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Table A1 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, Curaçao, Dominican Republic, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Jamaica, 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

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		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, Niger, Nigeria, Senegal, South Sudan, 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.

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Table A2 Major energy and economic indicators

		1990	2013	2040		CAGR (%) 1990/2013	CAGR (%) 2013/2040	
				Reference	Advanced Technologies		Reference	Advanced Technologies
Total primary energy consumption (Mtoe)	**World**	**8,768**	**13,555**	**18,963**	**16,396**	**1.9**	**1.3**	**0.7**
	Asia	2,110	5,409	8,691	7,534	4.2	1.8	1.2
	China	871	3,022	4,227	3,533	5.6	1.3	0.6
	India	307	775	1,830	1,582	4.1	3.2	2.7
	Japan	439	455	436	388	0.1	-0.2	-0.6
Oil consumption (Mtoe)	**World**	**3,232**	**4,210**	**5,496**	**4,658**	**1.2**	**1.0**	**0.4**
	Asia	618	1,254	2,053	1,778	3.1	1.8	1.3
	China	119	478	797	678	6.2	1.9	1.3
	India	61	176	451	396	4.7	3.5	3.0
	Japan	250	202	135	112	-0.9	-1.5	-2.2
Natural gas consumption (Mtoe)	**World**	**1,663**	**2,902**	**4,741**	**3,665**	**2.4**	**1.8**	**0.9**
	Asia	116	532	1,417	1,149	6.9	3.7	2.9
	China	13	140	580	491	11.0	5.4	4.8
	India	11	44	196	174	6.4	5.6	5.2
	Japan	44	106	112	72	3.9	0.2	-1.4
Coal consumption (Mtoe)	**World**	**2,221**	**3,928**	**4,577**	**3,105**	**2.5**	**0.6**	**-0.9**
	Asia	786	2,747	3,546	2,460	5.6	0.9	-0.4
	China	528	2,045	2,161	1,515	6.1	0.2	-1.1
	India	94	341	806	513	5.8	3.2	1.5
	Japan	77	121	116	95	2.0	-0.2	-0.9
Power generation (TWh)	**World**	**11,826**	**23,307**	**39,509**	**33,671**	**3.0**	**2.0**	**1.4**
	Asia	2,215	9,481	19,519	16,649	6.5	2.7	2.1
	China	621	5,422	9,728	8,224	9.9	2.2	1.6
	India	293	1,193	4,196	3,715	6.3	4.8	4.3
	Japan	836	1,038	1,200	1,015	0.9	0.5	-0.1
Energy-related carbon dioxide emissions (Mt)	**World**	**21,200**	**32,920**	**42,693**	**31,762**	**1.9**	**1.0**	**-0.1**
	Asia	4,920	14,936	21,966	16,195	4.9	1.4	0.3
	China	2,339	9,437	11,627	8,493	6.3	0.8	-0.4
	India	546	1,894	4,757	3,377	5.6	3.5	2.2
	Japan	1,070	1,234	1,034	791	0.6	-0.7	-1.6
Primary energy consumption per GDP (toe/$2010 million)	**World**	**234**	**192**	**125**	**108**	**-0.8**	**-1.6**	**-2.1**
	Asia	285	272	142	123	-0.2	-2.4	-2.9
	China	1,073	402	145	121	-4.2	-3.7	-4.3
	India	640	380	162	140	-2.2	-3.1	-3.6
	Japan	96	80	52	46	-0.8	-1.6	-2.0
Primary energy consumption per capita (toe/person)	**World**	**1.66**	**1.91**	**2.09**	**1.81**	**0.6**	**0.3**	**-0.2**
	Asia	0.72	1.39	1.90	1.65	2.9	1.2	0.6
	China	0.77	2.23	3.04	2.54	4.7	1.2	0.5
	India	0.35	0.62	1.14	0.99	2.5	2.3	1.8
	Japan	3.56	3.57	3.82	3.40	0.0	0.3	-0.2
GDP ($2010 billion)	**World**	**37,514**	**70,542**	**152,280**	**152,341**	**2.8**	**2.9**	**2.9**
	Asia	7,400	19,855	61,360	61,421	4.4	4.3	4.3
	China	811	7,513	29,180	29,180	10.2	5.2	5.2
	India	479	2,039	11,298	11,298	6.5	6.5	6.5
	Japan	4,553	5,656	8,369	8,429	0.9	1.5	1.5
Population (Million)	**World**	**5,271**	**7,114**	**9,068**	**9,068**	**1.3**	**0.9**	**0.9**
	Asia	2,931	3,890	4,579	4,579	1.2	0.6	0.6
	China	1,135	1,357	1,389	1,389	0.8	0.1	0.1
	India	869	1,252	1,599	1,599	1.6	0.9	0.9
	Japan	124	127	114	114	0.1	-0.4	-0.4

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Table A3 Population

(Million)

	1990	2000	2013	2020	2030	2040	CAGR (%) 1990/2013	2013/2020	2020/2030	2030/2040	2013/2040
World	5,271 (100)	6,093 (100)	7,114 (100)	7,685 (100)	8,420 (100)	9,068 (100)	1.3	1.1	0.9	0.7	0.9
Asia	2,931 (55.6)	3,401 (55.8)	3,890 (54.7)	4,137 (53.8)	4,406 (52.3)	4,579 (50.5)	1.2	0.9	0.6	0.4	0.6
China	1,135 (21.5)	1,263 (20.7)	1,357 (19.1)	1,398 (18.2)	1,410 (16.7)	1,389 (15.3)	0.8	0.4	0.1	-0.1	0.1
India	869 (16.5)	1,042 (17.1)	1,252 (17.6)	1,359 (17.7)	1,495 (17.8)	1,599 (17.6)	1.6	1.2	1.0	0.7	0.9
Japan	124 (2.3)	127 (2.1)	127 (1.8)	125 (1.6)	120 (1.4)	114 (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	0.2	0.0	0.2
Chinese Taipei	20 (0.4)	22 (0.4)	23 (0.3)	23 (0.3)	23 (0.3)	22 (0.2)	0.6	0.0	-0.1	-0.4	-0.2
ASEAN	427 (8.1)	503 (8.3)	594 (8.3)	640 (8.3)	693 (8.2)	732 (8.1)	1.4	1.1	0.8	0.5	0.8
Indonesia	179 (3.4)	209 (3.4)	250 (3.5)	270 (3.5)	294 (3.5)	311 (3.4)	1.5	1.1	0.8	0.6	0.8
Malaysia	18 (0.3)	23 (0.4)	30 (0.4)	33 (0.4)	36 (0.4)	39 (0.4)	2.2	1.4	1.1	0.7	1.0
Myanmar	42 (0.8)	48 (0.8)	53 (0.7)	57 (0.7)	61 (0.7)	63 (0.7)	1.0	0.9	0.7	0.4	0.6
Philippines	62 (1.2)	78 (1.3)	98 (1.4)	109 (1.4)	125 (1.5)	138 (1.5)	2.0	1.5	1.3	1.0	1.3
Singapore	3 (0.1)	4 (0.1)	5 (0.1)	6 (0.1)	6 (0.1)	7 (0.1)	2.5	1.5	0.7	0.4	0.8
Thailand	57 (1.1)	62 (1.0)	67 (0.9)	68 (0.9)	68 (0.8)	66 (0.7)	0.7	0.2	0.0	-0.3	-0.1
Viet Nam	66 (1.3)	78 (1.3)	90 (1.3)	96 (1.3)	103 (1.2)	108 (1.2)	1.3	1.0	0.7	0.4	0.7
Asia excl. Japan	2,808 (53.3)	3,274 (53.7)	3,762 (52.9)	4,012 (52.2)	4,285 (50.9)	4,465 (49.2)	1.3	0.9	0.7	0.4	0.6
North America	277 (5.3)	313 (5.1)	351 (4.9)	370 (4.8)	395 (4.7)	415 (4.6)	1.0	0.7	0.7	0.5	0.6
United States	250 (4.7)	282 (4.6)	316 (4.4)	332 (4.3)	355 (4.2)	373 (4.1)	1.0	0.7	0.6	0.5	0.6
Latin America	441 (8.4)	521 (8.6)	611 (8.6)	656 (8.5)	710 (8.4)	749 (8.3)	1.4	1.0	0.8	0.5	0.8
OECD Europe	499 (9.5)	521 (8.5)	557 (7.8)	570 (7.4)	580 (6.9)	585 (6.5)	0.5	0.3	0.2	0.1	0.2
European Union	478 (9.1)	488 (8.0)	507 (7.1)	516 (6.7)	523 (6.2)	526 (5.8)	0.3	0.3	0.1	0.0	0.1
Non-OECD Europe	344 (6.5)	341 (5.6)	342 (4.8)	347 (4.5)	347 (4.1)	342 (3.8)	0.0	0.2	0.0	-0.2	0.0
Africa	627 (11.9)	806 (13.2)	1,109 (15.6)	1,318 (17.2)	1,652 (19.6)	2,030 (22.4)	2.5	2.5	2.3	2.1	2.3
Middle East	132 (2.5)	166 (2.7)	226 (3.2)	256 (3.3)	296 (3.5)	332 (3.7)	2.4	1.8	1.5	1.1	1.4
Oceania	20 (0.4)	23 (0.4)	28 (0.4)	30 (0.4)	33 (0.4)	36 (0.4)	1.3	1.3	1.0	0.8	1.0
OECD	1,062 (20.2)	1,150 (18.9)	1,254 (17.6)	1,299 (16.9)	1,348 (16.0)	1,380 (15.2)	0.7	0.5	0.4	0.2	0.4
Non-OECD	4,209 (79.8)	4,943 (81.1)	5,860 (82.4)	6,386 (83.1)	7,071 (84.0)	7,688 (84.8)	1.4	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 (%).

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Table A4 GDP [Reference Scenario and Advanced Technologies Scenario]

($2010 billion)

	1990	2000	2013	2020	2030	2040	CAGR (%) 1990/2013	2013/2020	2020/2030	2030/2040	2013/2040
World	37,514 (100)	49,355 (100)	70,542 (100)	87,139 (100)	118,035 (100)	152,280 (100)	2.8	3.1	3.1	2.6	2.9
Asia	7,400 (19.7)	10,696 (21.7)	19,855 (28.1)	27,912 (32.0)	43,027 (36.5)	61,360 (40.3)	4.4	5.0	4.4	3.6	4.3
China	811 (2.2)	2,189 (4.4)	7,513 (10.7)	11,641 (13.4)	19,762 (16.7)	29,180 (19.2)	10.2	6.5	5.4	4.0	5.2
India	479 (1.3)	825 (1.7)	2,039 (2.9)	3,391 (3.9)	6,462 (5.5)	11,298 (7.4)	6.5	7.5	6.7	5.7	6.5
Japan	4,553 (12.1)	5,093 (10.3)	5,656 (8.0)	6,547 (7.5)	7,566 (6.4)	8,369 (5.5)	0.9	2.1	1.5	1.0	1.5
Korea	377 (1.0)	710 (1.4)	1,195 (1.7)	1,525 (1.7)	1,985 (1.7)	2,375 (1.6)	5.1	3.5	2.7	1.8	2.6
Chinese Taipei	167 (0.4)	305 (0.6)	482 (0.7)	636 (0.7)	790 (0.7)	900 (0.6)	4.7	4.0	2.2	1.3	2.3
ASEAN	703 (1.9)	1,137 (2.3)	2,190 (3.1)	3,097 (3.6)	4,848 (4.1)	7,019 (4.6)	5.1	5.1	4.6	3.8	4.4
Indonesia	282 (0.8)	426 (0.9)	849 (1.2)	1,247 (1.4)	2,015 (1.7)	3,041 (2.0)	4.9	5.6	4.9	4.2	4.8
Malaysia	79 (0.2)	158 (0.3)	288 (0.4)	408 (0.5)	633 (0.5)	872 (0.6)	5.8	5.1	4.5	3.3	4.2
Myanmar	7 (0.0)	13 (0.0)	51 (0.1)	87 (0.1)	156 (0.1)	248 (0.2)	9.2	8.0	6.0	4.8	6.1
Philippines	95 (0.3)	125 (0.3)	237 (0.3)	360 (0.4)	563 (0.5)	838 (0.6)	4.1	6.2	4.6	4.0	4.8
Singapore	68 (0.2)	134 (0.3)	267 (0.4)	331 (0.4)	436 (0.4)	499 (0.3)	6.2	3.1	2.8	1.4	2.3
Thailand	135 (0.4)	209 (0.4)	350 (0.5)	444 (0.5)	637 (0.5)	866 (0.6)	4.2	3.5	3.7	3.1	3.4
Viet Nam	29 (0.1)	61 (0.1)	137 (0.2)	205 (0.2)	388 (0.3)	631 (0.4)	6.9	6.0	6.6	5.0	5.8
Asia excl. Japan	2,847 (7.6)	5,603 (11.4)	14,198 (20.1)	21,366 (24.5)	35,461 (30.0)	52,992 (34.8)	7.2	6.0	5.2	4.1	5.0
North America	10,064 (26.8)	14,050 (28.5)	17,619 (25.0)	20,910 (24.0)	26,405 (22.4)	31,603 (20.8)	2.5	2.5	2.4	1.8	2.2
United States	9,056 (24.1)	12,713 (25.8)	15,902 (22.5)	18,932 (21.7)	23,986 (20.3)	28,725 (18.9)	2.5	2.5	2.4	1.8	2.2
Latin America	2,764 (7.4)	3,744 (7.6)	5,691 (8.1)	6,515 (7.5)	8,993 (7.6)	11,569 (7.6)	3.2	2.0	3.3	2.6	2.7
OECD Europe	12,611 (33.6)	15,826 (32.1)	18,688 (26.5)	21,167 (24.3)	24,766 (21.0)	27,948 (18.4)	1.7	1.8	1.6	1.2	1.5
European Union	11,862 (31.6)	14,721 (29.8)	17,159 (24.3)	19,411 (22.3)	22,767 (19.3)	25,759 (16.9)	1.6	1.8	1.6	1.2	1.5
Non-OECD Europe	2,168 (5.8)	1,509 (3.1)	2,705 (3.8)	2,958 (3.4)	4,019 (3.4)	5,121 (3.4)	1.0	1.3	3.1	2.5	2.4
Africa	886 (2.4)	1,145 (2.3)	2,117 (3.0)	2,924 (3.4)	4,566 (3.9)	6,928 (4.5)	3.9	4.7	4.6	4.3	4.5
Middle East	902 (2.4)	1,393 (2.8)	2,419 (3.4)	2,984 (3.4)	4,054 (3.4)	5,153 (3.4)	4.4	3.0	3.1	2.4	2.8
Oceania	719 (1.9)	993 (2.0)	1,447 (2.1)	1,769 (2.0)	2,206 (1.9)	2,598 (1.7)	3.1	2.9	2.2	1.7	2.2
OECD	29,024 (77.4)	37,701 (76.4)	46,008 (65.2)	53,678 (61.6)	65,412 (55.4)	76,233 (50.1)	2.0	2.2	2.0	1.5	1.9
Non-OECD	8,490 (22.6)	11,654 (23.6)	24,534 (34.8)	33,461 (38.4)	52,623 (44.6)	76,047 (49.9)	4.7	4.5	4.6	3.8	4.3

