6.3	4.8	4.3
	Japan	836	1,026	1,171	1,006	0.9	0.5	-0.1
Coal consumption (Mtoe)	World	21,233	32,562	43,734	32,124	2.0	1.1	0.0
	Asia	4,959	14,564	22,422	15,856	5.0	1.6	0.3
	China	2,339	9,067	12,402	8,913	6.4	1.1	-0.1
	India	585	1,961	4,688	3,121	5.7	3.2	1.7
	Japan	1,070	1,220	969	659	0.6	-0.8	-2.2
Power generation (TWh)	World	238	197	125	106	-0.9	-1.6	-2.2
	Asia	286	280	143	120	-0.1	-2.4	-3.0
	China	1,072	414	145	120	-4.2	-3.7	-4.3
	India	660	415	179	150	-2.1	-3.0	-3.6
	Japan	96	81	50	44	-0.8	-1.7	-2.2
Energy-related carbon dioxide emissions (Mt)	World	1.67	1.90	2.15	1.82	0.6	0.4	-0.2
	Asia	0.72	1.37	1.94	1.63	2.9	1.3	0.6
	China	0.77	2.14	3.18	2.62	4.8	1.4	0.7
	India	0.36	0.64	1.16	0.97	2.6	2.2	1.5
	Japan	3.56	3.55	3.63	3.15	0.0	0.1	-0.4
Primary energy consumption per GDP (toe/\$2010 million)	World	36,939	67,904	154,291	154,291	2.8	3.0	3.0
	Asia	7,398	18,808	61,633	61,633	4.3	4.3	4.3
	China	812	6,988	30,784	30,784	10.3	5.4	5.4
	India	479	1,901	10,148	10,148	6.5	6.2	6.2
	Japan	4,553	5,571	8,278	8,278	0.9	1.4	1.4
Primary energy consumption per capita (toe/person)	World	5,272	7,033	8,983	8,983	1.3	0.9	0.9
	Asia	2,931	3,854	4,531	4,531	1.3	0.6	0.6
	China	1,135	1,351	1,408	1,408	0.8	0.1	0.1
	India	869	1,237	1,566	1,566	1.6	0.8	0.8
	Japan	124	128	115	115	0.1	-0.4	-0.4

Table 3 Population

							(Million)				
							CAGR (%)				
	1990	2000	2012	2020	2030	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040
World	5,272 (100)	6,093 (100)	7,033 (100)	7,667 (100)	8,372 (100)	8,983 (100)	1.3	1.1	0.9	0.7	0.9
Asia	2,931 (55.6)	3,401 (55.8)	3,854 (54.8)	4,129 (53.9)	4,382 (52.3)	4,531 (50.4)	1.3	0.9	0.6	0.3	0.6
China	1,135 (21.5)	1,263 (20.7)	1,351 (19.2)	1,405 (18.3)	1,425 (17.0)	1,408 (15.7)	0.8	0.5	0.1	-0.1	0.1
India	869 (16.5)	1,042 (17.1)	1,237 (17.6)	1,353 (17.7)	1,476 (17.6)	1,566 (17.4)	1.6	1.1	0.9	0.6	0.8
Japan	124 (2.3)	127 (2.1)	128 (1.8)	126 (1.6)	121 (1.4)	115 (1.3)	0.1	-0.2	-0.4	-0.5	-0.4
Korea	43 (0.8)	47 (0.8)	50 (0.7)	52 (0.7)	53 (0.6)	53 (0.6)	0.7	0.4	0.3	0.0	0.2
Chinese Taipei	20 (0.4)	22 (0.4)	23 (0.3)	24 (0.3)	24 (0.3)	23 (0.3)	0.6	0.2	0.0	-0.3	0.0
ASEAN	427 (8.1)	503 (8.3)	587 (8.3)	638 (8.3)	691 (8.3)	729 (8.1)	1.5	1.1	0.8	0.5	0.8
Indonesia	179 (3.4)	209 (3.4)	247 (3.5)	269 (3.5)	293 (3.5)	311 (3.5)	1.5	1.1	0.9	0.6	0.8
Malaysia	18 (0.3)	23 (0.4)	29 (0.4)	33 (0.4)	37 (0.4)	40 (0.4)	2.2	1.5	1.2	0.8	1.1
Myanmar	42 (0.8)	48 (0.8)	53 (0.8)	56 (0.7)	59 (0.7)	59 (0.7)	1.0	0.8	0.4	0.1	0.4
Philippines	62 (1.2)	78 (1.3)	97 (1.4)	110 (1.4)	128 (1.5)	144 (1.6)	2.0	1.7	1.5	1.2	1.4
Singapore	3 (0.1)	4 (0.1)	5 (0.1)	6 (0.1)	7 (0.1)	7 (0.1)	2.6	1.7	0.8	0.5	0.9
Thailand	57 (1.1)	62 (1.0)	67 (0.9)	68 (0.9)	68 (0.8)	66 (0.7)	0.8	0.2	0.0	-0.3	-0.1
Viet Nam	66 (1.3)	78 (1.3)	89 (1.3)	95 (1.2)	100 (1.2)	102 (1.1)	1.4	0.8	0.5	0.2	0.5
Asia excl. Japan	2,808 (53.3)	3,274 (53.7)	3,726 (53.0)	4,004 (52.2)	4,261 (50.9)	4,416 (49.2)	1.3	0.9	0.6	0.4	0.6
North America	277 (5.3)	313 (5.1)	349 (5.0)	372 (4.8)	399 (4.8)	422 (4.7)	1.0	0.8	0.7	0.6	0.7
United States	250 (4.7)	282 (4.6)	314 (4.5)	334 (4.4)	359 (4.3)	379 (4.2)	1.0	0.8	0.7	0.6	0.7
Latin America	441 (8.4)	521 (8.6)	605 (8.6)	656 (8.6)	711 (8.5)	750 (8.4)	1.4	1.0	0.8	0.5	0.8
OECD Europe	499 (9.5)	521 (8.6)	555 (7.9)	570 (7.4)	583 (7.0)	590 (6.6)	0.5	0.4	0.2	0.1	0.2
European Union	478 (9.1)	488 (8.0)	506 (7.2)	518 (6.7)	526 (6.3)	529 (5.9)	0.3	0.3	0.2	0.1	0.2
Non-OECD Europe	344 (6.5)	341 (5.6)	341 (4.9)	344 (4.5)	340 (4.1)	333 (3.7)	0.0	0.1	-0.1	-0.2	-0.1
Africa	627 (11.9)	806 (13.2)	1,082 (15.4)	1,310 (17.1)	1,632 (19.5)	1,995 (22.2)	2.5	2.4	2.2	2.0	2.2
Middle East	132 (2.5)	166 (2.7)	221 (3.1)	256 (3.3)	293 (3.5)	325 (3.6)	2.4	1.8	1.4	1.1	1.4
Oceania	20 (0.4)	23 (0.4)	27 (0.4)	30 (0.4)	33 (0.4)	36 (0.4)	1.3	1.2	1.0	0.9	1.0
OECD	1,062 (20.2)	1,150 (18.9)	1,246 (17.7)	1,300 (17.0)	1,353 (16.2)	1,388 (15.5)	0.7	0.5	0.4	0.3	0.4
Non-OECD	4,209 (79.8)	4,943 (81.1)	5,787 (82.3)	6,367 (83.0)	7,019 (83.8)	7,594 (84.5)	1.5	1.2	1.0	0.8	1.0

Source: United Nations "Population Estimates and Projections: The 2012 Revision", World Bank "World Development Indicators"

Note: Figures in parentheses are global shares (%).

Table 4 GDP [Reference Scenario and Advanced Technologies Scenario]

	(\$2010 billion)						CAGR (%)				
	1990	2000	2012	2020	2030	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040
World	36,939 (100)	48,631 (100)	67,904 (100)	87,739 (100)	119,426 (100)	154,291 (100)	2.8	3.3	3.1	2.6	3.0
Asia	7,398 (20.0)	10,658 (21.9)	18,808 (27.7)	28,042 (32.0)	43,252 (36.2)	61,633 (39.9)	4.3	5.1	4.4	3.6	4.3
China	812 (2.2)	2,190 (4.5)	6,988 (10.3)	12,175 (13.9)	20,797 (17.4)	30,784 (20.0)	10.3	7.2	5.5	4.0	5.4
India	479 (1.3)	825 (1.7)	1,901 (2.8)	3,079 (3.5)	5,854 (4.9)	10,148 (6.6)	6.5	6.2	6.6	5.7	6.2
Japan	4,553 (12.3)	5,093 (10.5)	5,571 (8.2)	6,501 (7.4)	7,422 (6.2)	8,278 (5.4)	0.9	1.9	1.3	1.1	1.4
Korea	374 (1.0)	675 (1.4)	1,074 (1.6)	1,438 (1.6)	1,874 (1.6)	2,250 (1.5)	4.9	3.7	2.7	1.8	2.7
Chinese Taipei	168 (0.5)	307 (0.6)	473 (0.7)	663 (0.8)	835 (0.7)	952 (0.6)	4.8	4.3	2.3	1.3	2.5
ASEAN	702 (1.9)	1,137 (2.3)	2,074 (3.1)	3,124 (3.6)	4,901 (4.1)	7,101 (4.6)	5.0	5.3	4.6	3.8	4.5
Indonesia	282 (0.8)	426 (0.9)	802 (1.2)	1,261 (1.4)	2,046 (1.7)	3,097 (2.0)	4.9	5.8	5.0	4.2	4.9
Malaysia	79 (0.2)	158 (0.3)	275 (0.4)	405 (0.5)	630 (0.5)	872 (0.6)	5.8	5.0	4.5	3.3	4.2
Myanmar	7 (0.0)	13 (0.0)	47 (0.1)	79 (0.1)	138 (0.1)	214 (0.1)	9.3	6.8	5.8	4.5	5.6
Philippines	95 (0.3)	125 (0.3)	221 (0.3)	356 (0.4)	565 (0.5)	851 (0.6)	3.9	6.2	4.7	4.2	4.9
Singapore	67 (0.2)	134 (0.3)	247 (0.4)	335 (0.4)	449 (0.4)	522 (0.3)	6.1	3.9	3.0	1.5	2.7
Thailand	135 (0.4)	209 (0.4)	340 (0.5)	465 (0.5)	670 (0.6)	910 (0.6)	4.3	4.0	3.7	3.1	3.6
Viet Nam	29 (0.1)	61 (0.1)	130 (0.2)	205 (0.2)	382 (0.3)	610 (0.4)	7.0	5.9	6.4	4.8	5.7
Asia excl. Japan	2,845 (7.7)	5,565 (11.4)	13,237 (19.5)	21,542 (24.6)	35,830 (30.0)	53,355 (34.6)	7.2	6.3	5.2	4.1	5.1
North America	10,036 (27.2)	14,027 (28.8)	17,303 (25.5)	21,237 (24.2)	27,001 (22.6)	32,507 (21.1)	2.5	2.6	2.4	1.9	2.3
United States	9,054 (24.5)	12,717 (26.2)	15,658 (23.1)	19,280 (22.0)	24,593 (20.6)	29,621 (19.2)	2.5	2.6	2.5	1.9	2.3
Latin America	2,714 (7.3)	3,665 (7.5)	5,446 (8.0)	6,975 (7.9)	9,664 (8.1)	12,418 (8.0)	3.2	3.1	3.3	2.5	3.0
OECD Europe	12,172 (33.0)	15,317 (31.5)	18,000 (26.5)	20,510 (23.4)	24,203 (20.3)	27,543 (17.9)	1.8	1.6	1.7	1.3	1.5
European Union	11,433 (31.0)	14,229 (29.3)	16,542 (24.4)	18,848 (21.5)	22,299 (18.7)	25,446 (16.5)	1.7	1.6	1.7	1.3	1.6
Non-OECD Europe	2,167 (5.9)	1,507 (3.1)	2,644 (3.9)	3,223 (3.7)	4,455 (3.7)	5,642 (3.7)	0.9	2.5	3.3	2.4	2.7
Africa	819 (2.2)	1,075 (2.2)	1,847 (2.7)	2,660 (3.0)	4,102 (3.4)	6,125 (4.0)	3.8	4.7	4.4	4.1	4.4
Middle East	919 (2.5)	1,393 (2.9)	2,449 (3.6)	3,328 (3.8)	4,506 (3.8)	5,717 (3.7)	4.6	3.9	3.1	2.4	3.1
Oceania	715 (1.9)	989 (2.0)	1,407 (2.1)	1,765 (2.0)	2,243 (1.9)	2,704 (1.8)	3.1	2.9	2.4	1.9	2.4
OECD	28,548 (77.3)	37,129 (76.3)	44,727 (65.9)	53,245 (60.7)	65,257 (54.6)	76,636 (49.7)	2.1	2.2	2.1	1.6	1.9
Non-OECD	8,391 (22.7)	11,503 (23.7)	23,177 (34.1)	34,494 (39.3)	54,169 (45.4)	77,654 (50.3)	4.7	5.1	4.6	3.7	4.4

Source: World Bank "World Development Indicators", etc. (historical)

Note: Figures in parentheses are global shares (%).

Table 5 International energy prices

Real prices		2013	2020	2030	2040
Crude oil	\$2013/bbl	110	116	122	127
Natural gas Japan	\$2013/MBtu	16.1	13.6	14.0	14.5
Europe	\$2013/MBtu	10.6	10.9	11.5	12.8
United States	\$2013/MBtu	3.7	4.4	6.0	7.7
Steam coal	\$2013/t	112	123	134	140
Nominal prices		2013	2020	2030	2040
Crude oil	\$/bbl	110	133	171	217
Natural gas Japan	\$/MBtu	16.1	15.6	19.6	24.8
Europe	\$/MBtu	10.6	12.5	16.1	21.8
United States	\$/MBtu	3.7	5.1	8.4	13.1
Steam coal	\$/t	112	141	188	238

Note: 2% per annum of inflation rates are assumed.

Table 6 Primary energy consumption [Reference Scenario]

							(Mtoe)				
							CAGR (%)				
	1990	2000	2012	2020	2030	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040
World	8,780 (100)	10,079 (100)	13,371 (100)	15,259 (100)	17,413 (100)	19,276 (100)	1.9	1.7	1.3	1.0	1.3
Asia	2,119 (24.1)	2,936 (29.1)	5,268 (39.4)	6,403 (42.0)	7,638 (43.9)	8,794 (45.6)	4.2	2.5	1.8	1.4	1.8
China	871 (9.9)	1,161 (11.5)	2,894 (21.6)	3,505 (23.0)	4,069 (23.4)	4,474 (23.2)	5.6	2.4	1.5	1.0	1.6
India	316 (3.6)	456 (4.5)	788 (5.9)	1,007 (6.6)	1,351 (7.8)	1,814 (9.4)	4.2	3.1	3.0	3.0	3.0
Japan	439 (5.0)	519 (5.1)	452 (3.4)	457 (3.0)	440 (2.5)	416 (2.2)	0.1	0.1	-0.4	-0.6	-0.3
Korea	93 (1.1)	188 (1.9)	263 (2.0)	294 (1.9)	324 (1.9)	326 (1.7)	4.9	1.4	1.0	0.0	0.8
Chinese Taipei	48 (0.5)	85 (0.8)	105 (0.8)	116 (0.8)	121 (0.7)	120 (0.6)	3.6	1.3	0.4	-0.1	0.5
ASEAN	233 (2.7)	380 (3.8)	573 (4.3)	772 (5.1)	1,007 (5.8)	1,248 (6.5)	4.2	3.8	2.7	2.2	2.8
Indonesia	99 (1.1)	156 (1.5)	214 (1.6)	310 (2.0)	403 (2.3)	507 (2.6)	3.6	4.8	2.7	2.3	3.1
Malaysia	22 (0.3)	49 (0.5)	81 (0.6)	106 (0.7)	134 (0.8)	160 (0.8)	6.1	3.4	2.4	1.8	2.5
Myanmar	11 (0.1)	13 (0.1)	15 (0.1)	18 (0.1)	24 (0.1)	30 (0.2)	1.6	2.4	2.6	2.6	2.5
Philippines	29 (0.3)	40 (0.4)	43 (0.3)	55 (0.4)	72 (0.4)	93 (0.5)	1.8	3.2	2.8	2.6	2.8
Singapore	12 (0.1)	19 (0.2)	25 (0.2)	30 (0.2)	37 (0.2)	41 (0.2)	3.6	2.4	2.0	1.1	1.8
Thailand	42 (0.5)	72 (0.7)	127 (0.9)	161 (1.1)	200 (1.1)	237 (1.2)	5.1	3.1	2.2	1.7	2.3
Viet Nam	18 (0.2)	29 (0.3)	65 (0.5)	86 (0.6)	132 (0.8)	174 (0.9)	6.0	3.6	4.3	2.8	3.6
Asia excl. Japan	1,680 (19.1)	2,417 (24.0)	4,816 (36.0)	5,946 (39.0)	7,198 (41.3)	8,378 (43.5)	4.9	2.7	1.9	1.5	2.0
North America	2,124 (24.2)	2,525 (25.0)	2,392 (17.9)	2,485 (16.3)	2,533 (14.5)	2,506 (13.0)	0.5	0.5	0.2	-0.1	0.2
United States	1,915 (21.8)	2,273 (22.6)	2,141 (16.0)	2,219 (14.5)	2,244 (12.9)	2,201 (11.4)	0.5	0.4	0.1	-0.2	0.1
Latin America	468 (5.3)	600 (6.0)	837 (6.3)	1,018 (6.7)	1,279 (7.3)	1,492 (7.7)	2.7	2.5	2.3	1.6	2.1
OECD Europe	1,619 (18.4)	1,746 (17.3)	1,745 (13.1)	1,818 (11.9)	1,863 (10.7)	1,879 (9.7)	0.3	0.5	0.2	0.1	0.3
European Union	1,645 (18.7)	1,693 (16.8)	1,644 (12.3)	1,716 (11.2)	1,758 (10.1)	1,778 (9.2)	0.0	0.5	0.2	0.1	0.3
Non-OECD Europe	1,537 (17.5)	1,003 (10.0)	1,194 (8.9)	1,225 (8.0)	1,337 (7.7)	1,427 (7.4)	-1.1	0.3	0.9	0.7	0.6
Africa	391 (4.5)	497 (4.9)	733 (5.5)	895 (5.9)	1,084 (6.2)	1,272 (6.6)	2.9	2.5	1.9	1.6	2.0
Middle East	222 (2.5)	375 (3.7)	705 (5.3)	841 (5.5)	1,014 (5.8)	1,165 (6.0)	5.4	2.2	1.9	1.4	1.8
Oceania	99 (1.1)	125 (1.2)	147 (1.1)	156 (1.0)	162 (0.9)	165 (0.9)	1.8	0.7	0.4	0.2	0.4
OECD	4,511 (51.4)	5,273 (52.3)	5,225 (39.1)	5,481 (35.9)	5,646 (32.4)	5,670 (29.4)	0.7	0.6	0.3	0.0	0.3
Non-OECD	4,068 (46.3)	4,534 (45.0)	7,795 (58.3)	9,361 (61.3)	11,263 (64.7)	13,030 (67.6)	3.0	2.3	1.9	1.5	1.9

Source: International Energy Agency "World Energy Balances" (historical)

Note: Figures in parentheses are global shares (%). World includes international bunkers.

Table 7 Primary energy consumption, coal [Reference Scenario]

							(Mtoe)				
							CAGR (%)				
	1990	2000	2012	2020	2030	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040
World	2,231 (100)	2,358 (100)	3,879 (100)	4,112 (100)	4,433 (100)	4,705 (100)	2.5	0.7	0.8	0.6	0.7
Asia	796 (35.7)	1,078 (45.7)	2,669 (68.8)	2,948 (71.7)	3,291 (74.2)	3,605 (76.6)	5.7	1.2	1.1	0.9	1.1
China	528 (23.7)	691 (29.3)	1,969 (50.8)	2,133 (51.9)	2,245 (50.6)	2,274 (48.3)	6.2	1.0	0.5	0.1	0.5
India	103 (4.6)	161 (6.8)	354 (9.1)	425 (10.3)	568 (12.8)	776 (16.5)	5.8	2.3	2.9	3.2	2.8
Japan	77 (3.4)	97 (4.1)	112 (2.9)	101 (2.5)	104 (2.3)	99 (2.1)	1.7	-1.3	0.3	-0.5	-0.4
Korea	25 (1.1)	42 (1.8)	77 (2.0)	81 (2.0)	92 (2.1)	94 (2.0)	5.2	0.6	1.3	0.1	0.7
Chinese Taipei	11 (0.5)	30 (1.3)	40 (1.0)	40 (1.0)	39 (0.9)	34 (0.7)	5.8	0.2	-0.4	-1.3	-0.5
ASEAN	13 (0.6)	32 (1.4)	89 (2.3)	130 (3.2)	197 (4.4)	272 (5.8)	9.3	4.9	4.2	3.3	4.1
Indonesia	4 (0.2)	12 (0.5)	30 (0.8)	51 (1.2)	84 (1.9)	125 (2.7)	10.2	6.9	5.1	4.1	5.3
Malaysia	1 (0.1)	2 (0.1)	16 (0.4)	23 (0.6)	30 (0.7)	36 (0.8)	11.8	4.8	2.8	1.8	3.0
Myanmar	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.0)	1 (0.0)	2 (0.0)	9.4	1.5	5.8	5.0	4.3
Philippines	2 (0.1)	5 (0.2)	9 (0.2)	12 (0.3)	18 (0.4)	27 (0.6)	8.4	3.6	4.6	3.8	4.0
Singapore	0 (0.0)	- (-)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	-4.7	-9.7	4.3	1.9	-0.7
Thailand	4 (0.2)	8 (0.3)	17 (0.4)	21 (0.5)	27 (0.6)	33 (0.7)	7.1	2.3	2.5	2.2	2.3
Viet Nam	2 (0.1)	4 (0.2)	17 (0.4)	23 (0.6)	37 (0.8)	49 (1.0)	9.5	4.3	4.7	2.9	4.0
Asia excl. Japan	719 (32.2)	981 (41.6)	2,557 (65.9)	2,847 (69.2)	3,188 (71.9)	3,506 (74.5)	5.9	1.4	1.1	1.0	1.1
North America	485 (21.7)	565 (24.0)	443 (11.4)	409 (9.9)	355 (8.0)	299 (6.3)	-0.4	-1.0	-1.4	-1.7	-1.4
United States	460 (20.6)	534 (22.6)	425 (11.0)	395 (9.6)	347 (7.8)	292 (6.2)	-0.4	-0.9	-1.3	-1.7	-1.3
Latin America	20 (0.9)	27 (1.2)	37 (1.0)	46 (1.1)	64 (1.4)	79 (1.7)	2.8	2.7	3.2	2.2	2.7
OECD Europe	449 (20.1)	330 (14.0)	315 (8.1)	292 (7.1)	286 (6.5)	268 (5.7)	-1.6	-0.9	-0.2	-0.7	-0.6
European Union	456 (20.4)	321 (13.6)	294 (7.6)	274 (6.7)	270 (6.1)	251 (5.3)	-2.0	-0.9	-0.2	-0.7	-0.6
Non-OECD Europe	367 (16.5)	209 (8.9)	248 (6.4)	227 (5.5)	225 (5.1)	222 (4.7)	-1.8	-1.1	-0.1	-0.1	-0.4
Africa	74 (3.3)	90 (3.8)	105 (2.7)	123 (3.0)	141 (3.2)	162 (3.4)	1.6	1.9	1.4	1.4	1.6
Middle East	3 (0.1)	8 (0.3)	12 (0.3)	16 (0.4)	22 (0.5)	28 (0.6)	6.3	4.5	2.9	2.4	3.2
Oceania	36 (1.6)	49 (2.1)	48 (1.2)	51 (1.2)	48 (1.1)	43 (0.9)	1.3	0.6	-0.5	-1.1	-0.4
OECD	1,078 (48.3)	1,094 (46.4)	1,011 (26.1)	954 (23.2)	918 (20.7)	845 (18.0)	-0.3	-0.7	-0.4	-0.8	-0.6
Non-OECD	1,152 (51.7)	1,264 (53.6)	2,867 (73.9)	3,157 (76.8)	3,516 (79.3)	3,860 (82.0)	4.2	1.2	1.1	0.9	1.1

Source: International Energy Agency "World Energy Balances" (historical)

Note: Figures in parentheses are global shares (%). World includes international bunkers.

Table 8 Primary energy consumption, oil [Reference Scenario]

							(Mtoe)				
							CAGR (%)				
	1990	2000	2012	2020	2030	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040
World	3,231 (100)	3,658 (100)	4,205 (100)	4,608 (100)	5,165 (100)	5,639 (100)	1.2	1.2	1.1	0.9	1.1
Asia	618 (19.1)	917 (25.1)	1,243 (29.6)	1,498 (32.5)	1,803 (34.9)	2,096 (37.2)	3.2	2.4	1.9	1.5	1.9
China	119 (3.7)	221 (6.0)	464 (11.0)	620 (13.5)	766 (14.8)	877 (15.6)	6.4	3.7	2.1	1.4	2.3
India	61 (1.9)	112 (3.1)	177 (4.2)	242 (5.2)	338 (6.5)	445 (7.9)	5.0	4.0	3.4	2.8	3.3
Japan	250 (7.8)	255 (7.0)	210 (5.0)	178 (3.9)	156 (3.0)	139 (2.5)	-0.8	-2.0	-1.4	-1.1	-1.5
Korea	50 (1.5)	99 (2.7)	97 (2.3)	97 (2.1)	97 (1.9)	95 (1.7)	3.1	0.0	0.0	-0.2	-0.1
Chinese Taipei	26 (0.8)	38 (1.0)	39 (0.9)	42 (0.9)	44 (0.9)	43 (0.8)	1.9	1.1	0.4	-0.1	0.4
ASEAN	88 (2.7)	153 (4.2)	209 (5.0)	263 (5.7)	333 (6.5)	411 (7.3)	4.0	2.9	2.4	2.1	2.4
Indonesia	33 (1.0)	58 (1.6)	77 (1.8)	95 (2.1)	122 (2.4)	154 (2.7)	3.9	2.7	2.5	2.3	2.5
Malaysia	11 (0.4)	19 (0.5)	29 (0.7)	33 (0.7)	37 (0.7)	41 (0.7)	4.3	1.7	1.2	1.0	1.3
Myanmar	1 (0.0)	2 (0.1)	2 (0.1)	3 (0.1)	4 (0.1)	7 (0.1)	5.1	2.8	4.6	4.9	4.2
Philippines	11 (0.3)	16 (0.4)	14 (0.3)	17 (0.4)	21 (0.4)	27 (0.5)	1.1	2.4	2.6	2.3	2.4
Singapore	11 (0.4)	17 (0.5)	17 (0.4)	21 (0.5)	26 (0.5)	30 (0.5)	1.9	2.4	2.2	1.4	2.0
Thailand	18 (0.6)	32 (0.9)	49 (1.2)	66 (1.4)	79 (1.5)	92 (1.6)	4.7	3.9	1.8	1.5	2.3
Viet Nam	3 (0.1)	8 (0.2)	20 (0.5)	28 (0.6)	42 (0.8)	60 (1.1)	9.6	4.0	4.3	3.5	3.9
Asia excl. Japan	368 (11.4)	662 (18.1)	1,032 (24.6)	1,320 (28.6)	1,647 (31.9)	1,957 (34.7)	4.8	3.1	2.2	1.7	2.3
North America	833 (25.8)	958 (26.2)	854 (20.3)	828 (18.0)	817 (15.8)	801 (14.2)	0.1	-0.4	-0.1	-0.2	-0.2
United States	757 (23.4)	871 (23.8)	771 (18.3)	740 (16.1)	721 (14.0)	697 (12.4)	0.1	-0.5	-0.3	-0.3	-0.4
Latin America	237 (7.3)	303 (8.3)	388 (9.2)	430 (9.3)	507 (9.8)	561 (10.0)	2.3	1.3	1.7	1.0	1.3
OECD Europe	606 (18.8)	650 (17.8)	559 (13.3)	544 (11.8)	532 (10.3)	510 (9.0)	-0.4	-0.3	-0.2	-0.4	-0.3
European Union	606 (18.8)	623 (17.0)	526 (12.5)	515 (11.2)	505 (9.8)	487 (8.6)	-0.6	-0.3	-0.2	-0.4	-0.3
Non-OECD Europe	468 (14.5)	203 (5.5)	252 (6.0)	259 (5.6)	282 (5.5)	296 (5.3)	-2.8	0.4	0.8	0.5	0.6
Africa	86 (2.7)	98 (2.7)	160 (3.8)	190 (4.1)	220 (4.3)	249 (4.4)	2.8	2.2	1.5	1.3	1.6
Middle East	146 (4.5)	217 (5.9)	349 (8.3)	402 (8.7)	474 (9.2)	532 (9.4)	4.0	1.8	1.7	1.2	1.5
Oceania	35 (1.1)	40 (1.1)	51 (1.2)	47 (1.0)	50 (1.0)	53 (0.9)	1.7	-1.0	0.7	0.5	0.1
OECD	1,861 (57.6)	2,103 (57.5)	1,888 (44.9)	1,823 (39.6)	1,793 (34.7)	1,749 (31.0)	0.1	-0.4	-0.2	-0.2	-0.3
Non-OECD	1,169 (36.2)	1,283 (35.1)	1,966 (46.8)	2,377 (51.6)	2,891 (56.0)	3,349 (59.4)	2.4	2.4	2.0	1.5	1.9

Source: International Energy Agency "World Energy Balances" (historical)

Note: Figures in parentheses are global shares (%). World includes international bunkers.

Table 9 Primary energy consumption, natural gas [Reference Scenario]

							(Mtoe)				
							CAGR (%)				
	1990	2000	2012	2020	2030	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040
World	1,667 (100)	2,073 (100)	2,844 (100)	3,446 (100)	4,207 (100)	4,856 (100)	2.5	2.4	2.0	1.4	1.9
Asia	116 (6.9)	232 (11.2)	507 (17.8)	738 (21.4)	1,094 (26.0)	1,434 (29.5)	6.9	4.8	4.0	2.7	3.8
China	13 (0.8)	21 (1.0)	121 (4.2)	264 (7.7)	460 (10.9)	622 (12.8)	10.7	10.3	5.7	3.1	6.0
India	11 (0.6)	23 (1.1)	49 (1.7)	78 (2.3)	133 (3.2)	220 (4.5)	7.2	6.1	5.4	5.2	5.5
Japan	44 (2.6)	66 (3.2)	105 (3.7)	93 (2.7)	105 (2.5)	106 (2.2)	4.0	-1.6	1.2	0.1	0.0
Korea	3 (0.2)	17 (0.8)	45 (1.6)	48 (1.4)	53 (1.3)	51 (1.1)	13.6	0.8	1.0	-0.2	0.5
Chinese Taipei	1 (0.1)	6 (0.3)	13 (0.5)	20 (0.6)	26 (0.6)	30 (0.6)	10.8	5.0	2.8	1.4	2.9
ASEAN	30 (1.8)	74 (3.6)	126 (4.4)	168 (4.9)	225 (5.3)	283 (5.8)	6.7	3.7	3.0	2.3	3.0
Indonesia	16 (0.9)	27 (1.3)	35 (1.2)	49 (1.4)	67 (1.6)	90 (1.9)	3.7	4.2	3.3	3.0	3.4
Malaysia	7 (0.4)	25 (1.2)	32 (1.1)	47 (1.4)	59 (1.4)	70 (1.4)	7.4	4.6	2.4	1.7	2.8
Myanmar	1 (0.0)	1 (0.1)	1 (0.0)	3 (0.1)	6 (0.1)	9 (0.2)	2.2	12.4	6.2	4.3	7.2
Philippines	- (-)	0 (0.0)	3 (0.1)	5 (0.1)	8 (0.2)	12 (0.2)	-	5.6	4.9	3.9	4.7
Singapore	- (-)	1 (0.1)	7 (0.3)	7 (0.2)	8 (0.2)	8 (0.2)	-	-0.3	0.9	-0.2	0.2
Thailand	5 (0.3)	17 (0.8)	35 (1.2)	42 (1.2)	55 (1.3)	69 (1.4)	9.3	2.2	2.8	2.2	2.4
Viet Nam	0 (0.0)	1 (0.1)	8 (0.3)	11 (0.3)	18 (0.4)	23 (0.5)	43.9	4.4	4.6	2.5	3.8
Asia excl. Japan	72 (4.3)	167 (8.0)	401 (14.1)	645 (18.7)	989 (23.5)	1,329 (27.4)	8.2	6.1	4.4	3.0	4.4
North America	493 (29.6)	622 (30.0)	679 (23.9)	777 (22.5)	838 (19.9)	849 (17.5)	1.5	1.7	0.8	0.1	0.8
United States	438 (26.3)	548 (26.4)	596 (20.9)	682 (19.8)	736 (17.5)	741 (15.3)	1.4	1.7	0.8	0.1	0.8
Latin America	76 (4.6)	117 (5.7)	197 (6.9)	265 (7.7)	361 (8.6)	444 (9.2)	4.4	3.8	3.2	2.1	2.9
OECD Europe	260 (15.6)	393 (19.0)	417 (14.7)	469 (13.6)	509 (12.1)	520 (10.7)	2.2	1.5	0.8	0.2	0.8
European Union	297 (17.8)	396 (19.1)	392 (13.8)	441 (12.8)	479 (11.4)	491 (10.1)	1.3	1.5	0.8	0.2	0.8
Non-OECD Europe	603 (36.1)	488 (23.6)	570 (20.0)	594 (17.2)	641 (15.2)	681 (14.0)	-0.3	0.5	0.8	0.6	0.6
Africa	30 (1.8)	47 (2.3)	100 (3.5)	144 (4.2)	208 (5.0)	281 (5.8)	5.7	4.7	3.8	3.0	3.8
Middle East	72 (4.3)	148 (7.2)	340 (12.0)	413 (12.0)	493 (11.7)	568 (11.7)	7.3	2.5	1.8	1.4	1.8
Oceania	19 (1.1)	24 (1.2)	34 (1.2)	37 (1.1)	40 (0.9)	42 (0.9)	2.7	1.3	0.7	0.5	0.8
OECD	843 (50.5)	1,156 (55.8)	1,343 (47.2)	1,504 (43.6)	1,645 (39.1)	1,689 (34.8)	2.1	1.4	0.9	0.3	0.8
Non-OECD	824 (49.5)	917 (44.2)	1,501 (52.8)	1,932 (56.1)	2,539 (60.3)	3,130 (64.5)	2.8	3.2	2.8	2.1	2.7

Source: International Energy Agency "World Energy Balances" (historical)

Note: Figures in parentheses are global shares (%). World includes international bunkers.