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

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

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Table A5 International energy prices

Real prices			2014	Reference 2020	Reference 2030	Reference 2040	Lower Price 2020	Lower Price 2030	Lower Price 2040
Crude oil		$2014/bbl	105	75	100	125	70	75	80
Natural gas	Japan	$2014/MBtu	16.3	10.7	12.8	14.1	9.6	9.8	10.2
	Europe (UK)	$2014/MBtu	8.2	8.5	9.8	11.7	6.8	7.3	8.1
	United States	$2014/MBtu	4.4	4.5	5.6	6.8	3.4	3.7	3.9
Steam coal		$2014/t	98	89	106	132	86	96	108

Nominal prices			2014	Reference 2020	Reference 2030	Reference 2040	Lower Price 2020	Lower Price 2030	Lower Price 2040
Crude oil		$/bbl	105	84	137	209	79	103	134
Natural gas	Japan	$/MBtu	16.3	12.0	17.6	23.6	10.8	13.5	17.1
	Europe (UK)	$/MBtu	8.2	9.6	13.5	19.6	7.7	10.0	13.6
	United States	$/MBtu	4.4	5.1	7.7	11.4	3.8	5.1	6.5
Steam coal		$/t	98	100	145	221	97	132	181

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

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Table A6 Primary energy consumption [Reference Scenario]

(Mtoe)

	1990	2000	2013	2020	2030	2040	CAGR (%) 1990/2013	2013/2020	2020/2030	2030/2040	2013/2040
World	8,768 (100)	10,057 (100)	13,555 (100)	15,207 (100)	17,211 (100)	18,963 (100)	1.9	1.7	1.2	1.0	1.3
Asia	2,110 (24.1)	2,920 (29.0)	5,409 (39.9)	6,411 (42.2)	7,567 (44.0)	8,691 (45.8)	4.2	2.5	1.7	1.4	1.8
China	871 (9.9)	1,161 (11.5)	3,022 (22.3)	3,498 (23.0)	3,918 (22.8)	4,227 (22.3)	5.6	2.1	1.1	0.8	1.3
India	307 (3.5)	441 (4.4)	775 (5.7)	993 (6.5)	1,360 (7.9)	1,830 (9.7)	4.1	3.6	3.2	3.0	3.2
Japan	439 (5.0)	519 (5.2)	455 (3.4)	471 (3.1)	461 (2.7)	436 (2.3)	0.1	0.5	-0.2	-0.6	-0.2
Korea	93 (1.1)	188 (1.9)	264 (1.9)	300 (2.0)	328 (1.9)	325 (1.7)	4.6	1.9	0.9	-0.1	0.8
Chinese Taipei	48 (0.5)	85 (0.8)	109 (0.8)	120 (0.8)	126 (0.7)	128 (0.7)	3.6	1.4	0.5	0.1	0.6
ASEAN	233 (2.7)	380 (3.8)	587 (4.3)	776 (5.1)	1,035 (6.0)	1,327 (7.0)	4.1	4.1	2.9	2.5	3.1
Indonesia	99 (1.1)	156 (1.5)	214 (1.6)	314 (2.1)	419 (2.4)	540 (2.8)	3.4	5.6	2.9	2.6	3.5
Malaysia	22 (0.3)	49 (0.5)	89 (0.7)	109 (0.7)	135 (0.8)	160 (0.8)	6.2	3.0	2.1	1.7	2.2
Myanmar	11 (0.1)	13 (0.1)	17 (0.1)	20 (0.1)	26 (0.1)	33 (0.2)	1.9	2.7	2.5	2.5	2.6
Philippines	29 (0.3)	40 (0.4)	45 (0.3)	58 (0.4)	76 (0.4)	99 (0.5)	1.9	3.7	2.8	2.6	3.0
Singapore	12 (0.1)	19 (0.2)	26 (0.2)	31 (0.2)	37 (0.2)	41 (0.2)	3.6	2.5	1.8	1.0	1.7
Thailand	42 (0.5)	72 (0.7)	134 (1.0)	159 (1.0)	202 (1.2)	244 (1.3)	5.2	2.4	2.5	1.9	2.2
Viet Nam	18 (0.2)	29 (0.3)	60 (0.4)	83 (0.5)	136 (0.8)	206 (1.1)	5.4	4.7	5.1	4.2	4.7
Asia excl. Japan	1,670 (19.0)	2,401 (23.9)	4,955 (36.6)	5,940 (39.1)	7,106 (41.3)	8,255 (43.5)	4.8	2.6	1.8	1.5	1.9
North America	2,124 (24.2)	2,525 (25.1)	2,442 (18.0)	2,519 (16.6)	2,538 (14.7)	2,463 (13.0)	0.6	0.4	0.1	-0.3	0.0
United States	1,915 (21.8)	2,273 (22.6)	2,188 (16.1)	2,254 (14.8)	2,260 (13.1)	2,181 (11.5)	0.6	0.4	0.0	-0.4	0.0
Latin America	464 (5.3)	594 (5.9)	849 (6.3)	964 (6.3)	1,194 (6.9)	1,381 (7.3)	2.7	1.8	2.2	1.5	1.8
OECD Europe	1,620 (18.5)	1,746 (17.4)	1,737 (12.8)	1,788 (11.8)	1,807 (10.5)	1,795 (9.5)	0.3	0.4	0.1	-0.1	0.1
European Union	1,645 (18.8)	1,692 (16.8)	1,626 (12.0)	1,674 (11.0)	1,693 (9.8)	1,682 (8.9)	-0.1	0.4	0.1	-0.1	0.1
Non-OECD Europe	1,537 (17.5)	1,003 (10.0)	1,156 (8.5)	1,185 (7.8)	1,266 (7.4)	1,323 (7.0)	-1.2	0.4	0.7	0.4	0.5
Africa	391 (4.5)	494 (4.9)	747 (5.5)	906 (6.0)	1,134 (6.6)	1,368 (7.2)	2.9	2.8	2.3	1.9	2.3
Middle East	222 (2.5)	374 (3.7)	713 (5.3)	837 (5.5)	1,006 (5.8)	1,160 (6.1)	5.2	2.3	1.9	1.4	1.8
Oceania	99 (1.1)	125 (1.2)	149 (1.1)	162 (1.1)	169 (1.0)	172 (0.9)	1.8	1.2	0.4	0.2	0.5
OECD	4,511 (51.4)	5,274 (52.4)	5,276 (38.9)	5,520 (36.3)	5,627 (32.7)	5,558 (29.3)	0.7	0.6	0.2	-0.1	0.2
Non-OECD	4,055 (46.2)	4,509 (44.8)	7,925 (58.5)	9,251 (60.8)	11,055 (64.2)	12,796 (67.5)	3.0	2.2	1.8	1.5	1.8

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

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

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Table A7 Primary energy consumption, coal [Reference Scenario]

(Mtoe)

	1990	2000	2013	2020	2030	2040	CAGR (%) 1990/2013	2013/2020	2020/2030	2030/2040	2013/2040
World	2,221 (100)	2,343 (100)	3,928 (100)	4,143 (100)	4,367 (100)	4,577 (100)	2.5	0.8	0.5	0.5	0.6
Asia	786 (35.4)	1,063 (45.4)	2,747 (69.9)	2,992 (72.2)	3,271 (74.9)	3,546 (77.5)	5.6	1.2	0.9	0.8	0.9
China	528 (23.8)	691 (29.5)	2,045 (52.1)	2,157 (52.1)	2,192 (50.2)	2,161 (47.2)	6.1	0.8	0.2	-0.1	0.2
India	94 (4.2)	146 (6.2)	341 (8.7)	428 (10.3)	584 (13.4)	806 (17.6)	5.8	3.3	3.1	3.3	3.2
Japan	77 (3.4)	97 (4.1)	121 (3.1)	118 (2.8)	121 (2.8)	116 (2.5)	2.0	-0.4	0.2	-0.4	-0.2
Korea	25 (1.1)	42 (1.8)	78 (2.0)	80 (1.9)	89 (2.0)	86 (1.9)	5.0	0.5	1.1	-0.4	0.4
Chinese Taipei	11 (0.5)	30 (1.3)	40 (1.0)	40 (1.0)	40 (0.9)	39 (0.8)	5.7	-0.1	-0.1	-0.3	-0.2
ASEAN	13 (0.6)	32 (1.4)	91 (2.3)	131 (3.2)	197 (4.5)	280 (6.1)	9.0	5.2	4.2	3.6	4.2
Indonesia	4 (0.2)	12 (0.5)	32 (0.8)	54 (1.3)	86 (2.0)	126 (2.8)	10.0	8.0	4.8	3.9	5.3
Malaysia	1 (0.1)	2 (0.1)	15 (0.4)	20 (0.5)	26 (0.6)	32 (0.7)	11.1	3.6	2.7	2.1	2.7
Myanmar	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.0)	1 (0.0)	2 (0.1)	7.7	10.5	6.7	5.0	7.0
Philippines	2 (0.1)	5 (0.2)	11 (0.3)	13 (0.3)	19 (0.4)	27 (0.6)	8.9	2.3	4.2	3.5	3.5
Singapore	0 (0.0)	- (-)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	11.5	3.6	2.5	1.2	2.3
Thailand	4 (0.2)	8 (0.3)	17 (0.4)	20 (0.5)	25 (0.6)	31 (0.7)	6.8	1.9	2.6	2.0	2.2
Viet Nam	2 (0.1)	4 (0.2)	16 (0.4)	23 (0.6)	38 (0.9)	61 (1.3)	8.9	5.8	5.0	4.8	5.2
Asia excl. Japan	709 (31.9)	966 (41.2)	2,626 (66.9)	2,874 (69.4)	3,151 (72.1)	3,430 (74.9)	5.9	1.3	0.9	0.9	1.0
North America	485 (21.8)	565 (24.1)	450 (11.4)	417 (10.1)	345 (7.9)	269 (5.9)	-0.3	-1.1	-1.9	-2.5	-1.9
United States	460 (20.7)	534 (22.8)	432 (11.0)	401 (9.7)	334 (7.7)	262 (5.7)	-0.3	-1.0	-1.8	-2.4	-1.8
Latin America	20 (0.9)	27 (1.2)	43 (1.1)	45 (1.1)	60 (1.4)	74 (1.6)	3.3	0.6	3.1	2.0	2.0
OECD Europe	449 (20.2)	330 (14.1)	307 (7.8)	294 (7.1)	285 (6.5)	265 (5.8)	-1.6	-0.6	-0.3	-0.7	-0.5
European Union	456 (20.5)	321 (13.7)	286 (7.3)	273 (6.6)	266 (6.1)	247 (5.4)	-2.0	-0.7	-0.3	-0.8	-0.5
Non-OECD Europe	367 (16.5)	209 (8.9)	219 (5.6)	210 (5.1)	198 (4.5)	192 (4.2)	-2.2	-0.7	-0.6	-0.3	-0.5
Africa	74 (3.3)	90 (3.8)	104 (2.6)	126 (3.0)	144 (3.3)	167 (3.6)	1.5	2.7	1.4	1.5	1.8
Middle East	3 (0.1)	8 (0.3)	10 (0.3)	12 (0.3)	16 (0.4)	21 (0.5)	5.4	2.9	2.8	2.6	2.7
Oceania	36 (1.6)	49 (2.1)	47 (1.2)	48 (1.2)	47 (1.1)	45 (1.0)	1.1	0.3	-0.2	-0.6	-0.2
OECD	1,078 (48.5)	1,094 (46.7)	1,022 (26.0)	978 (23.6)	916 (21.0)	818 (17.9)	-0.2	-0.6	-0.6	-1.1	-0.8
Non-OECD	1,143 (51.5)	1,248 (53.3)	2,905 (74.0)	3,165 (76.4)	3,451 (79.0)	3,759 (82.1)	4.1	1.2	0.9	0.9	1.0

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

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

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Table A8 Primary energy consumption, oil [Reference Scenario]

(Mtoe)