Table 10 Final energy consumption [Reference Scenario]

							(Mtoe)				
							CAGR (%)				
	1990	2000	2012	2020	2030	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040
World	6,288 (100)	7,088 (100)	8,979 (100)	10,313 (100)	11,869 (100)	13,254 (100)	1.6	1.7	1.4	1.1	1.4
Asia	1,579 (25.1)	2,042 (28.8)	3,323 (37.0)	4,052 (39.3)	4,877 (41.1)	5,681 (42.9)	3.4	2.5	1.9	1.5	1.9
China	664 (10.6)	816 (11.5)	1,702 (19.0)	2,099 (20.4)	2,464 (20.8)	2,745 (20.7)	4.4	2.7	1.6	1.1	1.7
India	250 (4.0)	318 (4.5)	512 (5.7)	660 (6.4)	874 (7.4)	1,161 (8.8)	3.3	3.2	2.8	2.9	3.0
Japan	298 (4.7)	341 (4.8)	309 (3.4)	302 (2.9)	291 (2.5)	277 (2.1)	0.2	-0.3	-0.4	-0.5	-0.4
Korea	65 (1.0)	127 (1.8)	166 (1.9)	180 (1.7)	193 (1.6)	195 (1.5)	4.4	1.0	0.7	0.1	0.6
Chinese Taipei	29 (0.5)	49 (0.7)	65 (0.7)	73 (0.7)	78 (0.7)	79 (0.6)	3.7	1.5	0.6	0.1	0.7
ASEAN	173 (2.8)	271 (3.8)	412 (4.6)	526 (5.1)	697 (5.9)	877 (6.6)	4.0	3.1	2.8	2.3	2.7
Indonesia	80 (1.3)	121 (1.7)	160 (1.8)	208 (2.0)	278 (2.3)	359 (2.7)	3.2	3.4	2.9	2.6	2.9
Malaysia	14 (0.2)	30 (0.4)	49 (0.6)	62 (0.6)	79 (0.7)	95 (0.7)	5.9	2.9	2.4	1.9	2.4
Myanmar	9 (0.1)	11 (0.2)	14 (0.2)	17 (0.2)	21 (0.2)	27 (0.2)	2.0	1.8	2.2	2.5	2.2
Philippines	20 (0.3)	24 (0.3)	24 (0.3)	30 (0.3)	40 (0.3)	52 (0.4)	0.9	2.9	2.9	2.6	2.8
Singapore	5 (0.1)	8 (0.1)	16 (0.2)	20 (0.2)	26 (0.2)	29 (0.2)	5.4	3.0	2.4	1.3	2.2
Thailand	29 (0.5)	51 (0.7)	92 (1.0)	113 (1.1)	140 (1.2)	168 (1.3)	5.4	2.5	2.2	1.8	2.2
Viet Nam	16 (0.3)	25 (0.4)	54 (0.6)	74 (0.7)	111 (0.9)	145 (1.1)	5.7	4.0	4.2	2.7	3.6
Asia excl. Japan	1,281 (20.4)	1,701 (24.0)	3,014 (33.6)	3,750 (36.4)	4,586 (38.6)	5,405 (40.8)	4.0	2.8	2.0	1.7	2.1
North America	1,452 (23.1)	1,736 (24.5)	1,641 (18.3)	1,716 (16.6)	1,766 (14.9)	1,766 (13.3)	0.6	0.6	0.3	0.0	0.3
United States	1,294 (20.6)	1,546 (21.8)	1,433 (16.0)	1,497 (14.5)	1,530 (12.9)	1,516 (11.4)	0.5	0.5	0.2	-0.1	0.2
Latin America	346 (5.5)	452 (6.4)	607 (6.8)	730 (7.1)	912 (7.7)	1,061 (8.0)	2.6	2.3	2.2	1.5	2.0
OECD Europe	1,122 (17.8)	1,226 (17.3)	1,218 (13.6)	1,283 (12.4)	1,320 (11.1)	1,331 (10.0)	0.4	0.6	0.3	0.1	0.3
European Union	1,129 (18.0)	1,175 (16.6)	1,139 (12.7)	1,203 (11.7)	1,242 (10.5)	1,257 (9.5)	0.0	0.7	0.3	0.1	0.4
Non-OECD Europe	1,073 (17.1)	654 (9.2)	742 (8.3)	796 (7.7)	903 (7.6)	996 (7.5)	-1.7	0.9	1.3	1.0	1.1
Africa	292 (4.6)	371 (5.2)	539 (6.0)	655 (6.4)	785 (6.6)	919 (6.9)	2.8	2.5	1.8	1.6	1.9
Middle East	157 (2.5)	254 (3.6)	468 (5.2)	561 (5.4)	692 (5.8)	807 (6.1)	5.1	2.3	2.1	1.6	2.0
Oceania	66 (1.1)	83 (1.2)	92 (1.0)	101 (1.0)	109 (0.9)	116 (0.9)	1.5	1.1	0.8	0.6	0.8
OECD	3,099 (49.3)	3,631 (51.2)	3,568 (39.7)	3,747 (36.3)	3,873 (32.6)	3,903 (29.4)	0.6	0.6	0.3	0.1	0.3
Non-OECD	2,988 (47.5)	3,185 (44.9)	5,061 (56.4)	6,148 (59.6)	7,492 (63.1)	8,775 (66.2)	2.4	2.5	2.0	1.6	2.0

Source: International Energy Agency "World Energy Balances" (historical)

Note: Figures in parentheses are global shares (%). World includes international bunkers.

Table 11 Final energy consumption, industry [Reference Scenario]

							(Mtoe)				
							CAGR (%)				
	1990	2000	2012	2020	2030	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040
World	1,805 (100)	1,889 (100)	2,541 (100)	2,929 (100)	3,364 (100)	3,782 (100)	1.6	1.8	1.4	1.2	1.4
Asia	520 (28.8)	672 (35.6)	1,284 (50.5)	1,527 (52.1)	1,758 (52.3)	1,996 (52.8)	4.2	2.2	1.4	1.3	1.6
China	244 (13.5)	329 (17.4)	810 (31.9)	923 (31.5)	980 (29.1)	1,022 (27.0)	5.6	1.6	0.6	0.4	0.8
India	69 (3.8)	83 (4.4)	168 (6.6)	226 (7.7)	309 (9.2)	421 (11.1)	4.1	3.8	3.2	3.2	3.3
Japan	101 (5.6)	96 (5.1)	82 (3.2)	84 (2.9)	83 (2.5)	81 (2.2)	-0.9	0.4	-0.2	-0.2	0.0
Korea	19 (1.1)	38 (2.0)	47 (1.9)	53 (1.8)	58 (1.7)	58 (1.5)	4.2	1.4	0.8	0.1	0.7
Chinese Taipei	12 (0.7)	19 (1.0)	22 (0.9)	25 (0.9)	26 (0.8)	26 (0.7)	2.8	1.3	0.3	0.0	0.5
ASEAN	43 (2.4)	76 (4.0)	115 (4.5)	160 (5.5)	227 (6.8)	292 (7.7)	4.6	4.2	3.6	2.5	3.4
Indonesia	18 (1.0)	31 (1.6)	37 (1.5)	57 (1.9)	80 (2.4)	107 (2.8)	3.3	5.4	3.5	2.9	3.8
Malaysia	6 (0.3)	12 (0.6)	14 (0.6)	20 (0.7)	26 (0.8)	32 (0.8)	4.4	4.1	2.8	2.1	2.9
Myanmar	0 (0.0)	1 (0.1)	2 (0.1)	2 (0.1)	4 (0.1)	6 (0.2)	7.1	4.3	4.3	4.2	4.3
Philippines	5 (0.3)	5 (0.3)	6 (0.3)	8 (0.3)	11 (0.3)	15 (0.4)	1.4	3.3	3.2	2.9	3.1
Singapore	1 (0.0)	2 (0.1)	5 (0.2)	7 (0.2)	8 (0.3)	10 (0.3)	10.2	3.3	2.4	1.3	2.3
Thailand	9 (0.5)	17 (0.9)	29 (1.1)	36 (1.2)	48 (1.4)	62 (1.6)	5.7	2.7	3.0	2.5	2.7
Viet Nam	5 (0.3)	8 (0.4)	20 (0.8)	30 (1.0)	49 (1.5)	61 (1.6)	7.1	4.8	5.2	2.2	4.0
Asia excl. Japan	420 (23.2)	575 (30.5)	1,202 (47.3)	1,442 (49.2)	1,675 (49.8)	1,914 (50.6)	4.9	2.3	1.5	1.3	1.7
North America	331 (18.3)	387 (20.5)	307 (12.1)	322 (11.0)	325 (9.7)	319 (8.4)	-0.3	0.6	0.1	-0.2	0.1
United States	284 (15.7)	332 (17.6)	248 (9.8)	257 (8.8)	257 (7.6)	247 (6.5)	-0.6	0.4	0.0	-0.4	0.0
Latin America	116 (6.4)	150 (7.9)	196 (7.7)	242 (8.3)	317 (9.4)	388 (10.3)	2.4	2.6	2.7	2.0	2.5
OECD Europe	322 (17.9)	324 (17.2)	288 (11.3)	305 (10.4)	312 (9.3)	316 (8.4)	-0.5	0.7	0.2	0.1	0.3
European Union	343 (19.0)	309 (16.3)	264 (10.4)	279 (9.5)	288 (8.6)	294 (7.8)	-1.2	0.7	0.3	0.2	0.4
Non-OECD Europe	396 (22.0)	206 (10.9)	228 (9.0)	240 (8.2)	285 (8.5)	327 (8.7)	-2.5	0.7	1.7	1.4	1.3
Africa	55 (3.0)	58 (3.1)	82 (3.2)	110 (3.8)	140 (4.2)	170 (4.5)	1.9	3.7	2.4	2.0	2.6
Middle East	42 (2.3)	64 (3.4)	127 (5.0)	154 (5.2)	195 (5.8)	233 (6.2)	5.2	2.4	2.4	1.8	2.2
Oceania	23 (1.3)	28 (1.5)	28 (1.1)	30 (1.0)	32 (0.9)	33 (0.9)	0.9	1.1	0.5	0.4	0.7
OECD	826 (45.8)	909 (48.1)	791 (31.1)	841 (28.7)	867 (25.8)	876 (23.2)	-0.2	0.8	0.3	0.1	0.4
Non-OECD	979 (54.2)	980 (51.9)	1,749 (68.9)	2,089 (71.3)	2,497 (74.2)	2,906 (76.8)	2.7	2.2	1.8	1.5	1.8

Source: International Energy Agency "World Energy Balances" (historical)

Note: Figures in parentheses are global shares (%).

Table 12 Final energy consumption, transport [Reference Scenario]

							(Mtoe)				
							CAGR (%)				
	1990	2000	2012	2020	2030	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040
World	1,575 (100)	1,964 (100)	2,507 (100)	2,879 (100)	3,316 (100)	3,674 (100)	2.1	1.7	1.4	1.0	1.4
Asia	191 (12.1)	326 (16.6)	559 (22.3)	738 (25.6)	956 (28.8)	1,176 (32.0)	5.0	3.5	2.6	2.1	2.7
China	34 (2.2)	88 (4.5)	238 (9.5)	355 (12.3)	470 (14.2)	566 (15.4)	9.3	5.1	2.8	1.9	3.1
India	21 (1.3)	32 (1.6)	74 (2.9)	101 (3.5)	149 (4.5)	209 (5.7)	5.9	4.0	4.0	3.5	3.8
Japan	72 (4.6)	88 (4.5)	75 (3.0)	68 (2.4)	60 (1.8)	53 (1.5)	0.2	-1.1	-1.2	-1.2	-1.2
Korea	15 (0.9)	26 (1.3)	30 (1.2)	29 (1.0)	29 (0.9)	28 (0.8)	3.4	-0.4	-0.2	-0.2	-0.2
Chinese Taipei	7 (0.4)	12 (0.6)	12 (0.5)	14 (0.5)	15 (0.5)	15 (0.4)	2.8	2.0	0.7	-0.2	0.7
ASEAN	32 (2.1)	62 (3.1)	104 (4.2)	136 (4.7)	185 (5.6)	240 (6.5)	5.5	3.4	3.1	2.7	3.0
Indonesia	11 (0.7)	22 (1.1)	44 (1.8)	60 (2.1)	87 (2.6)	119 (3.2)	6.6	3.9	3.9	3.2	3.6
Malaysia	5 (0.3)	10 (0.5)	15 (0.6)	17 (0.6)	20 (0.6)	22 (0.6)	5.2	1.8	1.5	1.0	1.4
Myanmar	0 (0.0)	1 (0.1)	1 (0.0)	2 (0.1)	3 (0.1)	6 (0.2)	4.0	6.3	6.2	6.1	6.2
Philippines	5 (0.3)	8 (0.4)	8 (0.3)	10 (0.4)	14 (0.4)	18 (0.5)	2.8	2.9	2.9	2.5	2.8
Singapore	1 (0.1)	2 (0.1)	3 (0.1)	3 (0.1)	3 (0.1)	3 (0.1)	2.9	2.4	1.0	0.2	1.1
Thailand	9 (0.6)	15 (0.7)	22 (0.9)	27 (0.9)	32 (1.0)	35 (1.0)	4.1	2.8	1.6	1.0	1.7
Viet Nam	1 (0.1)	3 (0.2)	11 (0.5)	16 (0.6)	25 (0.8)	37 (1.0)	10.0	4.7	4.3	4.0	4.3
Asia excl. Japan	119 (7.5)	238 (12.1)	485 (19.3)	670 (23.3)	896 (27.0)	1,123 (30.6)	6.6	4.1	2.9	2.3	3.0
North America	531 (33.7)	640 (32.6)	658 (26.3)	659 (22.9)	654 (19.7)	632 (17.2)	1.0	0.0	-0.1	-0.3	-0.1
United States	488 (31.0)	588 (30.0)	597 (23.8)	595 (20.7)	587 (17.7)	562 (15.3)	0.9	0.0	-0.1	-0.4	-0.2
Latin America	103 (6.5)	141 (7.2)	216 (8.6)	265 (9.2)	332 (10.0)	377 (10.3)	3.4	2.6	2.3	1.3	2.0
OECD Europe	266 (16.9)	316 (16.1)	322 (12.8)	330 (11.5)	325 (9.8)	307 (8.3)	0.9	0.3	-0.2	-0.6	-0.2
European Union	259 (16.4)	304 (15.5)	307 (12.2)	317 (11.0)	313 (9.4)	297 (8.1)	0.8	0.4	-0.1	-0.5	-0.1
Non-OECD Europe	172 (10.9)	110 (5.6)	144 (5.7)	169 (5.9)	185 (5.6)	195 (5.3)	-0.8	2.0	0.9	0.5	1.1
Africa	38 (2.4)	54 (2.8)	92 (3.7)	112 (3.9)	132 (4.0)	151 (4.1)	4.1	2.5	1.6	1.3	1.8
Middle East	50 (3.2)	74 (3.8)	131 (5.2)	150 (5.2)	188 (5.7)	217 (5.9)	4.5	1.7	2.3	1.5	1.8
Oceania	24 (1.5)	30 (1.5)	36 (1.4)	37 (1.3)	40 (1.2)	43 (1.2)	1.8	0.5	0.8	0.6	0.6
OECD	938 (59.6)	1,142 (58.2)	1,180 (47.1)	1,196 (41.6)	1,192 (36.0)	1,156 (31.5)	1.0	0.2	0.0	-0.3	-0.1
Non-OECD	436 (27.7)	549 (28.0)	977 (39.0)	1,265 (43.9)	1,619 (48.8)	1,942 (52.9)	3.7	3.3	2.5	1.8	2.5

Source: International Energy Agency "World Energy Balances" (historical)

Note: Figures in parentheses are global shares (%). World includes international bunkers.

Table 13 Final energy consumption, buildings, etc. [Reference Scenario]

							(Mtoe)				
							CAGR (%)				
	1990	2000	2012	2020	2030	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040
World	2,425 (100)	2,610 (100)	3,123 (100)	3,563 (100)	4,092 (100)	4,556 (100)	1.2	1.7	1.4	1.1	1.4
Asia	752 (31.0)	855 (32.8)	1,151 (36.9)	1,391 (39.0)	1,690 (41.3)	1,962 (43.1)	2.0	2.4	2.0	1.5	1.9
China	344 (14.2)	337 (12.9)	518 (16.6)	649 (18.2)	807 (19.7)	915 (20.1)	1.9	2.9	2.2	1.3	2.1
India	146 (6.0)	176 (6.8)	234 (7.5)	286 (8.0)	349 (8.5)	438 (9.6)	2.2	2.5	2.0	2.3	2.3
Japan	91 (3.7)	116 (4.4)	115 (3.7)	115 (3.2)	114 (2.8)	110 (2.4)	1.1	0.0	0.0	-0.4	-0.1
Korea	24 (1.0)	37 (1.4)	45 (1.5)	46 (1.3)	51 (1.2)	51 (1.1)	2.9	0.2	1.0	0.0	0.4
Chinese Taipei	7 (0.3)	10 (0.4)	12 (0.4)	13 (0.4)	13 (0.3)	13 (0.3)	2.6	1.1	0.5	0.0	0.5
ASEAN	87 (3.6)	113 (4.3)	141 (4.5)	168 (4.7)	209 (5.1)	256 (5.6)	2.2	2.2	2.2	2.0	2.1
Indonesia	44 (1.8)	59 (2.3)	67 (2.1)	78 (2.2)	95 (2.3)	115 (2.5)	2.0	2.0	1.9	1.9	2.0
Malaysia	3 (0.1)	5 (0.2)	10 (0.3)	14 (0.4)	19 (0.5)	24 (0.5)	5.8	4.1	3.3	2.6	3.3
Myanmar	8 (0.3)	9 (0.3)	11 (0.4)	12 (0.3)	14 (0.3)	15 (0.3)	1.4	0.9	1.0	1.0	1.0
Philippines	10 (0.4)	10 (0.4)	9 (0.3)	11 (0.3)	14 (0.4)	19 (0.4)	-0.5	2.5	2.6	2.6	2.6
Singapore	1 (0.0)	2 (0.1)	2 (0.1)	3 (0.1)	3 (0.1)	4 (0.1)	3.3	1.7	2.7	1.9	2.1
Thailand	11 (0.4)	14 (0.5)	22 (0.7)	26 (0.7)	33 (0.8)	39 (0.9)	3.3	2.0	2.4	1.8	2.1
Viet Nam	10 (0.4)	14 (0.5)	20 (0.6)	24 (0.7)	31 (0.8)	40 (0.9)	3.0	2.6	2.6	2.5	2.6
Asia excl. Japan	661 (27.2)	739 (28.3)	1,036 (33.2)	1,277 (35.8)	1,576 (38.5)	1,852 (40.6)	2.1	2.6	2.1	1.6	2.1
North America	457 (18.8)	535 (20.5)	545 (17.4)	591 (16.6)	622 (15.2)	633 (13.9)	0.8	1.0	0.5	0.2	0.5
United States	403 (16.6)	473 (18.1)	483 (15.5)	528 (14.8)	554 (13.5)	562 (12.3)	0.8	1.1	0.5	0.1	0.5
Latin America	101 (4.2)	121 (4.6)	151 (4.8)	173 (4.8)	204 (5.0)	230 (5.0)	1.8	1.7	1.7	1.2	1.5
OECD Europe	434 (17.9)	473 (18.1)	504 (16.1)	532 (14.9)	561 (13.7)	581 (12.7)	0.7	0.7	0.5	0.3	0.5
European Union	429 (17.7)	453 (17.4)	470 (15.1)	497 (13.9)	526 (12.9)	546 (12.0)	0.4	0.7	0.6	0.4	0.5
Non-OECD Europe	439 (18.1)	289 (11.1)	284 (9.1)	294 (8.3)	317 (7.7)	335 (7.4)	-2.0	0.4	0.7	0.6	0.6
Africa	188 (7.8)	243 (9.3)	344 (11.0)	407 (11.4)	486 (11.9)	566 (12.4)	2.8	2.1	1.8	1.5	1.8
Middle East	40 (1.7)	76 (2.9)	121 (3.9)	149 (4.2)	183 (4.5)	219 (4.8)	5.1	2.7	2.1	1.8	2.1
Oceania	15 (0.6)	19 (0.7)	23 (0.7)	26 (0.7)	29 (0.7)	31 (0.7)	2.0	1.5	1.1	0.7	1.1
OECD	1,045 (43.1)	1,210 (46.3)	1,266 (40.5)	1,349 (37.9)	1,423 (34.8)	1,459 (32.0)	0.9	0.8	0.5	0.3	0.5
Non-OECD	1,380 (56.9)	1,400 (53.7)	1,857 (59.5)	2,214 (62.1)	2,669 (65.2)	3,097 (68.0)	1.4	2.2	1.9	1.5	1.8

Source: International Energy Agency "World Energy Balances" (historical)

Note: Figures in parentheses are global shares (%).

Table 14 Final energy consumption, electricity [Reference Scenario]

							(TWh)				
							CAGR (%)				
	1990	2000	2012	2020	2030	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040
World	9,695 (100)	12,689 (100)	18,912 (100)	23,213 (100)	28,880 (100)	34,210 (100)	3.1	2.6	2.2	1.7	2.1
Asia	1,812 (18.7)	3,229 (25.4)	7,525 (39.8)	10,143 (43.7)	13,575 (47.0)	17,017 (49.7)	6.7	3.8	3.0	2.3	3.0
China	454 (4.7)	1,037 (8.2)	4,128 (21.8)	5,704 (24.6)	7,456 (25.8)	8,835 (25.8)	10.6	4.1	2.7	1.7	2.8
India	215 (2.2)	376 (3.0)	869 (4.6)	1,324 (5.7)	2,183 (7.6)	3,480 (10.2)	6.6	5.4	5.1	4.8	5.1
Japan	750 (7.7)	944 (7.4)	923 (4.9)	991 (4.3)	1,052 (3.6)	1,075 (3.1)	0.9	0.9	0.6	0.2	0.5
Korea	94 (1.0)	263 (2.1)	481 (2.5)	591 (2.5)	717 (2.5)	769 (2.2)	7.7	2.6	1.9	0.7	1.7
Chinese Taipei	77 (0.8)	160 (1.3)	223 (1.2)	249 (1.1)	268 (0.9)	275 (0.8)	5.0	1.4	0.7	0.3	0.8
ASEAN	130 (1.3)	320 (2.5)	682 (3.6)	1,007 (4.3)	1,541 (5.3)	2,146 (6.3)	7.8	5.0	4.3	3.4	4.2
Indonesia	28 (0.3)	79 (0.6)	175 (0.9)	290 (1.2)	472 (1.6)	727 (2.1)	8.6	6.5	5.0	4.4	5.2
Malaysia	20 (0.2)	61 (0.5)	121 (0.6)	180 (0.8)	258 (0.9)	338 (1.0)	8.5	5.1	3.6	2.7	3.7
Myanmar	2 (0.0)	3 (0.0)	8 (0.0)	15 (0.1)	30 (0.1)	52 (0.2)	7.3	7.9	7.0	5.8	6.8
Philippines	21 (0.2)	37 (0.3)	59 (0.3)	85 (0.4)	125 (0.4)	177 (0.5)	4.8	4.6	4.0	3.5	4.0
Singapore	13 (0.1)	27 (0.2)	44 (0.2)	51 (0.2)	62 (0.2)	72 (0.2)	5.7	1.7	2.1	1.5	1.8
Thailand	38 (0.4)	88 (0.7)	162 (0.9)	214 (0.9)	305 (1.1)	391 (1.1)	6.8	3.5	3.6	2.5	3.2
Viet Nam	6 (0.1)	22 (0.2)	110 (0.6)	168 (0.7)	283 (1.0)	381 (1.1)	14.0	5.5	5.4	3.0	4.6
Asia excl. Japan	1,063 (11.0)	2,285 (18.0)	6,602 (34.9)	9,152 (39.4)	12,523 (43.4)	15,942 (46.6)	8.7	4.2	3.2	2.4	3.2
North America	3,052 (31.5)	3,981 (31.4)	4,229 (22.4)	4,665 (20.1)	5,128 (17.8)	5,338 (15.6)	1.5	1.2	1.0	0.4	0.8
United States	2,634 (27.2)	3,499 (27.6)	3,727 (19.7)	4,125 (17.8)	4,534 (15.7)	4,694 (13.7)	1.6	1.3	1.0	0.3	0.8
Latin America	517 (5.3)	810 (6.4)	1,217 (6.4)	1,539 (6.6)	2,049 (7.1)	2,502 (7.3)	4.0	3.0	2.9	2.0	2.6
OECD Europe	2,230 (23.0)	2,710 (21.4)	3,066 (16.2)	3,333 (14.4)	3,619 (12.5)	3,844 (11.2)	1.5	1.0	0.8	0.6	0.8
European Union	2,163 (22.3)	2,531 (19.9)	2,797 (14.8)	3,037 (13.1)	3,312 (11.5)	3,531 (10.3)	1.2	1.0	0.9	0.6	0.8
Non-OECD Europe	1,471 (15.2)	1,011 (8.0)	1,254 (6.6)	1,412 (6.1)	1,692 (5.9)	1,938 (5.7)	-0.7	1.5	1.8	1.4	1.6
Africa	257 (2.7)	361 (2.8)	587 (3.1)	800 (3.4)	1,133 (3.9)	1,527 (4.5)	3.8	3.9	3.5	3.0	3.5
Middle East	199 (2.0)	379 (3.0)	786 (4.2)	1,031 (4.4)	1,359 (4.7)	1,689 (4.9)	6.4	3.5	2.8	2.2	2.8
Oceania	157 (1.6)	207 (1.6)	248 (1.3)	289 (1.2)	324 (1.1)	356 (1.0)	2.1	1.9	1.1	0.9	1.3
OECD	6,399 (66.0)	8,304 (65.4)	9,239 (48.9)	10,240 (44.1)	11,343 (39.3)	12,024 (35.1)	1.7	1.3	1.0	0.6	0.9
Non-OECD	3,296 (34.0)	4,385 (34.6)	9,673 (51.1)	12,973 (55.9)	17,538 (60.7)	22,186 (64.9)	5.0	3.7	3.1	2.4	3.0

Source: International Energy Agency "World Energy Balances" (historical)

Note: Figures in parentheses are global shares (%).

Table 15 Electricity generation [Reference Scenario]

							(TWh)				
							CAGR (%)				
	1990	2000	2012	2020	2030	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040
World	11,825 (100)	15,426 (100)	22,668 (100)	27,547 (100)	34,044 (100)	40,217 (100)	3.0	2.5	2.1	1.7	2.1
Asia	2,215 (18.7)	3,974 (25.8)	8,921 (39.4)	11,841 (43.0)	15,707 (46.1)	19,630 (48.8)	6.5	3.6	2.9	2.3	2.9
China	621 (5.3)	1,356 (8.8)	4,985 (22.0)	6,761 (24.5)	8,749 (25.7)	10,294 (25.6)	9.9	3.9	2.6	1.6	2.6
India	293 (2.5)	570 (3.7)	1,128 (5.0)	1,662 (6.0)	2,675 (7.9)	4,230 (10.5)	6.3	5.0	4.9	4.7	4.8
Japan	836 (7.1)	1,049 (6.8)	1,026 (4.5)	1,090 (4.0)	1,151 (3.4)	1,171 (2.9)	0.9	0.8	0.5	0.2	0.5
Korea	105 (0.9)	289 (1.9)	531 (2.3)	648 (2.4)	785 (2.3)	842 (2.1)	7.6	2.5	1.9	0.7	1.7
Chinese Taipei	88 (0.7)	181 (1.2)	247 (1.1)	278 (1.0)	298 (0.9)	305 (0.8)	4.8	1.5	0.7	0.2	0.7
ASEAN	154 (1.3)	370 (2.4)	754 (3.3)	1,088 (3.9)	1,642 (4.8)	2,293 (5.7)	7.5	4.7	4.2	3.4	4.1
Indonesia	33 (0.3)	93 (0.6)	196 (0.9)	323 (1.2)	526 (1.5)	806 (2.0)	8.5	6.5	5.0	4.4	5.2
Malaysia	23 (0.2)	69 (0.4)	134 (0.6)	199 (0.7)	283 (0.8)	370 (0.9)	8.4	5.0	3.6	2.7	3.7
Myanmar	2 (0.0)	5 (0.0)	11 (0.0)	18 (0.1)	36 (0.1)	62 (0.2)	6.9	6.8	7.0	5.8	6.5
Philippines	26 (0.2)	45 (0.3)	73 (0.3)	103 (0.4)	151 (0.4)	210 (0.5)	4.7	4.5	3.9	3.3	3.8
Singapore	16 (0.1)	32 (0.2)	47 (0.2)	54 (0.2)	66 (0.2)	77 (0.2)	5.1	1.7	2.1	1.5	1.8
Thailand	44 (0.4)	96 (0.6)	167 (0.7)	210 (0.8)	294 (0.9)	390 (1.0)	6.2	2.9	3.4	2.8	3.1
Viet Nam	9 (0.1)	27 (0.2)	123 (0.5)	175 (0.6)	279 (0.8)	370 (0.9)	12.8	4.5	4.8	2.8	4.0
Asia excl. Japan	1,380 (11.7)	2,925 (19.0)	7,895 (34.8)	10,751 (39.0)	14,556 (42.8)	18,459 (45.9)	8.3	3.9	3.1	2.4	3.1
North America	3,685 (31.2)	4,631 (30.0)	4,905 (21.6)	5,341 (19.4)	5,848 (17.2)	6,080 (15.1)	1.3	1.1	0.9	0.4	0.8
United States	3,203 (27.1)	4,026 (26.1)	4,271 (18.8)	4,676 (17.0)	5,119 (15.0)	5,292 (13.2)	1.3	1.1	0.9	0.3	0.8
Latin America	623 (5.3)	1,003 (6.5)	1,516 (6.7)	1,890 (6.9)	2,494 (7.3)	3,036 (7.5)	4.1	2.8	2.8	2.0	2.5
OECD Europe	2,661 (22.5)	3,223 (20.9)	3,603 (15.9)	3,926 (14.3)	4,250 (12.5)	4,505 (11.2)	1.4	1.1	0.8	0.6	0.8
European Union	2,576 (21.8)	3,005 (19.5)	3,264 (14.4)	3,571 (13.0)	3,895 (11.4)	4,172 (10.4)	1.1	1.1	0.9	0.7	0.9
Non-OECD Europe	1,894 (16.0)	1,432 (9.3)	1,742 (7.7)	1,960 (7.1)	2,336 (6.9)	2,668 (6.6)	-0.4	1.5	1.8	1.3	1.5
Africa	316 (2.7)	442 (2.9)	720 (3.2)	975 (3.5)	1,374 (4.0)	1,844 (4.6)	3.8	3.9	3.5	3.0	3.4
Middle East	244 (2.1)	472 (3.1)	968 (4.3)	1,268 (4.6)	1,647 (4.8)	2,028 (5.0)	6.5	3.4	2.7	2.1	2.7
Oceania	187 (1.6)	249 (1.6)	293 (1.3)	345 (1.3)	387 (1.1)	425 (1.1)	2.1	2.1	1.2	0.9	1.3
OECD	7,608 (64.3)	9,685 (62.8)	10,722 (47.3)	11,810 (42.9)	13,051 (38.3)	13,834 (34.4)	1.6	1.2	1.0	0.6	0.9
Non-OECD	4,218 (35.7)	5,741 (37.2)	11,946 (52.7)	15,737 (57.1)	20,993 (61.7)	26,382 (65.6)	4.8	3.5	2.9	2.3	2.9

Source: International Energy Agency "World Energy Balances" (historical)

Note: Figures in parentheses are global shares (%).

Table 16 GDP per capita [Reference Scenario]

	(\$2010 thousand/person)										
							CAGR (%)				
	1990	2000	2012	2020	2030	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040
World	7.0	8.0	9.7	11.4	14.3	17.2	1.5	2.1	2.2	1.9	2.1
Asia	2.5	3.1	4.9	6.8	9.9	13.6	3.0	4.2	3.8	3.3	3.7
China	0.7	1.7	5.2	8.7	14.6	21.9	9.4	6.7	5.4	4.1	5.3
India	0.6	0.8	1.5	2.3	4.0	6.5	4.8	5.0	5.7	5.0	5.3
Japan	36.9	40.1	43.7	51.7	61.4	72.1	0.8	2.1	1.7	1.6	1.8
Korea	8.7	14.4	21.5	27.8	35.2	42.2	4.2	3.3	2.4	1.8	2.4
Chinese Taipei	8.2	13.8	20.4	28.1	35.3	41.7	4.2	4.1	2.3	1.7	2.6
ASEAN	1.6	2.3	3.5	4.9	7.1	9.7	3.5	4.2	3.8	3.2	3.7
Indonesia	1.6	2.0	3.2	4.7	7.0	9.9	3.3	4.7	4.1	3.6	4.1
Malaysia	4.4	6.7	9.4	12.3	17.1	21.9	3.6	3.4	3.3	2.5	3.1
Myanmar	0.2	0.3	0.9	1.4	2.4	3.6	8.1	6.0	5.3	4.3	5.1
Philippines	1.5	1.6	2.3	3.2	4.4	5.9	1.9	4.4	3.2	3.0	3.5
Singapore	22.0	33.2	46.5	55.2	68.1	75.4	3.5	2.2	2.1	1.0	1.7
Thailand	2.4	3.3	5.1	6.9	9.9	13.9	3.5	3.8	3.8	3.4	3.7
Viet Nam	0.4	0.8	1.5	2.2	3.8	6.0	5.5	5.0	5.9	4.5	5.2
Asia excl. Japan	1.0	1.7	3.6	5.4	8.4	12.1	5.9	5.3	4.6	3.7	4.5
North America	36.2	44.8	49.6	57.1	67.7	77.1	1.4	1.8	1.7	1.3	1.6
United States	36.3	45.1	49.9	57.7	68.6	78.2	1.5	1.8	1.7	1.3	1.6
Latin America	6.2	7.0	9.0	10.6	13.6	16.5	1.7	2.1	2.5	2.0	2.2
OECD Europe	24.4	29.4	32.5	36.0	41.5	46.7	1.3	1.3	1.4	1.2	1.3
European Union	23.9	29.1	32.7	36.4	42.4	48.1	1.4	1.3	1.5	1.3	1.4
Non-OECD Europe	6.3	4.4	7.7	9.4	13.1	16.9	0.9	2.4	3.4	2.6	2.8
Africa	1.3	1.3	1.7	2.0	2.5	3.1	1.2	2.2	2.2	2.0	2.1
Middle East	7.0	8.4	11.1	13.0	15.4	17.6	2.1	2.0	1.7	1.3	1.7
Oceania	35.1	43.0	51.8	59.1	67.7	74.9	1.8	1.7	1.4	1.0	1.3
OECD	26.9	32.3	35.9	41.0	48.2	55.2	1.3	1.7	1.6	1.4	1.6
Non-OECD	2.0	2.3	4.0	5.4	7.7	10.2	3.2	3.8	3.6	2.9	3.4

Source: World Bank "World Development Indicators", International Energy Agency "World Energy Balances", etc. (historical)

Table 17 Primary energy consumption per capita [Reference Scenario]

	(toe/person)										
	1990	2000	2012	2020	2030	2040	CAGR (%)				
							1990/2012	2012/2020	2020/2030	2030/2040	2012/2040
World	1.67	1.65	1.90	1.99	2.08	2.15	0.6	0.6	0.4	0.3	0.4
Asia	0.72	0.86	1.37	1.55	1.74	1.94	2.9	1.6	1.2	1.1	1.3
China	0.77	0.92	2.14	2.49	2.85	3.18	4.8	1.9	1.4	1.1	1.4
India	0.36	0.44	0.64	0.74	0.91	1.16	2.6	2.0	2.1	2.4	2.2
Japan	3.56	4.09	3.55	3.64	3.64	3.63	0.0	0.3	0.0	0.0	0.1
Korea	2.17	4.00	5.27	5.67	6.09	6.11	4.1	0.9	0.7	0.0	0.5
Chinese Taipei	2.34	3.81	4.52	4.92	5.11	5.26	3.0	1.1	0.4	0.3	0.5
ASEAN	0.55	0.76	0.98	1.21	1.46	1.71	2.7	2.7	1.9	1.6	2.0
Indonesia	0.55	0.74	0.87	1.15	1.37	1.63	2.1	3.6	1.8	1.7	2.3
Malaysia	1.22	2.11	2.78	3.23	3.64	4.02	3.8	1.9	1.2	1.0	1.3
Myanmar	0.25	0.27	0.29	0.33	0.40	0.51	0.6	1.6	2.1	2.4	2.1
Philippines	0.46	0.51	0.44	0.50	0.57	0.65	-0.2	1.5	1.3	1.4	1.4
Singapore	3.78	4.63	4.72	5.01	5.65	5.99	1.0	0.8	1.2	0.6	0.9
Thailand	0.74	1.16	1.89	2.38	2.96	3.61	4.4	2.9	2.2	2.0	2.3
Viet Nam	0.27	0.37	0.73	0.91	1.32	1.71	4.6	2.8	3.8	2.6	3.1
Asia excl. Japan	0.60	0.74	1.29	1.49	1.69	1.90	3.6	1.8	1.3	1.2	1.4
North America	7.66	8.07	6.86	6.69	6.35	5.94	-0.5	-0.3	-0.5	-0.7	-0.5
United States	7.67	8.06	6.82	6.64	6.26	5.81	-0.5	-0.3	-0.6	-0.7	-0.6
Latin America	1.06	1.15	1.38	1.55	1.80	1.99	1.2	1.4	1.5	1.0	1.3
OECD Europe	3.25	3.35	3.15	3.19	3.19	3.19	-0.1	0.2	0.0	0.0	0.0
European Union	3.44	3.47	3.25	3.32	3.34	3.36	-0.3	0.2	0.1	0.0	0.1
Non-OECD Europe	4.47	2.94	3.50	3.56	3.93	4.28	-1.1	0.2	1.0	0.9	0.7
Africa	0.62	0.62	0.68	0.68	0.66	0.64	0.4	0.1	-0.3	-0.4	-0.2
Middle East	1.69	2.25	3.18	3.29	3.46	3.58	2.9	0.4	0.5	0.3	0.4
Oceania	4.86	5.44	5.42	5.21	4.89	4.58	0.5	-0.5	-0.6	-0.6	-0.6
OECD	4.25	4.58	4.19	4.22	4.17	4.08	-0.1	0.1	-0.1	-0.2	-0.1
Non-OECD	0.97	0.92	1.35	1.47	1.60	1.72	1.5	1.1	0.9	0.7	0.9

Source: World Bank "World Development Indicators", International Energy Agency "World Energy Balances", etc. (historical)

Note: World includes international bunkers.