	1990	2000	2013	2020	2030	2040	CAGR (%) 1990/2013	2013/2020	2020/2030	2030/2040	2013/2040
World	3,232 (100)	3,660 (100)	4,210 (100)	4,616 (100)	5,121 (100)	5,496 (100)	1.2	1.3	1.0	0.7	1.0
Asia	618 (19.1)	917 (25.1)	1,254 (29.8)	1,483 (32.1)	1,771 (34.6)	2,053 (37.3)	3.1	2.4	1.8	1.5	1.8
China	119 (3.7)	221 (6.0)	478 (11.4)	595 (12.9)	704 (13.7)	797 (14.5)	6.2	3.2	1.7	1.2	1.9
India	61 (1.9)	112 (3.1)	176 (4.2)	248 (5.4)	348 (6.8)	451 (8.2)	4.7	5.0	3.5	2.6	3.5
Japan	250 (7.7)	255 (7.0)	202 (4.8)	175 (3.8)	155 (3.0)	135 (2.5)	-0.9	-2.1	-1.2	-1.3	-1.5
Korea	50 (1.5)	99 (2.7)	97 (2.3)	100 (2.2)	101 (2.0)	98 (1.8)	2.9	0.5	0.0	-0.3	0.0
Chinese Taipei	26 (0.8)	38 (1.0)	42 (1.0)	46 (1.0)	47 (0.9)	47 (0.8)	2.1	1.4	0.3	-0.2	0.4
ASEAN	88 (2.7)	153 (4.2)	209 (5.0)	256 (5.5)	333 (6.5)	422 (7.7)	3.8	2.9	2.7	2.4	2.6
Indonesia	33 (1.0)	58 (1.6)	77 (1.8)	93 (2.0)	119 (2.3)	155 (2.8)	3.7	2.8	2.5	2.6	2.6
Malaysia	11 (0.4)	19 (0.5)	31 (0.7)	38 (0.8)	46 (0.9)	52 (1.0)	4.5	3.0	1.9	1.3	2.0
Myanmar	1 (0.0)	2 (0.1)	3 (0.1)	4 (0.1)	6 (0.1)	9 (0.2)	6.0	4.3	4.2	4.5	4.3
Philippines	11 (0.3)	16 (0.4)	14 (0.3)	19 (0.4)	26 (0.5)	34 (0.6)	1.0	4.7	3.2	2.9	3.5
Singapore	11 (0.4)	17 (0.5)	16 (0.4)	18 (0.4)	21 (0.4)	23 (0.4)	1.5	1.8	1.6	0.6	1.3
Thailand	18 (0.6)	32 (0.9)	53 (1.3)	62 (1.4)	78 (1.5)	92 (1.7)	4.8	2.4	2.2	1.7	2.1
Viet Nam	3 (0.1)	8 (0.2)	16 (0.4)	21 (0.5)	37 (0.7)	56 (1.0)	7.9	4.4	5.7	4.4	4.9
Asia excl. Japan	367 (11.4)	662 (18.1)	1,051 (25.0)	1,309 (28.4)	1,616 (31.6)	1,917 (34.9)	4.7	3.2	2.1	1.7	2.3
North America	833 (25.8)	958 (26.2)	859 (20.4)	865 (18.7)	854 (16.7)	792 (14.4)	0.1	0.1	-0.1	-0.8	-0.3
United States	757 (23.4)	871 (23.8)	780 (18.5)	782 (16.9)	765 (14.9)	702 (12.8)	0.1	0.0	-0.2	-0.9	-0.4
Latin America	237 (7.3)	303 (8.3)	390 (9.3)	416 (9.0)	476 (9.3)	506 (9.2)	2.2	0.9	1.4	0.6	1.0
OECD Europe	606 (18.7)	650 (17.8)	549 (13.0)	519 (11.3)	490 (9.6)	454 (8.3)	-0.4	-0.8	-0.6	-0.8	-0.7
European Union	606 (18.7)	623 (17.0)	513 (12.2)	489 (10.6)	463 (9.0)	430 (7.8)	-0.7	-0.7	-0.5	-0.8	-0.7
Non-OECD Europe	468 (14.5)	203 (5.5)	242 (5.8)	248 (5.4)	260 (5.1)	262 (4.8)	-2.8	0.3	0.5	0.1	0.3
Africa	86 (2.7)	98 (2.7)	168 (4.0)	207 (4.5)	248 (4.8)	284 (5.2)	2.9	3.0	1.8	1.4	2.0
Middle East	146 (4.5)	217 (5.9)	342 (8.1)	393 (8.5)	455 (8.9)	509 (9.3)	3.8	2.0	1.5	1.1	1.5
Oceania	35 (1.1)	40 (1.1)	52 (1.2)	57 (1.2)	61 (1.2)	63 (1.2)	1.8	1.3	0.7	0.3	0.7
OECD	1,861 (57.6)	2,103 (57.5)	1,874 (44.5)	1,848 (40.0)	1,803 (35.2)	1,692 (30.8)	0.0	-0.2	-0.2	-0.6	-0.4
Non-OECD	1,169 (36.2)	1,283 (35.1)	1,982 (47.1)	2,340 (50.7)	2,811 (54.9)	3,230 (58.8)	2.3	2.4	1.9	1.4	1.8

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

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

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Table A9 Primary energy consumption, natural gas [Reference Scenario]

(Mtoe)

	1990	2000	2013	2020	2030	2040	CAGR (%) 1990/2013	2013/2020	2020/2030	2030/2040	2013/2040
World	**1,663** (100)	**2,067** (100)	**2,902** (100)	**3,359** (100)	**4,096** (100)	**4,741** (100)	2.4	2.1	2.0	1.5	1.8
Asia	**116** (7.0)	**232** (11.2)	**532** (18.3)	**732** (21.8)	**1,083** (26.4)	**1,417** (29.9)	6.9	4.7	4.0	2.7	3.7
China	**13** (0.8)	**21** (1.0)	**140** (4.8)	**256** (7.6)	**431** (10.5)	**580** (12.2)	11.0	9.0	5.4	3.0	5.4
India	**11** (0.6)	**23** (1.1)	**44** (1.5)	**69** (2.0)	**120** (2.9)	**196** (4.1)	6.4	6.4	5.7	5.1	5.6
Japan	**44** (2.7)	**66** (3.2)	**106** (3.7)	**97** (2.9)	**110** (2.7)	**112** (2.4)	3.9	-1.4	1.3	0.1	0.2
Korea	**3** (0.2)	**17** (0.8)	**48** (1.6)	**47** (1.4)	**57** (1.4)	**58** (1.2)	13.2	-0.1	1.8	0.2	0.7
Chinese Taipei	**1** (0.1)	**6** (0.3)	**13** (0.5)	**19** (0.6)	**27** (0.7)	**30** (0.6)	10.2	5.7	3.3	1.0	3.1
ASEAN	**30** (1.8)	**74** (3.6)	**133** (4.6)	**175** (5.2)	**236** (5.8)	**305** (6.4)	6.7	4.0	3.0	2.6	3.1
Indonesia	**16** (1.0)	**27** (1.3)	**33** (1.1)	**51** (1.5)	**73** (1.8)	**99** (2.1)	3.2	6.5	3.6	3.1	4.2
Malaysia	**7** (0.4)	**25** (1.2)	**38** (1.3)	**44** (1.3)	**51** (1.2)	**57** (1.2)	7.8	2.1	1.5	1.2	1.5
Myanmar	**1** (0.0)	**1** (0.1)	**2** (0.1)	**3** (0.1)	**6** (0.1)	**8** (0.2)	3.9	9.1	5.2	3.6	5.6
Philippines	**-** (-)	**0** (0.0)	**3** (0.1)	**5** (0.1)	**7** (0.2)	**11** (0.2)	-	6.7	4.9	3.8	4.9
Singapore	**-** (-)	**1** (0.1)	**9** (0.3)	**10** (0.3)	**11** (0.3)	**13** (0.3)	-	1.1	1.7	1.3	1.4
Thailand	**5** (0.3)	**17** (0.8)	**38** (1.3)	**44** (1.3)	**56** (1.4)	**66** (1.4)	9.2	2.3	2.4	1.6	2.1
Viet Nam	**0** (0.0)	**1** (0.1)	**8** (0.3)	**15** (0.5)	**29** (0.7)	**49** (1.0)	41.9	8.8	6.7	5.4	6.7
Asia excl. Japan	**72** (4.3)	**167** (8.1)	**426** (14.7)	**635** (18.9)	**972** (23.7)	**1,305** (27.5)	8.1	5.9	4.4	3.0	4.2
North America	**493** (29.6)	**622** (30.1)	**697** (24.0)	**759** (22.6)	**826** (20.2)	**850** (17.9)	1.5	1.2	0.8	0.3	0.7
United States	**438** (26.3)	**548** (26.5)	**610** (21.0)	**668** (19.9)	**722** (17.6)	**742** (15.6)	1.4	1.3	0.8	0.3	0.7
Latin America	**72** (4.3)	**112** (5.4)	**199** (6.9)	**235** (7.0)	**328** (8.0)	**411** (8.7)	4.5	2.4	3.4	2.3	2.7
OECD Europe	**260** (15.6)	**393** (19.0)	**415** (14.3)	**454** (13.5)	**485** (11.9)	**498** (10.5)	2.1	1.3	0.7	0.2	0.7
European Union	**297** (17.9)	**396** (19.1)	**387** (13.3)	**420** (12.5)	**449** (11.0)	**461** (9.7)	1.2	1.2	0.7	0.2	0.7
Non-OECD Europe	**603** (36.2)	**489** (23.6)	**569** (19.6)	**579** (17.2)	**615** (15.0)	**641** (13.5)	-0.2	0.2	0.6	0.4	0.4
Africa	**30** (1.8)	**47** (2.3)	**100** (3.4)	**133** (3.9)	**192** (4.7)	**260** (5.5)	5.4	4.1	3.8	3.1	3.6
Middle East	**72** (4.3)	**148** (7.2)	**356** (12.3)	**422** (12.6)	**510** (12.4)	**593** (12.5)	7.2	2.5	1.9	1.5	1.9
Oceania	**19** (1.1)	**24** (1.2)	**34** (1.2)	**36** (1.1)	**36** (0.9)	**37** (0.8)	2.6	0.8	0.2	0.1	0.3
OECD	**843** (50.7)	**1,156** (55.9)	**1,365** (47.0)	**1,477** (44.0)	**1,612** (39.4)	**1,662** (35.1)	2.1	1.1	0.9	0.3	0.7
Non-OECD	**820** (49.3)	**911** (44.1)	**1,536** (53.0)	**1,873** (55.8)	**2,462** (60.1)	**3,044** (64.2)	2.8	2.9	2.8	2.1	2.6

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

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

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Table A10 Final energy consumption [Reference Scenario]

(Mtoe)

	1990	2000	2013	2020	2030	2040	CAGR (%) 1990/2013	2013/2020	2020/2030	2030/2040	2013/2040
World	6,281 (100)	7,085 (100)	9,173 (100)	10,309 (100)	11,735 (100)	12,991 (100)	1.7	1.7	1.3	1.0	1.3
Asia	1,572 (25.0)	2,039 (28.8)	3,476 (37.9)	4,088 (39.7)	4,829 (41.1)	5,581 (43.0)	3.5	2.3	1.7	1.5	1.8
China	664 (10.6)	815 (11.5)	1,814 (19.8)	2,106 (20.4)	2,381 (20.3)	2,604 (20.0)	4.5	2.2	1.2	0.9	1.3
India	243 (3.9)	315 (4.5)	528 (5.8)	673 (6.5)	889 (7.6)	1,169 (9.0)	3.4	3.5	2.8	2.8	3.0
Japan	298 (4.7)	341 (4.8)	311 (3.4)	313 (3.0)	305 (2.6)	289 (2.2)	0.2	0.1	-0.2	-0.5	-0.3
Korea	65 (1.0)	127 (1.8)	168 (1.8)	185 (1.8)	199 (1.7)	197 (1.5)	4.2	1.4	0.7	-0.1	0.6
Chinese Taipei	29 (0.5)	49 (0.7)	68 (0.7)	75 (0.7)	81 (0.7)	82 (0.6)	3.7	1.6	0.7	0.2	0.7
ASEAN	173 (2.8)	271 (3.8)	425 (4.6)	532 (5.2)	701 (6.0)	897 (6.9)	4.0	3.3	2.8	2.5	2.8
Indonesia	80 (1.3)	121 (1.7)	162 (1.8)	205 (2.0)	269 (2.3)	351 (2.7)	3.1	3.4	2.8	2.7	2.9
Malaysia	14 (0.2)	30 (0.4)	54 (0.6)	69 (0.7)	87 (0.7)	103 (0.8)	6.1	3.5	2.3	1.8	2.4
Myanmar	9 (0.1)	11 (0.2)	15 (0.2)	17 (0.2)	22 (0.2)	28 (0.2)	2.1	2.0	2.2	2.4	2.2
Philippines	20 (0.3)	24 (0.3)	26 (0.3)	33 (0.3)	44 (0.4)	57 (0.4)	1.2	3.4	2.9	2.8	3.0
Singapore	5 (0.1)	8 (0.1)	20 (0.2)	23 (0.2)	28 (0.2)	31 (0.2)	6.1	2.5	1.9	1.0	1.7
Thailand	29 (0.5)	51 (0.7)	96 (1.0)	115 (1.1)	144 (1.2)	173 (1.3)	5.4	2.6	2.3	1.8	2.2
Viet Nam	16 (0.3)	25 (0.4)	51 (0.6)	68 (0.7)	105 (0.9)	151 (1.2)	5.2	4.1	4.5	3.7	4.1
Asia excl. Japan	1,275 (20.3)	1,698 (24.0)	3,165 (34.5)	3,775 (36.6)	4,524 (38.6)	5,291 (40.7)	4.0	2.6	1.8	1.6	1.9
North America	1,452 (23.1)	1,736 (24.5)	1,694 (18.5)	1,752 (17.0)	1,785 (15.2)	1,740 (13.4)	0.7	0.5	0.2	-0.3	0.1
United States	1,294 (20.6)	1,546 (21.8)	1,495 (16.3)	1,538 (14.9)	1,557 (13.3)	1,506 (11.6)	0.6	0.4	0.1	-0.3	0.0
Latin America	344 (5.5)	449 (6.3)	610 (6.6)	685 (6.6)	841 (7.2)	963 (7.4)	2.5	1.7	2.1	1.4	1.7
OECD Europe	1,122 (17.9)	1,225 (17.3)	1,219 (13.3)	1,256 (12.2)	1,268 (10.8)	1,254 (9.7)	0.4	0.4	0.1	-0.1	0.1
European Union	1,130 (18.0)	1,176 (16.6)	1,139 (12.4)	1,176 (11.4)	1,190 (10.1)	1,179 (9.1)	0.0	0.5	0.1	-0.1	0.1
Non-OECD Europe	1,073 (17.1)	654 (9.2)	704 (7.7)	757 (7.3)	838 (7.1)	896 (6.9)	-1.8	1.0	1.0	0.7	0.9
Africa	292 (4.6)	370 (5.2)	555 (6.0)	673 (6.5)	846 (7.2)	1,028 (7.9)	2.8	2.8	2.3	2.0	2.3
Middle East	157 (2.5)	255 (3.6)	467 (5.1)	558 (5.4)	685 (5.8)	801 (6.2)	4.9	2.6	2.1	1.6	2.0
Oceania	66 (1.1)	83 (1.2)	94 (1.0)	105 (1.0)	114 (1.0)	120 (0.9)	1.5	1.6	0.8	0.5	0.9
OECD	3,099 (49.3)	3,631 (51.2)	3,631 (39.6)	3,783 (36.7)	3,867 (33.0)	3,819 (29.4)	0.7	0.6	0.2	-0.1	0.2
Non-OECD	2,980 (47.4)	3,180 (44.9)	5,188 (56.6)	6,091 (59.1)	7,339 (62.5)	8,564 (65.9)	2.4	2.3	1.9	1.6	1.9

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

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

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Table A11 Final energy consumption, industry [Reference Scenario]

(Mtoe)

	1990	2000	2013	2020	2030	2040	CAGR (%) 1990/2013	2013/2020	2020/2030	2030/2040	2013/2040
World	1,807 (100)	1,895 (100)	2,623 (100)	2,930 (100)	3,311 (100)	3,678 (100)	1.6	1.6	1.2	1.1	1.3
Asia	518 (28.7)	672 (35.5)	1,367 (52.1)	1,567 (53.5)	1,761 (53.2)	1,965 (53.4)	4.3	2.0	1.2	1.1	1.4
China	244 (13.5)	329 (17.3)	878 (33.5)	960 (32.8)	987 (29.8)	997 (27.1)	5.7	1.3	0.3	0.1	0.5
India	67 (3.7)	83 (4.4)	179 (6.8)	230 (7.9)	312 (9.4)	424 (11.5)	4.4	3.7	3.1	3.1	3.2
Japan	101 (5.6)	96 (5.1)	82 (3.1)	89 (3.0)	89 (2.7)	87 (2.4)	-0.9	1.1	0.0	-0.1	0.2
Korea	19 (1.1)	38 (2.0)	48 (1.8)	55 (1.9)	59 (1.8)	58 (1.6)	4.0	2.0	0.8	-0.3	0.7
Chinese Taipei	12 (0.7)	19 (1.0)	23 (0.9)	26 (0.9)	27 (0.8)	28 (0.8)	2.8	1.5	0.7	0.2	0.7
ASEAN	43 (2.4)	76 (4.0)	116 (4.4)	153 (5.2)	212 (6.4)	279 (7.6)	4.5	4.0	3.3	2.8	3.3
Indonesia	18 (1.0)	31 (1.6)	37 (1.4)	51 (1.8)	74 (2.2)	102 (2.8)	3.1	4.9	3.7	3.2	3.8
Malaysia	6 (0.3)	12 (0.6)	15 (0.6)	20 (0.7)	25 (0.8)	30 (0.8)	4.5	4.1	2.3	1.8	2.6
Myanmar	0 (0.0)	1 (0.1)	2 (0.1)	3 (0.1)	4 (0.1)	6 (0.2)	7.1	4.7	4.5	4.4	4.5
Philippines	5 (0.3)	5 (0.3)	7 (0.3)	9 (0.3)	11 (0.3)	14 (0.4)	1.7	3.2	2.6	2.4	2.7
Singapore	1 (0.0)	2 (0.1)	6 (0.2)	7 (0.2)	8 (0.3)	9 (0.3)	10.4	2.3	2.1	1.2	1.8
Thailand	9 (0.5)	17 (0.9)	30 (1.1)	35 (1.2)	45 (1.4)	55 (1.5)	5.5	2.4	2.5	2.0	2.3
Viet Nam	5 (0.3)	8 (0.4)	19 (0.7)	28 (0.9)	44 (1.3)	63 (1.7)	6.5	5.2	4.8	3.6	4.4
Asia excl. Japan	417 (23.1)	576 (30.4)	1,285 (49.0)	1,478 (50.4)	1,672 (50.5)	1,878 (51.1)	5.0	2.0	1.2	1.2	1.4
North America	331 (18.3)	387 (20.4)	309 (11.8)	318 (10.9)	314 (9.5)	303 (8.2)	-0.3	0.4	-0.1	-0.4	-0.1
United States	284 (15.7)	332 (17.5)	261 (10.0)	267 (9.1)	257 (7.8)	243 (6.6)	-0.4	0.3	-0.4	-0.6	-0.3
Latin America	115 (6.3)	148 (7.8)	199 (7.6)	220 (7.5)	279 (8.4)	335 (9.1)	2.4	1.5	2.4	1.9	2.0
OECD Europe	323 (17.9)	323 (17.1)	281 (10.7)	294 (10.0)	296 (9.0)	292 (7.9)	-0.6	0.6	0.1	-0.1	0.1
European Union	343 (19.0)	308 (16.2)	258 (9.8)	270 (9.2)	274 (8.3)	273 (7.4)	-1.2	0.7	0.2	-0.1	0.2
Non-OECD Europe	396 (21.9)	206 (10.9)	203 (7.7)	211 (7.2)	254 (7.7)	287 (7.8)	-2.9	0.6	1.8	1.3	1.3
Africa	55 (3.0)	58 (3.0)	85 (3.2)	107 (3.7)	142 (4.3)	183 (5.0)	1.9	3.4	2.9	2.5	2.9
Middle East	47 (2.6)	73 (3.8)	150 (5.7)	180 (6.1)	231 (7.0)	277 (7.5)	5.2	2.6	2.5	1.8	2.3
Oceania	23 (1.3)	28 (1.5)	29 (1.1)	33 (1.1)	35 (1.0)	36 (1.0)	1.1	1.5	0.6	0.3	0.7
OECD	826 (45.7)	908 (47.9)	794 (30.3)	839 (28.6)	851 (25.7)	843 (22.9)	-0.2	0.8	0.1	-0.1	0.2
Non-OECD	981 (54.3)	987 (52.1)	1,830 (69.7)	2,091 (71.4)	2,460 (74.3)	2,835 (77.1)	2.7	1.9	1.6	1.4	1.6

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

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

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Table A12 Final energy consumption, transport [Reference Scenario]

(Mtoe)

	1990	2000	2013	2020	2030	2040	CAGR (%) 1990/2013	2013/2020	2020/2030	2030/2040	2013/2040
World	**1,576** (100)	**1,965** (100)	**2,552** (100)	**2,884** (100)	**3,291** (100)	**3,589** (100)	2.1	1.8	1.3	0.9	1.3
Asia	**190** (12.1)	**325** (16.6)	**581** (22.8)	**727** (25.2)	**927** (28.2)	**1,123** (31.3)	5.0	3.3	2.5	1.9	2.5
China	**33** (2.1)	**88** (4.5)	**245** (9.6)	**321** (11.1)	**410** (12.5)	**489** (13.6)	9.1	3.9	2.5	1.8	2.6
India	**21** (1.3)	**32** (1.6)	**75** (2.9)	**110** (3.8)	**163** (5.0)	**212** (5.9)	5.7	5.7	4.0	2.6	3.9
Japan	**72** (4.6)	**88** (4.5)	**73** (2.9)	**70** (2.4)	**62** (1.9)	**55** (1.5)	0.1	-0.8	-1.1	-1.1	-1.0
Korea	**15** (0.9)	**26** (1.3)	**31** (1.2)	**32** (1.1)	**33** (1.0)	**30** (0.8)	3.4	0.4	0.1	-0.7	-0.1
Chinese Taipei	**7** (0.4)	**12** (0.6)	**12** (0.5)	**13** (0.5)	**14** (0.4)	**13** (0.4)	2.6	1.1	0.4	-0.2	0.3
ASEAN	**32** (2.1)	**62** (3.1)	**112** (4.4)	**140** (4.9)	**189** (5.8)	**250** (7.0)	5.5	3.3	3.0	2.8	3.0
Indonesia	**11** (0.7)	**22** (1.1)	**46** (1.8)	**61** (2.1)	**85** (2.6)	**117** (3.3)	6.6	4.0	3.4	3.3	3.5
Malaysia	**5** (0.3)	**10** (0.5)	**19** (0.8)	**23** (0.8)	**27** (0.8)	**30** (0.8)	6.3	2.5	1.6	1.0	1.6
Myanmar	**0** (0.0)	**1** (0.1)	**1** (0.1)	**2** (0.1)	**4** (0.1)	**6** (0.2)	5.0	5.7	5.7	5.5	5.6
Philippines	**5** (0.3)	**8** (0.4)	**9** (0.3)	**12** (0.4)	**17** (0.5)	**24** (0.7)	2.9	4.4	3.7	3.4	3.8
Singapore	**1** (0.1)	**2** (0.1)	**3** (0.1)	**3** (0.1)	**3** (0.1)	**4** (0.1)	3.0	2.5	0.9	0.1	1.0
Thailand	**9** (0.6)	**15** (0.7)	**23** (0.9)	**25** (0.9)	**27** (0.8)	**27** (0.8)	4.1	1.4	0.6	0.3	0.7
Viet Nam	**1** (0.1)	**3** (0.2)	**10** (0.4)	**14** (0.5)	**26** (0.8)	**42** (1.2)	9.2	4.5	6.4	4.7	5.3
Asia excl. Japan	**118** (7.5)	**237** (12.1)	**507** (19.9)	**658** (22.8)	**865** (26.3)	**1,068** (29.8)	6.5	3.8	2.8	2.1	2.8
North America	**531** (33.7)	**640** (32.6)	**669** (26.2)	**684** (23.7)	**679** (20.6)	**634** (17.7)	1.0	0.3	-0.1	-0.7	-0.2
United States	**488** (30.9)	**588** (29.9)	**608** (23.8)	**618** (21.4)	**611** (18.6)	**569** (15.9)	1.0	0.2	-0.1	-0.7	-0.2
Latin America	**103** (6.5)	**141** (7.2)	**216** (8.5)	**252** (8.7)	**312** (9.5)	**346** (9.6)	3.3	2.2	2.2	1.0	1.8
OECD Europe	**266** (16.9)	**316** (16.1)	**320** (12.6)	**314** (10.9)	**299** (9.1)	**276** (7.7)	0.8	-0.3	-0.5	-0.8	-0.6
European Union	**259** (16.4)	**304** (15.5)	**303** (11.9)	**300** (10.4)	**286** (8.7)	**263** (7.3)	0.7	-0.1	-0.5	-0.8	-0.5
Non-OECD Europe	**172** (10.9)	**110** (5.6)	**144** (5.7)	**155** (5.4)	**170** (5.2)	**178** (5.0)	-0.8	1.0	0.9	0.5	0.8
Africa	**38** (2.4)	**54** (2.8)	**97** (3.8)	**121** (4.2)	**145** (4.4)	**164** (4.6)	4.2	3.3	1.8	1.2	2.0
Middle East	**50** (3.2)	**74** (3.8)	**135** (5.3)	**155** (5.4)	**189** (5.7)	**216** (6.0)	4.4	2.1	1.9	1.4	1.8
Oceania	**24** (1.5)	**30** (1.5)	**36** (1.4)	**39** (1.3)	**42** (1.3)	**44** (1.2)	1.7	1.2	0.7	0.4	0.7
OECD	**938** (59.6)	**1,143** (58.1)	**1,189** (46.6)	**1,215** (42.1)	**1,202** (36.5)	**1,133** (31.6)	1.0	0.3	-0.1	-0.6	-0.2
Non-OECD	**435** (27.6)	**549** (27.9)	**1,009** (39.5)	**1,233** (42.8)	**1,560** (47.4)	**1,847** (51.5)	3.7	2.9	2.4	1.7	2.3

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

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

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Table A13 Final energy consumption, buildings, etc. [Reference Scenario]

(Mtoe)