Table 18 Primary energy consumption per GDP [Reference Scenario]

	(toe/\$2010 million)										
							CAGR (%)				
	1990	2000	2012	2020	2030	2040	1990/2012	2012/2020	2020/2030	2030/2040	2012/2040
World	238	207	197	174	146	125	-0.9	-1.5	-1.7	-1.5	-1.6
Asia	286	275	280	228	177	143	-0.1	-2.5	-2.5	-2.1	-2.4
China	1,072	530	414	288	196	145	-4.2	-4.4	-3.8	-2.9	-3.7
India	660	553	415	327	231	179	-2.1	-2.9	-3.4	-2.5	-3.0
Japan	96	102	81	70	59	50	-0.8	-1.8	-1.7	-1.6	-1.7
Korea	248	279	245	204	173	145	-0.1	-2.3	-1.6	-1.8	-1.9
Chinese Taipei	285	276	221	175	145	126	-1.1	-2.9	-1.9	-1.4	-2.0
ASEAN	332	334	276	247	205	176	-0.8	-1.4	-1.8	-1.5	-1.6
Indonesia	350	365	266	246	197	164	-1.2	-1.0	-2.2	-1.8	-1.7
Malaysia	279	314	295	263	213	184	0.3	-1.5	-2.1	-1.5	-1.7
Myanmar	1,599	964	326	232	171	142	-7.0	-4.2	-3.0	-1.8	-2.9
Philippines	304	319	193	154	128	110	-2.0	-2.8	-1.8	-1.5	-2.0
Singapore	172	140	101	91	83	79	-2.4	-1.4	-0.9	-0.4	-0.9
Thailand	311	346	372	347	298	260	0.8	-0.9	-1.5	-1.4	-1.3
Viet Nam	606	470	500	420	345	285	-0.9	-2.2	-1.9	-1.9	-2.0
Asia excl. Japan	591	434	364	276	201	157	-2.2	-3.4	-3.1	-2.4	-3.0
North America	212	180	138	117	94	77	-1.9	-2.1	-2.2	-1.9	-2.1
United States	212	179	137	115	91	74	-2.0	-2.1	-2.3	-2.0	-2.2
Latin America	172	164	154	146	132	120	-0.5	-0.6	-1.0	-1.0	-0.9
OECD Europe	133	114	97	89	77	68	-1.4	-1.1	-1.4	-1.2	-1.2
European Union	144	119	99	91	79	70	-1.7	-1.1	-1.4	-1.2	-1.3
Non-OECD Europe	709	666	452	380	300	253	-2.0	-2.1	-2.3	-1.7	-2.0
Africa	478	462	397	337	264	208	-0.8	-2.0	-2.4	-2.4	-2.3
Middle East	242	269	288	253	225	204	0.8	-1.6	-1.2	-1.0	-1.2
Oceania	139	127	105	88	72	61	-1.3	-2.1	-2.0	-1.6	-1.9
OECD	158	142	117	103	87	74	-1.4	-1.6	-1.7	-1.6	-1.6
Non-OECD	485	394	336	271	208	168	-1.6	-2.6	-2.6	-2.1	-2.5

Source: World Bank "World Development Indicators", International Energy Agency "World Energy Balances", etc. (historical)

Note: World includes international bunkers.

Table 19 Energy-related carbon dioxide emissions [Reference Scenario]

							(Mt)				
							CAGR (%)				
	1990	2000	2012	2020	2030	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040
World	21,233 (100)	23,575 (100)	32,562 (100)	35,757 (100)	40,086 (100)	43,734 (100)	2.0	1.2	1.1	0.9	1.1
Asia	4,959 (23.4)	7,048 (29.9)	14,564 (44.7)	16,796 (47.0)	19,702 (49.1)	22,422 (51.3)	5.0	1.8	1.6	1.3	1.6
China	2,339 (11.0)	3,258 (13.8)	9,067 (27.8)	10,425 (29.2)	11,667 (29.1)	12,402 (28.4)	6.4	1.8	1.1	0.6	1.1
India	585 (2.8)	961 (4.1)	1,961 (6.0)	2,475 (6.9)	3,404 (8.5)	4,688 (10.7)	5.7	3.0	3.2	3.3	3.2
Japan	1,070 (5.0)	1,196 (5.1)	1,220 (3.7)	1,057 (3.0)	1,031 (2.6)	969 (2.2)	0.6	-1.8	-0.2	-0.6	-0.8
Korea	239 (1.1)	433 (1.8)	576 (1.8)	574 (1.6)	614 (1.5)	606 (1.4)	4.1	0.0	0.7	-0.1	0.2
Chinese Taipei	116 (0.5)	225 (1.0)	248 (0.8)	268 (0.8)	276 (0.7)	261 (0.6)	3.5	1.0	0.3	-0.5	0.2
ASEAN	362 (1.7)	709 (3.0)	1,139 (3.5)	1,536 (4.3)	2,112 (5.3)	2,747 (6.3)	5.4	3.8	3.2	2.7	3.2
Indonesia	134 (0.6)	262 (1.1)	405 (1.2)	570 (1.6)	822 (2.1)	1,130 (2.6)	5.2	4.4	3.7	3.2	3.7
Malaysia	54 (0.3)	120 (0.5)	198 (0.6)	269 (0.8)	333 (0.8)	387 (0.9)	6.1	3.9	2.2	1.5	2.4
Myanmar	4 (0.0)	10 (0.0)	11 (0.0)	17 (0.0)	29 (0.1)	47 (0.1)	4.5	5.9	5.6	4.7	5.4
Philippines	39 (0.2)	69 (0.3)	84 (0.3)	109 (0.3)	156 (0.4)	215 (0.5)	3.6	3.2	3.7	3.2	3.4
Singapore	29 (0.1)	48 (0.2)	51 (0.2)	57 (0.2)	66 (0.2)	72 (0.2)	2.6	1.2	1.6	0.9	1.2
Thailand	81 (0.4)	152 (0.6)	244 (0.7)	314 (0.9)	396 (1.0)	479 (1.1)	5.2	3.2	2.4	1.9	2.4
Viet Nam	17 (0.1)	43 (0.2)	139 (0.4)	193 (0.5)	301 (0.8)	409 (0.9)	10.0	4.2	4.5	3.1	3.9
Asia excl. Japan	3,889 (18.3)	5,852 (24.8)	13,344 (41.0)	15,739 (44.0)	18,671 (46.6)	21,453 (49.1)	5.8	2.1	1.7	1.4	1.7
North America	5,236 (24.7)	6,125 (26.0)	5,584 (17.1)	5,556 (15.5)	5,394 (13.5)	5,103 (11.7)	0.3	-0.1	-0.3	-0.6	-0.3
United States	4,820 (22.7)	5,617 (23.8)	5,139 (15.8)	5,092 (14.2)	4,927 (12.3)	4,619 (10.6)	0.3	-0.1	-0.3	-0.6	-0.4
Latin America	915 (4.3)	1,199 (5.1)	1,681 (5.2)	1,986 (5.6)	2,494 (6.2)	2,898 (6.6)	2.8	2.1	2.3	1.5	2.0
OECD Europe	3,952 (18.6)	3,892 (16.5)	3,628 (11.1)	3,579 (10.0)	3,594 (9.0)	3,466 (7.9)	-0.4	-0.2	0.0	-0.4	-0.2
European Union	4,068 (19.2)	3,786 (16.1)	3,408 (10.5)	3,374 (9.4)	3,398 (8.5)	3,285 (7.5)	-0.8	-0.1	0.1	-0.3	-0.1
Non-OECD Europe	4,123 (19.4)	2,462 (10.4)	2,859 (8.8)	2,840 (7.9)	2,949 (7.4)	3,021 (6.9)	-1.6	-0.1	0.4	0.2	0.2
Africa	593 (2.8)	719 (3.0)	1,086 (3.3)	1,337 (3.7)	1,648 (4.1)	1,975 (4.5)	2.8	2.6	2.1	1.8	2.2
Middle East	559 (2.6)	936 (4.0)	1,675 (5.1)	1,975 (5.5)	2,358 (5.9)	2,701 (6.2)	5.1	2.1	1.8	1.4	1.7
Oceania	281 (1.3)	357 (1.5)	410 (1.3)	411 (1.1)	415 (1.0)	407 (0.9)	1.7	0.0	0.1	-0.2	0.0
OECD	11,095 (52.3)	12,398 (52.6)	11,965 (36.7)	11,823 (33.1)	11,830 (29.5)	11,456 (26.2)	0.3	-0.1	0.0	-0.3	-0.2
Non-OECD	9,521 (44.8)	10,342 (43.9)	19,523 (60.0)	22,657 (63.4)	26,724 (66.7)	30,536 (69.8)	3.3	1.9	1.7	1.3	1.6

Source: Compiled from International Energy Agency "World Energy Balances" (historical)

Note: Figures in parentheses are global shares (%). Excludes emission reduction by CCS. World includes international bunkers.

Table 20 World [Reference Scenario]

Primary energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/	2012/	2020/	2030/	2012/
											2012	2020	2030	2040	2040
Total ^{*1}	7,211	8,780	10,079	13,371	15,259	17,413	19,276	100	100	100	1.9	1.7	1.3	1.0	1.3
Coal	1,788	2,231	2,358	3,879	4,112	4,433	4,705	25	29	24	2.5	0.7	0.8	0.6	0.7
Oil	3,101	3,231	3,658	4,205	4,608	5,165	5,639	37	31	29	1.2	1.2	1.1	0.9	1.1
Natural gas	1,234	1,667	2,073	2,844	3,446	4,207	4,856	19	21	25	2.5	2.4	2.0	1.4	1.9
Nuclear	186	526	676	642	850	996	1,154	6.0	4.8	6.0	0.9	3.6	1.6	1.5	2.1
Hydro	148	184	225	316	365	395	421	2.1	2.4	2.2	2.5	1.8	0.8	0.6	1.0
Geothermal	12	34	52	67	145	174	199	0.4	0.5	1.0	3.1	10.2	1.9	1.3	4.0
Solar, wind, etc.	0.1	2.4	7.9	75	128	191	259	0.0	0.6	1.3	17.0	6.8	4.1	3.1	4.5
Biomass and waste	741	905	1,029	1,343	1,606	1,850	2,042	10	10	11	1.8	2.3	1.4	1.0	1.5

Final energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/	2012/	2020/	2030/	2012/
											2012	2020	2030	2040	2040
Total	5,381	6,288	7,088	8,979	10,313	11,869	13,254	100	100	100	1.6	1.7	1.4	1.1	1.4
By sector															
Industry	1,775	1,805	1,889	2,541	2,929	3,364	3,782	29	28	29	1.6	1.8	1.4	1.2	1.4
Transport	1,247	1,575	1,964	2,507	2,879	3,316	3,674	25	28	28	2.1	1.7	1.4	1.0	1.4
Buildings, etc.	2,004	2,425	2,610	3,123	3,563	4,092	4,556	39	35	34	1.2	1.7	1.4	1.1	1.4
Non-energy use	354	482	626	809	942	1,098	1,242	7.7	9.0	9.4	2.4	1.9	1.5	1.2	1.5
By energy															
Coal	712	768	577	909	966	976	992	12	10	7.5	0.8	0.8	0.1	0.2	0.3
Oil	2,445	2,605	3,124	3,652	4,064	4,609	5,076	41	41	38	1.5	1.3	1.3	1.0	1.2
Natural gas	816	946	1,123	1,366	1,668	2,004	2,313	15	15	17	1.7	2.5	1.8	1.4	1.9
Electricity	586	834	1,091	1,626	1,996	2,484	2,942	13	18	22	3.1	2.6	2.2	1.7	2.1
Heat	121	335	247	287	304	332	351	5.3	3.2	2.7	-0.7	0.8	0.9	0.6	0.7
Renewables	701	800	926	1,138	1,314	1,465	1,579	13	13	12	1.6	1.8	1.1	0.8	1.2

Electricity generation

	(TWh)							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/	2012/	2020/	2030/	2012/
											2012	2020	2030	2040	2040
Total	8,283	11,825	15,426	22,668	27,547	34,044	40,217	100	100	100	3.0	2.5	2.1	1.7	2.1
Coal	3,142	4,425	6,002	9,168	10,266	12,359	14,315	37	40	36	3.4	1.4	1.9	1.5	1.6
Oil	1,654	1,310	1,203	1,128	1,067	1,126	1,173	11	5.0	2.9	-0.7	-0.7	0.5	0.4	0.1
Natural gas	999	1,760	2,753	5,100	6,691	9,168	11,447	15	22	28	5.0	3.5	3.2	2.2	2.9
Nuclear	713	2,013	2,591	2,461	3,259	3,827	4,451	17	11	11	0.9	3.6	1.6	1.5	2.1
Hydro	1,717	2,144	2,620	3,672	4,241	4,594	4,895	18	16	12	2.5	1.8	0.8	0.6	1.0
Geothermal	14	36	52	70	157	202	246	0.3	0.3	0.6	3.0	10.5	2.6	2.0	4.6
Solar, wind, etc.	0.5	5.2	35	628	1,163	1,792	2,482	0.0	2.8	6.2	24.4	8.0	4.4	3.3	5.0
Biomass and waste	44	132	170	439	702	975	1,206	1.1	1.9	3.0	5.6	6.0	3.3	2.2	3.7

Energy and economic indicators

								CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990/	2012/	2020/	2030/	2012/
								2012	2020	2030	2040	2040
GDP (\$2010 billion)	27,314	36,939	48,631	67,904	87,739	119,426	154,291	2.8	3.3	3.1	2.6	3.0
Population (million)	4,436	5,272	6,093	7,033	7,667	8,372	8,983	1.3	1.1	0.9	0.7	0.9
CO ₂ emissions ^{*2} (Mt)	18,432	21,233	23,575	32,562	35,757	40,086	43,734	2.0	1.2	1.1	0.9	1.1
GDP per capita (\$2010 thousand)	6.2	7.0	8.0	9.7	11	14	17	1.5	2.1	2.2	1.9	2.1
Primary energy consump. per capita (toe)	1.6	1.7	1.7	1.9	2.0	2.1	2.1	0.6	0.6	0.4	0.3	0.4
Primary energy consumption per GDP ^{*3}	264	238	207	197	174	146	125	-0.9	-1.5	-1.7	-1.5	-1.6
CO ₂ emissions per GDP ^{*2, *4}	675	575	485	480	408	336	283	-0.8	-2.0	-1.9	-1.7	-1.9
CO ₂ per primary energy consumption ^{*2, *5}	2.6	2.4	2.3	2.4	2.3	2.3	2.3	0.0	-0.5	-0.2	-0.1	-0.3
Automobile ownership (million)	416	577	767	1,150	1,424	1,758	2,089	3.2	2.7	2.1	1.7	2.2
Automobile ownership rates ^{*6}	94	109	126	163	186	210	233	1.8	1.6	1.2	1.0	1.3

*1 Trade of electricity and heat are not shown, *2 Excludes emission reduction by CCS, *3 toe/\$2010 million,

*4 t/\$2010 million, *5 t/toe, *6 Vehicles per 1,000 people

Table 21 Asia [Reference Scenario]

Primary energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/	2012/	2020/	2030/	2012/
											2012	2020	2030	2040	2040
Total ^{*1}	1,445	2,119	2,936	5,268	6,403	7,638	8,794	100	100	100	4.2	2.5	1.8	1.4	1.8
Coal	471	796	1,078	2,669	2,948	3,291	3,605	38	51	41	5.7	1.2	1.1	0.9	1.1
Oil	478	618	917	1,243	1,498	1,803	2,096	29	24	24	3.2	2.4	1.9	1.5	1.9
Natural gas	51	116	232	507	738	1,094	1,434	5.5	9.6	16	6.9	4.8	4.0	2.7	3.8
Nuclear	25	77	132	89	281	381	479	3.6	1.7	5.5	0.7	15.5	3.1	2.3	6.2
Hydro	20	32	41	107	142	157	170	1.5	2.0	1.9	5.7	3.6	1.0	0.8	1.7
Geothermal	2.6	8.2	23	32	76	86	87	0.4	0.6	1.0	6.3	11.5	1.2	0.2	3.7
Solar, wind, etc.	-	1.2	2.1	27	52	81	112	0.1	0.5	1.3	15.0	8.8	4.4	3.4	5.3
Biomass and waste	397	472	510	594	664	740	805	22	11	9.2	1.0	1.4	1.1	0.8	1.1

Final energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/	2012/	2020/	2030/	2012/
											2012	2020	2030	2040	2040
Total	1,142	1,579	2,042	3,323	4,052	4,877	5,681	100	100	100	3.4	2.5	1.9	1.5	1.9
By sector															
Industry	391	520	672	1,284	1,527	1,758	1,996	33	39	35	4.2	2.2	1.4	1.3	1.6
Transport	127	191	326	559	738	956	1,176	12	17	21	5.0	3.5	2.6	2.1	2.7
Buildings, etc.	570	752	855	1,151	1,391	1,690	1,962	48	35	35	2.0	2.4	2.0	1.5	1.9
Non-energy use	54	116	190	329	396	472	548	7.3	9.9	9.6	4.9	2.3	1.8	1.5	1.8
By energy															
Coal	310	438	407	735	792	794	801	28	22	14	2.4	0.9	0.0	0.1	0.3
Oil	327	464	741	1,073	1,333	1,636	1,922	29	32	34	3.9	2.8	2.1	1.6	2.1
Natural gas	21	47	89	232	352	516	686	3.0	7.0	12	7.5	5.4	3.9	2.9	4.0
Electricity	88	156	278	647	872	1,167	1,463	9.9	19	26	6.7	3.8	3.0	2.3	3.0
Heat	7.5	14	30	77	94	105	109	0.9	2.3	1.9	8.0	2.5	1.1	0.4	1.2
Renewables	388	459	498	559	608	658	700	29	17	12	0.9	1.1	0.8	0.6	0.8

Electricity generation

	(TWh)							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/	2012/	2020/	2030/	2012/
											2012	2020	2030	2040	2040
Total	1,196	2,215	3,974	8,921	11,841	15,707	19,630	100	100	100	6.5	3.6	2.9	2.3	2.9
Coal	302	863	1,991	5,529	6,598	8,627	10,627	39	62	54	8.8	2.2	2.7	2.1	2.4
Oil	472	421	385	352	258	228	233	19	3.9	1.2	-0.8	-3.8	-1.2	0.2	-1.5
Natural gas	90	247	567	1,167	1,623	2,571	3,554	11	13	18	7.3	4.2	4.7	3.3	4.1
Nuclear	97	294	505	342	1,079	1,472	1,866	13	3.8	9.5	0.7	15.5	3.2	2.4	6.3
Hydro	232	370	481	1,243	1,655	1,827	1,975	17	14	10	5.7	3.6	1.0	0.8	1.7
Geothermal	3.0	8.3	20	22	56	74	84	0.4	0.3	0.4	4.6	12.2	2.7	1.3	4.8
Solar, wind, etc.	-	0.0	3.0	150	382	631	941	0.0	1.7	4.8	45.7	12.4	5.1	4.1	6.8
Biomass and waste	0.0	11	22	116	190	276	349	0.5	1.3	1.8	11.1	6.4	3.8	2.4	4.0

Energy and economic indicators

								CAGR (%)							
	1980	1990	2000	2012	2020	2030	2040	1990/	2012/	2020/	2030/	2012/			
								2012	2020	2030	2040	2040			
GDP (\$2010 billion)	4,347	7,398	10,658	18,808	28,042	43,252	61,633	4.3	5.1	4.4	3.6	4.3			
Population (million)	2,442	2,931	3,401	3,854	4,129	4,382	4,531	1.3	0.9	0.6	0.3	0.6			
CO ₂ emissions ^{*2} (Mt)	3,289	4,959	7,048	14,564	16,796	19,702	22,422	5.0	1.8	1.6	1.3	1.6			
GDP per capita (\$2010 thousand)	1.8	2.5	3.1	4.9	6.8	9.9	14	3.0	4.2	3.8	3.3	3.7			
Primary energy consump. per capita (toe)	0.6	0.7	0.9	1.4	1.6	1.7	1.9	2.9	1.6	1.2	1.1	1.3			
Primary energy consumption per GDP ^{*3}	332	286	275	280	228	177	143	-0.1	-2.5	-2.5	-2.1	-2.4			
CO ₂ emissions per GDP ^{*2, *4}	757	670	661	774	599	456	364	0.7	-3.2	-2.7	-2.2	-2.7			
CO ₂ per primary energy consumption ^{*2, *5}	2.3	2.3	2.4	2.8	2.6	2.6	2.5	0.8	-0.7	-0.2	-0.1	-0.3			
Automobile ownership (million)	48	86	139	295	433	598	807	5.8	4.9	3.3	3.0	3.7			
Automobile ownership rates ^{*6}	19	29	41	76	105	137	178	4.5	4.0	2.7	2.7	3.1			

*1 Trade of electricity and heat are not shown, *2 Excludes emission reduction by CCS, *3 toe/\$2010 million,

*4 t/\$2010 million, *5 t/toe, *6 Vehicles per 1,000 people

Table 22 China [Reference Scenario]

Primary energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040
	Total ^{*1}	598	871	1,161	2,894	3,505	4,069	4,474	100	100	100	5.6	2.4	1.5	1.0
Coal	313	528	691	1,969	2,133	2,245	2,274	61	68	51	6.2	1.0	0.5	0.1	0.5
Oil	89	119	221	464	620	766	877	14	16	20	6.4	3.7	2.1	1.4	2.3
Natural gas	12	13	21	121	264	460	622	1.5	4.2	14	10.7	10.3	5.7	3.1	6.0
Nuclear	-	-	4.4	25	118	186	253	-	0.9	5.7	n.a.	21.2	4.6	3.1	8.6
Hydro	5.0	11	19	74	100	106	110	1.3	2.6	2.5	9.1	3.8	0.5	0.4	1.4
Geothermal	-	-	1.6	4.3	6.2	8.4	9.8	-	0.1	0.2	n.a.	4.8	3.1	1.5	3.0
Solar, wind, etc.	-	0.0	1.0	22	42	64	84	0.0	0.7	1.9	34.3	8.6	4.3	2.8	5.0
Biomass and waste	180	200	204	216	221	235	245	23	7.5	5.5	0.3	0.3	0.6	0.4	0.5

Final energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040
	Total	494	664	816	1,702	2,099	2,464	2,745	100	100	100	4.4	2.7	1.6	1.1
By sector															
Industry	188	244	329	810	923	980	1,022	37	48	37	5.6	1.6	0.6	0.4	0.8
Transport	24	34	88	238	355	470	566	5.1	14	21	9.3	5.1	2.8	1.9	3.1
Buildings, etc.	272	344	337	518	649	807	915	52	30	33	1.9	2.9	2.2	1.3	2.1
Non-energy use	10	43	62	136	172	208	242	6.5	8.0	8.8	5.4	2.9	1.9	1.5	2.1
By energy															
Coal	220	318	304	558	577	535	489	48	33	18	2.6	0.4	-0.7	-0.9	-0.5
Oil	59	85	180	422	569	706	810	13	25	30	7.6	3.8	2.2	1.4	2.4
Natural gas	6.4	8.9	12	81	159	262	361	1.3	4.7	13	10.6	8.8	5.1	3.3	5.5
Electricity	21	39	89	355	491	641	760	5.9	21	28	10.6	4.1	2.7	1.7	2.8
Heat	7.4	13	25	71	86	94	96	2.0	4.2	3.5	7.9	2.5	0.9	0.3	1.1
Renewables	180	200	205	216	217	225	229	30	13	8.3	0.3	0.1	0.4	0.2	0.2

Electricity generation

	(TWh)							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040
	Total	301	621	1,356	4,985	6,761	8,749	10,294	100	100	100	9.9	3.9	2.6	1.6
Coal	164	443	1,062	3,785	4,485	5,590	6,324	71	76	61	10.2	2.1	2.2	1.2	1.9
Oil	78	49	46	6.8	7.6	7.5	7.4	7.9	0.1	0.1	-8.6	1.5	-0.2	-0.2	0.3
Natural gas	0.7	2.8	5.8	86	300	639	925	0.4	1.7	9.0	16.9	16.9	7.9	3.8	8.9
Nuclear	-	-	17	97	454	713	973	-	2.0	9.4	n.a.	21.2	4.6	3.1	8.6
Hydro	58	127	222	863	1,167	1,228	1,280	20	17	12	9.1	3.8	0.5	0.4	1.4
Geothermal	-	-	-	0.2	0.3	0.3	0.3	-	0.0	0.0	n.a.	6.8	1.5	1.4	2.9
Solar, wind, etc.	-	0.0	0.6	102	271	450	630	0.0	2.1	6.1	58.6	12.9	5.2	3.4	6.7
Biomass and waste	-	-	2.4	45	77	120	155	-	0.9	1.5	n.a.	7.0	4.5	2.6	4.5

Energy and economic indicators

								CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040
	GDP (\$2010 billion)	334	812	2,190	6,988	12,175	20,797	30,784	10.3	7.2	5.5	4.0
Population (million)	981	1,135	1,263	1,351	1,405	1,425	1,408	0.8	0.5	0.1	-0.1	0.1
CO ₂ emissions ^{*2} (Mt)	1,506	2,339	3,258	9,067	10,425	11,667	12,402	6.4	1.8	1.1	0.6	1.1
GDP per capita (\$2010 thousand)	0.3	0.7	1.7	5.2	8.7	15	22	9.4	6.7	5.4	4.1	5.3
Primary energy consump. per capita (toe)	0.6	0.8	0.9	2.1	2.5	2.9	3.2	4.8	1.9	1.4	1.1	1.4
Primary energy consumption per GDP ^{*3}	1,790	1,072	530	414	288	196	145	-4.2	-4.4	-3.8	-2.9	-3.7
CO ₂ emissions per GDP ^{*2, *4}	4,507	2,879	1,488	1,298	856	561	403	-3.6	-5.1	-4.1	-3.3	-4.1
CO ₂ per primary energy consumption ^{*2, *5}	2.5	2.7	2.8	3.1	3.0	2.9	2.8	0.7	-0.6	-0.4	-0.3	-0.4
Automobile ownership (million)	1.2	5.3	16	109	205	293	374	14.7	8.2	3.6	2.5	4.5
Automobile ownership rates ^{*6}	1.2	4.7	12	81	146	205	266	13.8	7.6	3.5	2.6	4.3

*1 Trade of electricity and heat are not shown, *2 Excludes emission reduction by CCS, *3 toe/\$2010 million,

*4 t/\$2010 million, *5 t/toe, *6 Vehicles per 1,000 people

Table 23 India [Reference Scenario]

Primary energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/2012	2012/2020	2020/2030	2030/2040	2012/2040
	Total ^{*1}	205	316	456	788	1,007	1,351	1,814	100	100	100	4.2	3.1	3.0	3.0
Coal	49	103	161	354	425	568	776	33	45	43	5.8	2.3	2.9	3.2	2.8
Oil	33	61	112	177	242	338	445	19	22	25	5.0	4.0	3.4	2.8	3.3
Natural gas	1.3	11	23	49	78	133	220	3.3	6.2	12	7.2	6.1	5.4	5.2	5.5
Nuclear	0.8	1.6	4.4	8.6	29	52	79	0.5	1.1	4.3	7.9	16.5	5.9	4.3	8.2
Hydro	4.0	6.2	6.4	11	14	18	22	1.9	1.4	1.2	2.6	3.6	2.5	1.8	2.6
Geothermal	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Solar, wind, etc.	-	0.0	0.2	3.1	5.6	8.3	14	0.0	0.4	0.8	29.5	7.7	4.0	5.2	5.5
Biomass and waste	116	133	149	185	212	234	259	42	23	14	1.5	1.7	1.0	1.0	1.2

Final energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/2012	2012/2020	2020/2030	2030/2040	2012/2040
	Total	179	250	318	512	660	874	1,161	100	100	100	3.3	3.2	2.8	2.9
By sector															
Industry	43	69	83	168	226	309	421	28	33	36	4.1	3.8	3.2	3.2	3.3
Transport	17	21	32	74	101	149	209	8.4	14	18	5.9	4.0	4.0	3.5	3.8
Buildings, etc.	113	146	176	234	286	349	438	59	46	38	2.2	2.5	2.0	2.3	2.3
Non-energy use	5.7	13	27	36	47	67	92	5.3	7.0	7.9	4.6	3.6	3.6	3.2	3.5
By energy															
Coal	28	42	33	88	104	120	149	17	17	13	3.5	2.0	1.5	2.2	1.9
Oil	27	50	94	148	215	311	418	20	29	36	5.1	4.7	3.8	3.0	3.8
Natural gas	0.7	5.6	9.7	26	37	55	81	2.3	5.1	6.9	7.2	4.2	4.1	4.0	4.1
Electricity	7.8	18	32	75	114	188	299	7.4	15	26	6.6	5.4	5.1	4.8	5.1
Heat	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Renewables	116	133	148	174	192	201	214	53	34	18	1.2	1.2	0.5	0.7	0.7

Electricity generation

	(TWh)							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/2012	2012/2020	2020/2030	2030/2040	2012/2040
	Total	120	293	570	1,128	1,662	2,675	4,230	100	100	100	6.3	5.0	4.9	4.7
Coal	61	192	390	801	1,084	1,719	2,695	65	71	64	6.7	3.8	4.7	4.6	4.4
Oil	8.8	13	29	23	14	11	11	4.5	2.0	0.3	2.5	-6.0	-2.3	-0.1	-2.6
Natural gas	0.6	10.0	56	94	188	382	730	3.4	8.3	17	10.7	9.1	7.3	6.7	7.6
Nuclear	3.0	6.1	17	33	112	198	302	2.1	2.9	7.1	7.9	16.5	5.9	4.3	8.2
Hydro	47	72	74	126	167	213	256	24	11	6.1	2.6	3.6	2.5	1.8	2.6
Geothermal	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Solar, wind, etc.	-	0.0	1.7	30	60	91	155	0.0	2.7	3.7	36.6	8.9	4.3	5.4	6.0
Biomass and waste	-	-	1.3	21	37	60	80	-	1.8	1.9	n.a.	7.8	4.9	2.9	5.0

Energy and economic indicators

								CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990/2012	2012/2020	2020/2030	2030/2040	2012/2040
	GDP (\$2010 billion)	279	479	825	1,901	3,079	5,854	10,148	6.5	6.2	6.6	5.7
Population (million)	699	869	1,042	1,237	1,353	1,476	1,566	1.6	1.1	0.9	0.6	0.8
CO ₂ emissions ^{*2} (Mt)	284	585	961	1,961	2,475	3,404	4,688	5.7	3.0	3.2	3.3	3.2
GDP per capita (\$2010 thousand)	0.4	0.6	0.8	1.5	2.3	4.0	6.5	4.8	5.0	5.7	5.0	5.3
Primary energy consump. per capita (toe)	0.3	0.4	0.4	0.6	0.7	0.9	1.2	2.6	2.0	2.1	2.4	2.2
Primary energy consumption per GDP ^{*3}	735	660	553	415	327	231	179	-2.1	-2.9	-3.4	-2.5	-3.0
CO ₂ emissions per GDP ^{*2, *4}	1,016	1,219	1,164	1,032	804	581	462	-0.8	-3.1	-3.2	-2.3	-2.8
CO ₂ per primary energy consumption ^{*2, *5}	1.4	1.8	2.1	2.5	2.5	2.5	2.6	1.4	-0.2	0.2	0.3	0.1
Automobile ownership (million)	1.7	4.3	9.4	29	49	97	190	9.1	6.6	7.1	6.9	6.9
Automobile ownership rates ^{*6}	2.4	5.0	9.0	24	36	66	121	7.4	5.4	6.2	6.3	6.0

*1 Trade of electricity and heat are not shown, *2 Excludes emission reduction by CCS, *3 toe/\$2010 million,

*4 t/\$2010 million, *5 t/toe, *6 Vehicles per 1,000 people

Table 24 Japan [Reference Scenario]

Primary energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/	2012/	2020/	2030/	2012/
											2012	2020	2030	2040	2040
Total ^{*1}	345	439	519	452	457	440	416	100	100	100	0.1	0.1	-0.4	-0.6	-0.3
Coal	60	77	97	112	101	104	99	17	25	24	1.7	-1.3	0.3	-0.5	-0.4
Oil	234	250	255	210	178	156	139	57	46	33	-0.8	-2.0	-1.4	-1.1	-1.5
Natural gas	21	44	66	105	93	105	106	10	23	25	4.0	-1.6	1.2	0.1	0.0
Nuclear	22	53	84	4.2	59	44	37	12	0.9	8.9	-10.9	39.4	-2.9	-1.8	8.1
Hydro	7.6	7.7	7.5	6.5	7.6	7.6	7.6	1.7	1.4	1.8	-0.8	2.0	0.0	0.0	0.6
Geothermal	0.8	1.6	3.1	2.4	3.7	7.3	8.6	0.4	0.5	2.1	2.0	5.4	7.1	1.6	4.7
Solar, wind, etc.	-	1.2	0.8	1.4	3.1	4.7	6.6	0.3	0.3	1.6	0.7	10.9	4.2	3.4	5.8
Biomass and waste	-	4.9	5.6	10	12	12	13	1.1	2.3	3.1	3.4	1.7	0.4	0.5	0.8

Final energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/	2012/	2020/	2030/	2012/
											2012	2020	2030	2040	2040
Total	232	298	341	309	302	291	277	100	100	100	0.2	-0.3	-0.4	-0.5	-0.4
By sector															
Industry	91	101	96	82	84	83	81	34	26	29	-0.9	0.4	-0.2	-0.2	0.0
Transport	54	72	88	75	68	60	53	24	24	19	0.2	-1.1	-1.2	-1.2	-1.2
Buildings, etc.	58	91	116	115	115	114	110	31	37	40	1.1	0.0	0.0	-0.4	-0.1
Non-energy use	28	34	41	38	35	34	32	12	12	12	0.4	-0.9	-0.5	-0.5	-0.6
By energy															
Coal	25	32	25	27	26	25	23	11	8.7	8.3	-0.7	-0.4	-0.6	-0.7	-0.6
Oil	157	182	208	164	148	130	113	61	53	41	-0.5	-1.3	-1.3	-1.3	-1.3
Natural gas	5.8	15	23	35	37	39	39	5.1	11	14	3.8	0.8	0.4	0.0	0.4
Electricity	44	64	81	79	85	90	92	22	26	33	0.9	0.9	0.6	0.2	0.5
Heat	0.1	0.2	0.5	0.5	2.6	4.6	6.5	0.1	0.2	2.3	4.6	21.7	6.0	3.4	9.3
Renewables	-	3.9	3.7	3.3	3.2	3.1	2.9	1.3	1.1	1.0	-0.7	-0.6	-0.4	-0.7	-0.6

Electricity generation

	(TWh)							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/	2012/	2020/	2030/	2012/
											2012	2020	2030	2040	2040
Total	573	836	1,049	1,026	1,090	1,151	1,171	100	100	100	0.9	0.8	0.5	0.2	0.5
Coal	55	116	229	303	256	283	273	14	30	23	4.5	-2.1	1.0	-0.3	-0.4
Oil	265	237	135	181	102	80	80	28	18	6.8	-1.2	-7.0	-2.3	-0.1	-2.9
Natural gas	81	179	256	397	332	417	443	21	39	38	3.7	-2.2	2.3	0.6	0.4
Nuclear	83	202	322	16	227	169	141	24	1.6	12	-10.9	39.4	-2.9	-1.8	8.1
Hydro	88	89	87	75	88	89	89	11	7.4	7.6	-0.8	2.0	0.0	0.0	0.6
Geothermal	0.9	1.7	3.3	2.6	4.1	8.3	9.8	0.2	0.3	0.8	1.9	5.8	7.4	1.7	4.9
Solar, wind, etc.	-	0.0	0.5	12	32	51	73	0.0	1.2	6.2	53.1	13.4	4.7	3.7	6.7
Biomass and waste	-	11	16	39	49	55	62	1.3	3.8	5.3	6.0	3.0	1.1	1.2	1.7

Energy and economic indicators

									CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990/	2012/	2020/	2030/	2012/	
													2020
GDP (\$2010 billion)	2,894	4,553	5,093	5,571	6,501	7,422	8,278	0.9	1.9	1.3	1.1	1.4	
Population (million)	117	124	127	128	126	121	115	0.1	-0.2	-0.4	-0.5	-0.4	
CO ₂ emissions ^{*2} (Mt)	916	1,070	1,196	1,220	1,057	1,031	969	0.6	-1.8	-0.2	-0.6	-0.8	
GDP per capita (\$2010 thousand)	25	37	40	44	52	61	72	0.8	2.1	1.7	1.6	1.8	
Primary energy consump. per capita (toe)	3.0	3.6	4.1	3.5	3.6	3.6	3.6	0.0	0.3	0.0	0.0	0.1	
Primary energy consumption per GDP ^{*3}	119	96	102	81	70	59	50	-0.8	-1.8	-1.7	-1.6	-1.7	
CO ₂ emissions per GDP ^{*2, *4}	317	235	235	219	163	139	117	-0.3	-3.7	-1.6	-1.7	-2.2	
CO ₂ per primary energy consumption ^{*2, *5}	2.7	2.4	2.3	2.7	2.3	2.3	2.3	0.5	-1.9	0.1	-0.1	-0.5	
Automobile ownership (million)	38	58	72	76	77	74	71	1.3	0.2	-0.4	-0.4	-0.2	
Automobile ownership rates ^{*6}	325	467	570	595	615	612	619	1.1	0.4	0.0	0.1	0.1	