	1990	2000	2013	2020	2030	2040	CAGR (%) 1990/2013	2013/2020	2020/2030	2030/2040	2013/2040
World	**2,421** (100)	**2,605** (100)	**3,199** (100)	**3,568** (100)	**4,070** (100)	**4,553** (100)	1.2	1.6	1.3	1.1	1.3
Asia	**748** (30.9)	**852** (32.7)	**1,188** (37.1)	**1,386** (38.8)	**1,652** (40.6)	**1,929** (42.4)	2.0	2.2	1.8	1.6	1.8
China	**344** (14.2)	**337** (12.9)	**548** (17.1)	**649** (18.2)	**776** (19.1)	**882** (19.4)	2.0	2.4	1.8	1.3	1.8
India	**142** (5.9)	**173** (6.6)	**238** (7.4)	**284** (8.0)	**344** (8.5)	**438** (9.6)	2.3	2.6	1.9	2.4	2.3
Japan	**91** (3.8)	**116** (4.4)	**118** (3.7)	**118** (3.3)	**119** (2.9)	**114** (2.5)	1.1	0.1	0.1	-0.5	-0.1
Korea	**24** (1.0)	**37** (1.4)	**45** (1.4)	**48** (1.3)	**53** (1.3)	**53** (1.2)	2.7	0.8	1.0	0.0	0.6
Chinese Taipei	**7** (0.3)	**10** (0.4)	**12** (0.4)	**13** (0.4)	**14** (0.3)	**14** (0.3)	2.5	1.5	0.5	0.1	0.6
ASEAN	**87** (3.6)	**113** (4.3)	**143** (4.5)	**171** (4.8)	**212** (5.2)	**261** (5.7)	2.2	2.5	2.2	2.1	2.2
Indonesia	**44** (1.8)	**59** (2.3)	**68** (2.1)	**79** (2.2)	**96** (2.3)	**115** (2.5)	1.9	2.2	1.9	1.9	2.0
Malaysia	**3** (0.1)	**5** (0.2)	**10** (0.3)	**14** (0.4)	**20** (0.5)	**27** (0.6)	5.7	4.9	3.6	2.7	3.6
Myanmar	**8** (0.3)	**9** (0.3)	**12** (0.4)	**13** (0.4)	**14** (0.3)	**15** (0.3)	1.4	1.0	0.9	0.9	0.9
Philippines	**10** (0.4)	**10** (0.4)	**10** (0.3)	**12** (0.3)	**15** (0.4)	**19** (0.4)	-0.2	2.6	2.3	2.3	2.4
Singapore	**1** (0.0)	**2** (0.1)	**2** (0.1)	**3** (0.1)	**4** (0.1)	**4** (0.1)	3.3	2.8	2.2	1.5	2.1
Thailand	**11** (0.4)	**14** (0.5)	**21** (0.7)	**26** (0.7)	**33** (0.8)	**40** (0.9)	3.0	2.6	2.4	2.1	2.4
Viet Nam	**10** (0.4)	**14** (0.5)	**19** (0.6)	**23** (0.7)	**31** (0.8)	**41** (0.9)	2.9	2.7	2.7	3.0	2.8
Asia excl. Japan	**657** (27.1)	**736** (28.2)	**1,070** (33.5)	**1,268** (35.5)	**1,533** (37.7)	**1,815** (39.9)	2.1	2.4	1.9	1.7	2.0
North America	**457** (18.9)	**535** (20.5)	**573** (17.9)	**597** (16.7)	**619** (15.2)	**623** (13.7)	1.0	0.6	0.4	0.1	0.3
United States	**403** (16.7)	**473** (18.1)	**507** (15.8)	**528** (14.8)	**548** (13.5)	**550** (12.1)	1.0	0.6	0.4	0.0	0.3
Latin America	**101** (4.2)	**120** (4.6)	**154** (4.8)	**169** (4.7)	**202** (5.0)	**230** (5.1)	1.9	1.3	1.8	1.3	1.5
OECD Europe	**433** (17.9)	**473** (18.1)	**511** (16.0)	**529** (14.8)	**548** (13.5)	**559** (12.3)	0.7	0.5	0.4	0.2	0.3
European Union	**429** (17.7)	**453** (17.4)	**478** (14.9)	**494** (13.9)	**513** (12.6)	**523** (11.5)	0.5	0.5	0.4	0.2	0.3
Non-OECD Europe	**439** (18.1)	**288** (11.1)	**272** (8.5)	**296** (8.3)	**314** (7.7)	**326** (7.2)	-2.1	1.2	0.6	0.4	0.7
Africa	**188** (7.8)	**243** (9.3)	**354** (11.1)	**421** (11.8)	**530** (13.0)	**647** (14.2)	2.8	2.5	2.3	2.0	2.3
Middle East	**40** (1.7)	**76** (2.9)	**122** (3.8)	**144** (4.0)	**175** (4.3)	**207** (4.5)	4.9	2.4	1.9	1.7	2.0
Oceania	**15** (0.6)	**19** (0.7)	**23** (0.7)	**26** (0.7)	**29** (0.7)	**32** (0.7)	1.9	1.8	1.2	0.9	1.2
OECD	**1,044** (43.1)	**1,209** (46.4)	**1,305** (40.8)	**1,358** (38.0)	**1,415** (34.8)	**1,434** (31.5)	1.0	0.6	0.4	0.1	0.4
Non-OECD	**1,377** (56.9)	**1,396** (53.6)	**1,894** (59.2)	**2,211** (62.0)	**2,655** (65.2)	**3,119** (68.5)	1.4	2.2	1.8	1.6	1.9

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

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

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Table A14 Final energy consumption, electricity [Reference Scenario]

(TWh)

	1990	2000	2013	2020	2030	2040	CAGR (%) 1990/2013	2013/2020	2020/2030	2030/2040	2013/2040
World	**9,695** (100)	**12,688** (100)	**19,494** (100)	**23,110** (100)	**28,440** (100)	**33,613** (100)	3.1	2.5	2.1	1.7	2.0
Asia	**1,812** (18.7)	**3,229** (25.4)	**7,981** (40.9)	**10,211** (44.2)	**13,438** (47.2)	**16,751** (49.8)	6.7	3.6	2.8	2.2	2.8
China	**454** (4.7)	**1,037** (8.2)	**4,492** (23.0)	**5,741** (24.8)	**7,180** (25.2)	**8,315** (24.7)	10.5	3.6	2.3	1.5	2.3
India	**215** (2.2)	**376** (3.0)	**890** (4.6)	**1,266** (5.5)	**2,090** (7.4)	**3,283** (9.8)	6.4	5.2	5.1	4.6	5.0
Japan	**750** (7.7)	**944** (7.4)	**950** (4.9)	**1,026** (4.4)	**1,104** (3.9)	**1,133** (3.4)	1.0	1.1	0.7	0.3	0.7
Korea	**94** (1.0)	**263** (2.1)	**487** (2.5)	**595** (2.6)	**717** (2.5)	**750** (2.2)	7.4	2.9	1.9	0.5	1.6
Chinese Taipei	**77** (0.8)	**160** (1.3)	**227** (1.2)	**255** (1.1)	**285** (1.0)	**301** (0.9)	4.8	1.7	1.1	0.5	1.1
ASEAN	**130** (1.3)	**320** (2.5)	**713** (3.7)	**1,015** (4.4)	**1,589** (5.6)	**2,332** (6.9)	7.7	5.2	4.6	3.9	4.5
Indonesia	**28** (0.3)	**79** (0.6)	**188** (1.0)	**303** (1.3)	**501** (1.8)	**768** (2.3)	8.6	7.0	5.2	4.4	5.3
Malaysia	**20** (0.2)	**61** (0.5)	**127** (0.7)	**170** (0.7)	**246** (0.9)	**336** (1.0)	8.4	4.2	3.8	3.1	3.7
Myanmar	**2** (0.0)	**3** (0.0)	**9** (0.0)	**16** (0.1)	**30** (0.1)	**51** (0.2)	7.3	9.2	6.6	5.3	6.7
Philippines	**21** (0.2)	**37** (0.3)	**62** (0.3)	**85** (0.4)	**125** (0.4)	**173** (0.5)	4.7	4.7	3.9	3.3	3.9
Singapore	**13** (0.1)	**27** (0.2)	**46** (0.2)	**51** (0.2)	**61** (0.2)	**69** (0.2)	5.6	1.5	1.8	1.3	1.5
Thailand	**38** (0.4)	**88** (0.7)	**164** (0.8)	**202** (0.9)	**289** (1.0)	**388** (1.2)	6.5	3.0	3.6	3.0	3.2
Viet Nam	**6** (0.1)	**22** (0.2)	**114** (0.6)	**184** (0.8)	**332** (1.2)	**541** (1.6)	13.5	7.0	6.1	5.0	5.9
Asia excl. Japan	**1,063** (11.0)	**2,285** (18.0)	**7,031** (36.1)	**9,185** (39.7)	**12,334** (43.4)	**15,619** (46.5)	8.6	3.9	3.0	2.4	3.0
North America	**3,052** (31.5)	**3,981** (31.4)	**4,267** (21.9)	**4,671** (20.2)	**5,066** (17.8)	**5,239** (15.6)	1.5	1.3	0.8	0.3	0.8
United States	**2,634** (27.2)	**3,499** (27.6)	**3,782** (19.4)	**4,115** (17.8)	**4,470** (15.7)	**4,609** (13.7)	1.6	1.2	0.8	0.3	0.7
Latin America	**517** (5.3)	**810** (6.4)	**1,267** (6.5)	**1,478** (6.4)	**1,997** (7.0)	**2,492** (7.4)	4.0	2.2	3.1	2.2	2.5
OECD Europe	**2,230** (23.0)	**2,710** (21.4)	**3,048** (15.6)	**3,323** (14.4)	**3,584** (12.6)	**3,774** (11.2)	1.4	1.2	0.8	0.5	0.8
European Union	**2,163** (22.3)	**2,531** (19.9)	**2,771** (14.2)	**3,011** (13.0)	**3,259** (11.5)	**3,443** (10.2)	1.1	1.2	0.8	0.5	0.8
Non-OECD Europe	**1,471** (15.2)	**1,011** (8.0)	**1,256** (6.4)	**1,332** (5.8)	**1,587** (5.6)	**1,831** (5.4)	-0.7	0.8	1.8	1.4	1.4
Africa	**257** (2.7)	**361** (2.8)	**595** (3.1)	**769** (3.3)	**1,056** (3.7)	**1,401** (4.2)	3.7	3.7	3.2	2.9	3.2
Middle East	**199** (2.0)	**379** (3.0)	**835** (4.3)	**1,052** (4.6)	**1,405** (4.9)	**1,784** (5.3)	6.4	3.3	2.9	2.4	2.8
Oceania	**157** (1.6)	**207** (1.6)	**244** (1.3)	**275** (1.2)	**309** (1.1)	**340** (1.0)	1.9	1.7	1.2	1.0	1.2
OECD	**6,399** (66.0)	**8,304** (65.4)	**9,304** (47.7)	**10,258** (44.4)	**11,256** (39.6)	**11,838** (35.2)	1.6	1.4	0.9	0.5	0.9
Non-OECD	**3,296** (34.0)	**4,384** (34.6)	**10,191** (52.3)	**12,852** (55.6)	**17,184** (60.4)	**21,775** (64.8)	5.0	3.4	2.9	2.4	2.9

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

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

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Table A15 Electricity generation [Reference Scenario]

(TWh)

	1990	2000	2013	2020	2030	2040	CAGR (%) 1990/2013	2013/2020	2020/2030	2030/2040	2013/2040
World	11,826 (100)	15,426 (100)	23,307 (100)	27,414 (100)	33,547 (100)	39,509 (100)	3.0	2.3	2.0	1.6	2.0
Asia	2,215 (18.7)	3,974 (25.8)	9,481 (40.7)	12,018 (43.8)	15,719 (46.9)	19,519 (49.4)	6.5	3.4	2.7	2.2	2.7
China	621 (5.3)	1,356 (8.8)	5,422 (23.3)	6,833 (24.9)	8,459 (25.2)	9,728 (24.6)	9.9	3.4	2.2	1.4	2.2
India	293 (2.5)	570 (3.7)	1,193 (5.1)	1,675 (6.1)	2,714 (8.1)	4,196 (10.6)	6.3	5.0	4.9	4.5	4.8
Japan	836 (7.1)	1,049 (6.8)	1,038 (4.5)	1,116 (4.1)	1,188 (3.5)	1,200 (3.0)	0.9	1.0	0.6	0.1	0.5
Korea	105 (0.9)	289 (1.9)	538 (2.3)	647 (2.4)	777 (2.3)	812 (2.1)	7.3	2.7	1.9	0.4	1.5
Chinese Taipei	88 (0.7)	181 (1.2)	249 (1.1)	280 (1.0)	311 (0.9)	327 (0.8)	4.6	1.7	1.1	0.5	1.0
ASEAN	154 (1.3)	370 (2.4)	786 (3.4)	1,117 (4.1)	1,738 (5.2)	2,538 (6.4)	7.3	5.1	4.5	3.9	4.4
Indonesia	33 (0.3)	93 (0.6)	216 (0.9)	345 (1.3)	570 (1.7)	871 (2.2)	8.6	7.0	5.1	4.3	5.3
Malaysia	23 (0.2)	69 (0.4)	138 (0.6)	185 (0.7)	267 (0.8)	363 (0.9)	8.1	4.2	3.7	3.1	3.6
Myanmar	2 (0.0)	5 (0.0)	12 (0.1)	22 (0.1)	40 (0.1)	65 (0.2)	7.1	8.9	6.3	5.0	6.5
Philippines	26 (0.2)	45 (0.3)	75 (0.3)	104 (0.4)	150 (0.4)	206 (0.5)	4.7	4.7	3.8	3.2	3.8
Singapore	16 (0.1)	32 (0.2)	48 (0.2)	53 (0.2)	63 (0.2)	72 (0.2)	5.0	1.5	1.8	1.3	1.5
Thailand	44 (0.4)	96 (0.6)	166 (0.7)	201 (0.7)	280 (0.8)	367 (0.9)	5.9	2.8	3.4	2.7	3.0
Viet Nam	9 (0.1)	27 (0.2)	127 (0.5)	201 (0.7)	361 (1.1)	587 (1.5)	12.4	6.8	6.0	5.0	5.8
Asia excl. Japan	1,380 (11.7)	2,925 (19.0)	8,442 (36.2)	10,903 (39.8)	14,531 (43.3)	18,319 (46.4)	8.2	3.7	2.9	2.3	2.9
North America	3,685 (31.2)	4,631 (30.0)	4,939 (21.2)	5,381 (19.6)	5,811 (17.3)	5,999 (15.2)	1.3	1.2	0.8	0.3	0.7
United States	3,203 (27.1)	4,026 (26.1)	4,287 (18.4)	4,652 (17.0)	5,037 (15.0)	5,188 (13.1)	1.3	1.2	0.8	0.3	0.7
Latin America	623 (5.3)	1,003 (6.5)	1,553 (6.7)	1,787 (6.5)	2,377 (7.1)	2,937 (7.4)	4.0	2.0	2.9	2.1	2.4
OECD Europe	2,662 (22.5)	3,223 (20.9)	3,559 (15.3)	3,876 (14.1)	4,171 (12.4)	4,388 (11.1)	1.3	1.2	0.7	0.5	0.8
European Union	2,576 (21.8)	3,005 (19.5)	3,230 (13.9)	3,511 (12.8)	3,806 (11.3)	4,041 (10.2)	1.0	1.2	0.8	0.6	0.8
Non-OECD Europe	1,894 (16.0)	1,432 (9.3)	1,740 (7.5)	1,827 (6.7)	2,156 (6.4)	2,465 (6.2)	-0.4	0.7	1.7	1.3	1.3
Africa	316 (2.7)	442 (2.9)	732 (3.1)	933 (3.4)	1,271 (3.8)	1,678 (4.2)	3.7	3.5	3.1	2.8	3.1
Middle East	244 (2.1)	472 (3.1)	1,012 (4.3)	1,262 (4.6)	1,671 (5.0)	2,115 (5.4)	6.4	3.2	2.8	2.4	2.8
Oceania	187 (1.6)	249 (1.6)	292 (1.3)	329 (1.2)	370 (1.1)	408 (1.0)	2.0	1.7	1.2	1.0	1.2
OECD	7,608 (64.3)	9,685 (62.8)	10,736 (46.1)	11,789 (43.0)	12,883 (38.4)	13,513 (34.2)	1.5	1.3	0.9	0.5	0.9
Non-OECD	4,218 (35.7)	5,741 (37.2)	12,571 (53.9)	15,625 (57.0)	20,663 (61.6)	25,996 (65.8)	4.9	3.2	2.8	2.3	2.7