*1 Trade of electricity and heat are not shown, *2 Excludes emission reduction by CCS, *3 toe/\$2010 million,

*4 t/\$2010 million, *5 t/toe, *6 Vehicles per 1,000 people

Table 25 Korea [Reference Scenario]

Primary energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/2012	2012/2020	2020/2030	2030/2040	2012/2040
	Total ^{*1}	41	93	188	263	294	324	326	100	100	100	4.9	1.4	1.0	0.0
Coal	14	25	42	77	81	92	94	27	29	29	5.2	0.6	1.3	0.1	0.7
Oil	27	50	99	97	97	97	95	54	37	29	3.1	0.0	0.0	-0.2	-0.1
Natural gas	-	2.7	17	45	48	53	51	2.9	17	16	13.6	0.8	1.0	-0.2	0.5
Nuclear	0.9	14	28	39	61	73	73	15	15	22	4.9	5.7	1.8	0.0	2.2
Hydro	0.2	0.5	0.3	0.3	0.3	0.3	0.3	0.6	0.1	0.1	-2.1	0.0	0.0	0.0	0.0
Geothermal	-	-	-	0.1	0.1	0.1	0.1	-	0.0	0.0	n.a.	0.0	2.1	1.7	1.4
Solar, wind, etc.	-	0.0	0.0	0.2	1.0	2.0	4.3	0.0	0.1	1.3	15.4	19.6	7.4	8.0	11.0
Biomass and waste	-	0.7	1.4	4.3	5.3	6.8	7.8	0.8	1.6	2.4	8.4	2.7	2.6	1.4	2.2

Final energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/2012	2012/2020	2020/2030	2030/2040	2012/2040
	Total	31	65	127	166	180	193	195	100	100	100	4.4	1.0	0.7	0.1
By sector															
Industry	10	19	38	47	53	58	58	30	28	30	4.2	1.4	0.8	0.1	0.7
Transport	4.8	15	26	30	29	29	28	22	18	14	3.4	-0.4	-0.2	-0.2	-0.2
Buildings, etc.	13	24	37	45	46	51	51	38	27	26	2.9	0.2	1.0	0.0	0.4
Non-energy use	3.1	6.7	25	43	51	56	58	10	26	30	8.8	2.1	1.0	0.3	1.0
By energy															
Coal	9.7	12	9.1	9.6	11	11	10	18	5.8	5.1	-0.9	1.9	0.3	-1.3	0.2
Oil	19	44	80	84	87	88	87	67	51	44	3.0	0.3	0.1	-0.1	0.1
Natural gas	-	0.7	11	23	23	24	23	1.0	14	12	17.4	0.0	0.3	-0.2	0.0
Electricity	2.8	8.1	23	41	51	62	66	13	25	34	7.7	2.6	1.9	0.7	1.7
Heat	-	-	3.3	5.0	4.3	4.3	3.9	-	3.0	2.0	n.a.	-1.8	0.0	-1.0	-0.9
Renewables	-	0.7	1.3	3.1	3.6	4.5	5.2	1.1	1.9	2.7	6.8	1.6	2.4	1.4	1.8

Electricity generation

	(TWh)							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/2012	2012/2020	2020/2030	2030/2040	2012/2040
	Total	37	105	289	531	648	785	842	100	100	100	7.6	2.5	1.9	0.7
Coal	2.5	18	111	239	246	289	310	17	45	37	12.6	0.4	1.6	0.7	0.9
Oil	29	19	35	21	12	8.3	6.6	18	4.0	0.8	0.5	-6.9	-3.5	-2.4	-4.1
Natural gas	-	9.6	29	112	137	176	186	9.1	21	22	11.8	2.5	2.5	0.5	1.8
Nuclear	3.5	53	109	150	235	280	280	50	28	33	4.9	5.7	1.8	0.0	2.2
Hydro	2.0	6.4	4.0	4.0	4.0	4.0	4.0	6.0	0.7	0.5	-2.1	0.0	0.0	0.0	0.0
Geothermal	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Solar, wind, etc.	-	0.0	0.0	2.4	11	23	49	0.0	0.5	5.9	42.5	20.9	7.5	8.1	11.4
Biomass and waste	-	-	0.1	1.7	3.5	5.4	6.9	-	0.3	0.8	n.a.	9.8	4.4	2.4	5.2

Energy and economic indicators

										CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990/2012	2012/2020	2020/2030	2030/2040	2012/2040		
	GDP (\$2010 billion)	162	374	675	1,074	1,438	1,874	2,250	4.9	3.7	2.7	1.8	2.7	
Population (million)	38	43	47	50	52	53	53	0.7	0.4	0.3	0.0	0.2		
CO ₂ emissions ^{*2} (Mt)	126	239	433	576	574	614	606	4.1	0.0	0.7	-0.1	0.2		
GDP per capita (\$2010 thousand)	4.3	8.7	14	21	28	35	42	4.2	3.3	2.4	1.8	2.4		
Primary energy consump. per capita (toe)	1.1	2.2	4.0	5.3	5.7	6.1	6.1	4.1	0.9	0.7	0.0	0.5		
Primary energy consumption per GDP ^{*3}	254	248	279	245	204	173	145	-0.1	-2.3	-1.6	-1.8	-1.9		
CO ₂ emissions per GDP ^{*2, *4}	777	638	641	536	399	328	269	-0.8	-3.6	-1.9	-1.9	-2.4		
CO ₂ per primary energy consumption ^{*2, *5}	3.1	2.6	2.3	2.2	2.0	1.9	1.9	-0.7	-1.4	-0.3	-0.2	-0.6		
Automobile ownership (million)	0.5	3.4	12	18	22	25	28	8.0	2.1	1.6	1.0	1.5		
Automobile ownership rates ^{*6}	14	79	257	369	421	478	528	7.2	1.7	1.3	1.0	1.3		

*1 Trade of electricity and heat are not shown, *2 Excludes emission reduction by CCS, *3 toe/\$2010 million,

*4 t/\$2010 million, *5 t/toe, *6 Vehicles per 1,000 people

Table 26 Chinese Taipei [Reference Scenario]

Primary energy consumption																
	Mtoe							Shares (%)			CAGR (%)					
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040	
Total ^{*1}	28	48	85	105	116	121	120	100	100	100	3.6	1.3	0.4	-0.1	0.5	
Coal	3.9	11	30	40	40	39	34	24	38	28	5.8	0.2	-0.4	-1.3	-0.5	
Oil	20	26	38	39	42	44	43	54	37	36	1.9	1.1	0.4	-0.1	0.4	
Natural gas	1.6	1.4	5.6	13	20	26	30	2.9	13	25	10.8	5.0	2.8	1.4	2.9	
Nuclear	2.1	8.6	10	11	11	8.3	8.3	18	10	6.9	0.9	0.4	-2.7	0.0	-0.9	
Hydro	0.3	0.5	0.4	0.5	0.3	0.3	0.3	1.1	0.5	0.3	-0.5	-4.3	0.0	0.0	-1.2	
Geothermal	-	0.0	-	-	-	-	-	0.0	-	-	-100	n.a.	n.a.	n.a.	n.a.	
Solar, wind, etc.	-	0.0	0.1	0.2	0.6	0.8	1.2	0.0	0.2	1.0	12.4	11.8	3.8	4.0	6.1	
Biomass and waste	-	-	0.6	1.7	2.2	3.0	3.3	-	1.7	2.8	n.a.	2.8	3.2	1.2	2.4	

Final energy consumption																
	Mtoe							Shares (%)			CAGR (%)					
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040	
Total	19	29	49	65	73	78	79	100	100	100	3.7	1.5	0.6	0.1	0.7	
By sector																
Industry	10	12	19	22	25	26	26	42	34	33	2.8	1.3	0.3	0.0	0.5	
Transport	2.9	6.6	12	12	14	15	15	22	18	19	2.8	2.0	0.7	-0.2	0.7	
Buildings, etc.	3.6	6.5	10	12	13	13	13	22	18	17	2.6	1.1	0.5	0.0	0.5	
Non-energy use	2.0	4.0	7.8	19	22	24	25	14	29	32	7.4	1.5	0.9	0.4	0.9	
By energy																
Coal	2.2	3.6	5.0	7.3	8.5	9.1	9.4	12	11	12	3.3	2.0	0.7	0.3	0.9	
Oil	12	18	28	36	40	42	41	62	55	52	3.1	1.3	0.4	-0.1	0.5	
Natural gas	1.4	0.9	1.6	2.4	2.8	3.3	3.7	3.0	3.7	4.6	4.7	2.1	1.5	1.1	1.5	
Electricity	3.2	6.6	14	19	21	23	24	22	29	30	5.0	1.4	0.7	0.3	0.8	
Heat	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.	
Renewables	-	0.0	0.1	0.3	0.6	0.7	0.8	0.1	0.5	1.0	14.4	6.1	2.1	1.2	2.9	

Electricity generation																
	(TWh)							Shares (%)			CAGR (%)					
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040	
Total	43	88	181	247	278	298	305	100	100	100	4.8	1.5	0.7	0.2	0.7	
Coal	6.0	24	88	125	118	110	90	28	50	29	7.7	-0.7	-0.7	-2.0	-1.2	
Oil	26	23	30	7.8	6.0	5.3	5.2	26	3.2	1.7	-4.9	-3.4	-1.2	-0.1	-1.4	
Natural gas	-	1.2	17	64	99	134	156	1.4	26	51	19.6	5.6	3.1	1.6	3.3	
Nuclear	8.2	33	39	40	42	32	32	37	16	10	0.9	0.4	-2.7	0.0	-0.9	
Hydro	2.9	6.4	4.6	5.7	4.0	4.0	4.0	7.2	2.3	1.3	-0.5	-4.3	0.0	0.0	-1.2	
Geothermal	-	0.0	-	-	-	-	-	0.0	-	-	-100	n.a.	n.a.	n.a.	n.a.	
Solar, wind, etc.	-	-	0.0	1.5	3.9	5.8	9.6	-	0.6	3.2	n.a.	12.2	4.1	5.2	6.8	
Biomass and waste	-	-	1.7	3.5	5.4	7.6	8.6	-	1.4	2.8	n.a.	5.6	3.5	1.3	3.3	

Energy and economic indicators																
	1980	1990	2000	2012	2020	2030	2040	CAGR (%)								
								1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040				
GDP (\$2010 billion)	80	168	307	473	663	835	952	4.8	4.3	2.3	1.3	2.5				
Population (million)	18	20	22	23	24	24	23	0.6	0.2	0.0	-0.3	0.0				
CO ₂ emissions ^{*2} (Mt)	75	116	225	248	268	276	261	3.5	1.0	0.3	-0.5	0.2				
GDP per capita (\$2010 thousand)	4.5	8.2	14	20	28	35	42	4.2	4.1	2.3	1.7	2.6				
Primary energy consump. per capita (toe)	1.6	2.3	3.8	4.5	4.9	5.1	5.3	3.0	1.1	0.4	0.3	0.5				
Primary energy consumption per GDP ^{*3}	347	285	276	221	175	145	126	-1.1	-2.9	-1.9	-1.4	-2.0				
CO ₂ emissions per GDP ^{*2, *4}	927	689	733	525	405	330	274	-1.2	-3.2	-2.0	-1.8	-2.3				
CO ₂ per primary energy consumption ^{*2, *5}	2.7	2.4	2.6	2.4	2.3	2.3	2.2	-0.1	-0.3	-0.1	-0.5	-0.3				
Automobile ownership (million)	0.5	2.9	5.5	7.1	8.3	9.3	9.7	4.2	1.9	1.1	0.4	1.1				
Automobile ownership rates ^{*6}	27	141	249	309	351	392	423	3.6	1.6	1.1	0.8	1.1				

*1 Trade of electricity and heat are not shown, *2 Excludes emission reduction by CCS, *3 toe/\$2010 million,

*4 t/\$2010 million, *5 t/toe, *6 Vehicles per 1,000 people

Table 27 ASEAN [Reference Scenario]

Primary energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/	2012/	2020/	2030/	2012/
											2012	2020	2030	2040	2040
Total ^{*1}	142	233	380	573	772	1,007	1,248	100	100	100	4.2	3.8	2.7	2.2	2.8
Coal	3.6	13	32	89	130	197	272	5.4	16	22	9.3	4.9	4.2	3.3	4.1
Oil	58	88	153	209	263	333	411	38	37	33	4.0	2.9	2.4	2.1	2.4
Natural gas	8.6	30	74	126	168	225	283	13	22	23	6.7	3.7	3.0	2.3	3.0
Nuclear	-	-	-	-	-	9.4	20	-	-	1.6	n.a.	n.a.	n.a.	7.9	n.a.
Hydro	0.8	2.3	4.1	8.8	11	14	16	1.0	1.5	1.3	6.2	3.2	2.4	1.2	2.2
Geothermal	1.8	6.6	18	25	65	69	68	2.8	4.4	5.5	6.2	12.8	0.6	-0.2	3.6
Solar, wind, etc.	-	-	-	0.1	0.2	0.5	1.0	-	0.0	0.1	n.a.	14.8	7.7	7.9	9.8
Biomass and waste	70	93	99	114	131	154	172	40	20	14	0.9	1.7	1.6	1.1	1.5

Final energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/	2012/	2020/	2030/	2012/
											2012	2020	2030	2040	2040
Total	112	173	271	412	526	697	877	100	100	100	4.0	3.1	2.8	2.3	2.7
By sector															
Industry	22	43	76	115	160	227	292	25	28	33	4.6	4.2	3.6	2.5	3.4
Transport	17	32	62	104	136	185	240	19	25	27	5.5	3.4	3.1	2.7	3.0
Buildings, etc.	71	87	113	141	168	209	256	50	34	29	2.2	2.2	2.2	2.0	2.1
Non-energy use	2.4	11	21	52	63	75	88	6.3	13	10	7.3	2.4	1.9	1.6	1.9
By energy															
Coal	2.1	6.0	13	28	40	58	75	3.4	6.9	8.5	7.3	4.4	3.9	2.5	3.5
Oil	41	67	123	187	232	301	377	38	45	43	4.8	2.8	2.6	2.3	2.5
Natural gas	2.5	7.5	17	37	53	73	95	4.4	9.0	11	7.5	4.7	3.2	2.6	3.4
Electricity	4.7	11	28	59	87	133	185	6.4	14	21	7.8	5.0	4.3	3.4	4.2
Heat	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Renewables	62	82	90	101	114	132	146	47	25	17	1.0	1.5	1.4	1.0	1.3

Electricity generation

	(TWh)							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/	2012/	2020/	2030/	2012/
											2012	2020	2030	2040	2040
Total	62	154	370	754	1,088	1,642	2,293	100	100	100	7.5	4.7	4.2	3.4	4.1
Coal	3.0	28	79	236	361	585	880	18	31	38	10.2	5.5	4.9	4.2	4.8
Oil	47	66	72	55	64	73	83	43	7.3	3.6	-0.8	1.9	1.3	1.4	1.5
Natural gas	0.7	26	154	334	459	675	917	17	44	40	12.3	4.0	3.9	3.1	3.7
Nuclear	-	-	-	-	-	45	104	-	-	4.5	n.a.	n.a.	n.a.	8.7	n.a.
Hydro	9.8	27	47	102	132	167	187	18	14	8.2	6.2	3.2	2.4	1.2	2.2
Geothermal	2.1	6.6	16	20	51	64	73	4.3	2.6	3.2	5.1	12.7	2.3	1.2	4.8
Solar, wind, etc.	-	-	-	0.9	2.6	5.6	12	-	0.1	0.5	n.a.	15.0	7.8	8.0	9.9
Biomass and waste	-	0.6	1.0	6.9	18	28	37	0.4	0.9	1.6	11.7	12.9	4.6	2.6	6.1

Energy and economic indicators

								CAGR (%)							
	1980	1990	2000	2012	2020	2030	2040	2020	2030	2040	1990/	2012/	2020/	2030/	2012/
											2012	2020	2030	2040	2040
GDP (\$2010 billion)	405	702	1,137	2,074	3,124	4,901	7,101	5.0	5.3	4.6	3.8	4.5			
Population (million)	345	427	503	587	638	691	729	1.5	1.1	0.8	0.5	0.8			
CO ₂ emissions ^{*2} (Mt)	205	362	709	1,139	1,536	2,112	2,747	5.4	3.8	3.2	2.7	3.2			
GDP per capita (\$2010 thousand)	1.2	1.6	2.3	3.5	4.9	7.1	9.7	3.5	4.2	3.8	3.2	3.7			
Primary energy consump. per capita (toe)	0.4	0.5	0.8	1.0	1.2	1.5	1.7	2.7	2.7	1.9	1.6	2.0			
Primary energy consumption per GDP ^{*3}	352	332	334	276	247	205	176	-0.8	-1.4	-1.8	-1.5	-1.6			
CO ₂ emissions per GDP ^{*2, *4}	507	515	624	549	492	431	387	0.3	-1.4	-1.3	-1.1	-1.2			
CO ₂ per primary energy consumption ^{*2, *5}	1.4	1.6	1.9	2.0	2.0	2.1	2.2	1.1	0.0	0.5	0.5	0.4			
Automobile ownership (million)	4.4	10	21	48	62	85	114	7.3	3.4	3.2	2.9	3.2			
Automobile ownership rates ^{*6}	13	24	41	82	98	124	156	5.8	2.3	2.3	2.4	2.4			

*1 Trade of electricity and heat are not shown, *2 Excludes emission reduction by CCS, *3 toe/\$2010 million,

*4 t/\$2010 million, *5 t/toe, *6 Vehicles per 1,000 people

Table 28 Indonesia [Reference Scenario]

Primary energy consumption															
	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040
Total ^{*1}	56	99	156	214	310	403	507	100	100	100	3.6	4.8	2.7	2.3	3.1
Coal	0.2	3.5	12	30	51	84	125	3.6	14	25	10.2	6.9	5.1	4.1	5.3
Oil	20	33	58	77	95	122	154	34	36	30	3.9	2.7	2.5	2.3	2.5
Natural gas	4.9	16	27	35	49	67	90	16	16	18	3.7	4.2	3.3	3.0	3.4
Nuclear	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Hydro	0.1	0.5	0.9	1.1	1.2	1.4	1.5	0.5	0.5	0.3	3.7	1.3	1.3	0.7	1.1
Geothermal	-	1.9	8.4	16	52	54	51	2.0	7.6	10	10.1	15.7	0.4	-0.6	4.2
Solar, wind, etc.	-	-	-	0.0	0.0	0.0	0.1	-	0.0	0.0	n.a.	50.3	5.3	6.7	17.1
Biomass and waste	30	43	50	54	62	74	86	44	25	17	1.0	1.7	1.8	1.4	1.7

Final energy consumption															
	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040
Total	50	80	121	160	208	278	359	100	100	100	3.2	3.4	2.9	2.6	2.9
By sector															
Industry	6.7	18	31	37	57	80	107	23	23	30	3.3	5.4	3.5	2.9	3.8
Transport	6.0	11	22	44	60	87	119	13	28	33	6.6	3.9	3.9	3.2	3.6
Buildings, etc.	36	44	59	67	78	95	115	55	42	32	2.0	2.0	1.9	1.9	2.0
Non-energy use	1.2	7.4	9.8	11	13	15	17	9.2	7.1	4.9	2.0	2.0	1.3	1.4	1.6
By energy															
Coal	0.1	2.1	4.7	4.7	9.2	13	16	2.7	2.9	4.3	3.7	8.8	3.1	2.2	4.4
Oil	17	27	49	69	87	115	146	34	43	41	4.3	2.9	2.8	2.5	2.7
Natural gas	2.4	6.0	12	17	26	37	50	7.5	11	14	4.9	5.1	3.6	3.1	3.8
Electricity	0.6	2.4	6.8	15	25	41	63	3.0	9.4	17	8.6	6.5	5.0	4.4	5.2
Heat	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Renewables	29	42	49	53	61	73	84	53	33	24	1.1	1.7	1.8	1.4	1.7

Electricity generation															
	(TWh)							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040
Total	7.5	33	93	196	323	526	806	100	100	100	8.5	6.5	5.0	4.4	5.2
Coal	-	9.8	34	95	159	295	492	30	49	61	10.9	6.6	6.4	5.2	6.0
Oil	6.2	15	18	33	37	37	36	47	17	4.5	3.5	1.5	0.0	-0.1	0.4
Natural gas	-	0.7	26	45	77	130	206	2.2	23	26	20.6	6.7	5.4	4.8	5.5
Nuclear	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Hydro	1.3	5.7	10	13	14	16	17	17	6.5	2.1	3.7	1.3	1.3	0.7	1.1
Geothermal	-	1.1	4.9	9.4	36	47	53	3.4	4.8	6.5	10.1	18.1	2.7	1.2	6.3
Solar, wind, etc.	-	-	-	0.0	0.2	0.4	0.7	-	0.0	0.1	n.a.	50.4	5.3	6.7	17.1
Biomass and waste	-	-	0.0	0.2	0.4	0.7	0.9	-	0.1	0.1	n.a.	9.5	4.9	2.9	5.5

Energy and economic indicators															
	1980	1990	2000	2012	2020	2030	2040	2020	2030	2040	CAGR (%)				
											1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040
GDP (\$2010 billion)	152	282	426	802	1,261	2,046	3,097	4.9	5.8	5.0	4.2	4.9			
Population (million)	145	179	209	247	269	293	311	1.5	1.1	0.9	0.6	0.8			
CO ₂ emissions ^{*2} (Mt)	71	134	262	405	570	822	1,130	5.2	4.4	3.7	3.2	3.7			
GDP per capita (\$2010 thousand)	1.0	1.6	2.0	3.2	4.7	7.0	9.9	3.3	4.7	4.1	3.6	4.1			
Primary energy consump. per capita (toe)	0.4	0.6	0.7	0.9	1.2	1.4	1.6	2.1	3.6	1.8	1.7	2.3			
Primary energy consumption per GDP ^{*3}	367	350	365	266	246	197	164	-1.2	-1.0	-2.2	-1.8	-1.7			
CO ₂ emissions per GDP ^{*2, *4}	471	475	615	505	452	402	365	0.3	-1.4	-1.2	-1.0	-1.2			
CO ₂ per primary energy consumption ^{*2, *5}	1.3	1.4	1.7	1.9	1.8	2.0	2.2	1.5	-0.4	1.0	0.9	0.6			
Automobile ownership (million)	1.3	2.8	5.4	18	26	39	56	8.8	4.8	4.1	3.7	4.1			
Automobile ownership rates ^{*6}	8.9	16	26	73	97	133	180	7.2	3.7	3.2	3.1	3.3			

*1 Trade of electricity and heat are not shown, *2 Excludes emission reduction by CCS, *3 toe/\$2010 million,

*4 t/\$2010 million, *5 t/toe, *6 Vehicles per 1,000 people

Table 29 Malaysia [Reference Scenario]

Primary energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/2012	2012/2020	2020/2030	2030/2040	2012/2040
	Total ^{*1}	12	22	49	81	106	134	160	100	100	100	6.1	3.4	2.4	1.8
Coal	0.1	1.4	2.3	16	23	30	36	6.1	19	22	11.8	4.8	2.8	1.8	3.0
Oil	7.9	11	19	29	33	37	41	51	35	26	4.3	1.7	1.2	1.0	1.3
Natural gas	2.2	6.8	25	32	47	59	70	31	40	43	7.4	4.6	2.4	1.7	2.8
Nuclear	-	-	-	-	-	2.6	7.7	-	-	4.8	n.a.	n.a.	n.a.	11.6	n.a.
Hydro	0.1	0.3	0.6	0.8	0.7	1.0	1.1	1.5	1.0	0.7	3.8	-1.3	3.2	1.0	1.1
Geothermal	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Solar, wind, etc.	-	-	-	0.0	0.0	0.0	0.1	-	0.0	0.0	n.a.	10.9	7.4	13.8	10.6
Biomass and waste	1.8	2.3	2.8	3.5	3.2	4.4	5.0	10	4.3	3.1	1.8	-0.8	3.1	1.3	1.3

Final energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/2012	2012/2020	2020/2030	2030/2040	2012/2040
	Total	7.2	14	30	49	62	79	95	100	100	100	5.9	2.9	2.4	1.9
By sector															
Industry	3.1	5.6	12	14	20	26	32	40	29	34	4.4	4.1	2.8	2.1	2.9
Transport	2.1	4.8	10	15	17	20	22	34	30	23	5.2	1.8	1.5	1.0	1.4
Buildings, etc.	1.8	2.8	5.4	9.9	14	19	24	20	20	26	5.8	4.1	3.3	2.6	3.3
Non-energy use	0.3	0.8	2.2	11	12	15	17	6.0	22	18	12.3	1.7	1.7	1.6	1.7
By energy															
Coal	0.1	0.5	1.0	1.7	2.3	3.2	4.2	3.7	3.5	4.5	5.7	3.3	3.6	2.7	3.2
Oil	5.3	9.2	18	25	27	31	35	66	51	36	4.7	0.9	1.4	1.1	1.1
Natural gas	0.0	1.1	3.9	10	16	20	25	7.8	21	26	10.7	5.4	2.6	2.0	3.2
Electricity	0.7	1.7	5.3	10	15	22	29	12	21	31	8.5	5.1	3.6	2.7	3.7
Heat	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Renewables	1.1	1.5	1.7	1.9	2.0	2.5	2.4	11	3.8	2.6	1.1	1.0	1.9	0.0	1.0

Electricity generation

	(TWh)							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/2012	2012/2020	2020/2030	2030/2040	2012/2040
	Total	10	23	69	134	199	283	370	100	100	100	8.4	5.0	3.6	2.7
Coal	-	2.9	7.7	56	85	116	144	13	42	39	14.3	5.4	3.2	2.2	3.4
Oil	8.5	11	3.6	6.0	6.0	6.0	6.0	46	4.5	1.6	-2.5	0.0	0.0	0.0	0.0
Natural gas	0.1	5.5	51	63	96	134	170	24	47	46	11.7	5.5	3.4	2.4	3.6
Nuclear	-	-	-	-	-	9.8	29	-	-	8.0	n.a.	n.a.	n.a.	11.6	n.a.
Hydro	1.4	4.0	7.0	9.1	8.1	11	13	17	6.7	3.4	3.8	-1.4	3.4	1.1	1.2
Geothermal	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Solar, wind, etc.	-	-	-	0.0	0.1	0.2	0.8	-	0.0	0.2	n.a.	11.4	7.6	13.9	10.9
Biomass and waste	-	-	-	0.8	3.7	5.9	7.8	-	0.6	2.1	n.a.	20.4	4.9	2.9	8.4

Energy and economic indicators

								CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990/2012	2012/2020	2020/2030	2030/2040	2012/2040
	GDP (\$2010 billion)	44	79	158	275	405	630	872	5.8	5.0	4.5	3.3
Population (million)	14	18	23	29	33	37	40	2.2	1.5	1.2	0.8	1.1
CO ₂ emissions ^{*2} (Mt)	29	54	120	198	269	333	387	6.1	3.9	2.2	1.5	2.4
GDP per capita (\$2010 thousand)	3.2	4.4	6.7	9.4	12	17	22	3.6	3.4	3.3	2.5	3.1
Primary energy consump. per capita (toe)	0.9	1.2	2.1	2.8	3.2	3.6	4.0	3.8	1.9	1.2	1.0	1.3
Primary energy consumption per GDP ^{*3}	272	279	314	295	263	213	184	0.3	-1.5	-2.1	-1.5	-1.7
CO ₂ emissions per GDP ^{*2, *4}	649	681	761	721	664	529	444	0.3	-1.0	-2.2	-1.7	-1.7
CO ₂ per primary energy consumption ^{*2, *5}	2.4	2.4	2.4	2.4	2.5	2.5	2.4	0.0	0.5	-0.2	-0.3	0.0
Automobile ownership (million)	0.9	2.4	5.2	11	13	15	16	7.1	1.7	1.6	1.0	1.4
Automobile ownership rates ^{*6}	65	133	224	376	383	400	408	4.8	0.2	0.4	0.2	0.3

*1 Trade of electricity and heat are not shown, *2 Excludes emission reduction by CCS, *3 toe/\$2010 million,

*4 t/\$2010 million, *5 t/toe, *6 Vehicles per 1,000 people

Table 30 Myanmar [Reference Scenario]

Primary energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040
Total ^{*1}	9.4	11	13	15	18	24	30	100	100	100	1.6	2.4	2.6	2.6	2.5
Coal	0.2	0.1	0.3	0.5	0.5	1.0	1.6	0.6	3.2	5.1	9.4	1.5	5.8	5.0	4.3
Oil	1.3	0.7	2.0	2.2	2.7	4.3	6.9	6.8	14	23	5.1	2.8	4.6	4.9	4.2
Natural gas	0.3	0.8	1.2	1.2	3.1	5.7	8.7	7.1	8.0	28	2.2	12.4	6.2	4.3	7.2
Nuclear	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Hydro	0.1	0.1	0.2	0.7	0.8	1.1	1.5	1.0	4.4	5.0	8.9	3.0	3.0	3.0	3.0
Geothermal	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Solar, wind, etc.	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Biomass and waste	7.6	9.0	9.2	11	11	12	12	84	70	39	0.8	0.5	0.4	0.2	0.4

Final energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040
Total	8.4	9.4	11	14	17	21	27	100	100	100	2.0	1.8	2.2	2.5	2.2
By sector															
Industry	0.6	0.4	1.2	1.8	2.5	3.8	5.7	4.2	12	21	7.1	4.3	4.3	4.2	4.3
Transport	0.6	0.4	1.2	1.1	1.7	3.2	5.7	4.7	7.4	21	4.0	6.3	6.2	6.1	6.2
Buildings, etc.	7.0	8.5	9.1	11	12	14	15	90	79	56	1.4	0.9	1.0	1.0	1.0
Non-energy use	0.1	0.1	0.1	0.2	0.3	0.3	0.3	1.0	1.7	1.2	4.4	1.0	1.0	1.0	1.0
By energy															
Coal	0.1	0.1	0.3	0.3	0.4	0.6	0.9	0.5	2.1	3.3	8.3	3.9	3.9	3.9	3.9
Oil	1.2	0.6	1.5	2.1	2.9	4.7	7.7	6.2	14	29	5.9	4.6	4.9	5.1	4.9
Natural gas	0.1	0.2	0.3	0.7	0.9	1.3	1.7	2.4	5.0	6.5	5.5	3.1	3.2	3.3	3.2
Electricity	0.1	0.1	0.3	0.7	1.3	2.6	4.5	1.6	4.9	17	7.3	7.9	7.0	5.8	6.8
Heat	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Renewables	6.9	8.4	9.0	11	11	12	12	89	74	44	1.1	0.6	0.4	0.2	0.4

Electricity generation

	(TWh)							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040
Total	1.5	2.5	5.1	11	18	36	62	100	100	100	6.9	6.8	7.0	5.8	6.5
Coal	0.0	0.0	-	0.8	0.6	1.6	3.2	1.6	7.2	5.1	14.4	-3.1	10.4	7.1	5.2
Oil	0.5	0.3	0.7	0.1	0.0	0.1	0.2	11	0.5	0.3	-7.3	-3.1	10.4	7.1	5.2
Natural gas	0.2	1.0	2.5	2.1	7.7	21	41	39	20	66	3.7	17.4	10.4	7.1	11.1
Nuclear	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Hydro	0.8	1.2	1.9	7.8	9.8	13	18	48	72	28	8.9	3.0	3.0	3.0	3.0
Geothermal	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Solar, wind, etc.	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Biomass and waste	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.

Energy and economic indicators

	1980	1990	2000	2012	2020	2030	2040	CAGR (%)				
								1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040
GDP (\$2010 billion)	5.9	6.7	13	47	79	138	214	9.3	6.8	5.8	4.5	5.6
Population (million)	34	42	48	53	56	59	59	1.0	0.8	0.4	0.1	0.4
CO ₂ emissions ^{*2} (Mt)	5.2	4.1	9.9	11	17	29	47	4.5	5.9	5.6	4.7	5.4
GDP per capita (\$2010 thousand)	0.2	0.2	0.3	0.9	1.4	2.4	3.6	8.1	6.0	5.3	4.3	5.1
Primary energy consump. per capita (toe)	0.3	0.3	0.3	0.3	0.3	0.4	0.5	0.6	1.6	2.1	2.4	2.1
Primary energy consumption per GDP ^{*3}	1,603	1,599	964	326	232	171	142	-7.0	-4.2	-3.0	-1.8	-2.9
CO ₂ emissions per GDP ^{*2, *4}	891	608	744	231	216	213	218	-4.3	-0.8	-0.1	0.2	-0.2
CO ₂ per primary energy consumption ^{*2, *5}	0.6	0.4	0.8	0.7	0.9	1.2	1.5	2.9	3.5	3.0	2.1	2.8
Automobile ownership (million)	0.1	0.1	0.3	0.4	0.7	1.3	2.5	8.2	7.3	7.0	6.6	6.9
Automobile ownership rates ^{*6}	2.2	1.6	5.2	7.3	12	23	43	7.1	6.5	6.5	6.5	6.5

*1 Trade of electricity and heat are not shown, *2 Excludes emission reduction by CCS, *3 toe/\$2010 million,

*4 t/\$2010 million, *5 t/toe, *6 Vehicles per 1,000 people

Table 31 Philippines [Reference Scenario]

Primary energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040
Total ^{*1}	22	29	40	43	55	72	93	100	100	100	1.8	3.2	2.8	2.6	2.8
Coal	0.5	1.5	5.2	8.9	12	18	27	5.3	21	29	8.4	3.6	4.6	3.8	4.0
Oil	10	11	16	14	17	21	27	38	32	29	1.1	2.4	2.6	2.3	2.4
Natural gas	-	-	0.0	3.2	5.0	8.0	12	-	7.6	13	n.a.	5.6	4.9	3.9	4.7
Nuclear	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Hydro	0.3	0.5	0.7	0.9	1.0	1.0	1.0	1.8	2.1	1.1	2.4	1.4	0.0	0.0	0.4
Geothermal	1.8	4.7	10.0	8.8	13	15	17	16	21	19	2.9	5.4	1.4	1.2	2.5
Solar, wind, etc.	-	-	-	0.0	0.0	0.1	0.1	-	0.0	0.1	n.a.	21.9	6.1	3.7	9.5
Biomass and waste	9.4	11	8.1	7.0	7.0	8.0	9.5	39	16	10	-2.1	0.1	1.3	1.7	1.1

Final energy consumption

	Mtoe							Shares (%)			CAGR (%)					
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040	
Total	17	20	24	24	30	40	52	100	100	100	0.9	2.9	2.9	2.6	2.8	
By sector																
Industry	3.4	4.7	5.3	6.4	8.2	11	15	24	26	29	1.4	3.3	3.2	2.9	3.1	
Transport	3.5	4.5	8.1	8.4	10	14	18	23	35	35	2.8	2.9	2.9	2.5	2.8	
Buildings, etc.	9.4	10	10	9.1	11	14	19	52	38	36	-0.5	2.5	2.6	2.6	2.6	
Non-energy use	0.3	0.2	0.3	0.2	0.2	0.3	0.4	1.2	0.7	0.7	-1.3	2.9	2.5	2.4	2.6	
By energy																
Coal	0.2	0.6	0.8	1.7	1.7	1.8	1.9	3.1	7.2	3.6	4.8	-0.3	0.5	0.7	0.3	
Oil	7.0	8.1	13	12	15	20	25	41	48	48	1.6	3.2	2.8	2.5	2.8	
Natural gas	-	-	-	0.1	0.5	1.0	1.5	-	0.2	2.9	n.a.	29.4	7.7	4.4	12.2	
Electricity	1.5	1.8	3.1	5.1	7.3	11	15	9.3	21	29	4.8	4.6	4.0	3.5	4.0	
Heat	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.	
Renewables	7.8	9.1	6.9	5.6	5.7	6.9	8.3	46	23	16	-2.2	0.4	1.8	2.0	1.4	

Electricity generation

	(TWh)							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040
Total	18	26	45	73	103	151	210	100	100	100	4.7	4.5	3.9	3.3	3.8
Coal	0.2	1.9	17	28	43	71	106	7.3	39	50	13.0	5.4	5.1	4.1	4.8
Oil	12	12	9.2	4.3	4.3	4.3	4.3	47	5.8	2.0	-4.8	0.0	0.0	0.0	0.0
Natural gas	-	-	0.0	20	28	45	66	-	27	32	n.a.	4.8	4.8	3.9	4.5
Nuclear	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Hydro	3.5	6.1	7.8	10	11	11	11	23	14	5.4	2.4	1.4	0.0	0.0	0.4
Geothermal	2.1	5.5	12	10	16	18	20	21	14	9.6	2.9	5.4	1.4	1.2	2.4
Solar, wind, etc.	-	-	-	0.1	0.4	0.7	1.0	-	0.1	0.5	n.a.	21.9	6.1	3.7	9.5
Biomass and waste	-	0.4	-	0.2	0.4	0.6	0.8	1.6	0.2	0.4	-3.8	9.1	4.9	2.9	5.3

Energy and economic indicators

	1980	1990	2000	2012	2020	2030	2040	CAGR (%)				
								1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040
GDP (\$2010 billion)	80	95	125	221	356	565	851	3.9	6.2	4.7	4.2	4.9
Population (million)	47	62	78	97	110	128	144	2.0	1.7	1.5	1.2	1.4
CO ₂ emissions ^{*2} (Mt)	33	39	69	84	109	156	215	3.6	3.2	3.7	3.2	3.4
GDP per capita (\$2010 thousand)	1.7	1.5	1.6	2.3	3.2	4.4	5.9	1.9	4.4	3.2	3.0	3.5
Primary energy consump. per capita (toe)	0.5	0.5	0.5	0.4	0.5	0.6	0.7	-0.2	1.5	1.3	1.4	1.4
Primary energy consumption per GDP ^{*3}	280	304	319	193	154	128	110	-2.0	-2.8	-1.8	-1.5	-2.0
CO ₂ emissions per GDP ^{*2, *4}	414	409	550	382	305	277	253	-0.3	-2.8	-1.0	-0.9	-1.5
CO ₂ per primary energy consumption ^{*2, *5}	1.5	1.3	1.7	2.0	2.0	2.2	2.3	1.8	0.0	0.9	0.6	0.5
Automobile ownership (million)	0.9	1.2	2.4	3.3	4.7	7.3	11	4.6	4.6	4.4	4.1	4.3
Automobile ownership rates ^{*6}	18	20	31	34	43	57	75	2.5	2.9	2.9	2.9	2.9

*1 Trade of electricity and heat are not shown, *2 Excludes emission reduction by CCS, *3 toe/\$2010 million,

*4 t/\$2010 million, *5 t/toe, *6 Vehicles per 1,000 people

Table 32 Thailand [Reference Scenario]

Primary energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040
Total ^{*1}	22	42	72	127	161	200	237	100	100	100	5.1	3.1	2.2	1.7	2.3
Coal	0.5	3.8	7.7	17	21	27	33	9.1	14	14	7.1	2.3	2.5	2.2	2.3
Oil	11	18	32	49	66	79	92	43	39	39	4.7	3.9	1.8	1.5	2.3
Natural gas	-	5.0	17	35	42	55	69	12	28	29	9.3	2.2	2.8	2.2	2.4
Nuclear	-	-	-	-	-	0.2	0.7	-	-	0.3	n.a.	n.a.	n.a.	11.6	n.a.
Hydro	0.1	0.4	0.5	0.8	0.8	0.8	0.9	1.0	0.6	0.4	2.6	0.5	0.5	0.5	0.5
Geothermal	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.3	1.4	1.2	5.9
Solar, wind, etc.	-	-	-	0.1	0.1	0.3	0.7	-	0.0	0.3	n.a.	12.6	8.4	8.1	9.4
Biomass and waste	11	15	15	23	29	34	37	35	18	16	2.1	2.8	1.5	1.0	1.7

Final energy consumption

	Mtoe							Shares (%)			CAGR (%)					
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040	
Total	15	29	51	92	113	140	168	100	100	100	5.4	2.5	2.2	1.8	2.2	
By sector																
Industry	4.0	8.7	17	29	36	48	62	30	32	37	5.7	2.7	3.0	2.5	2.7	
Transport	3.2	9.0	15	22	27	32	35	31	24	21	4.1	2.8	1.6	1.0	1.7	
Buildings, etc.	7.8	11	14	22	26	33	39	37	24	23	3.3	2.0	2.4	1.8	2.1	
Non-energy use	0.2	0.4	5.6	19	24	28	32	1.5	21	19	18.9	2.4	1.6	1.5	1.8	
By energy																
Coal	0.1	1.3	3.5	8.8	10	14	19	4.5	9.5	11	9.0	2.0	3.0	3.0	2.7	
Oil	7.3	15	29	48	58	70	82	52	52	49	5.4	2.3	1.9	1.6	1.9	
Natural gas	-	0.1	1.1	6.1	7.5	9.8	12	0.5	6.6	7.4	18.8	2.7	2.7	2.4	2.6	
Electricity	1.1	3.3	7.6	14	18	26	34	11	15	20	6.8	3.5	3.6	2.5	3.2	
Heat	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.	
Renewables	6.7	9.2	9.4	16	19	21	21	32	17	13	2.4	2.3	0.9	0.4	1.1	

Electricity generation

	(TWh)							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040
Total	14	44	96	167	210	294	390	100	100	100	6.2	2.9	3.4	2.8	3.1
Coal	1.4	11	18	33	44	56	66	25	20	17	5.1	3.5	2.4	1.7	2.5
Oil	12	10	10	2.4	2.7	3.7	4.7	23	1.5	1.2	-6.4	1.5	3.1	2.3	2.4
Natural gas	-	18	62	117	144	198	253	40	70	65	8.9	2.6	3.2	2.5	2.8
Nuclear	-	-	-	-	-	9.8	29	-	-	7.6	n.a.	n.a.	n.a.	11.6	n.a.
Hydro	1.3	5.0	6.0	8.8	9.1	9.6	10	11	5.3	2.6	2.6	0.5	0.5	0.5	0.5
Geothermal	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.3	1.4	1.2	5.9
Solar, wind, etc.	-	-	-	0.6	1.6	3.7	7.9	-	0.4	2.0	n.a.	12.6	8.4	8.1	9.4
Biomass and waste	-	-	0.5	4.4	8.7	14	19	-	2.6	4.8	n.a.	9.0	4.9	2.9	5.3

Energy and economic indicators

	1980	1990	2000	2012	2020	2030	2040	CAGR (%)				
								1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040
GDP (\$2010 billion)	63	135	209	340	465	670	910	4.3	4.0	3.7	3.1	3.6
Population (million)	47	57	62	67	68	68	66	0.8	0.2	0.0	-0.3	-0.1
CO ₂ emissions ^{*2} (Mt)	34	81	152	244	314	396	479	5.2	3.2	2.4	1.9	2.4
GDP per capita (\$2010 thousand)	1.3	2.4	3.3	5.1	6.9	9.9	14	3.5	3.8	3.8	3.4	3.7
Primary energy consump. per capita (toe)	0.5	0.7	1.2	1.9	2.4	3.0	3.6	4.4	2.9	2.2	2.0	2.3
Primary energy consumption per GDP ^{*3}	347	311	346	372	347	298	260	0.8	-0.9	-1.5	-1.4	-1.3
CO ₂ emissions per GDP ^{*2, *4}	537	598	727	717	675	591	526	0.8	-0.8	-1.3	-1.2	-1.1
CO ₂ per primary energy consumption ^{*2, *5}	1.5	1.9	2.1	1.9	1.9	2.0	2.0	0.0	0.1	0.2	0.2	0.2
Automobile ownership (million)	0.9	2.8	6.1	13	15	18	21	7.2	2.0	1.8	1.3	1.7
Automobile ownership rates ^{*6}	19	50	98	193	222	267	315	6.3	1.8	1.9	1.7	1.8

*1 Trade of electricity and heat are not shown, *2 Excludes emission reduction by CCS, *3 toe/\$2010 million,

*4 t/\$2010 million, *5 t/toe, *6 Vehicles per 1,000 people

Table 33 Viet Nam [Reference Scenario]

Primary energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/2012	2012/2020	2020/2030	2030/2040	2012/2040
	Total ^{*1}	14	18	29	65	86	132	174	100	100	100	6.0	3.6	4.3	2.8
Coal	2.3	2.2	4.4	17	23	37	49	12	25	28	9.5	4.3	4.7	2.9	4.0
Oil	1.8	2.7	7.8	20	28	42	60	15	32	35	9.6	4.0	4.3	3.5	3.9
Natural gas	-	0.0	1.1	8.1	11	18	23	0.0	12	13	43.9	4.4	4.6	2.5	3.8
Nuclear	-	-	-	-	-	6.6	12	-	-	6.7	n.a.	n.a.	n.a.	5.9	n.a.
Hydro	0.1	0.5	1.3	4.6	6.8	9.0	10	2.6	7.1	5.8	11.0	5.0	2.9	1.2	2.9
Geothermal	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Solar, wind, etc.	-	-	-	0.0	0.0	0.0	0.1	-	0.0	0.1	n.a.	15.2	7.9	8.8	10.2
Biomass and waste	10	12	14	15	16	18	18	70	23	11	0.8	0.9	1.0	0.3	0.7

Final energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/2012	2012/2020	2020/2030	2030/2040	2012/2040
	Total	13	16	25	54	74	111	145	100	100	100	5.7	4.0	4.2	2.7
By sector															
Industry	3.8	4.5	7.9	20	30	49	61	28	38	42	7.1	4.8	5.2	2.2	4.0
Transport	0.6	1.4	3.5	11	16	25	37	8.6	21	26	10.0	4.7	4.3	4.0	4.3
Buildings, etc.	8.6	10	14	20	24	31	40	63	36	27	3.0	2.6	2.6	2.5	2.6
Non-energy use	0.0	0.0	0.1	2.8	3.8	5.8	7.6	0.2	5.2	5.2	23.4	4.0	4.2	2.7	3.6
By energy															
Coal	1.5	1.3	3.2	11	16	27	34	8.3	21	23	10.1	4.8	5.1	2.4	4.1
Oil	1.7	2.3	6.5	19	27	42	59	15	35	41	10.0	4.5	4.4	3.6	4.2
Natural gas	-	-	0.0	0.5	0.9	1.5	1.9	-	0.9	1.3	n.a.	7.5	5.6	2.3	4.9
Electricity	0.2	0.5	1.9	9.4	14	24	33	3.3	17	23	14.0	5.5	5.4	3.0	4.6
Heat	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Renewables	9.7	12	13	14	15	17	17	74	26	12	0.8	1.0	1.0	0.3	0.7

Electricity generation

	(TWh)							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/2012	2012/2020	2020/2030	2030/2040	2012/2040
	Total	3.6	8.7	27	123	175	279	370	100	100	100	12.8	4.5	4.8	2.8
Coal	1.4	2.0	3.1	22	30	45	70	23	18	19	11.5	3.7	4.4	4.4	4.2
Oil	0.7	1.3	4.5	3.4	3.4	3.4	3.4	15	2.7	0.9	4.4	0.0	0.0	0.0	0.0
Natural gas	-	0.0	4.4	44	62	100	132	0.1	36	36	49.9	4.5	4.8	2.8	4.0
Nuclear	-	-	-	-	-	25	45	-	-	12	n.a.	n.a.	n.a.	5.9	n.a.
Hydro	1.5	5.4	15	53	79	105	118	62	43	32	11.0	5.0	2.9	1.2	2.9
Geothermal	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Solar, wind, etc.	-	-	-	0.1	0.3	0.6	1.3	-	0.1	0.4	n.a.	15.1	7.9	8.8	10.2
Biomass and waste	-	-	-	0.1	0.1	0.2	0.2	-	0.0	0.1	n.a.	8.5	4.9	2.9	5.2

Energy and economic indicators

										CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990/2012	2012/2020	2020/2030	2030/2040	2012/2040		
	GDP (\$2010 billion)	17	29	61	130	205	382	610	7.0	5.9	6.4	4.8	5.7	
Population (million)	54	66	78	89	95	100	102	1.4	0.8	0.5	0.2	0.5		
CO ₂ emissions ^{*2} (Mt)	15	17	43	139	193	301	409	10.0	4.2	4.5	3.1	3.9		
GDP per capita (\$2010 thousand)	0.3	0.4	0.8	1.5	2.2	3.8	6.0	5.5	5.0	5.9	4.5	5.2		
Primary energy consump. per capita (toe)	0.3	0.3	0.4	0.7	0.9	1.3	1.7	4.6	2.8	3.8	2.6	3.1		
Primary energy consumption per GDP ^{*3}	851	606	470	500	420	345	285	-0.9	-2.2	-1.9	-1.9	-2.0		
CO ₂ emissions per GDP ^{*2, *4}	860	579	711	1,069	938	786	671	2.8	-1.6	-1.8	-1.6	-1.6		
CO ₂ per primary energy consumption ^{*2, *5}	1.0	1.0	1.5	2.1	2.2	2.3	2.4	3.7	0.6	0.2	0.3	0.3		
Automobile ownership (million)	0.2	0.2	0.4	1.2	2.0	3.5	6.0	9.3	6.3	5.9	5.6	5.9		
Automobile ownership rates ^{*6}	2.9	2.6	4.8	14	21	35	59	7.8	5.4	5.4	5.4	5.4		

*1 Trade of electricity and heat are not shown, *2 Excludes emission reduction by CCS, *3 toe/\$2010 million,

*4 t/\$2010 million, *5 t/toe, *6 Vehicles per 1,000 people

Table 34 North America [Reference Scenario]

Primary energy consumption																
	Mtoe							Shares (%)			CAGR (%)					
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040	
Total ^{*1}	1,997	2,124	2,525	2,392	2,485	2,533	2,506	100	100	100	0.5	0.5	0.2	-0.1	0.2	
Coal	397	485	565	443	409	355	299	23	19	12	-0.4	-1.0	-1.4	-1.7	-1.4	
Oil	885	833	958	854	828	817	801	39	36	32	0.1	-0.4	-0.1	-0.2	-0.2	
Natural gas	522	493	622	679	777	838	849	23	28	34	1.5	1.7	0.8	0.1	0.8	
Nuclear	80	179	227	234	231	241	250	8.4	9.8	10.0	1.2	-0.1	0.4	0.3	0.2	
Hydro	46	49	53	57	60	62	64	2.3	2.4	2.6	0.7	0.6	0.5	0.3	0.5	
Geothermal	4.6	14	13	8.7	19	23	29	0.7	0.4	1.2	-2.2	10.2	2.2	2.3	4.5	
Solar, wind, etc.	-	0.3	2.1	16	26	43	57	0.0	0.7	2.3	19.3	6.5	5.2	2.8	4.7	
Biomass and waste	62	70	85	101	135	153	157	3.3	4.2	6.3	1.7	3.7	1.3	0.3	1.6	

Final energy consumption																
	Mtoe							Shares (%)			CAGR (%)					
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040	
Total	1,466	1,452	1,736	1,641	1,716	1,766	1,766	100	100	100	0.6	0.6	0.3	0.0	0.3	
By sector																
Industry	437	331	387	307	322	325	319	23	19	18	-0.3	0.6	0.1	-0.2	0.1	
Transport	470	531	640	658	659	654	632	37	40	36	1.0	0.0	-0.1	-0.3	-0.1	
Buildings, etc.	446	457	535	545	591	622	633	31	33	36	0.8	1.0	0.5	0.2	0.5	
Non-energy use	114	134	173	130	145	165	181	9.2	8.0	10	-0.1	1.3	1.3	0.9	1.2	
By energy																
Coal	60	59	36	25	23	22	20	4.0	1.5	1.2	-3.8	-1.0	-0.6	-0.6	-0.7	
Oil	769	752	874	814	782	772	757	52	50	43	0.4	-0.5	-0.1	-0.2	-0.3	
Natural gas	374	346	413	353	398	409	408	24	22	23	0.1	1.5	0.3	0.0	0.5	
Electricity	200	262	342	364	401	441	459	18	22	26	1.5	1.2	1.0	0.4	0.8	
Heat	1.0	2.8	6.1	7.1	7.3	6.9	6.3	0.2	0.4	0.4	4.4	0.3	-0.6	-0.9	-0.4	
Renewables	62	30	64	78	105	115	114	2.1	4.8	6.5	4.4	3.7	1.0	-0.1	1.4	

Electricity generation																
	(TWh)							Shares (%)			CAGR (%)					
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040	
Total	2,801	3,685	4,631	4,905	5,341	5,848	6,080	100	100	100	1.3	1.1	0.9	0.4	0.8	
Coal	1,303	1,782	2,247	1,707	1,610	1,427	1,214	48	35	20	-0.2	-0.7	-1.2	-1.6	-1.2	
Oil	277	147	133	40	43	44	45	4.0	0.8	0.7	-5.7	0.9	0.3	0.2	0.4	
Natural gas	380	391	668	1,332	1,663	2,037	2,224	11	27	37	5.7	2.8	2.0	0.9	1.8	
Nuclear	304	685	871	896	887	926	958	19	18	16	1.2	-0.1	0.4	0.3	0.2	
Hydro	530	570	612	659	693	727	748	15	13	12	0.7	0.6	0.5	0.3	0.5	
Geothermal	5.4	16	15	18	40	50	63	0.4	0.4	1.0	0.6	10.4	2.2	2.4	4.5	
Solar, wind, etc.	-	3.8	6.7	165	277	470	626	0.1	3.4	10	18.7	6.7	5.4	2.9	4.9	
Biomass and waste	1.8	90	80	88	128	167	203	2.5	1.8	3.3	-0.1	4.7	2.8	1.9	3.0	

Energy and economic indicators																
											CAGR (%)					
	1980	1990	2000	2012	2020	2030	2040	2020	2030	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040	
GDP (\$2010 billion)				7,266	10,036	14,027	17,303	21,237	27,001	32,507	2.5	2.6	2.4	1.9	2.3	
Population (million)				252	277	313	349	372	399	422	1.0	0.8	0.7	0.6	0.7	
CO ₂ emissions ^{*2} (Mt)				5,169	5,236	6,125	5,584	5,556	5,394	5,103	0.3	-0.1	-0.3	-0.6	-0.3	
GDP per capita (\$2010 thousand)				29	36	45	50	57	68	77	1.4	1.8	1.7	1.3	1.6	
Primary energy consump. per capita (toe)				7.9	7.7	8.1	6.9	6.7	6.3	5.9	-0.5	-0.3	-0.5	-0.7	-0.5	
Primary energy consumption per GDP ^{*3}				275	212	180	138	117	94	77	-1.9	-2.1	-2.2	-1.9	-2.1	
CO ₂ emissions per GDP ^{*2, *4}				711	522	437	323	262	200	157	-2.2	-2.6	-2.7	-2.4	-2.5	
CO ₂ per primary energy consumption ^{*2, *5}				2.6	2.5	2.4	2.3	2.2	2.1	2.0	-0.2	-0.5	-0.5	-0.4	-0.5	
Automobile ownership (million)				169	205	239	273	298	332	359	1.3	1.1	1.1	0.8	1.0	
Automobile ownership rates ^{*6}				671	740	764	784	803	831	850	0.3	0.3	0.3	0.2	0.3	

*1 Trade of electricity and heat are not shown, *2 Excludes emission reduction by CCS, *3 toe/\$2010 million,

*4 t/\$2010 million, *5 t/toe, *6 Vehicles per 1,000 people

Table 35 United States [Reference Scenario]

Primary energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040
Total ^{*1}	1,805	1,915	2,273	2,141	2,219	2,244	2,201	100	100	100	0.5	0.4	0.1	-0.2	0.1
Coal	376	460	534	425	395	347	292	24	20	13	-0.4	-0.9	-1.3	-1.7	-1.3
Oil	797	757	871	771	740	721	697	40	36	32	0.1	-0.5	-0.3	-0.3	-0.4
Natural gas	477	438	548	596	682	736	741	23	28	34	1.4	1.7	0.8	0.1	0.8
Nuclear	69	159	208	209	210	210	219	8.3	9.8	9.9	1.2	0.1	0.0	0.4	0.2
Hydro	24	23	22	24	25	26	26	1.2	1.1	1.2	0.1	0.6	0.2	0.1	0.3
Geothermal	4.6	14	13	8.7	19	23	29	0.7	0.4	1.3	-2.2	10.1	2.2	2.4	4.4
Solar, wind, etc.	-	0.3	2.1	15	24	40	53	0.0	0.7	2.4	19.0	6.1	5.3	2.9	4.7
Biomass and waste	54	62	73	89	121	137	141	3.3	4.1	6.4	1.6	3.9	1.3	0.2	1.7

Final energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040
Total	1,311	1,294	1,546	1,433	1,497	1,530	1,516	100	100	100	0.5	0.5	0.2	-0.1	0.2
By sector															
Industry	387	284	332	248	257	257	247	22	17	16	-0.6	0.4	0.0	-0.4	0.0
Transport	425	488	588	597	595	587	562	38	42	37	0.9	0.0	-0.1	-0.4	-0.2
Buildings, etc.	397	403	473	483	528	554	562	31	34	37	0.8	1.1	0.5	0.1	0.5
Non-energy use	102	119	153	104	117	133	145	9.2	7.3	9.5	-0.6	1.4	1.3	0.9	1.2
By energy															
Coal	56	56	33	22	20	19	18	4.3	1.5	1.2	-4.1	-1.1	-0.5	-0.4	-0.7
Oil	689	683	793	719	684	665	643	53	50	42	0.2	-0.6	-0.3	-0.3	-0.4
Natural gas	337	303	360	296	338	346	343	23	21	23	-0.1	1.6	0.2	-0.1	0.5
Electricity	174	226	301	321	355	390	404	18	22	27	1.6	1.3	1.0	0.3	0.8
Heat	-	2.2	5.3	6.5	6.7	6.3	5.8	0.2	0.5	0.4	5.2	0.3	-0.5	-0.9	-0.4
Renewables	54	23	54	68	94	104	102	1.8	4.8	6.8	5.1	4.1	1.0	-0.1	1.5

Electricity generation

	(TWh)							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040
Total	2,427	3,203	4,026	4,271	4,676	5,119	5,292	100	100	100	1.3	1.1	0.9	0.3	0.8
Coal	1,243	1,700	2,129	1,643	1,567	1,406	1,199	53	38	23	-0.2	-0.6	-1.1	-1.6	-1.1
Oil	263	131	118	33	36	38	37	4.1	0.8	0.7	-6.1	1.0	0.6	-0.2	0.4
Natural gas	370	382	634	1,265	1,572	1,942	2,097	12	30	40	5.6	2.8	2.1	0.8	1.8
Nuclear	266	612	798	801	805	808	839	19	19	16	1.2	0.1	0.0	0.4	0.2
Hydro	279	273	253	279	292	299	302	8.5	6.5	5.7	0.1	0.6	0.2	0.1	0.3
Geothermal	5.4	16	15	18	40	49	62	0.5	0.4	1.2	0.6	10.3	2.2	2.4	4.5
Solar, wind, etc.	-	3.7	6.4	153	250	427	573	0.1	3.6	11	18.4	6.3	5.5	3.0	4.8
Biomass and waste	0.5	86	72	79	114	150	182	2.7	1.8	3.4	-0.4	4.8	2.8	1.9	3.0

Energy and economic indicators

								CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040
GDP (\$2010 billion)	6,521	9,054	12,717	15,658	19,280	24,593	29,621	2.5	2.6	2.5	1.9	2.3
Population (million)	227	250	282	314	334	359	379	1.0	0.8	0.7	0.6	0.7
CO ₂ emissions ^{*2} (Mt)	4,743	4,820	5,617	5,139	5,092	4,927	4,619	0.3	-0.1	-0.3	-0.6	-0.4
GDP per capita (\$2010 thousand)	29	36	45	50	58	69	78	1.5	1.8	1.7	1.3	1.6
Primary energy consump. per capita (toe)	7.9	7.7	8.1	6.8	6.6	6.3	5.8	-0.5	-0.3	-0.6	-0.7	-0.6
Primary energy consumption per GDP ^{*3}	277	212	179	137	115	91	74	-2.0	-2.1	-2.3	-2.0	-2.2
CO ₂ emissions per GDP ^{*2, *4}	727	532	442	328	264	200	156	-2.2	-2.7	-2.7	-2.5	-2.6
CO ₂ per primary energy consumption ^{*2, *5}	2.6	2.5	2.5	2.4	2.3	2.2	2.1	-0.2	-0.6	-0.4	-0.5	-0.5
Automobile ownership (million)	156	189	221	251	274	305	329	1.3	1.1	1.1	0.8	1.0
Automobile ownership rates ^{*6}	686	756	785	801	821	850	868	0.3	0.3	0.3	0.2	0.3

*1 Trade of electricity and heat are not shown, *2 Excludes emission reduction by CCS, *3 toe/\$2010 million,

*4 t/\$2010 million, *5 t/toe, *6 Vehicles per 1,000 people

Table 36 Latin America [Reference Scenario]

Primary energy consumption																
	Mtoe							Shares (%)			CAGR (%)					
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040	
Total ^{*1}	385	468	600	837	1,018	1,279	1,492	100	100	100	2.7	2.5	2.3	1.6	2.1	
Coal	13	20	27	37	46	64	79	4.4	4.5	5.3	2.8	2.7	3.2	2.2	2.7	
Oil	223	237	303	388	430	507	561	51	46	38	2.3	1.3	1.7	1.0	1.3	
Natural gas	51	76	117	197	265	361	444	16	24	30	4.4	3.8	3.2	2.1	2.9	
Nuclear	0.6	3.2	5.3	8.1	13	18	22	0.7	1.0	1.5	4.3	5.8	3.4	2.2	3.7	
Hydro	19	33	50	65	73	82	91	7.1	7.8	6.1	3.1	1.5	1.2	1.0	1.2	
Geothermal	1.2	5.1	6.3	8.1	18	26	38	1.1	1.0	2.5	2.2	10.8	3.5	3.8	5.7	
Solar, wind, etc.	-	0.0	0.2	1.7	3.1	5.3	9.3	0.0	0.2	0.6	23.0	8.3	5.4	5.8	6.4	
Biomass and waste	79	92	90	131	170	216	247	20	16	17	1.6	3.3	2.4	1.3	2.3	

Final energy consumption																
	Mtoe							Shares (%)			CAGR (%)					
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040	
Total	290	346	452	607	730	912	1,061	100	100	100	2.6	2.3	2.2	1.5	2.0	
By sector																
Industry	99	116	150	196	242	317	388	34	32	37	2.4	2.6	2.7	2.0	2.5	
Transport	85	103	141	216	265	332	377	30	36	36	3.4	2.6	2.3	1.3	2.0	
Buildings, etc.	89	101	121	151	173	204	230	29	25	22	1.8	1.7	1.7	1.2	1.5	
Non-energy use	16	26	41	43	50	59	66	7.4	7.1	6.2	2.4	1.9	1.6	1.2	1.5	
By energy																
Coal	6.1	8.5	11	13	14	16	19	2.5	2.2	1.7	2.0	0.7	1.6	1.4	1.3	
Oil	159	179	241	309	354	428	485	52	51	46	2.5	1.7	1.9	1.3	1.6	
Natural gas	28	39	56	82	107	138	167	11	13	16	3.4	3.5	2.6	1.9	2.6	
Electricity	27	44	70	105	132	176	215	13	17	20	4.0	3.0	2.9	2.0	2.6	
Heat	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.	
Renewables	69	74	75	99	123	154	175	22	16	17	1.3	2.8	2.3	1.3	2.1	

Electricity generation																
	(TWh)							Shares (%)			CAGR (%)					
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040	
Total	380	623	1,003	1,516	1,890	2,494	3,036	100	100	100	4.1	2.8	2.8	2.0	2.5	
Coal	7.8	23	44	86	131	212	290	3.8	5.7	9.5	6.1	5.4	5.0	3.2	4.4	
Oil	111	128	194	212	209	231	219	21	14	7.2	2.3	-0.2	1.0	-0.5	0.1	
Natural gas	35	60	138	358	517	824	1,104	9.6	24	36	8.5	4.7	4.8	3.0	4.1	
Nuclear	2.3	12	20	31	49	69	86	2.0	2.1	2.8	4.3	5.8	3.4	2.2	3.7	
Hydro	218	386	584	754	846	953	1,057	62	50	35	3.1	1.5	1.2	1.0	1.2	
Geothermal	1.4	5.9	7.8	9.5	22	31	44	1.0	0.6	1.5	2.2	10.8	3.5	3.8	5.7	
Solar, wind, etc.	-	0.0	0.3	11	26	45	74	0.0	0.7	2.4	48.1	11.1	5.5	5.1	6.9	
Biomass and waste	3.9	7.6	14	53	90	130	162	1.2	3.5	5.3	9.3	6.9	3.7	2.2	4.1	

Energy and economic indicators																
											CAGR (%)					
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040	
GDP (\$2010 billion)				2,349	2,714	3,665	5,446	6,975	9,664	12,418	3.2	3.1	3.3	2.5	3.0	
Population (million)				360	441	521	605	656	711	750	1.4	1.0	0.8	0.5	0.8	
CO ₂ emissions ^{*2} (Mt)				807	915	1,199	1,681	1,986	2,494	2,898	2.8	2.1	2.3	1.5	2.0	
GDP per capita (\$2010 thousand)				6.5	6.2	7.0	9.0	11	14	17	1.7	2.1	2.5	2.0	2.2	
Primary energy consump. per capita (toe)				1.1	1.1	1.2	1.4	1.6	1.8	2.0	1.2	1.4	1.5	1.0	1.3	
Primary energy consumption per GDP ^{*3}				164	172	164	154	146	132	120	-0.5	-0.6	-1.0	-1.0	-0.9	
CO ₂ emissions per GDP ^{*2, *4}				344	337	327	309	285	258	233	-0.4	-1.0	-1.0	-1.0	-1.0	
CO ₂ per primary energy consumption ^{*2, *5}				2.1	2.0	2.0	2.0	2.0	2.0	1.9	0.1	-0.4	0.0	0.0	-0.1	
Automobile ownership (million)				28	38	55	108	145	192	226	4.8	3.7	2.8	1.6	2.7	
Automobile ownership rates ^{*6}				79	87	105	179	221	270	301	3.3	2.7	2.0	1.1	1.9	

*1 Trade of electricity and heat are not shown, *2 Excludes emission reduction by CCS, *3 toe/\$2010 million,

*4 t/\$2010 million, *5 t/toe, *6 Vehicles per 1,000 people

Table 37 OECD Europe [Reference Scenario]

Primary energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/	2012/	2020/	2030/	2012/
											2012	2020	2030	2040	2040
Total ^{*1}	1,494	1,619	1,746	1,745	1,818	1,863	1,879	100	100	100	0.3	0.5	0.2	0.1	0.3
Coal	464	449	330	315	292	286	268	28	18	14	-1.6	-0.9	-0.2	-0.7	-0.6
Oil	688	606	650	559	544	532	510	37	32	27	-0.4	-0.3	-0.2	-0.4	-0.3
Natural gas	206	260	393	417	469	509	520	16	24	28	2.2	1.5	0.8	0.2	0.8
Nuclear	60	205	245	230	227	205	218	13	13	12	0.5	-0.1	-1.0	0.6	-0.2
Hydro	36	38	47	48	49	51	51	2.4	2.8	2.7	1.1	0.3	0.3	0.1	0.2
Geothermal	3.0	4.7	7.1	12	16	20	24	0.3	0.7	1.3	4.4	3.8	2.2	1.7	2.4
Solar, wind, etc.	0.1	0.3	2.7	28	39	49	58	0.0	1.6	3.1	23.3	4.2	2.4	1.7	2.7
Biomass and waste	36	54	71	136	185	213	232	3.4	7.8	12	4.3	3.9	1.5	0.8	1.9

Final energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/	2012/	2020/	2030/	2012/
											2012	2020	2030	2040	2040
Total	1,081	1,122	1,226	1,218	1,283	1,320	1,331	100	100	100	0.4	0.6	0.3	0.1	0.3
By sector															
Industry	356	322	324	288	305	312	316	29	24	24	-0.5	0.7	0.2	0.1	0.3
Transport	209	266	316	322	330	325	307	24	26	23	0.9	0.3	-0.2	-0.6	-0.2
Buildings, etc.	425	434	473	504	532	561	581	39	41	44	0.7	0.7	0.5	0.3	0.5
Non-energy use	90	100	112	104	116	123	128	8.9	8.6	9.6	0.2	1.3	0.6	0.4	0.7
By energy															
Coal	156	124	62	53	53	49	46	11	4.4	3.5	-3.8	-0.2	-0.7	-0.6	-0.5
Oil	551	518	568	500	495	486	467	46	41	35	-0.2	-0.1	-0.2	-0.4	-0.2
Natural gas	161	201	268	268	294	314	325	18	22	24	1.3	1.2	0.7	0.3	0.7
Electricity	147	192	233	264	287	311	331	17	22	25	1.5	1.0	0.8	0.6	0.8
Heat	35	40	40	46	47	48	48	3.5	3.8	3.6	0.7	0.1	0.3	0.1	0.1
Renewables	31	47	54	86	107	112	114	4.2	7.0	8.6	2.8	2.9	0.4	0.2	1.0

Electricity generation

	(TWh)							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/	2012/	2020/	2030/	2012/
											2012	2020	2030	2040	2040
Total	2,049	2,661	3,223	3,603	3,926	4,250	4,505	100	100	100	1.4	1.1	0.8	0.6	0.8
Coal	887	1,030	967	955	906	942	909	39	27	20	-0.3	-0.7	0.4	-0.4	-0.2
Oil	364	206	179	66	42	34	28	7.7	1.8	0.6	-5.0	-5.6	-2.1	-2.0	-3.1
Natural gas	138	168	512	671	825	970	1,027	6.3	19	23	6.5	2.6	1.6	0.6	1.5
Nuclear	230	787	939	881	871	786	837	30	24	19	0.5	-0.1	-1.0	0.6	-0.2
Hydro	416	446	546	562	573	591	596	17	16	13	1.1	0.3	0.3	0.1	0.2
Geothermal	2.7	3.6	6.2	12	18	23	28	0.1	0.3	0.6	5.6	5.0	2.6	2.0	3.1
Solar, wind, etc.	0.5	1.4	24	283	419	537	643	0.1	7.9	14	27.5	5.0	2.5	1.8	3.0
Biomass and waste	11	21	49	173	273	367	438	0.8	4.8	9.7	10.1	5.9	3.0	1.8	3.4

Energy and economic indicators

								CAGR (%)							
	1980	1990	2000	2012	2020	2030	2040	1990/	2012/	2020/	2030/	2012/			
								2012	2020	2030	2040	2040			
GDP (\$2010 billion)	9,584	12,172	15,317	18,000	20,510	24,203	27,543	1.8	1.6	1.7	1.3	1.5			
Population (million)	476	499	521	555	570	583	590	0.5	0.4	0.2	0.1	0.2			
CO ₂ emissions ^{*2} (Mt)	4,164	3,952	3,892	3,628	3,579	3,594	3,466	-0.4	-0.2	0.0	-0.4	-0.2			
GDP per capita (\$2010 thousand)	20	24	29	32	36	42	47	1.3	1.3	1.4	1.2	1.3			
Primary energy consump. per capita (toe)	3.1	3.2	3.4	3.1	3.2	3.2	3.2	-0.1	0.2	0.0	0.0	0.0			
Primary energy consumption per GDP ^{*3}	156	133	114	97	89	77	68	-1.4	-1.1	-1.4	-1.2	-1.2			
CO ₂ emissions per GDP ^{*2, *4}	434	325	254	202	174	148	126	-2.1	-1.8	-1.6	-1.6	-1.7			
CO ₂ per primary energy consumption ^{*2, *5}	2.8	2.4	2.2	2.1	2.0	1.9	1.8	-0.7	-0.7	-0.2	-0.4	-0.4			
Automobile ownership (million)	125	180	239	297	327	357	372	2.3	1.2	0.9	0.4	0.8			
Automobile ownership rates ^{*6}	262	360	458	536	573	612	632	1.8	0.8	0.7	0.3	0.6			

*1 Trade of electricity and heat are not shown, *2 Excludes emission reduction by CCS, *3 toe/\$2010 million,

*4 t/\$2010 million, *5 t/toe, *6 Vehicles per 1,000 people

Table 38 Non-OECD Europe [Reference Scenario]

Primary energy consumption																
	Mtoe							Shares (%)			CAGR (%)					
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040	
Total ^{*1}	1,241	1,537	1,003	1,194	1,225	1,337	1,427	100	100	100	-1.1	0.3	0.9	0.7	0.6	
Coal	362	367	209	248	227	225	222	24	21	16	-1.8	-1.1	-0.1	-0.1	-0.4	
Oil	464	468	203	252	259	282	296	30	21	21	-2.8	0.4	0.8	0.5	0.6	
Natural gas	355	603	488	570	594	641	681	39	48	48	-0.3	0.5	0.8	0.6	0.6	
Nuclear	21	59	64	78	90	124	147	3.9	6.5	10	1.2	1.8	3.2	1.7	2.3	
Hydro	20	23	24	24	25	26	27	1.5	2.0	1.9	0.3	0.4	0.3	0.3	0.3	
Geothermal	-	0.0	0.1	0.5	1.4	1.7	2.0	0.0	0.0	0.1	14.9	13.1	2.3	1.6	5.0	
Solar, wind, etc.	-	-	0.0	0.7	1.5	3.4	6.4	-	0.1	0.4	n.a.	11.1	8.3	6.4	8.4	
Biomass and waste	21	17	16	21	28	35	47	1.1	1.8	3.3	1.0	3.5	2.3	2.8	2.8	