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

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

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Table A16 GDP per capita [Reference Scenario]

($2010 thousand/person)

							CAGR (%)				
	1990	2000	2013	2020	2030	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
World	7.1	8.1	9.9	11.3	14.0	16.8	1.5	1.9	2.1	1.8	2.0
Asia	2.5	3.1	5.1	6.7	9.8	13.4	3.1	4.1	3.8	3.2	3.6
China	0.7	1.7	5.5	8.3	14.0	21.0	9.3	6.0	5.3	4.1	5.1
India	0.6	0.8	1.6	2.5	4.3	7.1	4.8	6.3	5.6	5.0	5.6
Japan	36.9	40.2	44.4	52.2	62.8	73.3	0.8	2.3	1.9	1.6	1.9
Korea	8.8	15.1	23.8	29.5	37.5	45.0	4.4	3.1	2.4	1.8	2.4
Chinese Taipei	8.2	13.7	20.6	27.1	34.1	40.2	4.1	4.0	2.3	1.7	2.5
ASEAN	1.6	2.3	3.7	4.8	7.0	9.6	3.6	4.0	3.7	3.2	3.6
Indonesia	1.6	2.0	3.4	4.6	6.9	9.8	3.4	4.5	4.0	3.6	4.0
Malaysia	4.4	6.7	9.7	12.5	17.4	22.3	3.5	3.7	3.4	2.5	3.1
Myanmar	0.2	0.3	1.0	1.5	2.6	3.9	8.1	7.1	5.3	4.3	5.4
Philippines	1.5	1.6	2.4	3.3	4.5	6.1	2.0	4.6	3.2	3.0	3.5
Singapore	22.2	33.4	49.4	55.1	68.0	75.2	3.5	1.6	2.1	1.0	1.6
Thailand	2.4	3.3	5.2	6.5	9.4	13.2	3.5	3.2	3.7	3.4	3.5
Viet Nam	0.4	0.8	1.5	2.1	3.8	5.8	5.5	4.9	5.8	4.5	5.1
Asia excl. Japan	1.0	1.7	3.8	5.3	8.3	11.9	5.9	5.0	4.5	3.7	4.3
North America	36.3	44.9	50.2	56.5	66.9	76.2	1.4	1.7	1.7	1.3	1.6
United States	36.3	45.1	50.3	56.9	67.6	77.1	1.4	1.8	1.7	1.3	1.6
Latin America	6.3	7.2	9.3	9.9	12.7	15.4	1.7	0.9	2.5	2.0	1.9
OECD Europe	25.3	30.4	33.5	37.2	42.7	47.8	1.2	1.5	1.4	1.1	1.3
European Union	24.8	30.2	33.8	37.6	43.5	49.0	1.4	1.5	1.5	1.2	1.4
Non-OECD Europe	6.3	4.4	7.9	8.5	11.6	15.0	1.0	1.0	3.1	2.6	2.4
Africa	1.4	1.4	1.9	2.2	2.8	3.4	1.3	2.2	2.2	2.1	2.2
Middle East	6.9	8.4	10.7	11.7	13.7	15.5	2.0	1.2	1.6	1.3	1.4
Oceania	35.3	43.1	52.5	58.7	66.1	71.8	1.7	1.6	1.2	0.8	1.2
OECD	27.3	32.8	36.7	41.3	48.5	55.2	1.3	1.7	1.6	1.3	1.5
Non-OECD	2.0	2.4	4.2	5.2	7.4	9.9	3.2	3.3	3.6	2.9	3.2

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

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Table A17 Primary energy consumption per capita [Reference Scenario]

(toe/person)

							CAGR (%)				
	1990	2000	2013	2020	2030	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
World	1.66	1.65	1.91	1.98	2.04	2.09	0.6	0.5	0.3	0.2	0.3
Asia	0.72	0.86	1.39	1.55	1.72	1.90	2.9	1.6	1.0	1.0	1.2
China	0.77	0.92	2.23	2.50	2.78	3.04	4.7	1.7	1.0	0.9	1.2
India	0.35	0.42	0.62	0.73	0.91	1.14	2.5	2.4	2.2	2.3	2.3
Japan	3.56	4.09	3.57	3.76	3.83	3.82	0.0	0.7	0.2	0.0	0.3
Korea	2.17	4.00	5.25	5.81	6.20	6.16	3.9	1.5	0.7	-0.1	0.6
Chinese Taipei	2.34	3.81	4.65	5.10	5.45	5.72	3.0	1.3	0.7	0.5	0.8
ASEAN	0.55	0.76	0.99	1.21	1.49	1.81	2.6	3.0	2.1	2.0	2.3
Indonesia	0.55	0.74	0.86	1.16	1.43	1.74	1.9	4.5	2.1	2.0	2.7
Malaysia	1.22	2.11	2.99	3.34	3.70	4.07	4.0	1.6	1.0	1.0	1.1
Myanmar	0.25	0.27	0.31	0.35	0.42	0.52	0.9	1.9	1.8	2.1	1.9
Philippines	0.46	0.51	0.45	0.53	0.61	0.71	-0.1	2.1	1.5	1.6	1.7
Singapore	3.78	4.63	4.83	5.18	5.81	6.18	1.1	1.0	1.2	0.6	0.9
Thailand	0.74	1.16	2.00	2.33	2.98	3.72	4.4	2.2	2.5	2.2	2.3
Viet Nam	0.27	0.37	0.67	0.86	1.32	1.91	4.0	3.6	4.4	3.8	4.0
Asia excl. Japan	0.59	0.73	1.32	1.48	1.66	1.85	3.5	1.7	1.1	1.1	1.3
North America	7.66	8.07	6.95	6.81	6.43	5.94	-0.4	-0.3	-0.6	-0.8	-0.6
United States	7.67	8.06	6.92	6.78	6.37	5.85	-0.4	-0.3	-0.6	-0.8	-0.6
Latin America	1.05	1.14	1.39	1.47	1.68	1.84	1.2	0.8	1.4	0.9	1.1
OECD Europe	3.25	3.35	3.12	3.14	3.12	3.07	-0.2	0.1	-0.1	-0.2	-0.1
European Union	3.44	3.47	3.21	3.24	3.24	3.20	-0.3	0.2	0.0	-0.1	0.0
Non-OECD Europe	4.47	2.94	3.38	3.41	3.65	3.87	-1.2	0.1	0.7	0.6	0.5
Africa	0.62	0.61	0.67	0.69	0.69	0.67	0.3	0.3	0.0	-0.2	0.0
Middle East	1.69	2.25	3.16	3.27	3.40	3.50	2.8	0.5	0.4	0.3	0.4
Oceania	4.86	5.44	5.39	5.36	5.06	4.76	0.4	-0.1	-0.6	-0.6	-0.5
OECD	4.25	4.59	4.21	4.25	4.17	4.03	0.0	0.1	-0.2	-0.4	-0.2
Non-OECD	0.96	0.91	1.35	1.45	1.56	1.66	1.5	1.0	0.8	0.6	0.8

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

Note: World includes international bunkers.

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Table A18 Primary energy consumption per GDP [Reference Scenario]

(toe/$2010 million)

							CAGR (%)				
	1990	2000	2013	2020	2030	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
World	234	204	192	175	146	125	-0.8	-1.4	-1.8	-1.6	-1.6
Asia	285	273	272	230	176	142	-0.2	-2.4	-2.6	-2.1	-2.4
China	1,073	530	402	300	198	145	-4.2	-4.1	-4.1	-3.1	-3.7
India	640	535	380	293	210	162	-2.2	-3.7	-3.3	-2.6	-3.1
Japan	96	102	80	72	61	52	-0.8	-1.6	-1.7	-1.6	-1.6
Korea	246	265	221	197	165	137	-0.5	-1.6	-1.7	-1.9	-1.8
Chinese Taipei	286	278	226	188	160	142	-1.0	-2.6	-1.6	-1.2	-1.7
ASEAN	332	334	268	251	214	189	-0.9	-0.9	-1.6	-1.2	-1.3
Indonesia	350	365	252	252	208	178	-1.4	0.0	-1.9	-1.6	-1.3
Malaysia	279	314	309	267	213	183	0.4	-2.0	-2.3	-1.5	-1.9
Myanmar	1,599	964	327	230	164	132	-6.7	-4.9	-3.3	-2.2	-3.3
Philippines	304	319	188	160	135	118	-2.1	-2.3	-1.7	-1.4	-1.7
Singapore	171	139	98	94	85	82	-2.4	-0.6	-0.9	-0.4	-0.6
Thailand	311	346	383	358	317	282	0.9	-1.0	-1.2	-1.2	-1.1
Viet Nam	606	470	439	403	352	327	-1.4	-1.2	-1.3	-0.7	-1.1
Asia excl. Japan	587	429	349	278	200	156	-2.2	-3.2	-3.2	-2.5	-2.9
North America	211	180	139	120	96	78	-1.8	-2.0	-2.2	-2.1	-2.1
United States	211	179	138	119	94	76	-1.9	-2.0	-2.3	-2.1	-2.2
Latin America	168	159	149	148	133	119	-0.5	-0.1	-1.1	-1.1	-0.8
OECD Europe	128	110	93	84	73	64	-1.4	-1.4	-1.5	-1.3	-1.4
European Union	139	115	95	86	74	65	-1.6	-1.3	-1.5	-1.3	-1.4
Non-OECD Europe	709	665	427	400	315	258	-2.2	-0.9	-2.4	-2.0	-1.8
Africa	441	432	353	310	248	198	-1.0	-1.8	-2.2	-2.3	-2.1
Middle East	246	269	295	280	248	225	0.8	-0.7	-1.2	-1.0	-1.0
Oceania	138	126	103	91	77	66	-1.3	-1.7	-1.7	-1.4	-1.6
OECD	155	140	115	103	86	73	-1.3	-1.5	-1.8	-1.6	-1.7
Non-OECD	478	387	323	276	210	168	-1.7	-2.2	-2.7	-2.2	-2.4

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

Note: World includes international bunkers.

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Table A19 Energy–related carbon dioxide emissions [Reference Scenario]

(Mt)

	1990	2000	2013	2020	2030	2040	CAGR (%) 1990/2013	2013/2020	2020/2030	2030/2040	2013/2040
World	21,200 (100)	23,520 (100)	32,920 (100)	35,719 (100)	39,498 (100)	42,693 (100)	1.9	1.2	1.0	0.8	1.0
Asia	4,920 (23.2)	6,989 (29.7)	14,936 (45.4)	16,874 (47.2)	19,447 (49.2)	21,966 (51.4)	4.9	1.8	1.4	1.2	1.4
China	2,339 (11.0)	3,258 (13.9)	9,437 (28.7)	10,406 (29.1)	11,196 (28.3)	11,627 (27.2)	6.3	1.4	0.7	0.4	0.8
India	546 (2.6)	901 (3.8)	1,894 (5.8)	2,480 (6.9)	3,459 (8.8)	4,757 (11.1)	5.6	3.9	3.4	3.2	3.5
Japan	1,070 (5.0)	1,196 (5.1)	1,234 (3.7)	1,120 (3.1)	1,105 (2.8)	1,034 (2.4)	0.6	-1.4	-0.1	-0.7	-0.7
Korea	239 (1.1)	433 (1.8)	582 (1.8)	583 (1.6)	631 (1.6)	606 (1.4)	3.9	0.0	0.8	-0.4	0.1
Chinese Taipei	115 (0.5)	225 (1.0)	255 (0.8)	272 (0.8)	285 (0.7)	282 (0.7)	3.5	0.9	0.5	-0.1	0.4
ASEAN	362 (1.7)	710 (3.0)	1,162 (3.5)	1,519 (4.3)	2,102 (5.3)	2,814 (6.6)	5.2	3.9	3.3	3.0	3.3
Indonesia	134 (0.6)	262 (1.1)	406 (1.2)	582 (1.6)	836 (2.1)	1,158 (2.7)	4.9	5.3	3.7	3.3	4.0
Malaysia	54 (0.3)	120 (0.5)	222 (0.7)	269 (0.8)	327 (0.8)	377 (0.9)	6.3	2.8	2.0	1.4	2.0
Myanmar	4 (0.0)	10 (0.0)	14 (0.0)	22 (0.1)	35 (0.1)	54 (0.1)	5.4	6.8	5.0	4.3	5.2
Philippines	39 (0.2)	69 (0.3)	90 (0.3)	117 (0.3)	171 (0.4)	235 (0.6)	3.8	3.8	3.8	3.3	3.6
Singapore	29 (0.1)	48 (0.2)	45 (0.1)	48 (0.1)	55 (0.1)	59 (0.1)	1.9	1.0	1.4	0.7	1.0
Thailand	81 (0.4)	152 (0.6)	254 (0.8)	288 (0.8)	352 (0.9)	411 (1.0)	5.1	1.8	2.0	1.6	1.8
Viet Nam	17 (0.1)	43 (0.2)	125 (0.4)	185 (0.5)	319 (0.8)	512 (1.2)	9.0	5.9	5.6	4.8	5.4
Asia excl. Japan	3,850 (18.2)	5,793 (24.6)	13,702 (41.6)	15,754 (44.1)	18,342 (46.4)	20,932 (49.0)	5.7	2.0	1.5	1.3	1.6
North America	5,236 (24.7)	6,125 (26.0)	5,626 (17.1)	5,632 (15.8)	5,414 (13.7)	4,962 (11.6)	0.3	0.0	-0.4	-0.9	-0.5
United States	4,820 (22.7)	5,617 (23.9)	5,184 (15.7)	5,186 (14.5)	4,954 (12.5)	4,517 (10.6)	0.3	0.0	-0.5	-0.9	-0.5
Latin America	905 (4.3)	1,187 (5.0)	1,718 (5.2)	1,881 (5.3)	2,333 (5.9)	2,664 (6.2)	2.8	1.3	2.2	1.3	1.6
OECD Europe	3,952 (18.6)	3,891 (16.5)	3,560 (10.8)	3,468 (9.7)	3,398 (8.6)	3,227 (7.6)	-0.5	-0.4	-0.2	-0.5	-0.4
European Union	4,068 (19.2)	3,783 (16.1)	3,320 (10.1)	3,239 (9.1)	3,184 (8.1)	3,023 (7.1)	-0.9	-0.4	-0.2	-0.5	-0.3
Non-OECD Europe	4,123 (19.4)	2,462 (10.5)	2,720 (8.3)	2,698 (7.6)	2,757 (7.0)	2,794 (6.5)	-1.8	-0.1	0.2	0.1	0.1
Africa	593 (2.8)	718 (3.1)	1,108 (3.4)	1,377 (3.9)	1,702 (4.3)	2,050 (4.8)	2.8	3.2	2.1	1.9	2.3
Middle East	571 (2.7)	952 (4.0)	1,756 (5.3)	2,028 (5.7)	2,402 (6.1)	2,754 (6.4)	5.0	2.1	1.7	1.4	1.7
Oceania	281 (1.3)	357 (1.5)	410 (1.2)	428 (1.2)	437 (1.1)	433 (1.0)	1.7	0.6	0.2	-0.1	0.2
OECD	11,096 (52.3)	12,396 (52.7)	11,975 (36.4)	11,898 (33.3)	11,753 (29.8)	11,118 (26.0)	0.3	-0.1	-0.1	-0.6	-0.3
Non-OECD	9,484 (44.7)	10,284 (43.7)	19,859 (60.3)	22,489 (63.0)	26,137 (66.2)	29,732 (69.6)	3.3	1.8	1.5	1.3	1.5

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.