Final energy consumption																
	Mtoe							Shares (%)			CAGR (%)					
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040	
Total	869	1,073	654	742	796	903	996	100	100	100	-1.7	0.9	1.3	1.0	1.1	
By sector																
Industry	394	396	206	228	240	285	327	37	31	33	-2.5	0.7	1.7	1.4	1.3	
Transport	107	172	110	144	169	185	195	16	19	20	-0.8	2.0	0.9	0.5	1.1	
Buildings, etc.	301	439	289	284	294	317	335	41	38	34	-2.0	0.4	0.7	0.6	0.6	
Non-energy use	67	66	49	87	93	117	138	6.2	12	14	1.2	0.9	2.3	1.7	1.7	
By energy																
Coal	152	114	37	57	54	57	60	11	7.7	6.0	-3.1	-0.8	0.5	0.5	0.2	
Oil	310	280	146	189	202	224	238	26	25	24	-1.8	0.8	1.0	0.6	0.8	
Natural gas	215	261	201	218	246	287	324	24	29	33	-0.8	1.6	1.5	1.2	1.4	
Electricity	95	126	87	108	121	146	167	12	15	17	-0.7	1.5	1.8	1.4	1.6	
Heat	78	279	172	156	156	172	188	26	21	19	-2.6	0.0	1.0	0.9	0.7	
Renewables	21	13	12	15	17	19	20	1.2	2.0	2.0	0.6	2.0	0.7	0.5	1.0	

Electricity generation																
	(TWh)							Shares (%)			CAGR (%)					
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040	
Total	1,461	1,894	1,432	1,742	1,960	2,336	2,668	100	100	100	-0.4	1.5	1.8	1.3	1.5	
Coal	471	429	338	418	448	486	522	23	24	20	-0.1	0.9	0.8	0.7	0.8	
Oil	357	256	70	40	28	27	26	14	2.3	1.0	-8.1	-4.2	-0.7	-0.1	-1.5	
Natural gas	295	715	504	693	819	987	1,134	38	40	43	-0.1	2.1	1.9	1.4	1.8	
Nuclear	79	226	242	297	343	472	561	12	17	21	1.2	1.8	3.2	1.7	2.3	
Hydro	232	267	274	283	293	302	311	14	16	12	0.3	0.4	0.3	0.3	0.3	
Geothermal	-	0.0	0.1	0.5	1.5	1.8	2.1	0.0	0.0	0.1	13.8	15.0	2.3	1.6	5.5	
Solar, wind, etc.	-	-	0.0	6.5	17	38	72	-	0.4	2.7	n.a.	12.3	8.7	6.6	9.0	
Biomass and waste	27	0.0	2.6	4.2	11	21	38	0.0	0.2	1.4	22.6	12.8	6.4	6.2	8.1	

Energy and economic indicators																
	1980	1990	2000	2012	2020	2030	2040	2020	2030	2040	CAGR (%)					
											1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040	
GDP (\$2010 billion)	1,768	2,167	1,507	2,644	3,223	4,455	5,642				0.9	2.5	3.3	2.4	2.7	
Population (million)	320	344	341	341	344	340	333				0.0	0.1	-0.1	-0.2	-0.1	
CO ₂ emissions ^{*2} (Mt)	3,497	4,123	2,462	2,859	2,840	2,949	3,021				-1.6	-0.1	0.4	0.2	0.2	
GDP per capita (\$2010 thousand)	5.5	6.3	4.4	7.7	9.4	13	17				0.9	2.4	3.4	2.6	2.8	
Primary energy consump. per capita (toe)	3.9	4.5	2.9	3.5	3.6	3.9	4.3				-1.1	0.2	1.0	0.9	0.7	
Primary energy consumption per GDP ^{*3}	702	709	666	452	380	300	253				-2.0	-2.1	-2.3	-1.7	-2.0	
CO ₂ emissions per GDP ^{*2, *4}	1,978	1,903	1,634	1,081	881	662	536				-2.5	-2.5	-2.8	-2.1	-2.5	
CO ₂ per primary energy consumption ^{*2, *5}	2.8	2.7	2.5	2.4	2.3	2.2	2.1				-0.5	-0.4	-0.5	-0.4	-0.4	
Automobile ownership (million)	22	31	46	88	108	129	138				4.8	2.7	1.7	0.7	1.6	
Automobile ownership rates ^{*6}	67	91	135	258	315	379	413				4.8	2.6	1.9	0.9	1.7	

*1 Trade of electricity and heat are not shown, *2 Excludes emission reduction by CCS, *3 toe/\$2010 million,

*4 t/\$2010 million, *5 t/toe, *6 Vehicles per 1,000 people

Table 39 European Union [Reference Scenario]

Primary energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040
Total ^{*1}	n.a.	1,645	1,693	1,644	1,716	1,758	1,778	100	100	100	0.0	0.5	0.2	0.1	0.3
Coal	n.a.	456	321	294	274	270	251	28	18	14	-2.0	-0.9	-0.2	-0.7	-0.6
Oil	n.a.	606	623	526	515	505	487	37	32	27	-0.6	-0.3	-0.2	-0.4	-0.3
Natural gas	n.a.	297	396	392	441	479	491	18	24	28	1.3	1.5	0.8	0.2	0.8
Nuclear	n.a.	207	246	230	227	205	217	13	14	12	0.5	-0.2	-1.0	0.6	-0.2
Hydro	n.a.	25	31	29	29	30	30	1.5	1.8	1.7	0.7	0.1	0.2	0.0	0.1
Geothermal	n.a.	3.2	4.6	5.7	7.0	8.0	8.9	0.2	0.3	0.5	2.7	2.6	1.3	1.1	1.6
Solar, wind, etc.	n.a.	0.2	2.4	27	38	49	61	0.0	1.6	3.4	23.7	4.5	2.7	2.0	2.9
Biomass and waste	n.a.	47	66	137	185	212	231	2.8	8.3	13	5.0	3.8	1.4	0.8	1.9

Final energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040
Total	n.a.	1,129	1,175	1,139	1,203	1,242	1,257	100	100	100	0.0	0.7	0.3	0.1	0.4
By sector															
Industry	n.a.	343	309	264	279	288	294	30	23	23	-1.2	0.7	0.3	0.2	0.4
Transport	n.a.	259	304	307	317	313	297	23	27	24	0.8	0.4	-0.1	-0.5	-0.1
Buildings, etc.	n.a.	429	453	470	497	526	546	38	41	43	0.4	0.7	0.6	0.4	0.5
Non-energy use	n.a.	99	110	99	110	116	120	8.7	8.7	9.6	0.0	1.4	0.5	0.4	0.7
By energy															
Coal	n.a.	122	52	38	38	36	34	11	3.4	2.7	-5.1	-0.1	-0.6	-0.5	-0.4
Oil	n.a.	503	539	469	465	458	442	45	41	35	-0.3	-0.1	-0.2	-0.4	-0.2
Natural gas	n.a.	226	272	259	284	302	313	20	23	25	0.6	1.2	0.6	0.3	0.7
Electricity	n.a.	186	218	241	261	285	304	16	21	24	1.2	1.0	0.9	0.6	0.8
Heat	n.a.	54	45	48	49	50	51	4.8	4.2	4.1	-0.5	0.1	0.3	0.2	0.2
Renewables	n.a.	39	49	84	107	112	114	3.5	7.4	9.1	3.6	3.0	0.4	0.2	1.1

Electricity generation

	(TWh)							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040
Total	n.a.	2,576	3,005	3,264	3,571	3,895	4,172	100	100	100	1.1	1.1	0.9	0.7	0.9
Coal	n.a.	1,050	967	935	892	930	897	41	29	21	-0.5	-0.6	0.4	-0.4	-0.1
Oil	n.a.	224	181	73	48	41	35	8.7	2.2	0.8	-5.0	-4.9	-1.7	-1.5	-2.6
Natural gas	n.a.	193	480	582	724	866	929	7.5	18	22	5.2	2.8	1.8	0.7	1.7
Nuclear	n.a.	795	945	882	870	785	832	31	27	20	0.5	-0.2	-1.0	0.6	-0.2
Hydro	n.a.	289	356	335	338	345	346	11	10	8.3	0.7	0.1	0.2	0.0	0.1
Geothermal	n.a.	3.2	4.8	5.8	7.2	8.2	9.2	0.1	0.2	0.2	2.7	2.9	1.3	1.1	1.7
Solar, wind, etc.	n.a.	1.3	24	281	422	556	686	0.1	8.6	16	27.7	5.2	2.8	2.1	3.2
Biomass and waste	n.a.	20	47	170	269	363	436	0.8	5.2	10	10.3	5.9	3.0	1.9	3.4

Energy and economic indicators

	1980	1990	2000	2012	2020	2030	2040	CAGR (%)				
								1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040
GDP (\$2010 billion)	n.a.	11,433	14,229	16,542	18,848	22,299	25,446	1.7	1.6	1.7	1.3	1.6
Population (million)	n.a.	478	488	506	518	526	529	0.3	0.3	0.2	0.1	0.2
CO ₂ emissions ^{*2} (Mt)	n.a.	4,068	3,786	3,408	3,374	3,398	3,285	-0.8	-0.1	0.1	-0.3	-0.1
GDP per capita (\$2010 thousand)	n.a.	24	29	33	36	42	48	1.4	1.3	1.5	1.3	1.4
Primary energy consump. per capita (toe)	n.a.	3.4	3.5	3.3	3.3	3.3	3.4	-0.3	0.2	0.1	0.0	0.1
Primary energy consumption per GDP ^{*3}	n.a.	144	119	99	91	79	70	-1.7	-1.1	-1.4	-1.2	-1.3
CO ₂ emissions per GDP ^{*2, *4}	n.a.	356	266	206	179	152	129	-2.5	-1.7	-1.6	-1.6	-1.7
CO ₂ per primary energy consumption ^{*2, *5}	n.a.	2.5	2.2	2.1	2.0	1.9	1.8	-0.8	-0.7	-0.2	-0.4	-0.4
Automobile ownership (million)	n.a.	177	235	290	318	347	362	2.3	1.2	0.9	0.4	0.8
Automobile ownership rates ^{*6}	n.a.	371	482	574	615	660	683	2.0	0.9	0.7	0.4	0.6

*1 Trade of electricity and heat are not shown, *2 Excludes emission reduction by CCS, *3 toe/\$2010 million,

*4 t/\$2010 million, *5 t/toe, *6 Vehicles per 1,000 people

Table 40 Africa [Reference Scenario]

Primary energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/	2012/	2020/	2030/	2012/
											2012	2020	2030	2040	2040
Total ^{*1}	272	391	497	733	895	1,084	1,272	100	100	100	2.9	2.5	1.9	1.6	2.0
Coal	52	74	90	105	123	141	162	19	14	13	1.6	1.9	1.4	1.4	1.6
Oil	61	86	98	160	190	220	249	22	22	20	2.8	2.2	1.5	1.3	1.6
Natural gas	12	30	47	100	144	208	281	7.6	14	22	5.7	4.7	3.8	3.0	3.8
Nuclear	-	2.2	3.4	3.4	3.5	7.5	7.8	0.6	0.5	0.6	2.0	0.5	7.9	0.3	3.0
Hydro	4.1	4.8	6.4	9.7	10	11	12	1.2	1.3	1.0	3.2	0.9	0.9	0.8	0.9
Geothermal	-	0.3	0.4	1.4	6.1	8.9	9.9	0.1	0.2	0.8	7.5	20.3	3.8	1.1	7.3
Solar, wind, etc.	-	0.0	0.0	0.3	1.2	1.8	4.1	0.0	0.0	0.3	34.6	16.3	4.7	8.5	9.3
Biomass and waste	142	194	250	352	417	484	545	50	48	43	2.7	2.1	1.5	1.2	1.6

Final energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/	2012/	2020/	2030/	2012/
											2012	2020	2030	2040	2040
Total	218	292	371	539	655	785	919	100	100	100	2.8	2.5	1.8	1.6	1.9
By sector															
Industry	46	55	58	82	110	140	170	19	15	19	1.9	3.7	2.4	2.0	2.6
Transport	27	38	54	92	112	132	151	13	17	16	4.1	2.5	1.6	1.3	1.8
Buildings, etc.	139	188	243	344	407	486	566	64	64	62	2.8	2.1	1.8	1.5	1.8
Non-energy use	5.4	11	16	20	25	27	33	3.8	3.8	3.6	2.7	2.8	0.9	1.8	1.8
By energy															
Coal	22	20	19	20	24	30	37	6.7	3.6	4.0	0.0	2.7	2.3	2.0	2.3
Oil	54	71	90	143	173	204	235	24	26	26	3.2	2.5	1.6	1.4	1.8
Natural gas	2.8	8.6	14	32	44	57	72	2.9	5.9	7.9	6.2	4.1	2.5	2.5	3.0
Electricity	14	22	31	51	69	97	131	7.6	9.4	14	3.8	3.9	3.5	3.0	3.5
Heat	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Renewables	126	171	217	294	345	397	444	59	55	48	2.5	2.0	1.4	1.1	1.5

Electricity generation

	(TWh)							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/	2012/	2020/	2030/	2012/
											2012	2020	2030	2040	2040
Total	184	316	442	720	975	1,374	1,844	100	100	100	3.8	3.9	3.5	3.0	3.4
Coal	100	165	209	259	323	391	471	52	36	26	2.1	2.8	1.9	1.9	2.2
Oil	22	41	51	73	77	81	84	13	10	4.5	2.7	0.6	0.5	0.3	0.5
Natural gas	14	45	92	256	415	702	1,046	14	36	57	8.2	6.2	5.4	4.1	5.2
Nuclear	-	8.4	13	13	14	29	30	2.7	1.8	1.6	2.0	0.5	7.9	0.3	3.0
Hydro	47	56	75	112	121	133	144	18	16	7.8	3.2	0.9	0.9	0.8	0.9
Geothermal	-	0.3	0.4	1.6	7.1	10	12	0.1	0.2	0.6	7.5	20.3	3.8	1.1	7.3
Solar, wind, etc.	-	-	0.2	2.7	12	20	47	-	0.4	2.6	n.a.	21.3	5.0	8.7	10.8
Biomass and waste	0.2	0.5	1.3	1.8	6.3	8.0	11	0.1	0.2	0.6	6.3	17.3	2.4	2.8	6.6

Energy and economic indicators

	1980	1990	2000	2012	2020	2030	2040	CAGR (%)				
								1990/	2012/	2020/	2030/	2012/
GDP (\$2010 billion)	648	819	1,075	1,847	2,660	4,102	6,125	3.8	4.7	4.4	4.1	4.4
Population (million)	476	627	806	1,082	1,310	1,632	1,995	2.5	2.4	2.2	2.0	2.2
CO ₂ emissions ^{*2} (Mt)	403	593	719	1,086	1,337	1,648	1,975	2.8	2.6	2.1	1.8	2.2
GDP per capita (\$2010 thousand)	1.4	1.3	1.3	1.7	2.0	2.5	3.1	1.2	2.2	2.2	2.0	2.1
Primary energy consump. per capita (toe)	0.6	0.6	0.6	0.7	0.7	0.7	0.6	0.4	0.1	-0.3	-0.4	-0.2
Primary energy consumption per GDP ^{*3}	419	478	462	397	337	264	208	-0.8	-2.0	-2.4	-2.4	-2.3
CO ₂ emissions per GDP ^{*2, *4}	622	724	668	588	503	402	322	-0.9	-1.9	-2.2	-2.2	-2.1
CO ₂ per primary energy consumption ^{*2, *5}	1.5	1.5	1.4	1.5	1.5	1.5	1.6	-0.1	0.1	0.2	0.2	0.2
Automobile ownership (million)	9.8	14	20	34	46	65	87	3.9	4.0	3.4	2.9	3.4
Automobile ownership rates ^{*6}	21	23	24	31	35	40	43	1.4	1.6	1.2	0.9	1.2

*1 Trade of electricity and heat are not shown, *2 Excludes emission reduction by CCS, *3 toe/\$2010 million,

*4 t/\$2010 million, *5 t/toe, *6 Vehicles per 1,000 people

Table 41 Middle East [Reference Scenario]

Primary energy consumption																
	Mtoe							Shares (%)			CAGR (%)					
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040	
Total ^{*1}	121	222	375	705	841	1,014	1,165	100	100	100	5.4	2.2	1.9	1.4	1.8	
Coal	1.2	3.0	8.1	12	16	22	28	1.3	1.6	2.4	6.3	4.5	2.9	2.4	3.2	
Oil	90	146	217	349	402	474	532	66	49	46	4.0	1.8	1.7	1.2	1.5	
Natural gas	29	72	148	340	413	493	568	32	48	49	7.3	2.5	1.8	1.4	1.8	
Nuclear	-	-	-	0.5	4.4	19	29	-	0.1	2.5	n.a.	31.8	15.9	4.4	15.8	
Hydro	0.8	1.0	0.7	1.9	1.8	1.8	1.8	0.5	0.3	0.2	2.9	-0.7	0.0	0.0	-0.2	
Geothermal	-	-	-	-	0.0	0.0	0.0	-	-	0.0	n.a.	n.a.	8.3	5.6	n.a.	
Solar, wind, etc.	-	0.4	0.7	1.3	2.0	3.1	4.7	0.2	0.2	0.4	5.4	5.6	4.4	4.2	4.7	
Biomass and waste	0.3	0.4	0.4	0.9	1.0	1.1	1.2	0.2	0.1	0.1	3.2	0.9	1.1	1.0	1.0	

Final energy consumption																
	Mtoe							Shares (%)			CAGR (%)					
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040	
Total	84	157	254	468	561	692	807	100	100	100	5.1	2.3	2.1	1.6	2.0	
By sector																
Industry	30	42	64	127	154	195	233	27	27	29	5.2	2.4	2.4	1.8	2.2	
Transport	26	50	74	131	150	188	217	32	28	27	4.5	1.7	2.3	1.5	1.8	
Buildings, etc.	22	40	76	121	149	183	219	26	26	27	5.1	2.7	2.1	1.8	2.1	
Non-energy use	5.6	25	40	89	109	126	139	16	19	17	6.0	2.6	1.5	1.0	1.6	
By energy																
Coal	0.3	0.2	0.5	2.2	2.5	3.8	5.2	0.1	0.5	0.6	11.7	2.0	4.3	3.1	3.2	
Oil	67	108	152	228	267	325	375	69	49	46	3.5	2.0	2.0	1.4	1.8	
Natural gas	9.8	31	68	168	201	243	278	20	36	34	7.9	2.3	1.9	1.3	1.8	
Electricity	6.5	17	33	68	89	117	145	11	14	18	6.4	3.5	2.8	2.2	2.8	
Heat	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.	
Renewables	0.2	0.7	1.0	2.0	2.5	3.3	4.4	0.5	0.4	0.5	4.7	2.5	2.9	2.9	2.8	

Electricity generation																
	(TWh)							Shares (%)			CAGR (%)					
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040	
Total	95	244	472	968	1,268	1,647	2,028	100	100	100	6.5	3.4	2.7	2.1	2.7	
Coal	0.1	11	30	39	60	80	102	4.3	4.0	5.0	6.2	5.5	2.9	2.5	3.5	
Oil	47	108	188	341	406	476	531	44	35	26	5.4	2.2	1.6	1.1	1.6	
Natural gas	39	114	246	563	760	988	1,247	47	58	61	7.5	3.8	2.7	2.4	2.9	
Nuclear	-	-	-	1.8	17	74	113	-	0.2	5.6	n.a.	31.8	15.9	4.4	15.8	
Hydro	9.7	12	8.0	22	21	21	21	4.9	2.3	1.0	2.9	-0.7	0.0	0.0	-0.2	
Geothermal	-	-	-	-	0.0	0.0	0.0	-	-	0.0	n.a.	n.a.	8.3	5.6	n.a.	
Solar, wind, etc.	-	0.0	0.0	0.6	4.2	8.3	15	0.0	0.1	0.7	33.6	28.1	6.9	6.2	12.3	
Biomass and waste	-	-	-	0.1	0.2	0.3	0.4	-	0.0	0.0	n.a.	5.4	4.8	2.8	4.3	

Energy and economic indicators																
											CAGR (%)					
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040	
GDP (\$2010 billion)			833	919	1,393	2,449	3,328	4,506	5,717		4.6	3.9	3.1	2.4	3.1	
Population (million)			92	132	166	221	256	293	325		2.4	1.8	1.4	1.1	1.4	
CO ₂ emissions ^{*2} (Mt)			332	559	936	1,675	1,975	2,358	2,701		5.1	2.1	1.8	1.4	1.7	
GDP per capita (\$2010 thousand)			9.0	7.0	8.4	11	13	15	18		2.1	2.0	1.7	1.3	1.7	
Primary energy consump. per capita (toe)			1.3	1.7	2.3	3.2	3.3	3.5	3.6		2.9	0.4	0.5	0.3	0.4	
Primary energy consumption per GDP ^{*3}			146	242	269	288	253	225	204		0.8	-1.6	-1.2	-1.0	-1.2	
CO ₂ emissions per GDP ^{*2, *4}			399	609	672	684	594	523	472		0.5	-1.8	-1.3	-1.0	-1.3	
CO ₂ per primary energy consumption ^{*2, *5}			2.7	2.5	2.5	2.4	2.3	2.3	2.3		-0.3	-0.1	-0.1	0.0	-0.1	
Automobile ownership (million)			5.8	10	14	35	44	61	75		5.8	3.0	3.2	2.1	2.8	
Automobile ownership rates ^{*6}			63	78	85	158	173	208	230		3.3	1.1	1.8	1.0	1.3	

*1 Trade of electricity and heat are not shown, *2 Excludes emission reduction by CCS, *3 toe/\$2010 million,

*4 t/\$2010 million, *5 t/toe, *6 Vehicles per 1,000 people

Table 42 Oceania [Reference Scenario]

Primary energy consumption																
	Mtoe							Shares (%)			CAGR (%)					
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040	
Total ^{*1}	79	99	125	147	156	162	165	100	100	100	1.8	0.7	0.4	0.2	0.4	
Coal	28	36	49	48	51	48	43	37	33	26	1.3	0.6	-0.5	-1.1	-0.4	
Oil	34	35	40	51	47	50	53	35	34	32	1.7	-1.0	0.7	0.5	0.1	
Natural gas	8.3	19	24	34	37	40	42	19	23	25	2.7	1.3	0.7	0.5	0.8	
Nuclear	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.	
Hydro	2.7	3.2	3.5	3.2	3.3	3.5	3.7	3.2	2.2	2.2	-0.1	0.5	0.5	0.5	0.5	
Geothermal	1.0	1.5	1.9	3.9	7.8	8.1	8.5	1.5	2.6	5.2	4.5	9.2	0.4	0.5	2.9	
Solar, wind, etc.	0.0	0.1	0.1	1.1	2.5	4.5	7.1	0.1	0.8	4.3	12.6	10.9	5.8	4.7	6.8	
Biomass and waste	4.1	4.7	6.1	6.3	7.1	7.3	7.8	4.8	4.3	4.7	1.3	1.5	0.3	0.7	0.8	

Final energy consumption																
	Mtoe							Shares (%)			CAGR (%)					
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040	
Total	54	66	83	92	101	109	116	100	100	100	1.5	1.1	0.8	0.6	0.8	
By sector																
Industry	20	23	28	28	30	32	33	35	30	29	0.9	1.1	0.5	0.4	0.7	
Transport	19	24	30	36	37	40	43	36	39	37	1.8	0.5	0.8	0.6	0.6	
Buildings, etc.	11	15	19	23	26	29	31	22	25	27	2.0	1.5	1.1	0.7	1.1	
Non-energy use	3.1	4.6	6.1	5.8	7.4	8.4	9.1	6.9	6.2	7.8	1.1	3.2	1.2	0.8	1.6	
By energy																
Coal	5.3	5.2	4.7	3.9	4.1	3.9	3.6	7.9	4.2	3.1	-1.3	0.7	-0.7	-0.6	-0.2	
Oil	31	33	40	47	49	54	57	50	51	49	1.6	0.7	0.9	0.6	0.7	
Natural gas	5.4	10	14	14	16	17	17	16	16	15	1.4	1.3	0.6	0.1	0.6	
Electricity	8.5	14	18	21	25	28	31	20	23	26	2.1	1.9	1.1	0.9	1.3	
Heat	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.	
Renewables	4.0	4.1	5.6	5.9	6.6	7.0	7.6	6.2	6.4	6.5	1.7	1.4	0.5	0.8	0.9	

Electricity generation																
	(TWh)							Shares (%)			CAGR (%)					
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040	
Total	118	187	249	293	345	387	425	100	100	100	2.1	2.1	1.2	0.9	1.3	
Coal	70	122	176	175	191	193	181	65	60	43	1.6	1.1	0.1	-0.6	0.1	
Oil	5.2	3.6	1.8	4.1	4.6	6.2	8.2	1.9	1.4	1.9	0.6	1.6	2.9	2.9	2.5	
Natural gas	8.7	20	26	59	70	88	110	11	20	26	5.0	2.3	2.3	2.2	2.3	
Nuclear	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.	
Hydro	32	37	41	37	38	40	43	20	13	10	-0.1	0.5	0.5	0.5	0.5	
Geothermal	1.2	2.1	2.9	6.2	13	13	14	1.1	2.1	3.3	5.0	9.6	0.3	0.5	3.0	
Solar, wind, etc.	-	-	0.2	9.7	24	42	64	-	3.3	15	n.a.	12.2	5.6	4.4	7.0	
Biomass and waste	0.7	1.3	1.7	3.0	3.7	4.7	5.8	0.7	1.0	1.4	4.0	2.9	2.2	2.1	2.4	

Energy and economic indicators																
	1980	1990	2000	2012	2020	2030	2040	CAGR (%)								
								1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040				
GDP (\$2010 billion)	520	715	989	1,407	1,765	2,243	2,704	3.1	2.9	2.4	1.9	2.4				
Population (million)	18	20	23	27	30	33	36	1.3	1.2	1.0	0.9	1.0				
CO ₂ emissions ^{*2} (Mt)	227	281	357	410	411	415	407	1.7	0.0	0.1	-0.2	0.0				
GDP per capita (\$2010 thousand)	29	35	43	52	59	68	75	1.8	1.7	1.4	1.0	1.3				
Primary energy consump. per capita (toe)	4.4	4.9	5.4	5.4	5.2	4.9	4.6	0.5	-0.5	-0.6	-0.6	-0.6				
Primary energy consumption per GDP ^{*3}	151	139	127	105	88	72	61	-1.3	-2.1	-2.0	-1.6	-1.9				
CO ₂ emissions per GDP ^{*2, *4}	437	392	361	291	233	185	150	-1.3	-2.8	-2.3	-2.1	-2.3				
CO ₂ per primary energy consumption ^{*2, *5}	2.9	2.8	2.9	2.8	2.6	2.6	2.5	-0.1	-0.7	-0.3	-0.4	-0.4				
Automobile ownership (million)	8.8	12	15	19	22	24	27	2.4	1.3	1.2	0.9	1.1				
Automobile ownership rates ^{*6}	495	567	650	714	722	734	738	1.0	0.1	0.2	0.1	0.1				

*1 Trade of electricity and heat are not shown, *2 Excludes emission reduction by CCS, *3 toe/\$2010 million,

*4 t/\$2010 million, *5 t/toe, *6 Vehicles per 1,000 people

Table 43 OECD [Reference Scenario]

Primary energy consumption

	Mtoe								Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/	2012/	2020/	2030/	2012/	
											2012	2020	2030	2040	2040	
Total ^{*1}	4,060	4,511	5,273	5,225	5,481	5,646	5,670	100	100	100	0.7	0.6	0.3	0.0	0.3	
Coal	966	1,078	1,094	1,011	954	918	845	24	19	15	-0.3	-0.7	-0.4	-0.8	-0.6	
Oil	1,938	1,861	2,103	1,888	1,823	1,793	1,749	41	36	31	0.1	-0.4	-0.2	-0.2	-0.3	
Natural gas	778	843	1,156	1,343	1,504	1,645	1,689	19	26	30	2.1	1.4	0.9	0.3	0.8	
Nuclear	162	451	586	509	582	566	581	10	9.7	10	0.5	1.7	-0.3	0.3	0.5	
Hydro	94	102	115	119	125	130	133	2.3	2.3	2.3	0.7	0.6	0.4	0.2	0.4	
Geothermal	10	26	30	32	57	74	94	0.6	0.6	1.7	0.9	7.4	2.6	2.5	3.9	
Solar, wind, etc.	0.1	1.9	5.8	47	73	106	138	0.0	0.9	2.4	15.7	5.7	3.8	2.7	3.9	
Biomass and waste	111	147	182	276	365	417	444	3.3	5.3	7.8	2.9	3.6	1.3	0.6	1.7	

Final energy consumption

	Mtoe								Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/	2012/	2020/	2030/	2012/	
											2012	2020	2030	2040	2040	
Total	2,937	3,099	3,631	3,568	3,747	3,873	3,903	100	100	100	0.6	0.6	0.3	0.1	0.3	
By sector																
Industry	940	826	909	791	841	867	876	27	22	22	-0.2	0.8	0.3	0.1	0.4	
Transport	781	938	1,142	1,180	1,196	1,192	1,156	30	33	30	1.0	0.2	0.0	-0.3	-0.1	
Buildings, etc.	972	1,045	1,210	1,266	1,349	1,423	1,459	34	35	37	0.9	0.8	0.5	0.3	0.5	
Non-energy use	243	290	370	330	361	391	412	9.3	9.3	11	0.6	1.1	0.8	0.5	0.8	
By energy																
Coal	259	234	140	121	119	113	106	7.5	3.4	2.7	-3.0	-0.2	-0.5	-0.6	-0.5	
Oil	1,570	1,586	1,841	1,695	1,663	1,645	1,608	51	48	41	0.3	-0.2	-0.1	-0.2	-0.2	
Natural gas	559	589	746	709	785	819	829	19	20	21	0.8	1.3	0.4	0.1	0.6	
Electricity	408	550	714	795	881	975	1,034	18	22	26	1.7	1.3	1.0	0.6	0.9	
Heat	36	43	49	59	61	64	65	1.4	1.7	1.7	1.5	0.4	0.5	0.2	0.3	
Renewables	105	97	141	189	239	257	261	3.1	5.3	6.7	3.1	3.0	0.7	0.2	1.2	

Electricity generation

	(TWh)								Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/	2012/	2020/	2030/	2012/	
											2012	2020	2030	2040	2040	
Total	5,656	7,608	9,685	10,722	11,810	13,051	13,834	100	100	100	1.6	1.2	1.0	0.6	0.9	
Coal	2,319	3,082	3,759	3,439	3,296	3,272	3,087	41	32	22	0.5	-0.5	-0.1	-0.6	-0.4	
Oil	980	676	580	374	243	204	194	8.9	3.5	1.4	-2.6	-5.3	-1.7	-0.5	-2.3	
Natural gas	618	782	1,543	2,735	3,253	4,019	4,419	10	26	32	5.9	2.2	2.1	1.0	1.7	
Nuclear	621	1,729	2,249	1,952	2,232	2,173	2,228	23	18	16	0.6	1.7	-0.3	0.3	0.5	
Hydro	1,093	1,181	1,341	1,389	1,454	1,516	1,549	16	13	11	0.7	0.6	0.4	0.2	0.4	
Geothermal	11	29	33	45	86	111	142	0.4	0.4	1.0	2.0	8.6	2.6	2.5	4.2	
Solar, wind, etc.	0.5	5.1	31	476	776	1,140	1,478	0.1	4.4	11	22.9	6.3	3.9	2.6	4.1	
Biomass and waste	13	124	149	312	470	616	736	1.6	2.9	5.3	4.3	5.3	2.7	1.8	3.1	

Energy and economic indicators

										CAGR (%)					
	1980	1990	2000	2012	2020	2030	2040	1990/	2012/	2040	1990/	2012/	2020/	2030/	2012/
											2012	2020	2030	2040	2040
GDP (\$2010 billion)	20,997	28,548	37,129	44,727	53,245	65,257	76,636				2.1	2.2	2.1	1.6	1.9
Population (million)	982	1,062	1,150	1,246	1,300	1,353	1,388				0.7	0.5	0.4	0.3	0.4
CO ₂ emissions ^{*2} (Mt)	10,863	11,095	12,398	11,965	11,823	11,830	11,456				0.3	-0.1	0.0	-0.3	-0.2
GDP per capita (\$2010 thousand)	21	27	32	36	41	48	55				1.3	1.7	1.6	1.4	1.6
Primary energy consump. per capita (toe)	4.1	4.2	4.6	4.2	4.2	4.2	4.1				-0.1	0.1	-0.1	-0.2	-0.1
Primary energy consumption per GDP ^{*3}	193	158	142	117	103	87	74				-1.4	-1.6	-1.7	-1.6	-1.6
CO ₂ emissions per GDP ^{*2, *4}	517	389	334	268	222	181	149				-1.7	-2.3	-2.0	-1.9	-2.1
CO ₂ per primary energy consumption ^{*2, *5}	2.7	2.5	2.4	2.3	2.2	2.1	2.0				-0.3	-0.7	-0.3	-0.4	-0.4
Automobile ownership (million)	347	469	594	721	795	875	929				2.0	1.2	1.0	0.6	0.9
Automobile ownership rates ^{*6}	354	441	516	578	612	647	669				1.2	0.7	0.6	0.3	0.5

*1 Trade of electricity and heat are not shown, *2 Excludes emission reduction by CCS, *3 toe/\$2010 million,

*4 t/\$2010 million, *5 t/toe, *6 Vehicles per 1,000 people

Table 44 Non-OECD [Reference Scenario]

Primary energy consumption															
	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040
Total ^{*1}	2,974	4,068	4,534	7,795	9,361	11,263	13,030	100	100	100	3.0	2.3	1.9	1.5	1.9
Coal	822	1,152	1,264	2,867	3,157	3,516	3,860	28	37	30	4.2	1.2	1.1	0.9	1.1
Oil	986	1,169	1,283	1,966	2,377	2,891	3,349	29	25	26	2.4	2.4	2.0	1.5	1.9
Natural gas	456	824	917	1,501	1,932	2,539	3,130	20	19	24	2.8	3.2	2.8	2.1	2.7
Nuclear	24	74	89	133	268	429	573	1.8	1.7	4.4	2.7	9.1	4.8	2.9	5.3
Hydro	54	83	110	196	240	265	288	2.0	2.5	2.2	4.0	2.5	1.0	0.8	1.4
Geothermal	2.2	7.6	22	34	88	100	105	0.2	0.4	0.8	7.1	12.5	1.3	0.4	4.1
Solar, wind, etc.	-	0.5	2.1	29	55	85	121	0.0	0.4	0.9	20.4	8.5	4.5	3.6	5.3
Biomass and waste	630	758	846	1,067	1,241	1,433	1,598	19	14	12	1.6	1.9	1.5	1.1	1.5

Final energy consumption															
	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040
Total	2,266	2,988	3,185	5,061	6,148	7,492	8,775	100	100	100	2.4	2.5	2.0	1.6	2.0
By sector															
Industry	835	979	980	1,749	2,089	2,497	2,906	33	35	33	2.7	2.2	1.8	1.5	1.8
Transport	289	436	549	977	1,265	1,619	1,942	15	19	22	3.7	3.3	2.5	1.8	2.5
Buildings, etc.	1,031	1,380	1,400	1,857	2,214	2,669	3,097	46	37	35	1.4	2.2	1.9	1.5	1.8
Non-energy use	111	192	256	478	580	706	830	6.4	9.5	9.5	4.2	2.4	2.0	1.6	2.0
By energy															
Coal	453	535	437	789	846	863	885	18	16	10	1.8	0.9	0.2	0.3	0.4
Oil	698	818	1,011	1,607	1,993	2,482	2,928	27	32	33	3.1	2.7	2.2	1.7	2.2
Natural gas	257	357	377	657	873	1,162	1,448	12	13	17	2.8	3.6	2.9	2.2	2.9
Electricity	178	283	377	832	1,116	1,508	1,908	9.5	16	22	5.0	3.7	3.1	2.4	3.0
Heat	85	293	198	227	243	268	286	9.8	4.5	3.3	-1.1	0.8	1.0	0.7	0.8
Renewables	596	702	785	949	1,076	1,209	1,319	24	19	15	1.4	1.6	1.2	0.9	1.2

Electricity generation															
	(TWh)							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040
Total	2,628	4,218	5,741	11,946	15,737	20,993	26,382	100	100	100	4.8	3.5	2.9	2.3	2.9
Coal	822	1,343	2,244	5,729	6,970	9,087	11,228	32	48	43	6.8	2.5	2.7	2.1	2.4
Oil	674	634	623	754	824	922	979	15	6.3	3.7	0.8	1.1	1.1	0.6	0.9
Natural gas	381	979	1,210	2,365	3,439	5,150	7,028	23	20	27	4.1	4.8	4.1	3.2	4.0
Nuclear	93	283	341	510	1,027	1,654	2,223	6.7	4.3	8.4	2.7	9.2	4.9	3.0	5.4
Hydro	624	963	1,279	2,283	2,787	3,078	3,346	23	19	13	4.0	2.5	1.0	0.8	1.4
Geothermal	2.6	7.8	19	26	70	91	104	0.2	0.2	0.4	5.6	13.5	2.6	1.4	5.1
Solar, wind, etc.	-	0.0	3.1	153	387	652	1,004	0.0	1.3	3.8	46.0	12.3	5.3	4.4	7.0
Biomass and waste	31	7.7	22	127	232	358	470	0.2	1.1	1.8	13.6	7.8	4.4	2.7	4.8

Energy and economic indicators															
	1980	1990	2000	2012	2020	2030	2040	CAGR (%)							
								1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040			
GDP (\$2010 billion)	6,316	8,391	11,503	23,177	34,494	54,169	77,654	4.7	5.1	4.6	3.7	4.4			
Population (million)	3,454	4,209	4,943	5,787	6,367	7,019	7,594	1.5	1.2	1.0	0.8	1.0			
CO ₂ emissions ^{*2} (Mt)	7,026	9,521	10,342	19,523	22,657	26,724	30,536	3.3	1.9	1.7	1.3	1.6			
GDP per capita (\$2010 thousand)	1.8	2.0	2.3	4.0	5.4	7.7	10	3.2	3.8	3.6	2.9	3.4			
Primary energy consump. per capita (toe)	0.9	1.0	0.9	1.3	1.5	1.6	1.7	1.5	1.1	0.9	0.7	0.9			
Primary energy consumption per GDP ^{*3}	471	485	394	336	271	208	168	-1.6	-2.6	-2.6	-2.1	-2.5			
CO ₂ emissions per GDP ^{*2, *4}	1,112	1,135	899	842	657	493	393	-1.3	-3.1	-2.8	-2.2	-2.7			
CO ₂ per primary energy consumption ^{*2, *5}	2.4	2.3	2.3	2.5	2.4	2.4	2.3	0.3	-0.4	-0.2	-0.1	-0.2			
Automobile ownership (million)	68	108	173	429	628	883	1,161	6.4	4.9	3.5	2.8	3.6			
Automobile ownership rates ^{*6}	20	26	35	74	99	126	153	4.9	3.6	2.5	2.0	2.6			

*1 Trade of electricity and heat are not shown, *2 Excludes emission reduction by CCS, *3 toe/\$2010 million,

*4 t/\$2010 million, *5 t/toe, *6 Vehicles per 1,000 people

Table 45 China [Low Growth Scenario]

Primary energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/	2012/	2020/	2030/	2012/
											2012	2020	2030	2040	2040
Total ^{*1}	598	871	1,161	2,894	3,358	3,591	3,797	100	100	100	5.6	1.9	0.7	0.6	1.0
Coal	313	528	691	1,969	2,029	1,922	1,840	61	68	48	6.2	0.4	-0.5	-0.4	-0.2
Oil	89	119	221	464	599	695	765	14	16	20	6.4	3.2	1.5	1.0	1.8
Natural gas	12	13	21	121	245	380	492	1.5	4.2	13	10.7	9.3	4.5	2.6	5.2
Nuclear	-	-	4.4	25	118	186	253	-	0.9	6.7	n.a.	21.2	4.6	3.1	8.6
Hydro	5.0	11	19	74	100	106	110	1.3	2.6	2.9	9.1	3.8	0.5	0.4	1.4
Geothermal	-	-	1.6	4.3	4.6	5.3	5.9	-	0.1	0.2	n.a.	0.9	1.5	1.1	1.2
Solar, wind, etc.	-	0.0	1.0	22	39	57	76	0.0	0.7	2.0	34.3	7.8	3.8	2.8	4.6
Biomass and waste	180	200	204	216	223	241	255	23	7.5	6.7	0.3	0.4	0.8	0.6	0.6

Final energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/	2012/	2020/	2030/	2012/
											2012	2020	2030	2040	2040
Total	494	664	816	1,702	2,026	2,227	2,404	100	100	100	4.4	2.2	0.9	0.8	1.2
By sector															
Industry	188	244	329	810	897	896	906	37	48	38	5.6	1.3	0.0	0.1	0.4
Transport	24	34	88	238	342	422	485	5.1	14	20	9.3	4.6	2.1	1.4	2.6
Buildings, etc.	272	344	337	518	616	706	781	52	30	32	1.9	2.2	1.4	1.0	1.5
Non-energy use	10	43	62	136	171	202	232	6.5	8.0	9.7	5.4	2.9	1.7	1.4	1.9
By energy															
Coal	220	318	304	558	566	509	465	48	33	19	2.6	0.2	-1.1	-0.9	-0.6
Oil	59	85	180	422	550	641	708	13	25	29	7.6	3.4	1.5	1.0	1.9
Natural gas	6.4	8.9	12	81	147	218	293	1.3	4.7	12	10.6	7.8	4.0	3.0	4.7
Electricity	21	39	89	355	464	547	618	5.9	21	26	10.6	3.4	1.7	1.2	2.0
Heat	7.4	13	25	71	85	90	92	2.0	4.2	3.8	7.9	2.3	0.7	0.2	1.0
Renewables	180	200	205	216	215	222	227	30	13	9.5	0.3	-0.1	0.3	0.3	0.2

Electricity generation

	(TWh)							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/	2012/	2020/	2030/	2012/
											2012	2020	2030	2040	2040
Total	301	621	1,356	4,985	6,393	7,464	8,374	100	100	100	9.9	3.2	1.6	1.2	1.9
Coal	164	443	1,062	3,785	4,140	4,436	4,648	71	76	56	10.2	1.1	0.7	0.5	0.7
Oil	78	49	46	6.8	7.6	7.5	7.4	7.9	0.1	0.1	-8.6	1.5	-0.2	-0.2	0.3
Natural gas	0.7	2.8	5.8	86	277	508	680	0.4	1.7	8.1	16.9	15.8	6.3	3.0	7.7
Nuclear	-	-	17	97	454	713	973	-	2.0	12	n.a.	21.2	4.6	3.1	8.6
Hydro	58	127	222	863	1,167	1,228	1,280	20	17	15	9.1	3.8	0.5	0.4	1.4
Geothermal	-	-	-	0.2	0.3	0.3	0.3	-	0.0	0.0	n.a.	6.8	1.5	1.4	2.9
Solar, wind, etc.	-	0.0	0.6	102	271	450	630	0.0	2.1	7.5	58.6	12.9	5.2	3.4	6.7
Biomass and waste	-	-	2.4	45	77	120	155	-	0.9	1.8	n.a.	7.0	4.5	2.6	4.5

Energy and economic indicators

	1980	1990	2000	2012	2020	2030	2040	CAGR (%)				
								1990/	2012/	2020/	2030/	2012/
GDP (\$2010 billion)	334	812	2,190	6,988	11,139	15,711	20,210	10.3	6.0	3.5	2.5	3.9
Population (million)	981	1,135	1,263	1,351	1,405	1,425	1,408	0.8	0.5	0.1	-0.1	0.1
CO ₂ emissions ^{*2} (Mt)	1,506	2,339	3,258	9,067	9,906	9,999	10,065	6.4	1.1	0.1	0.1	0.4
GDP per capita (\$2010 thousand)	0.3	0.7	1.7	5.2	7.9	11	14	9.4	5.5	3.4	2.7	3.7
Primary energy consump. per capita (toe)	0.6	0.8	0.9	2.1	2.4	2.5	2.7	4.8	1.4	0.5	0.7	0.8
Primary energy consumption per GDP ^{*3}	1,790	1,072	530	414	301	229	188	-4.2	-3.9	-2.7	-1.9	-2.8
CO ₂ emissions per GDP ^{*2, *4}	4,507	2,879	1,488	1,298	889	636	498	-3.6	-4.6	-3.3	-2.4	-3.4
CO ₂ per primary energy consumption ^{*2, *5}	2.5	2.7	2.8	3.1	3.0	2.8	2.7	0.7	-0.7	-0.6	-0.5	-0.6
Automobile ownership (million)	1.2	5.3	16	109	192	244	284	14.7	7.3	2.4	1.5	3.5
Automobile ownership rates ^{*6}	1.2	4.7	12	81	137	171	202	13.8	6.8	2.3	1.6	3.3

*1 Trade of electricity and heat are not shown, *2 Excludes emission reduction by CCS, *3 toe/\$2010 million,

*4 t/\$2010 million, *5 t/toe, *6 Vehicles per 1,000 people

Table 46 India [Low Growth Scenario]

Primary energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040
	Total ^{*1}	205	316	456	788	953	1,209	1,543	100	100	100	4.2	2.4	2.4	2.5
Coal	49	103	161	354	389	470	589	33	45	38	5.8	1.2	1.9	2.3	1.8
Oil	33	61	112	177	232	314	402	19	22	26	5.0	3.5	3.1	2.5	3.0
Natural gas	1.3	11	23	49	75	119	187	3.3	6.2	12	7.2	5.5	4.8	4.6	4.9
Nuclear	0.8	1.6	4.4	8.6	29	52	79	0.5	1.1	5.1	7.9	16.5	5.9	4.3	8.2
Hydro	4.0	6.2	6.4	11	14	18	22	1.9	1.4	1.4	2.6	3.6	2.5	1.8	2.6
Geothermal	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Solar, wind, etc.	-	0.0	0.2	3.1	5.6	8.3	14	0.0	0.4	0.9	29.5	7.7	4.0	5.2	5.5
Biomass and waste	116	133	149	185	207	227	249	42	23	16	1.5	1.4	0.9	0.9	1.1

Final energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040
	Total	179	250	318	512	631	798	1,013	100	100	100	3.3	2.6	2.4	2.4
By sector															
Industry	43	69	83	168	214	276	355	28	33	35	4.1	3.1	2.6	2.5	2.7
Transport	17	21	32	74	98	143	197	8.4	14	19	5.9	3.7	3.8	3.3	3.6
Buildings, etc.	113	146	176	234	272	319	382	59	46	38	2.2	1.9	1.6	1.8	1.8
Non-energy use	5.7	13	27	36	46	61	79	5.3	7.0	7.8	4.6	3.1	2.9	2.6	2.9
By energy															
Coal	28	42	33	88	97	103	116	17	17	11	3.5	1.2	0.6	1.2	1.0
Oil	27	50	94	148	206	288	376	20	29	37	5.1	4.2	3.4	2.7	3.4
Natural gas	0.7	5.6	9.7	26	36	52	74	2.3	5.1	7.3	7.2	4.0	3.8	3.6	3.8
Electricity	7.8	18	32	75	106	162	242	7.4	15	24	6.6	4.5	4.3	4.1	4.3
Heat	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Renewables	116	133	148	174	186	194	205	53	34	20	1.2	0.8	0.4	0.6	0.6

Electricity generation

	(TWh)							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040
	Total	120	293	570	1,128	1,547	2,308	3,426	100	100	100	6.3	4.0	4.1	4.0
Coal	61	192	390	801	983	1,407	2,035	65	71	59	6.7	2.6	3.7	3.8	3.4
Oil	8.8	13	29	23	13	9.0	8.3	4.5	2.0	0.2	2.5	-7.1	-3.3	-0.9	-3.5
Natural gas	0.6	10.0	56	94	175	328	589	3.4	8.3	17	10.7	8.1	6.5	6.0	6.8
Nuclear	3.0	6.1	17	33	112	198	302	2.1	2.9	8.8	7.9	16.5	5.9	4.3	8.2
Hydro	47	72	74	126	167	213	256	24	11	7.5	2.6	3.6	2.5	1.8	2.6
Geothermal	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Solar, wind, etc.	-	0.0	1.7	30	60	91	155	0.0	2.7	4.5	36.6	8.9	4.3	5.4	6.0
Biomass and waste	-	-	1.3	21	37	60	80	-	1.8	2.3	n.a.	7.8	4.9	2.9	5.0

Energy and economic indicators

								CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040
	GDP (\$2010 billion)	279	479	825	1,901	2,788	4,939	8,166	6.5	4.9	5.9	5.2
Population (million)	699	869	1,042	1,237	1,353	1,476	1,566	1.6	1.1	0.9	0.6	0.8
CO ₂ emissions ^{*2} (Mt)	284	585	961	1,961	2,302	2,932	3,781	5.7	2.0	2.5	2.6	2.4
GDP per capita (\$2010 thousand)	0.4	0.6	0.8	1.5	2.1	3.3	5.2	4.8	3.7	5.0	4.5	4.5
Primary energy consump. per capita (toe)	0.3	0.4	0.4	0.6	0.7	0.8	1.0	2.6	1.3	1.5	1.9	1.6
Primary energy consumption per GDP ^{*3}	735	660	553	415	342	245	189	-2.1	-2.4	-3.3	-2.6	-2.8
CO ₂ emissions per GDP ^{*2, *4}	1,016	1,219	1,164	1,032	826	594	463	-0.8	-2.7	-3.2	-2.5	-2.8
CO ₂ per primary energy consumption ^{*2, *5}	1.4	1.8	2.1	2.5	2.4	2.4	2.5	1.4	-0.4	0.0	0.1	-0.1
Automobile ownership (million)	1.7	4.3	9.4	29	47	92	175	9.1	6.2	6.8	6.7	6.6
Automobile ownership rates ^{*6}	2.4	5.0	9.0	24	35	62	112	7.4	5.0	5.9	6.1	5.7

*1 Trade of electricity and heat are not shown, *2 Excludes emission reduction by CCS, *3 toe/\$2010 million,

*4 t/\$2010 million, *5 t/toe, *6 Vehicles per 1,000 people

Table 47 China [Low Growth and Reform Scenario]

Primary energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/	2012/	2020/	2030/	2012/
											2012	2020	2030	2040	2040
Total ^{*1}	598	871	1,161	2,894	3,202	3,199	3,137	100	100	100	5.6	1.3	0.0	-0.2	0.3
Coal	313	528	691	1,969	1,864	1,538	1,224	61	68	39	6.2	-0.7	-1.9	-2.3	-1.7
Oil	89	119	221	464	574	615	624	14	16	20	6.4	2.7	0.7	0.1	1.1
Natural gas	12	13	21	121	239	353	432	1.5	4.2	14	10.7	9.0	4.0	2.0	4.7
Nuclear	-	-	4.4	25	143	259	374	-	0.9	12	n.a.	24.2	6.1	3.8	10.1
Hydro	5.0	11	19	74	107	115	122	1.3	2.6	3.9	9.1	4.7	0.7	0.6	1.8
Geothermal	-	-	1.6	4.3	6.2	8.3	9.6	-	0.1	0.3	n.a.	4.7	3.0	1.5	3.0
Solar, wind, etc.	-	0.0	1.0	22	46	75	109	0.0	0.7	3.5	34.3	9.8	5.1	3.8	5.9
Biomass and waste	180	200	204	216	223	237	244	23	7.5	7.8	0.3	0.4	0.6	0.3	0.4

Final energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/	2012/	2020/	2030/	2012/
											2012	2020	2030	2040	2040
Total	494	664	816	1,702	1,960	2,047	2,093	100	100	100	4.4	1.8	0.4	0.2	0.7
By sector															
Industry	188	244	329	810	866	819	777	37	48	37	5.6	0.8	-0.6	-0.5	-0.1
Transport	24	34	88	238	330	383	415	5.1	14	20	9.3	4.2	1.5	0.8	2.0
Buildings, etc.	272	344	337	518	594	643	673	52	30	32	1.9	1.7	0.8	0.5	0.9
Non-energy use	10	43	62	136	170	201	227	6.5	8.0	11	5.4	2.9	1.7	1.3	1.9
By energy															
Coal	220	318	304	558	544	463	400	48	33	19	2.6	-0.3	-1.6	-1.4	-1.2
Oil	59	85	180	422	527	569	579	13	25	28	7.6	2.8	0.8	0.2	1.1
Natural gas	6.4	8.9	12	81	142	211	285	1.3	4.7	14	10.6	7.4	4.0	3.0	4.6
Electricity	21	39	89	355	453	508	539	5.9	21	26	10.6	3.1	1.2	0.6	1.5
Heat	7.4	13	25	71	82	83	81	2.0	4.2	3.9	7.9	1.9	0.1	-0.3	0.5
Renewables	180	200	205	216	211	213	210	30	13	10	0.3	-0.3	0.1	-0.1	-0.1

Electricity generation

	(TWh)							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/	2012/	2020/	2030/	2012/
											2012	2020	2030	2040	2040
Total	301	621	1,356	4,985	6,232	6,905	7,217	100	100	100	9.9	2.8	1.0	0.4	1.3
Coal	164	443	1,062	3,785	3,727	3,354	2,705	71	76	37	10.2	-0.2	-1.0	-2.1	-1.2
Oil	78	49	46	6.8	7.6	7.5	7.4	7.9	0.1	0.1	-8.6	1.5	-0.2	-0.2	0.3
Natural gas	0.7	2.8	5.8	86	268	424	449	0.4	1.7	6.2	16.9	15.3	4.7	0.6	6.1
Nuclear	-	-	17	97	551	992	1,434	-	2.0	20	n.a.	24.2	6.1	3.8	10.1
Hydro	58	127	222	863	1,247	1,337	1,418	20	17	20	9.1	4.7	0.7	0.6	1.8
Geothermal	-	-	-	0.2	0.3	0.3	0.4	-	0.0	0.0	n.a.	7.1	2.3	2.5	3.7
Solar, wind, etc.	-	0.0	0.6	102	335	645	1,025	0.0	2.1	14	58.6	16.0	6.8	4.7	8.6
Biomass and waste	-	-	2.4	45	96	144	179	-	0.9	2.5	n.a.	10.1	4.1	2.1	5.1

Energy and economic indicators

								CAGR (%)							
	1980	1990	2000	2012	2020	2030	2040	1990/	2012/	2020/	2030/	2012/			
								2012	2020	2030	2040	2040			
GDP (\$2010 billion)			334	812	2,190	6,988	11,139	15,711	20,210	10.3	6.0	3.5	2.5	3.9	
Population (million)			981	1,135	1,263	1,351	1,405	1,425	1,408	0.8	0.5	0.1	-0.1	0.1	
CO ₂ emissions ^{*2} (Mt)			1,506	2,339	3,258	9,067	9,163	8,175	7,067	6.4	0.1	-1.1	-1.4	-0.9	
GDP per capita (\$2010 thousand)			0.3	0.7	1.7	5.2	7.9	11	14	9.4	5.5	3.4	2.7	3.7	
Primary energy consump. per capita (toe)			0.6	0.8	0.9	2.1	2.3	2.2	2.2	4.8	0.8	-0.2	-0.1	0.1	
Primary energy consumption per GDP ^{*3}			1,790	1,072	530	414	287	204	155	-4.2	-4.5	-3.4	-2.7	-3.4	
CO ₂ emissions per GDP ^{*2, *4}			4,507	2,879	1,488	1,298	823	520	350	-3.6	-5.5	-4.5	-3.9	-4.6	
CO ₂ per primary energy consumption ^{*2, *5}			2.5	2.7	2.8	3.1	2.9	2.6	2.3	0.7	-1.1	-1.1	-1.3	-1.2	
Automobile ownership (million)			1.2	5.3	16	109	192	244	284	14.7	7.3	2.4	1.5	3.5	
Automobile ownership rates ^{*6}			1.2	4.7	12	81	137	171	202	13.8	6.8	2.3	1.6	3.3	

*1 Trade of electricity and heat are not shown, *2 Excludes emission reduction by CCS, *3 toe/\$2010 million,

*4 t/\$2010 million, *5 t/toe, *6 Vehicles per 1,000 people

Table 48 India [Low Growth and Reform Scenario]

Primary energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/	2012/	2020/	2030/	2012/
											2012	2020	2030	2040	2040
Total ^{*1}	205	316	456	788	938	1,100	1,314	100	100	100	4.2	2.2	1.6	1.8	1.8
Coal	49	103	161	354	359	324	334	33	45	25	5.8	0.2	-1.0	0.3	-0.2
Oil	33	61	112	177	228	296	366	19	22	28	5.0	3.2	2.7	2.1	2.6
Natural gas	1.3	11	23	49	74	112	165	3.3	6.2	13	7.2	5.3	4.2	3.9	4.4
Nuclear	0.8	1.6	4.4	8.6	39	83	121	0.5	1.1	9.2	7.9	20.8	8.0	3.8	9.9
Hydro	4.0	6.2	6.4	11	14	18	22	1.9	1.4	1.7	2.6	3.6	2.5	1.8	2.6
Geothermal	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Solar, wind, etc.	-	0.0	0.2	3.1	10	29	42	0.0	0.4	3.2	29.5	16.4	10.7	4.0	9.8
Biomass and waste	116	133	149	185	213	237	262	42	23	20	1.5	1.8	1.1	1.0	1.3

Final energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/	2012/	2020/	2030/	2012/
											2012	2020	2030	2040	2040
Total	179	250	318	512	625	757	910	100	100	100	3.3	2.5	1.9	1.9	2.1
By sector															
Industry	43	69	83	168	212	255	300	28	33	33	4.1	2.9	1.9	1.6	2.1
Transport	17	21	32	74	98	138	189	8.4	14	21	5.9	3.6	3.5	3.2	3.4
Buildings, etc.	113	146	176	234	270	303	342	59	46	38	2.2	1.8	1.2	1.2	1.4
Non-energy use	5.7	13	27	36	46	61	79	5.3	7.0	8.7	4.6	3.1	2.9	2.6	2.9
By energy															
Coal	28	42	33	88	94	88	83	17	17	9.1	3.5	0.8	-0.6	-0.6	-0.2
Oil	27	50	94	148	201	271	340	20	29	37	5.1	3.9	3.0	2.3	3.0
Natural gas	0.7	5.6	9.7	26	36	51	72	2.3	5.1	7.9	7.2	3.9	3.7	3.5	3.7
Electricity	7.8	18	32	75	106	149	202	7.4	15	22	6.6	4.5	3.5	3.1	3.6
Heat	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Renewables	116	133	148	174	188	197	213	53	34	23	1.2	1.0	0.5	0.7	0.7

Electricity generation

	(TWh)							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/	2012/	2020/	2030/	2012/
											2012	2020	2030	2040	2040
Total	120	293	570	1,128	1,548	2,125	2,860	100	100	100	6.3	4.0	3.2	3.0	3.4
Coal	61	192	390	801	886	887	1,070	65	71	37	6.7	1.3	0.0	1.9	1.0
Oil	8.8	13	29	23	11	5.4	4.1	4.5	2.0	0.1	2.5	-8.8	-6.7	-2.7	-5.9
Natural gas	0.6	10.0	56	94	174	300	488	3.4	8.3	17	10.7	8.0	5.6	5.0	6.1
Nuclear	3.0	6.1	17	33	149	320	466	2.1	2.9	16	7.9	20.8	8.0	3.8	9.9
Hydro	47	72	74	126	167	213	256	24	11	9.0	2.6	3.6	2.5	1.8	2.6
Geothermal	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Solar, wind, etc.	-	0.0	1.7	30	115	328	487	0.0	2.7	17	36.6	18.1	11.0	4.0	10.4
Biomass and waste	-	-	1.3	21	46	71	90	-	1.8	3.1	n.a.	10.6	4.4	2.4	5.4

Energy and economic indicators

								CAGR (%)							
	1980	1990	2000	2012	2020	2030	2040	1990/	2012/	2020/	2030/	2012/	2020/	2030/	2040/
GDP (\$2010 billion)	279	479	825	1,901	2,788	4,939	8,166	6.5	4.9	5.9	5.2	5.3			
Population (million)	699	869	1,042	1,237	1,353	1,476	1,566	1.6	1.1	0.9	0.6	0.8			
CO ₂ emissions ^{*2} (Mt)	284	585	961	1,961	2,166	2,283	2,607	5.7	1.3	0.5	1.3	1.0			
GDP per capita (\$2010 thousand)	0.4	0.6	0.8	1.5	2.1	3.3	5.2	4.8	3.7	5.0	4.5	4.5			
Primary energy consump. per capita (toe)	0.3	0.4	0.4	0.6	0.7	0.7	0.8	2.6	1.1	0.7	1.2	1.0			
Primary energy consumption per GDP ^{*3}	735	660	553	415	336	223	161	-2.1	-2.6	-4.0	-3.2	-3.3			
CO ₂ emissions per GDP ^{*2, *4}	1,016	1,219	1,164	1,032	777	462	319	-0.8	-3.5	-5.1	-3.6	-4.1			
CO ₂ per primary energy consumption ^{*2, *5}	1.4	1.8	2.1	2.5	2.3	2.1	2.0	1.4	-0.9	-1.1	-0.4	-0.8			
Automobile ownership (million)	1.7	4.3	9.4	29	47	92	175	9.1	6.2	6.8	6.7	6.6			
Automobile ownership rates ^{*6}	2.4	5.0	9.0	24	35	62	112	7.4	5.0	5.9	6.1	5.7			

*1 Trade of electricity and heat are not shown, *2 Excludes emission reduction by CCS, *3 toe/\$2010 million,

*4 t/\$2010 million, *5 t/toe, *6 Vehicles per 1,000 people

Table 49 World [Advanced Technologies Scenario]

Primary energy consumption																
	Mtoe							Shares (%)			CAGR (%)					
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/2012	2012/2020	2020/2030	2030/2040	2012/2040	
	Total ^{*1}	7,211	8,780	10,079	13,371	14,520	15,645	16,374	100	100	100	1.9	1.0	0.7	0.5	0.7
Coal	1,788	2,231	2,358	3,879	3,686	3,433	3,150	25	29	19	2.5	-0.6	-0.7	-0.9	-0.7	
Oil	3,101	3,231	3,658	4,205	4,425	4,593	4,657	37	31	28	1.2	0.6	0.4	0.1	0.4	
Natural gas	1,234	1,667	2,073	2,844	3,166	3,557	3,817	19	21	23	2.5	1.4	1.2	0.7	1.1	
Nuclear	186	526	676	642	950	1,282	1,599	6.0	4.8	9.8	0.9	5.0	3.0	2.2	3.3	
Hydro	148	184	225	316	375	410	438	2.1	2.4	2.7	2.5	2.2	0.9	0.7	1.2	
Geothermal	12	34	52	67	156	265	336	0.4	0.5	2.1	3.1	11.2	5.4	2.4	6.0	
Solar, wind, etc.	0.1	2.4	7.9	75	155	284	432	0.0	0.6	2.6	17.0	9.4	6.3	4.3	6.4	
Biomass and waste	741	905	1,029	1,343	1,608	1,821	1,946	10	10	12	1.8	2.3	1.3	0.7	1.3	

Final energy consumption																
	Mtoe							Shares (%)			CAGR (%)					
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/2012	2012/2020	2020/2030	2030/2040	2012/2040	
	Total	5,381	6,288	7,088	8,979	9,891	10,748	11,354	100	100	100	1.6	1.2	0.8	0.5	0.8
By sector																
Industry	1,775	1,805	1,889	2,541	2,822	3,088	3,313	29	28	29	1.6	1.3	0.9	0.7	1.0	
Transport	1,247	1,575	1,964	2,507	2,796	3,025	3,135	25	28	28	2.1	1.4	0.8	0.4	0.8	
Buildings, etc.	2,004	2,425	2,610	3,123	3,330	3,538	3,664	39	35	32	1.2	0.8	0.6	0.4	0.6	
Non-energy use	354	482	626	809	942	1,098	1,241	7.7	9.0	11	2.4	1.9	1.5	1.2	1.5	
By energy																
Coal	712	768	577	909	929	885	846	12	10	7.5	0.8	0.3	-0.5	-0.5	-0.3	
Oil	2,445	2,605	3,124	3,652	3,920	4,110	4,197	41	41	37	1.5	0.9	0.5	0.2	0.5	
Natural gas	816	946	1,123	1,366	1,584	1,802	1,995	15	15	18	1.7	1.9	1.3	1.0	1.4	
Electricity	586	834	1,091	1,626	1,890	2,256	2,562	13	18	23	3.1	1.9	1.8	1.3	1.6	
Heat	121	335	247	287	290	298	299	5.3	3.2	2.6	-0.7	0.2	0.3	0.0	0.2	
Renewables	701	800	926	1,138	1,277	1,396	1,454	13	13	13	1.6	1.5	0.9	0.4	0.9	

Electricity generation																
	(TWh)							Shares (%)			CAGR (%)					
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/2012	2012/2020	2020/2030	2030/2040	2012/2040	
	Total	8,283	11,825	15,426	22,668	26,108	30,964	35,025	100	100	100	3.0	1.8	1.7	1.2	1.6
Coal	3,142	4,425	6,002	9,168	8,893	9,031	8,836	37	40	25	3.4	-0.4	0.2	-0.2	-0.1	
Oil	1,654	1,310	1,203	1,128	917	863	823	11	5.0	2.3	-0.7	-2.6	-0.6	-0.5	-1.1	
Natural gas	999	1,760	2,753	5,100	5,774	6,945	7,649	15	22	22	5.0	1.6	1.9	1.0	1.5	
Nuclear	713	2,013	2,591	2,461	3,643	4,948	6,210	17	11	18	0.9	5.0	3.1	2.3	3.4	
Hydro	1,717	2,144	2,620	3,672	4,359	4,764	5,089	18	16	15	2.5	2.2	0.9	0.7	1.2	
Geothermal	14	36	52	70	170	319	429	0.3	0.3	1.2	3.0	11.7	6.5	3.0	6.7	
Solar, wind, etc.	0.5	5.2	35	628	1,498	2,938	4,617	0.0	2.8	13	24.4	11.5	7.0	4.6	7.4	
Biomass and waste	44	132	170	439	853	1,155	1,372	1.1	1.9	3.9	5.6	8.7	3.1	1.7	4.2	

Energy and economic indicators																
											CAGR (%)					
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/2012	2012/2020	2020/2030	2030/2040	2012/2040	
	GDP (\$2010 billion)			27,314	36,939	48,631	67,904	87,739	119,426	154,291		2.8	3.3	3.1	2.6	3.0
Population (million)			4,436	5,272	6,093	7,033	7,667	8,372	8,983		1.3	1.1	0.9	0.7	0.9	
CO ₂ emissions ^{*2} (Mt)			18,432	21,233	23,575	32,562	32,852	32,839	32,124		2.0	0.1	0.0	-0.2	0.0	
GDP per capita (\$2010 thousand)			6.2	7.0	8.0	9.7	11	14	17		1.5	2.1	2.2	1.9	2.1	
Primary energy consump. per capita (toe)			1.6	1.7	1.7	1.9	1.9	1.9	1.8		0.6	0.0	-0.1	-0.2	-0.2	
Primary energy consumption per GDP ^{*3}			264	238	207	197	165	131	106		-0.9	-2.1	-2.3	-2.1	-2.2	
CO ₂ emissions per GDP ^{*2, *4}			675	575	485	480	374	275	208		-0.8	-3.0	-3.0	-2.7	-2.9	
CO ₂ per primary energy consumption ^{*2, *5}			2.6	2.4	2.3	2.4	2.3	2.1	2.0		0.0	-0.9	-0.7	-0.7	-0.8	
Automobile ownership (million)			416	577	767	1,150	1,424	1,758	2,089		3.2	2.7	2.1	1.7	2.2	
Automobile ownership rates ^{*6}			94	109	126	163	186	210	233		1.8	1.6	1.2	1.0	1.3	

*1 Trade of electricity and heat are not shown, *2 Excludes emission reduction by CCS, *3 toe/\$2010 million,

*4 t/\$2010 million, *5 t/toe, *6 Vehicles per 1,000 people

Table 50 Asia [Advanced Technologies Scenario]

Primary energy consumption															
	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040
Total ^{*1}	1,445	2,119	2,936	5,268	6,099	6,833	7,398	100	100	100	4.2	1.8	1.1	0.8	1.2
Coal	471	796	1,078	2,669	2,663	2,549	2,383	38	51	32	5.7	0.0	-0.4	-0.7	-0.4
Oil	478	618	917	1,243	1,434	1,622	1,748	29	24	24	3.2	1.8	1.2	0.8	1.2
Natural gas	51	116	232	507	682	938	1,152	5.5	9.6	16	6.9	3.8	3.2	2.1	3.0
Nuclear	25	77	132	89	345	549	769	3.6	1.7	10	0.7	18.4	4.8	3.4	8.0
Hydro	20	32	41	107	153	172	188	1.5	2.0	2.5	5.7	4.6	1.2	0.9	2.0
Geothermal	2.6	8.2	23	32	81	122	143	0.4	0.6	1.9	6.3	12.4	4.2	1.6	5.5
Solar, wind, etc.	-	1.2	2.1	27	65	127	193	0.1	0.5	2.6	15.0	11.8	6.9	4.3	7.3
Biomass and waste	397	472	510	594	673	750	816	22	11	11	1.0	1.6	1.1	0.9	1.1

Final energy consumption															
	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040
Total	1,142	1,579	2,042	3,323	3,913	4,480	4,957	100	100	100	3.4	2.1	1.4	1.0	1.4
By sector															
Industry	391	520	672	1,284	1,483	1,625	1,750	33	39	35	4.2	1.8	0.9	0.7	1.1
Transport	127	191	326	559	711	874	1,010	12	17	20	5.0	3.0	2.1	1.5	2.1
Buildings, etc.	570	752	855	1,151	1,324	1,509	1,650	48	35	33	2.0	1.8	1.3	0.9	1.3
Non-energy use	54	116	190	329	396	472	547	7.3	9.9	11	4.9	2.3	1.8	1.5	1.8
By energy															
Coal	310	438	407	735	765	724	686	28	22	14	2.4	0.5	-0.5	-0.5	-0.2
Oil	327	464	741	1,073	1,281	1,476	1,606	29	32	32	3.9	2.2	1.4	0.8	1.5
Natural gas	21	47	89	232	336	475	623	3.0	7.0	13	7.5	4.8	3.5	2.7	3.6
Electricity	88	156	278	647	838	1,064	1,259	9.9	19	25	6.7	3.3	2.4	1.7	2.4
Heat	7.5	14	30	77	91	96	96	0.9	2.3	1.9	8.0	2.2	0.5	0.0	0.8
Renewables	388	459	498	559	602	645	687	29	17	14	0.9	0.9	0.7	0.6	0.7

Electricity generation															
	(TWh)							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040
Total	1,196	2,215	3,974	8,921	11,365	14,286	16,795	100	100	100	6.5	3.1	2.3	1.6	2.3
Coal	302	863	1,991	5,529	5,785	6,349	6,541	39	62	39	8.8	0.6	0.9	0.3	0.6
Oil	472	421	385	352	216	167	147	19	3.9	0.9	-0.8	-5.9	-2.5	-1.3	-3.1
Natural gas	90	247	567	1,167	1,431	1,996	2,411	11	13	14	7.3	2.6	3.4	1.9	2.6
Nuclear	97	294	505	342	1,323	2,124	3,006	13	3.8	18	0.7	18.4	4.9	3.5	8.1
Hydro	232	370	481	1,243	1,775	2,002	2,190	17	14	13	5.7	4.6	1.2	0.9	2.0
Geothermal	3.0	8.3	20	22	60	106	142	0.4	0.3	0.8	4.6	13.0	5.9	3.0	6.8
Solar, wind, etc.	-	0.0	3.0	150	540	1,199	1,938	0.0	1.7	12	45.7	17.4	8.3	4.9	9.6
Biomass and waste	0.0	11	22	116	236	342	420	0.5	1.3	2.5	11.1	9.3	3.8	2.1	4.7