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Table A20 World [Reference Scenario]

Primary energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total[*1]	7,205	8,768	10,057	13,555	15,207	17,211	18,963	100	100	100	1.9	1.7	1.2	1.0	1.3
Coal	1,783	2,221	2,343	3,928	4,143	4,367	4,577	25	29	24	2.5	0.8	0.5	0.5	0.6
Oil	3,102	3,232	3,660	4,210	4,616	5,121	5,496	37	31	29	1.2	1.3	1.0	0.7	1.0
Natural gas	1,232	1,663	2,067	2,902	3,359	4,096	4,741	19	21	25	2.4	2.1	2.0	1.5	1.8
Nuclear	186	526	676	646	844	981	1,127	6.0	4.8	5.9	0.9	3.9	1.5	1.4	2.1
Hydro	148	184	225	326	369	402	434	2.1	2.4	2.3	2.5	1.8	0.9	0.8	1.1
Geothermal	12	34	52	66	146	190	229	0.4	0.5	1.2	2.9	12.0	2.7	1.9	4.7
Solar, wind, etc.	0.1	2.4	7.9	95	145	220	301	0.0	0.7	1.6	17.3	6.2	4.3	3.2	4.4
Biomass and waste	741	905	1,025	1,377	1,580	1,825	2,048	10	10	11	1.8	2.0	1.5	1.2	1.5

Final energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	5,375	6,281	7,085	9,173	10,309	11,735	12,991	100	100	100	1.7	1.7	1.3	1.0	1.3
Industry	1,773	1,807	1,895	2,623	2,930	3,311	3,678	29	29	28	1.6	1.6	1.2	1.1	1.3
Transport	1,248	1,576	1,965	2,552	2,884	3,291	3,589	25	28	28	2.1	1.8	1.3	0.9	1.3
Buildings, etc.	2,000	2,421	2,605	3,199	3,568	4,070	4,553	39	35	35	1.2	1.6	1.3	1.1	1.3
Non-energy use	354	477	619	799	927	1,064	1,172	7.6	8.7	9.0	2.3	2.1	1.4	1.0	1.4
Coal	709	766	578	954	1,007	1,000	994	12	10	7.7	1.0	0.8	-0.1	-0.1	0.2
Oil	2,446	2,606	3,127	3,704	4,113	4,616	4,992	41	40	38	1.5	1.5	1.2	0.8	1.1
Natural gas	814	944	1,121	1,400	1,613	1,903	2,174	15	15	17	1.7	2.0	1.7	1.3	1.6
Electricity	586	834	1,091	1,677	1,987	2,446	2,891	13	18	22	3.1	2.5	2.1	1.7	2.0
Heat	121	335	247	274	299	325	339	5.3	3.0	2.6	-0.9	1.3	0.8	0.4	0.8
Hydrogen	-	-	-	-	0.0	0.7	1.3	-	-	0.0	n.a.	n.a.	36.4	6.6	n.a.
Renewables	698	796	920	1,164	1,289	1,445	1,601	13	13	12	1.7	1.5	1.1	1.0	1.2

Electricity generation

	(TWh)							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	8,283	11,826	15,426	23,307	27,414	33,547	39,509	100	100	100	3.0	2.3	2.0	1.6	2.0
Coal	3,137	4,424	6,002	9,613	10,427	12,079	13,687	37	41	35	3.4	1.2	1.5	1.3	1.3
Oil	1,659	1,311	1,205	1,028	948	991	1,032	11	4.4	2.6	-1.1	-1.1	0.4	0.4	0.0
Natural gas	999	1,760	2,752	5,075	6,338	8,815	11,205	15	22	28	4.7	3.2	3.4	2.4	3.0
Nuclear	713	2,013	2,591	2,478	3,235	3,760	4,321	17	11	11	0.9	3.9	1.5	1.4	2.1
Hydro	1,717	2,145	2,620	3,790	4,293	4,679	5,046	18	16	13	2.5	1.8	0.9	0.8	1.1
Geothermal	14	36	52	72	150	194	239	0.3	0.3	0.6	3.0	11.1	2.6	2.1	4.6
Solar, wind, etc.	0.5	5.2	35	789	1,326	2,058	2,778	0.0	3.4	7.0	24.4	7.7	4.5	3.0	4.8
Biomass and waste	44	132	170	461	694	968	1,199	1.1	2.0	3.0	5.6	6.0	3.4	2.2	3.6

Energy and economic indicators

								CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
GDP ($2010 billion)	27,780	37,514	49,355	70,542	87,139	118,035	152,280	2.8	3.1	3.1	2.6	2.9
Population (million)	4,435	5,271	6,093	7,114	7,685	8,420	9,068	1.3	1.1	0.9	0.7	0.9
CO_2 emissions[*2] (Mt)	18,411	21,200	23,520	32,920	35,719	39,498	42,693	1.9	1.2	1.0	0.8	1.0
GDP per capita ($2010 thousand)	6.3	7.1	8.1	9.9	11	14	17	1.5	1.9	2.1	1.8	2.0
Primary energy consump. per capita (toe)	1.6	1.7	1.7	1.9	2.0	2.0	2.1	0.6	0.5	0.3	0.2	0.3
Primary energy consumption per GDP[*3]	259	234	204	192	175	146	125	-0.8	-1.4	-1.8	-1.6	-1.6
CO_2 emissions per GDP[*2, *4]	663	565	477	467	410	335	280	-0.8	-1.8	-2.0	-1.8	-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	-0.2	-0.3
Automobile ownership (million)	416	577	767	1,195	1,449	1,802	2,142	3.2	2.8	2.2	1.7	2.2
Automobile ownership rates[*6]	94	109	126	168	189	214	236	1.9	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

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Table A21 Asia [Reference Scenario]

Primary energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total[*1]	1,440	2,110	2,920	5,409	6,411	7,567	8,691	100	100	100	4.2	2.5	1.7	1.4	1.8
Coal	466	786	1,063	2,747	2,992	3,271	3,546	37	51	41	5.6	1.2	0.9	0.8	0.9
Oil	477	618	917	1,254	1,483	1,771	2,053	29	23	24	3.1	2.4	1.8	1.5	1.8
Natural gas	51	116	232	532	732	1,083	1,417	5.5	9.8	16	6.9	4.7	4.0	2.7	3.7
Nuclear	25	77	132	89	270	373	478	3.6	1.6	5.5	0.6	17.2	3.3	2.5	6.4
Hydro	20	32	41	113	145	163	182	1.5	2.1	2.1	5.7	3.6	1.2	1.1	1.8
Geothermal	2.6	8.2	23	31	78	102	116	0.4	0.6	1.3	6.0	13.8	2.8	1.3	5.0
Solar, wind, etc.	-	1.2	2.1	38	60	95	138	0.1	0.7	1.6	16.1	6.5	4.7	3.8	4.8
Biomass and waste	397	472	510	602	649	706	757	22	11	8.7	1.1	1.1	0.8	0.7	0.9

Final energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	1,136	1,572	2,039	3,476	4,088	4,829	5,581	100	100	100	3.5	2.3	1.7	1.5	1.8
Industry	390	518	672	1,367	1,567	1,761	1,965	33	39	35	4.3	2.0	1.2	1.1	1.4
Transport	126	190	325	581	727	927	1,123	12	17	20	5.0	3.3	2.5	1.9	2.5
Buildings, etc.	567	748	852	1,188	1,386	1,652	1,929	48	34	35	2.0	2.2	1.8	1.6	1.8
Non-energy use	54	116	190	340	408	489	564	7.4	9.8	10	4.8	2.6	1.8	1.4	1.9
Coal	308	435	408	795	839	827	817	28	23	15	2.7	0.8	-0.1	-0.1	0.1
Oil	327	464	742	1,102	1,344	1,623	1,897	30	32	34	3.8	2.9	1.9	1.6	2.0
Natural gas	21	47	89	248	342	496	658	3.0	7.1	12	7.5	4.7	3.8	2.9	3.7
Electricity	88	156	278	686	878	1,156	1,441	9.9	20	26	6.7	3.6	2.8	2.2	2.8
Heat	7.5	14	30	82	95	104	108	0.9	2.4	1.9	7.9	2.2	0.9	0.3	1.0
Hydrogen	-	-	-	-	0.0	0.2	0.4	-	-	0.0	n.a.	n.a.	22.1	7.4	n.a.
Renewables	386	456	493	562	589	623	660	29	16	12	0.9	0.7	0.6	0.6	0.6

Electricity generation

	(TWh)							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	1,196	2,215	3,974	9,481	12,018	15,719	19,519	100	100	100	6.5	3.4	2.7	2.2	2.7
Coal	298	862	1,990	5,939	6,784	8,513	10,257	39	63	53	8.8	1.9	2.3	1.9	2.0
Oil	476	422	386	306	218	209	206	19	3.2	1.1	-1.4	-4.7	-0.4	-0.2	-1.5
Natural gas	90	247	567	1,206	1,622	2,615	3,652	11	13	19	7.1	4.3	4.9	3.4	4.2
Nuclear	97	294	505	340	1,035	1,430	1,833	13	3.6	9.4	0.6	17.2	3.3	2.5	6.4
Hydro	232	370	481	1,319	1,686	1,897	2,114	17	14	11	5.7	3.6	1.2	1.1	1.8
Geothermal	3.0	8.4	20	22	51	68	77	0.4	0.2	0.4	4.2	13.1	2.8	1.3	4.8
Solar, wind, etc.	-	0.0	3.0	219	429	708	1,027	0.0	2.3	5.3	44.7	10.1	5.1	3.8	5.9
Biomass and waste	0.0	11	22	129	193	280	353	0.5	1.4	1.8	11.1	5.9	3.8	2.4	3.8

Energy and economic indicators

								CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
GDP ($2010 billion)	4,333	7,400	10,696	19,855	27,912	43,027	61,360	4.4	5.0	4.4	3.6	4.3
Population (million)	2,442	2,931	3,401	3,890	4,137	4,406	4,579	1.2	0.9	0.6	0.4	0.6
CO_2 emissions[*2] (Mt)	3,269	4,920	6,989	14,936	16,874	19,447	21,966	4.9	1.8	1.4	1.2	1.4
GDP per capita ($2010 thousand)	1.8	2.5	3.1	5.1	6.7	9.8	13	3.1	4.1	3.8	3.2	3.6
Primary energy consump. per capita (toe)	0.6	0.7	0.9	1.4	1.5	1.7	1.9	2.9	1.6	1.0	1.0	1.2
Primary energy consumption per GDP[*3]	332	285	273	272	230	176	142	-0.2	-2.4	-2.6	-2.1	-2.4
CO_2 emissions per GDP[*2, *4]	754	665	653	752	605	452	358	0.5	-3.1	-2.9	-2.3	-2.7
CO_2 per primary energy consumption[*2, *5]	2.3	2.3	2.4	2.8	2.6	2.6	2.5	0.7	-0.7	-0.2	-0.2	-0.3
Automobile ownership (million)	48	86	140	322	464	652	864	5.9	5.3	3.5	2.9	3.7
Automobile ownership rates[*6]	19	29	41	83	112	148	189	4.6	4.4	2.8	2.5	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

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Table A22 China [Reference Scenario]

Primary energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total[*1]	598	871	1,161	3,022	3,498	3,918	4,227	100	100	100	5.6	2.1	1.1	0.8	1.3
Coal	313	528	691	2,045	2,157	2,192	2,161	61	68	51	6.1	0.8	0.2	-0.1	0.2
Oil	89	119	221	478	595	704	797	14	16	19	6.2	3.2	1.7	1.2	1.9
Natural gas	12	13	21	140	256	431	580	1.5	4.6	14	11.0	9.0	5.4	3.0	5.4
Nuclear	-	-	4.4	29	117	177	237	-	1.0	5.6	n.a.	22.1	4.2	3.0	8.1
Hydro	5.0	11	19	78	100	106	110	1.3	2.6	2.6	8.9	3.6	0.5	0.4	1.3
Geothermal	-	-	1.7	4.5	6.4	8.6	10	-	0.1	0.2	n.a.	5.1	3.1	1.5	3.0
Solar, wind, etc.	-	0.0	1.0	32	48	76	109	0.0	1.1	2.6	34.9	6.0	4.7	3.7	4.7
Biomass and waste	180	200	203	216	219	224	224	23	7.1	5.3	0.3	0.2	0.2	0.0	0.1