Energy and economic indicators															
											CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040
GDP (\$2010 billion)				4,347	7,398	10,658	18,808	28,042	43,252	61,633	4.3	5.1	4.4	3.6	4.3
Population (million)				2,442	2,931	3,401	3,854	4,129	4,382	4,531	1.3	0.9	0.6	0.3	0.6
CO ₂ emissions ^{*2} (Mt)				3,289	4,959	7,048	14,564	15,342	15,840	15,856	5.0	0.7	0.3	0.0	0.3
GDP per capita (\$2010 thousand)				1.8	2.5	3.1	4.9	6.8	9.9	14	3.0	4.2	3.8	3.3	3.7
Primary energy consump. per capita (toe)				0.6	0.7	0.9	1.4	1.5	1.6	1.6	2.9	1.0	0.5	0.5	0.6
Primary energy consumption per GDP ^{*3}				332	286	275	280	218	158	120	-0.1	-3.1	-3.1	-2.7	-3.0
CO ₂ emissions per GDP ^{*2, *4}				757	670	661	774	547	366	257	0.7	-4.3	-3.9	-3.5	-3.9
CO ₂ per primary energy consumption ^{*2, *5}				2.3	2.3	2.4	2.8	2.5	2.3	2.1	0.8	-1.2	-0.8	-0.8	-0.9
Automobile ownership (million)				48	86	139	295	433	598	807	5.8	4.9	3.3	3.0	3.7
Automobile ownership rates ^{*6}				19	29	41	76	105	137	178	4.5	4.0	2.7	2.7	3.1

*1 Trade of electricity and heat are not shown, *2 Excludes emission reduction by CCS, *3 toe/\$2010 million,

*4 t/\$2010 million, *5 t/toe, *6 Vehicles per 1,000 people

Table 51 China [Advanced Technologies Scenario]

Primary energy consumption															
	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040
Total ^{*1}	598	871	1,161	2,894	3,301	3,580	3,684	100	100	100	5.6	1.7	0.8	0.3	0.9
Coal	313	528	691	1,969	1,930	1,775	1,543	61	68	42	6.2	-0.3	-0.8	-1.4	-0.9
Oil	89	119	221	464	597	701	752	14	16	20	6.4	3.2	1.6	0.7	1.7
Natural gas	12	13	21	121	250	411	531	1.5	4.2	14	10.7	9.6	5.1	2.6	5.4
Nuclear	-	-	4.4	25	143	259	374	-	0.9	10	n.a.	24.2	6.1	3.8	10.1
Hydro	5.0	11	19	74	107	115	122	1.3	2.6	3.3	9.1	4.7	0.7	0.6	1.8
Geothermal	-	-	1.6	4.3	6.2	8.4	9.9	-	0.1	0.3	n.a.	4.8	3.1	1.5	3.0
Solar, wind, etc.	-	0.0	1.0	22	46	78	112	0.0	0.7	3.0	34.3	10.0	5.3	3.8	6.0
Biomass and waste	180	200	204	216	222	234	240	23	7.5	6.5	0.3	0.3	0.5	0.3	0.4

Final energy consumption															
	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040
Total	494	664	816	1,702	2,018	2,263	2,412	100	100	100	4.4	2.2	1.2	0.6	1.3
By sector															
Industry	188	244	329	810	892	902	898	37	48	37	5.6	1.2	0.1	0.0	0.4
Transport	24	34	88	238	344	444	507	5.1	14	21	9.3	4.7	2.6	1.3	2.7
Buildings, etc.	272	344	337	518	611	710	764	52	30	32	1.9	2.1	1.5	0.7	1.4
Non-energy use	10	43	62	136	172	208	242	6.5	8.0	10	5.4	2.9	1.9	1.5	2.1
By energy															
Coal	220	318	304	558	555	489	426	48	33	18	2.6	0.0	-1.3	-1.4	-1.0
Oil	59	85	180	422	548	647	696	13	25	29	7.6	3.3	1.7	0.7	1.8
Natural gas	6.4	8.9	12	81	149	240	330	1.3	4.7	14	10.6	8.0	4.9	3.3	5.2
Electricity	21	39	89	355	472	589	665	5.9	21	28	10.6	3.6	2.2	1.2	2.3
Heat	7.4	13	25	71	83	86	84	2.0	4.2	3.5	7.9	2.1	0.3	-0.2	0.6
Renewables	180	200	205	216	210	213	211	30	13	8.7	0.3	-0.3	0.1	-0.1	-0.1

Electricity generation															
	(TWh)							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040
Total	301	621	1,356	4,985	6,488	7,999	8,907	100	100	100	9.9	3.4	2.1	1.1	2.1
Coal	164	443	1,062	3,785	3,966	4,326	4,155	71	76	47	10.2	0.6	0.9	-0.4	0.3
Oil	78	49	46	6.8	7.6	7.5	7.4	7.9	0.1	0.1	-8.6	1.5	-0.2	-0.2	0.3
Natural gas	0.7	2.8	5.8	86	285	547	689	0.4	1.7	7.7	16.9	16.2	6.7	2.3	7.7
Nuclear	-	-	17	97	551	992	1,434	-	2.0	16	n.a.	24.2	6.1	3.8	10.1
Hydro	58	127	222	863	1,247	1,337	1,418	20	17	16	9.1	4.7	0.7	0.6	1.8
Geothermal	-	-	-	0.2	0.3	0.3	0.4	-	0.0	0.0	n.a.	7.1	2.3	2.5	3.7
Solar, wind, etc.	-	0.0	0.6	102	335	645	1,025	0.0	2.1	12	58.6	16.0	6.8	4.7	8.6
Biomass and waste	-	-	2.4	45	96	144	179	-	0.9	2.0	n.a.	10.1	4.1	2.1	5.1

Energy and economic indicators															
											CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040
GDP (\$2010 billion)			334	812	2,190	6,988	12,175	20,797	30,784		10.3	7.2	5.5	4.0	5.4
Population (million)			981	1,135	1,263	1,351	1,405	1,425	1,408		0.8	0.5	0.1	-0.1	0.1
CO ₂ emissions ^{*2} (Mt)			1,506	2,339	3,258	9,067	9,515	9,493	8,913		6.4	0.6	0.0	-0.6	-0.1
GDP per capita (\$2010 thousand)			0.3	0.7	1.7	5.2	8.7	15	22		9.4	6.7	5.4	4.1	5.3
Primary energy consump. per capita (toe)			0.6	0.8	0.9	2.1	2.3	2.5	2.6		4.8	1.2	0.7	0.4	0.7
Primary energy consumption per GDP ^{*3}			1,790	1,072	530	414	271	172	120		-4.2	-5.2	-4.4	-3.6	-4.3
CO ₂ emissions per GDP ^{*2, *4}			4,507	2,879	1,488	1,298	782	456	290		-3.6	-6.1	-5.2	-4.5	-5.2
CO ₂ per primary energy consumption ^{*2, *5}			2.5	2.7	2.8	3.1	2.9	2.7	2.4		0.7	-1.0	-0.8	-0.9	-0.9
Automobile ownership (million)			1.2	5.3	16	109	205	293	374		14.7	8.2	3.6	2.5	4.5
Automobile ownership rates ^{*6}			1.2	4.7	12	81	146	205	266		13.8	7.6	3.5	2.6	4.3

*1 Trade of electricity and heat are not shown, *2 Excludes emission reduction by CCS, *3 toe/\$2010 million,

*4 t/\$2010 million, *5 t/toe, *6 Vehicles per 1,000 people

Table 52 India [Advanced Technologies Scenario]

Primary energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/	2012/	2020/	2030/	2012/
											2012	2020	2030	2040	2040
Total ^{*1}	205	316	456	788	984	1,209	1,519	100	100	100	4.2	2.8	2.1	2.3	2.4
Coal	49	103	161	354	386	388	448	33	45	29	5.8	1.1	0.1	1.4	0.8
Oil	33	61	112	177	234	303	377	19	22	25	5.0	3.5	2.6	2.2	2.7
Natural gas	1.3	11	23	49	77	125	195	3.3	6.2	13	7.2	5.9	4.9	4.6	5.1
Nuclear	0.8	1.6	4.4	8.6	42	97	152	0.5	1.1	10	7.9	21.9	8.8	4.6	10.8
Hydro	4.0	6.2	6.4	11	14	18	22	1.9	1.4	1.5	2.6	3.6	2.5	1.8	2.6
Geothermal	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Solar, wind, etc.	-	0.0	0.2	3.1	11	33	53	0.0	0.4	3.5	29.5	17.4	11.6	4.8	10.7
Biomass and waste	116	133	149	185	219	244	272	42	23	18	1.5	2.1	1.1	1.1	1.4

Final energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/	2012/	2020/	2030/	2012/
											2012	2020	2030	2040	2040
Total	179	250	318	512	651	814	1,021	100	100	100	3.3	3.1	2.3	2.3	2.5
By sector															
Industry	43	69	83	168	224	285	357	28	33	35	4.1	3.6	2.4	2.3	2.7
Transport	17	21	32	74	98	134	182	8.4	14	18	5.9	3.7	3.2	3.1	3.3
Buildings, etc.	113	146	176	234	282	328	389	59	46	38	2.2	2.3	1.5	1.7	1.8
Non-energy use	5.7	13	27	36	47	67	92	5.3	7.0	9.0	4.6	3.6	3.6	3.2	3.5
By energy															
Coal	28	42	33	88	100	103	111	17	17	11	3.5	1.6	0.3	0.7	0.8
Oil	27	50	94	148	207	278	351	20	29	34	5.1	4.3	3.0	2.4	3.1
Natural gas	0.7	5.6	9.7	26	36	53	78	2.3	5.1	7.6	7.2	4.1	4.0	3.9	4.0
Electricity	7.8	18	32	75	114	175	258	7.4	15	25	6.6	5.4	4.4	4.0	4.5
Heat	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Renewables	116	133	148	174	193	205	223	53	34	22	1.2	1.3	0.6	0.9	0.9

Electricity generation

	(TWh)							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/	2012/	2020/	2030/	2012/
											2012	2020	2030	2040	2040
Total	120	293	570	1,128	1,664	2,498	3,652	100	100	100	6.3	5.0	4.1	3.9	4.3
Coal	61	192	390	801	968	1,100	1,480	65	71	41	6.7	2.4	1.3	3.0	2.2
Oil	8.8	13	29	23	12	7.3	6.3	4.5	2.0	0.2	2.5	-7.3	-5.2	-1.5	-4.5
Natural gas	0.6	10.0	56	94	188	354	627	3.4	8.3	17	10.7	9.0	6.6	5.9	7.0
Nuclear	3.0	6.1	17	33	160	372	583	2.1	2.9	16	7.9	21.9	8.8	4.6	10.8
Hydro	47	72	74	126	167	213	256	24	11	7.0	2.6	3.6	2.5	1.8	2.6
Geothermal	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Solar, wind, etc.	-	0.0	1.7	30	124	380	609	0.0	2.7	17	36.6	19.2	11.9	4.8	11.3
Biomass and waste	-	-	1.3	21	46	71	90	-	1.8	2.5	n.a.	10.6	4.4	2.4	5.4

Energy and economic indicators

								CAGR (%)							
	1980	1990	2000	2012	2020	2030	2040	1990/	2012/	2020/	2030/	2012/	2020/	2030/	2040/
GDP (\$2010 billion)	279	479	825	1,901	3,079	5,854	10,148	6.5	6.2	6.6	5.7	6.2			
Population (million)	699	869	1,042	1,237	1,353	1,476	1,566	1.6	1.1	0.9	0.6	0.8			
CO ₂ emissions ^{*2} (Mt)	284	585	961	1,961	2,295	2,569	3,121	5.7	2.0	1.1	2.0	1.7			
GDP per capita (\$2010 thousand)	0.4	0.6	0.8	1.5	2.3	4.0	6.5	4.8	5.0	5.7	5.0	5.3			
Primary energy consump. per capita (toe)	0.3	0.4	0.4	0.6	0.7	0.8	1.0	2.6	1.7	1.2	1.7	1.5			
Primary energy consumption per GDP ^{*3}	735	660	553	415	320	207	150	-2.1	-3.2	-4.3	-3.2	-3.6			
CO ₂ emissions per GDP ^{*2, *4}	1,016	1,219	1,164	1,032	746	439	308	-0.8	-4.0	-5.2	-3.5	-4.2			
CO ₂ per primary energy consumption ^{*2, *5}	1.4	1.8	2.1	2.5	2.3	2.1	2.1	1.4	-0.8	-0.9	-0.3	-0.7			
Automobile ownership (million)	1.7	4.3	9.4	29	49	97	190	9.1	6.6	7.1	6.9	6.9			
Automobile ownership rates ^{*6}	2.4	5.0	9.0	24	36	66	121	7.4	5.4	6.2	6.3	6.0			

*1 Trade of electricity and heat are not shown, *2 Excludes emission reduction by CCS, *3 toe/\$2010 million,

*4 t/\$2010 million, *5 t/toe, *6 Vehicles per 1,000 people

Table 53 Japan [Advanced Technologies Scenario]

Primary energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/	2012/	2020/	2030/	2012/
											2012	2020	2030	2040	2040
Total ^{*1}	345	439	519	452	441	397	362	100	100	100	0.1	-0.3	-1.0	-0.9	-0.8
Coal	60	77	97	112	88	80	69	17	25	19	1.7	-3.0	-1.0	-1.4	-1.7
Oil	234	250	255	210	167	135	113	57	46	31	-0.8	-2.8	-2.1	-1.8	-2.2
Natural gas	21	44	66	105	76	69	59	10	23	16	4.0	-4.0	-0.9	-1.6	-2.0
Nuclear	22	53	84	4.2	77	66	64	12	0.9	18	-10.9	44.2	-1.6	-0.3	10.3
Hydro	7.6	7.7	7.5	6.5	11	13	13	1.7	1.4	3.6	-0.8	6.7	1.6	0.2	2.5
Geothermal	0.8	1.6	3.1	2.4	3.7	9.8	15	0.4	0.5	4.1	2.0	5.5	10.3	4.2	6.7
Solar, wind, etc.	-	1.2	0.8	1.4	4.7	9.1	14	0.3	0.3	3.8	0.7	16.7	6.9	4.0	8.6
Biomass and waste	-	4.9	5.6	10	13	14	15	1.1	2.3	4.2	3.4	3.3	0.9	0.5	1.4

Final energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/	2012/	2020/	2030/	2012/
											2012	2020	2030	2040	2040
Total	232	298	341	309	291	260	234	100	100	100	0.2	-0.8	-1.1	-1.1	-1.0
By sector															
Industry	91	101	96	82	84	78	74	34	26	31	-0.9	0.3	-0.7	-0.6	-0.4
Transport	54	72	88	75	64	52	43	24	24	18	0.2	-1.9	-2.1	-1.8	-1.9
Buildings, etc.	58	91	116	115	107	96	85	31	37	36	1.1	-0.8	-1.1	-1.2	-1.1
Non-energy use	28	34	41	38	35	34	33	12	12	14	0.4	-0.9	-0.4	-0.4	-0.5
By energy															
Coal	25	32	25	27	26	25	23	11	8.7	9.9	-0.7	-0.3	-0.6	-0.8	-0.6
Oil	157	182	208	164	141	114	94	61	53	40	-0.5	-1.9	-2.1	-2.0	-2.0
Natural gas	5.8	15	23	35	35	32	29	5.1	11	12	3.8	0.0	-1.0	-1.0	-0.7
Electricity	44	64	81	79	82	80	78	22	26	33	0.9	0.4	-0.2	-0.3	-0.1
Heat	0.1	0.2	0.5	0.5	2.9	5.1	7.2	0.1	0.2	3.1	4.6	23.7	5.6	3.5	9.7
Renewables	-	3.9	3.7	3.3	3.5	3.7	3.7	1.3	1.1	1.6	-0.7	0.4	0.7	0.0	0.3

Electricity generation

	(TWh)							Shares (%)			CAGR (%)				
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/	2012/	2020/	2030/	2012/
											2012	2020	2030	2040	2040
Total	573	836	1,049	1,026	1,055	1,037	1,006	100	100	100	0.9	0.3	-0.2	-0.3	-0.1
Coal	55	116	229	303	190	160	118	14	30	12	4.5	-5.7	-1.7	-3.0	-3.3
Oil	265	237	135	181	81	56	48	28	18	4.7	-1.2	-9.6	-3.6	-1.7	-4.7
Natural gas	81	179	256	397	251	244	206	21	39	20	3.7	-5.6	-0.3	-1.7	-2.3
Nuclear	83	202	322	16	297	254	245	24	1.6	24	-10.9	44.2	-1.6	-0.3	10.3
Hydro	88	89	87	75	127	149	153	11	7.4	15	-0.8	6.7	1.6	0.2	2.5
Geothermal	0.9	1.7	3.3	2.6	4.1	11	17	0.2	0.3	1.7	1.9	5.8	10.6	4.2	6.9
Solar, wind, etc.	-	0.0	0.5	12	48	96	145	0.0	1.2	14	53.1	19.1	7.2	4.3	9.4
Biomass and waste	-	11	16	39	57	67	75	1.3	3.8	7.5	6.0	5.0	1.6	1.1	2.4

Energy and economic indicators

								CAGR (%)							
	1980	1990	2000	2012	2020	2030	2040	1990/	2012/	2020/	2030/	2012/			
								2012	2020	2030	2040	2040			
GDP (\$2010 billion)	2,894	4,553	5,093	5,571	6,501	7,422	8,278	0.9	1.9	1.3	1.1	1.4			
Population (million)	117	124	127	128	126	121	115	0.1	-0.2	-0.4	-0.5	-0.4			
CO ₂ emissions ^{*2} (Mt)	916	1,070	1,196	1,220	931	790	659	0.6	-3.3	-1.6	-1.8	-2.2			
GDP per capita (\$2010 thousand)	25	37	40	44	52	61	72	0.8	2.1	1.7	1.6	1.8			
Primary energy consump. per capita (toe)	3.0	3.6	4.1	3.5	3.5	3.3	3.2	0.0	-0.1	-0.7	-0.4	-0.4			
Primary energy consumption per GDP ^{*3}	119	96	102	81	68	53	44	-0.8	-2.2	-2.4	-2.0	-2.2			
CO ₂ emissions per GDP ^{*2, *4}	317	235	235	219	143	106	80	-0.3	-5.2	-2.9	-2.9	-3.6			
CO ₂ per primary energy consumption ^{*2, *5}	2.7	2.4	2.3	2.7	2.1	2.0	1.8	0.5	-3.0	-0.6	-0.9	-1.4			
Automobile ownership (million)	38	58	72	76	77	74	71	1.3	0.2	-0.4	-0.4	-0.2			
Automobile ownership rates ^{*6}	325	467	570	595	615	612	619	1.1	0.4	0.0	0.1	0.1			

*1 Trade of electricity and heat are not shown, *2 Excludes emission reduction by CCS, *3 toe/\$2010 million,

*4 t/\$2010 million, *5 t/toe, *6 Vehicles per 1,000 people

Table 54 ASEAN [Advanced Technologies Scenario]

Primary energy consumption																
	Mtoe							Shares (%)			CAGR (%)					
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/2012	2012/2020	2020/2030	2030/2040	2012/2040	
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	2012	2020	2030	2040	2040	
Total ^{*1}	142	233	380	573	750	960	1,118	100	100	100	4.2	3.4	2.5	1.5	2.4	
Coal	3.6	13	32	89	119	163	191	5.4	16	17	9.3	3.7	3.2	1.6	2.8	
Oil	58	88	153	209	253	299	327	38	37	29	4.0	2.4	1.7	0.9	1.6	
Natural gas	8.6	30	74	126	159	198	225	13	22	20	6.7	3.0	2.3	1.3	2.1	
Nuclear	-	-	-	-	2.0	22	59	-	-	5.3	n.a.	n.a.	27.2	10.2	n.a.	
Hydro	0.8	2.3	4.1	8.8	11	15	17	1.0	1.5	1.5	6.2	3.4	2.6	1.5	2.4	
Geothermal	1.8	6.6	18	25	70	102	117	2.8	4.4	10	6.2	13.8	3.9	1.3	5.7	
Solar, wind, etc.	-	-	-	0.1	0.5	1.2	3.0	-	0.0	0.3	n.a.	26.0	10.1	9.3	14.1	
Biomass and waste	70	93	99	114	133	153	174	40	20	16	0.9	1.9	1.5	1.3	1.5	
Final energy consumption																
	Mtoe							Shares (%)			CAGR (%)					
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/2012	2012/2020	2020/2030	2030/2040	2012/2040	
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	2012	2020	2030	2040	2040	
Total	112	173	271	412	512	648	761	100	100	100	4.0	2.8	2.4	1.6	2.2	
By sector																
Industry	22	43	76	115	155	214	263	25	28	35	4.6	3.9	3.3	2.1	3.0	
Transport	17	32	62	104	131	164	194	19	25	26	5.5	2.9	2.3	1.7	2.2	
Buildings, etc.	71	87	113	141	164	194	217	50	34	29	2.2	1.9	1.7	1.1	1.5	
Non-energy use	2.4	11	21	52	62	75	87	6.3	13	11	7.3	2.4	1.8	1.5	1.9	
By energy																
Coal	2.1	6.0	13	28	39	56	69	3.4	6.9	9.1	7.3	4.1	3.7	2.1	3.3	
Oil	41	67	123	187	222	268	297	38	45	39	4.8	2.2	1.9	1.0	1.7	
Natural gas	2.5	7.5	17	37	52	69	86	4.4	9.0	11	7.5	4.5	2.8	2.2	3.1	
Electricity	4.7	11	28	59	83	123	160	6.4	14	21	7.8	4.4	4.0	2.7	3.6	
Heat	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.	
Renewables	62	82	90	101	116	132	149	47	25	20	1.0	1.7	1.3	1.3	1.4	
Electricity generation																
	(TWh)							Shares (%)			CAGR (%)					
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/2012	2012/2020	2020/2030	2030/2040	2012/2040	
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	2012	2020	2030	2040	2040	
Total	62	154	370	754	1,032	1,511	1,967	100	100	100	7.5	4.0	3.9	2.7	3.5	
Coal	3.0	28	79	236	322	460	556	18	31	28	10.2	4.0	3.6	1.9	3.1	
Oil	47	66	72	55	62	68	73	43	7.3	3.7	-0.8	1.6	0.8	0.8	1.0	
Natural gas	0.7	26	154	334	423	565	656	17	44	33	12.3	3.0	2.9	1.5	2.4	
Nuclear	-	-	-	-	7.7	104	280	-	-	14	n.a.	n.a.	29.7	10.5	n.a.	
Hydro	9.8	27	47	102	133	172	200	18	14	10	6.2	3.4	2.6	1.5	2.4	
Geothermal	2.1	6.6	16	20	55	93	123	4.3	2.6	6.3	5.1	13.6	5.5	2.8	6.8	
Solar, wind, etc.	-	-	-	0.9	5.6	15	36	-	0.1	1.8	n.a.	26.3	10.1	9.4	14.2	
Biomass and waste	-	0.6	1.0	6.9	22	34	42	0.4	0.9	2.1	11.7	15.8	4.4	2.1	6.7	
Energy and economic indicators																
											CAGR (%)					
	1980	1990	2000	2012	2020	2030	2040	2020	2030	2040	1990/2012	2012/2020	2020/2030	2030/2040	2012/2040	
GDP (\$2010 billion)				405	702	1,137	2,074	3,124	4,901	7,101	5.0	5.3	4.6	3.8	4.5	
Population (million)				345	427	503	587	638	691	729	1.5	1.1	0.8	0.5	0.8	
CO ₂ emissions ^{*2} (Mt)				205	362	709	1,139	1,440	1,814	2,039	5.4	3.0	2.3	1.2	2.1	
GDP per capita (\$2010 thousand)				1.2	1.6	2.3	3.5	4.9	7.1	9.7	3.5	4.2	3.8	3.2	3.7	
Primary energy consump. per capita (toe)				0.4	0.5	0.8	1.0	1.2	1.4	1.5	2.7	2.4	1.7	1.0	1.6	
Primary energy consumption per GDP ^{*3}				352	332	334	276	240	196	158	-0.8	-1.7	-2.0	-2.2	-2.0	
CO ₂ emissions per GDP ^{*2, *4}				507	515	624	549	461	370	287	0.3	-2.2	-2.2	-2.5	-2.3	
CO ₂ per primary energy consumption ^{*2, *5}				1.4	1.6	1.9	2.0	1.9	1.9	1.8	1.1	-0.4	-0.2	-0.4	-0.3	
Automobile ownership (million)				4.4	10	21	48	62	85	114	7.3	3.4	3.2	2.9	3.2	
Automobile ownership rates ^{*6}				13	24	41	82	98	124	156	5.8	2.3	2.3	2.4	2.4	

*1 Trade of electricity and heat are not shown, *2 Excludes emission reduction by CCS, *3 toe/\$2010 million,

*4 t/\$2010 million, *5 t/toe, *6 Vehicles per 1,000 people

Table 55 United States [Advanced Technologies Scenario]

Primary energy consumption																
	Mtoe							Shares (%)			CAGR (%)					
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/2012	2012/2020	2020/2030	2030/2040	2012/2040	
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	2012	2020	2030	2040	2040	
Total ^{*1}	1,805	1,915	2,273	2,141	2,082	1,962	1,766	100	100	100	0.5	-0.3	-0.6	-1.0	-0.7	
Coal	376	460	534	425	338	250	170	24	20	9.6	-0.4	-2.8	-3.0	-3.8	-3.2	
Oil	797	757	871	771	699	608	514	40	36	29	0.1	-1.2	-1.4	-1.7	-1.4	
Natural gas	477	438	548	596	610	572	485	23	28	27	1.4	0.3	-0.6	-1.6	-0.7	
Nuclear	69	159	208	209	223	244	257	8.3	9.8	15	1.2	0.8	0.9	0.5	0.7	
Hydro	24	23	22	24	25	26	26	1.2	1.1	1.5	0.1	0.6	0.2	0.1	0.3	
Geothermal	4.6	14	13	8.7	21	43	55	0.7	0.4	3.1	-2.2	11.7	7.4	2.4	6.8	
Solar, wind, etc.	-	0.3	2.1	15	31	66	104	0.0	0.7	5.9	19.0	9.7	7.9	4.7	7.2	
Biomass and waste	54	62	73	89	132	150	154	3.3	4.1	8.7	1.6	5.1	1.3	0.2	2.0	
Final energy consumption																
	Mtoe							Shares (%)			CAGR (%)					
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/2012	2012/2020	2020/2030	2030/2040	2012/2040	
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	2012	2020	2030	2040	2040	
Total	1,311	1,294	1,546	1,433	1,410	1,327	1,196	100	100	100	0.5	-0.2	-0.6	-1.0	-0.6	
By sector																
Industry	387	284	332	248	245	231	207	22	17	17	-0.6	-0.2	-0.6	-1.1	-0.7	
Transport	425	488	588	597	569	518	451	38	42	38	0.9	-0.6	-0.9	-1.4	-1.0	
Buildings, etc.	397	403	473	483	480	446	393	31	34	33	0.8	-0.1	-0.7	-1.3	-0.7	
Non-energy use	102	119	153	104	117	133	145	9.2	7.3	12	-0.6	1.4	1.3	0.9	1.2	
By energy																
Coal	56	56	33	22	19	17	15	4.3	1.5	1.3	-4.1	-1.6	-1.1	-1.2	-1.3	
Oil	689	683	793	719	646	560	471	53	50	39	0.2	-1.3	-1.4	-1.7	-1.5	
Natural gas	337	303	360	296	311	284	246	23	21	21	-0.1	0.6	-0.9	-1.4	-0.7	
Electricity	174	226	301	321	329	350	349	18	22	29	1.6	0.3	0.6	0.0	0.3	
Heat	-	2.2	5.3	6.5	6.4	5.6	4.7	0.2	0.5	0.4	5.2	-0.3	-1.3	-1.8	-1.2	
Renewables	54	23	54	68	99	111	111	1.8	4.8	9.2	5.1	4.7	1.2	0.0	1.7	
Electricity generation																
	(TWh)							Shares (%)			CAGR (%)					
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/2012	2012/2020	2020/2030	2030/2040	2012/2040	
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	2012	2020	2030	2040	2040	
Total	2,427	3,203	4,026	4,271	4,356	4,612	4,597	100	100	100	1.3	0.2	0.6	0.0	0.3	
Coal	1,243	1,700	2,129	1,643	1,329	986	651	53	38	14	-0.2	-2.6	-2.9	-4.1	-3.3	
Oil	263	131	118	33	30	27	20	4.1	0.8	0.4	-6.1	-1.1	-1.2	-2.7	-1.7	
Natural gas	370	382	634	1,265	1,332	1,361	1,136	12	30	25	5.6	0.7	0.2	-1.8	-0.4	
Nuclear	266	612	798	801	855	936	985	19	19	21	1.2	0.8	0.9	0.5	0.7	
Hydro	279	273	253	279	292	299	302	8.5	6.5	6.6	0.1	0.6	0.2	0.1	0.3	
Geothermal	5.4	16	15	18	45	92	117	0.5	0.4	2.5	0.6	12.0	7.5	2.4	6.9	
Solar, wind, etc.	-	3.7	6.4	153	334	737	1,185	0.1	3.6	26	18.4	10.3	8.2	4.9	7.6	
Biomass and waste	0.5	86	72	79	138	174	200	2.7	1.8	4.4	-0.4	7.2	2.3	1.4	3.4	
Energy and economic indicators																
										CAGR (%)						
	1980	1990	2000	2012	2020	2030	2040	1990/2012	2012/2020	2020/2030	2030/2040	2012/2040				
GDP (\$2010 billion)			6,521	9,054	12,717	15,658	19,280	24,593	29,621	2.5	2.6	2.5	1.9	2.3		
Population (million)			227	250	282	314	334	359	379	1.0	0.8	0.7	0.6	0.7		
CO ₂ emissions ^{*2} (Mt)			4,743	4,820	5,617	5,139	4,573	3,811	2,970	0.3	-1.4	-1.8	-2.5	-1.9		
GDP per capita (\$2010 thousand)			29	36	45	50	58	69	78	1.5	1.8	1.7	1.3	1.6		
Primary energy consump. per capita (toe)			7.9	7.7	8.1	6.8	6.2	5.5	4.7	-0.5	-1.1	-1.3	-1.6	-1.3		
Primary energy consumption per GDP ^{*3}			277	212	179	137	108	80	60	-2.0	-2.9	-3.0	-2.9	-2.9		
CO ₂ emissions per GDP ^{*2, *4}			727	532	442	328	237	155	100	-2.2	-4.0	-4.2	-4.3	-4.1		
CO ₂ per primary energy consumption ^{*2, *5}			2.6	2.5	2.5	2.4	2.2	1.9	1.7	-0.2	-1.1	-1.2	-1.4	-1.3		
Automobile ownership (million)			156	189	221	251	274	305	329	1.3	1.1	1.1	0.8	1.0		
Automobile ownership rates ^{*6}			686	756	785	801	821	850	868	0.3	0.3	0.3	0.2	0.3		

*1 Trade of electricity and heat are not shown, *2 Excludes emission reduction by CCS, *3 toe/\$2010 million,

*4 t/\$2010 million, *5 t/toe, *6 Vehicles per 1,000 people

Table 56 European Union [Advanced Technologies Scenario]

Primary energy consumption																
	Mtoe							Shares (%)			CAGR (%)					
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040	
Total ^{*1}	n.a.	1,645	1,693	1,644	1,636	1,587	1,492	100	100	100	0.0	-0.1	-0.3	-0.6	-0.3	
Coal	n.a.	456	321	294	232	191	163	28	18	11	-2.0	-2.9	-1.9	-1.6	-2.1	
Oil	n.a.	606	623	526	493	420	355	37	32	24	-0.6	-0.8	-1.6	-1.7	-1.4	
Natural gas	n.a.	297	396	392	395	379	347	18	24	23	1.3	0.1	-0.4	-0.9	-0.4	
Nuclear	n.a.	207	246	230	241	264	272	13	14	18	0.5	0.6	0.9	0.3	0.6	
Hydro	n.a.	25	31	29	29	30	30	1.5	1.8	2.0	0.7	0.1	0.2	0.0	0.1	
Geothermal	n.a.	3.2	4.6	5.7	7.1	10	12	0.2	0.3	0.8	2.7	2.8	3.6	1.4	2.6	
Solar, wind, etc.	n.a.	0.2	2.4	27	44	63	84	0.0	1.6	5.6	23.7	6.3	3.7	3.0	4.2	
Biomass and waste	n.a.	47	66	137	195	230	230	2.8	8.3	15	5.0	4.5	1.7	0.0	1.9	

Final energy consumption																
	Mtoe							Shares (%)			CAGR (%)					
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040	
Total	n.a.	1,129	1,175	1,139	1,145	1,098	1,017	100	100	100	0.0	0.1	-0.4	-0.8	-0.4	
By sector																
Industry	n.a.	343	309	264	269	265	258	30	23	25	-1.2	0.3	-0.2	-0.3	-0.1	
Transport	n.a.	259	304	307	305	272	218	23	27	21	0.8	-0.1	-1.1	-2.2	-1.2	
Buildings, etc.	n.a.	429	453	470	461	445	420	38	41	41	0.4	-0.2	-0.3	-0.6	-0.4	
Non-energy use	n.a.	99	110	99	110	116	120	8.7	8.7	12	0.0	1.4	0.5	0.4	0.7	
By energy																
Coal	n.a.	122	52	38	36	31	28	11	3.4	2.7	-5.1	-0.8	-1.3	-1.3	-1.2	
Oil	n.a.	503	539	469	446	380	321	45	41	32	-0.3	-0.6	-1.6	-1.7	-1.3	
Natural gas	n.a.	226	272	259	266	261	247	20	23	24	0.6	0.4	-0.2	-0.6	-0.2	
Electricity	n.a.	186	218	241	249	266	278	16	21	27	1.2	0.4	0.7	0.4	0.5	
Heat	n.a.	54	45	48	46	44	41	4.8	4.2	4.0	-0.5	-0.7	-0.5	-0.7	-0.6	
Renewables	n.a.	39	49	84	103	116	102	3.5	7.4	10	3.6	2.5	1.2	-1.2	0.7	

Electricity generation																
	(TWh)							Shares (%)			CAGR (%)					
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040	
Total	n.a.	2,576	3,005	3,264	3,422	3,684	3,881	100	100	100	1.1	0.6	0.7	0.5	0.6	
Coal	n.a.	1,050	967	935	716	592	510	41	29	13	-0.5	-3.3	-1.9	-1.5	-2.1	
Oil	n.a.	224	181	73	39	26	20	8.7	2.2	0.5	-5.0	-7.6	-3.8	-2.5	-4.4	
Natural gas	n.a.	193	480	582	580	554	491	7.5	18	13	5.2	0.0	-0.5	-1.2	-0.6	
Nuclear	n.a.	795	945	882	925	1,014	1,042	31	27	27	0.5	0.6	0.9	0.3	0.6	
Hydro	n.a.	289	356	335	338	345	346	11	10	8.9	0.7	0.1	0.2	0.0	0.1	
Geothermal	n.a.	3.2	4.8	5.8	7.4	11	12	0.1	0.2	0.3	2.7	3.1	3.7	1.3	2.7	
Solar, wind, etc.	n.a.	1.3	24	281	493	722	976	0.1	8.6	25	27.7	7.3	3.9	3.1	4.5	
Biomass and waste	n.a.	20	47	170	324	419	482	0.8	5.2	12	10.3	8.4	2.6	1.4	3.8	

Energy and economic indicators																
											CAGR (%)					
	1980	1990	2000	2012	2020	2030	2040	1990	2012	2040	1990/ 2012	2012/ 2020	2020/ 2030	2030/ 2040	2012/ 2040	
GDP (\$2010 billion)				n.a.	11,433	14,229	16,542	18,848	22,299	25,446	1.7	1.6	1.7	1.3	1.6	
Population (million)				n.a.	478	488	506	518	526	529	0.3	0.3	0.2	0.1	0.2	
CO ₂ emissions ^{*2} (Mt)				n.a.	4,068	3,786	3,408	3,031	2,590	2,192	-0.8	-1.5	-1.6	-1.7	-1.6	
GDP per capita (\$2010 thousand)				n.a.	24	29	33	36	42	48	1.4	1.3	1.5	1.3	1.4	
Primary energy consump. per capita (toe)				n.a.	3.4	3.5	3.3	3.2	3.0	2.8	-0.3	-0.4	-0.5	-0.7	-0.5	
Primary energy consumption per GDP ^{*3}				n.a.	144	119	99	87	71	59	-1.7	-1.7	-2.0	-1.9	-1.9	
CO ₂ emissions per GDP ^{*2, *4}				n.a.	356	266	206	161	116	86	-2.5	-3.0	-3.2	-2.9	-3.1	
CO ₂ per primary energy consumption ^{*2, *5}				n.a.	2.5	2.2	2.1	1.9	1.6	1.5	-0.8	-1.4	-1.3	-1.0	-1.2	
Automobile ownership (million)				n.a.	177	235	290	318	347	362	2.3	1.2	0.9	0.4	0.8	
Automobile ownership rates ^{*6}				n.a.	371	482	574	615	660	683	2.0	0.9	0.7	0.4	0.6	

*1 Trade of electricity and heat are not shown, *2 Excludes emission reduction by CCS, *3 toe/\$2010 million,

*4 t/\$2010 million, *5 t/toe, *6 Vehicles per 1,000 people