Final energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	494	664	815	1,814	2,106	2,381	2,604	100	100	100	4.5	2.2	1.2	0.9	1.3
Industry	188	244	329	878	960	987	997	37	48	38	5.7	1.3	0.3	0.1	0.5
Transport	24	33	88	245	321	410	489	5.0	14	19	9.1	3.9	2.5	1.8	2.6
Buildings, etc.	272	344	337	548	649	776	882	52	30	34	2.0	2.4	1.8	1.3	1.8
Non-energy use	10	43	62	143	176	208	236	6.5	7.9	9.1	5.4	3.0	1.7	1.3	1.9
Coal	220	318	304	603	611	558	496	48	33	19	2.8	0.2	-0.9	-1.2	-0.7
Oil	59	85	181	435	547	650	737	13	24	28	7.4	3.3	1.7	1.3	2.0
Natural gas	6.4	8.9	12	94	148	240	334	1.3	5.2	13	10.8	6.8	4.9	3.4	4.8
Electricity	21	39	89	386	494	617	715	5.9	21	27	10.5	3.6	2.3	1.5	2.3
Heat	7.4	13	25	76	88	94	95	2.0	4.2	3.7	7.9	2.0	0.7	0.1	0.8
Hydrogen	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Renewables	180	200	204	220	219	222	227	30	12	8.7	0.4	-0.1	0.1	0.2	0.1

Electricity generation

	(TWh)							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	301	621	1,356	5,422	6,833	8,459	9,728	100	100	100	9.9	3.4	2.2	1.4	2.2
Coal	159	441	1,061	4,090	4,526	5,312	5,816	71	75	60	10.2	1.5	1.6	0.9	1.3
Oil	82	50	47	6.6	6.5	6.3	6.2	8.1	0.1	0.1	-8.5	-0.3	-0.2	-0.2	-0.2
Natural gas	0.7	2.8	5.8	99	302	608	851	0.4	1.8	8.7	16.9	17.2	7.2	3.4	8.3
Nuclear	-	-	17	112	451	681	911	-	2.1	9.4	n.a.	22.1	4.2	3.0	8.1
Hydro	58	127	222	909	1,167	1,228	1,280	20	17	13	8.9	3.6	0.5	0.4	1.3
Geothermal	-	0.1	0.1	0.1	0.3	0.3	0.4	0.0	0.0	0.0	2.9	14.6	1.5	1.4	4.7
Solar, wind, etc.	-	0.0	0.6	155	304	504	708	0.0	2.9	7.3	51.5	10.1	5.2	3.4	5.8
Biomass and waste	-	-	2.4	50	77	120	155	-	0.9	1.6	n.a.	6.3	4.5	2.6	4.3

Energy and economic indicators

								CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
GDP ($2010 billion)	334	811	2,189	7,513	11,641	19,762	29,180	10.2	6.5	5.4	4.0	5.2
Population (million)	981	1,135	1,263	1,357	1,398	1,410	1,389	0.8	0.4	0.1	-0.1	0.1
CO_2 emissions[*2] (Mt)	1,505	2,339	3,258	9,437	10,406	11,196	11,627	6.3	1.4	0.7	0.4	0.8
GDP per capita ($2010 thousand)	0.3	0.7	1.7	5.5	8.3	14	21	9.3	6.0	5.3	4.1	5.1
Primary energy consump. per capita (toe)	0.6	0.8	0.9	2.2	2.5	2.8	3.0	4.7	1.7	1.0	0.9	1.2
Primary energy consumption per GDP[*3]	1,790	1,073	530	402	300	198	145	-4.2	-4.1	-4.1	-3.1	-3.7
CO_2 emissions per GDP[*2, *4]	4,505	2,882	1,489	1,256	894	567	398	-3.5	-4.7	-4.5	-3.5	-4.2
CO_2 per primary energy consumption[*2, *5]	2.5	2.7	2.8	3.1	3.0	2.9	2.8	0.7	-0.7	-0.4	-0.4	-0.5
Automobile ownership (million)	1.2	5.3	16	127	217	309	398	14.8	8.0	3.6	2.6	4.3
Automobile ownership rates[*6]	1.2	4.7	12	93	155	219	286	13.9	7.5	3.5	2.7	4.2

*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

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Table A23 India [Reference Scenario]

Primary energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total[*1]	200	307	441	775	993	1,360	1,830	100	100	100	4.1	3.6	3.2	3.0	3.2
Coal	45	94	146	341	428	584	806	31	44	44	5.8	3.3	3.1	3.3	3.2
Oil	33	61	112	176	248	348	451	20	23	25	4.7	5.0	3.5	2.6	3.5
Natural gas	1.3	11	23	44	69	120	196	3.4	5.7	11	6.4	6.4	5.7	5.1	5.6
Nuclear	0.8	1.6	4.4	8.9	19	49	80	0.5	1.2	4.4	7.8	11.3	10.1	5.0	8.5
Hydro	4.0	6.2	6.4	12	16	23	32	2.0	1.6	1.8	3.0	3.8	3.8	3.4	3.6
Geothermal	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Solar, wind, etc.	-	0.0	0.2	3.6	6.6	10	16	0.0	0.5	0.9	29.0	9.0	4.4	4.3	5.6
Biomass and waste	116	133	149	188	207	225	249	44	24	14	1.5	1.4	0.9	1.0	1.0

Final energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	174	243	315	528	673	889	1,169	100	100	100	3.4	3.5	2.8	2.8	3.0
Industry	42	67	83	179	230	312	424	27	34	36	4.4	3.7	3.1	3.1	3.2
Transport	17	21	32	75	110	163	212	8.6	14	18	5.7	5.7	4.0	2.6	3.9
Buildings, etc.	110	142	173	238	284	344	438	59	45	37	2.3	2.6	1.9	2.4	2.3
Non-energy use	5.7	13	27	36	48	70	96	5.5	6.9	8.2	4.5	4.2	3.7	3.2	3.6
Coal	25	39	35	103	124	148	188	16	20	16	4.3	2.6	1.8	2.4	2.2
Oil	27	50	94	150	220	319	419	21	28	36	4.9	5.6	3.8	2.8	3.9
Natural gas	0.7	5.6	9.7	27	37	54	77	2.3	5.0	6.6	7.0	4.6	3.9	3.6	4.0
Electricity	7.8	18	32	77	109	180	282	7.6	14	24	6.4	5.2	5.1	4.6	5.0
Heat	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Hydrogen	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Renewables	114	130	144	172	183	189	202	54	32	17	1.2	0.9	0.3	0.7	0.6

Electricity generation

	(TWh)							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	120	293	570	1,193	1,675	2,714	4,196	100	100	100	6.3	5.0	4.9	4.5	4.8
Coal	61	192	390	869	1,157	1,759	2,623	65	73	63	6.8	4.2	4.3	4.1	4.2
Oil	8.8	13	29	23	23	22	20	4.5	1.9	0.5	2.4	-0.3	-0.3	-0.7	-0.5
Natural gas	0.6	10.0	56	65	131	306	619	3.4	5.5	15	8.5	10.6	8.8	7.3	8.7
Nuclear	3.0	6.1	17	34	72	189	308	2.1	2.9	7.3	7.8	11.3	10.1	5.0	8.5
Hydro	47	72	74	142	184	267	373	24	12	8.9	3.0	3.8	3.8	3.4	3.6
Geothermal	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Solar, wind, etc.	-	0.0	1.7	37	72	114	177	0.0	3.1	4.2	35.9	10.0	4.7	4.5	6.0
Biomass and waste	-	-	1.3	23	36	58	77	-	1.9	1.8	n.a.	6.4	4.9	2.9	4.5

Energy and economic indicators

								CAGR (%)					
	1980	1990	2000	2013	2020	2030	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
GDP ($2010 billion)	279	479	825	2,039	3,391	6,462	11,298	6.5	7.5	6.7	5.7	6.5
Population (million)	699	869	1,042	1,252	1,359	1,495	1,599	1.6	1.2	1.0	0.7	0.9
CO_2 emissions[*2] (Mt)	265	546	901	1,894	2,480	3,459	4,757	5.6	3.9	3.4	3.2	3.5
GDP per capita ($2010 thousand)	0.4	0.6	0.8	1.6	2.5	4.3	7.1	4.8	6.3	5.6	5.0	5.6
Primary energy consump. per capita (toe)	0.3	0.4	0.4	0.6	0.7	0.9	1.1	2.5	2.4	2.2	2.3	2.3
Primary energy consumption per GDP[*3]	718	640	535	380	293	210	162	-2.2	-3.7	-3.3	-2.6	-3.1
CO_2 emissions per GDP[*2, *4]	950	1,139	1,092	929	731	535	421	-0.9	-3.4	-3.1	-2.4	-2.9
CO_2 per primary energy consumption[*2, *5]	1.3	1.8	2.0	2.4	2.5	2.5	2.6	1.4	0.3	0.2	0.2	0.2
Automobile ownership (million)	1.7	4.3	9.4	32	59	119	200	9.2	8.9	7.3	5.3	7.0
Automobile ownership rates[*6]	2.4	5.0	9.0	26	43	80	125	7.4	7.6	6.3	4.6	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

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Table A24 Japan [Reference Scenario]

Primary energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total[*1]	345	439	519	455	471	461	436	100	100	100	0.1	0.5	-0.2	-0.6	-0.2
Coal	60	77	97	121	118	121	116	17	27	27	2.0	-0.4	0.2	-0.4	-0.2
Oil	234	250	255	202	175	155	135	57	45	31	-0.9	-2.1	-1.2	-1.3	-1.5
Natural gas	21	44	66	106	97	110	112	10	23	26	3.9	-1.4	1.3	0.1	0.2
Nuclear	22	53	84	2.4	54	41	34	12	0.5	7.9	-12.5	56.0	-2.8	-1.7	10.3
Hydro	7.6	7.7	7.5	6.7	8.1	8.1	8.1	1.7	1.5	1.9	-0.6	2.7	0.0	0.0	0.7
Geothermal	0.8	1.6	3.1	2.4	3.8	7.7	9.0	0.4	0.5	2.1	1.9	6.9	7.1	1.6	5.0
Solar, wind, etc.	-	1.2	0.8	2.0	3.1	4.7	6.6	0.3	0.4	1.5	2.3	6.5	4.2	3.4	4.5
Biomass and waste	-	4.9	5.7	11	13	14	16	1.1	2.5	3.6	3.6	1.8	1.0	1.1	1.3

Final energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	232	298	341	311	313	305	289	100	100	100	0.2	0.1	-0.2	-0.5	-0.3
Industry	91	101	96	82	89	89	87	34	26	30	-0.9	1.1	0.0	-0.1	0.2
Transport	54	72	88	73	70	62	55	24	24	19	0.1	-0.8	-1.1	-1.1	-1.0
Buildings, etc.	58	91	116	118	118	119	114	31	38	39	1.1	0.1	0.1	-0.5	-0.1
Non-energy use	28	34	41	38	36	35	33	12	12	11	0.4	-0.9	-0.2	-0.6	-0.5
Coal	25	32	25	26	26	25	23	11	8.3	7.9	-0.9	0.3	-0.5	-1.0	-0.5
Oil	157	182	208	166	155	137	118	61	53	41	-0.4	-1.0	-1.2	-1.5	-1.2
Natural gas	5.8	15	23	34	37	39	39	5.1	11	14	3.5	1.1	0.5	0.1	0.5
Electricity	44	64	81	82	88	95	97	22	26	34	1.0	1.1	0.7	0.3	0.7
Heat	0.1	0.2	0.5	0.5	2.6	4.7	6.5	0.1	0.2	2.3	4.5	25.1	6.0	3.4	9.6
Hydrogen	-	-	-	-	0.0	0.2	0.4	-	-	0.1	n.a.	n.a.	21.5	7.5	n.a.
Renewables	-	3.9	3.7	3.6	3.7	4.2	5.0	1.3	1.1	1.7	-0.4	0.5	1.4	1.6	1.2

Electricity generation

	(TWh)							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	573	836	1,049	1,038	1,116	1,188	1,200	100	100	100	0.9	1.0	0.6	0.1	0.5
Coal	55	116	229	337	318	337	325	14	32	27	4.7	-0.8	0.6	-0.4	-0.1
Oil	265	237	135	150	67	57	53	28	14	4.4	-2.0	-10.9	-1.6	-0.7	-3.8
Natural gas	81	179	256	402	343	430	452	21	39	38	3.6	-2.2	2.3	0.5	0.4
Nuclear	83	202	322	9.3	209	156	132	24	0.9	11	-12.5	56.0	-2.8	-1.7	10.3
Hydro	88	89	87	78	94	94	94	11	7.5	7.9	-0.6	2.7	0.0	0.0	0.7
Geothermal	0.9	1.7	3.3	2.6	4.3	8.7	10	0.2	0.2	0.9	1.8	7.4	7.4	1.7	5.2
Solar, wind, etc.	-	0.0	0.5	19	32	51	73	0.0	1.9	6.1	53.6	7.5	4.7	3.7	5.0
Biomass and waste	-	11	16	41	48	54	61	1.3	3.9	5.0	6.0	2.5	1.1	1.1	1.5

Energy and economic indicators

								CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
GDP ($2010 billion)	2,894	4,553	5,093	5,656	6,547	7,566	8,369	0.9	2.1	1.5	1.0	1.5
Population (million)	117	124	127	127	125	120	114	0.1	-0.2	-0.4	-0.5	-0.4
CO_2 emissions[*2] (Mt)	916	1,070	1,196	1,234	1,120	1,105	1,034	0.6	-1.4	-0.1	-0.7	-0.7
GDP per capita ($2010 thousand)	25	37	40	44	52	63	73	0.8	2.3	1.9	1.6	1.9
Primary energy consump. per capita (toe)	3.0	3.6	4.1	3.6	3.8	3.8	3.8	0.0	0.7	0.2	0.0	0.3
Primary energy consumption per GDP[*3]	119	96	102	80	72	61	52	-0.8	-1.6	-1.7	-1.6	-1.6
CO_2 emissions per GDP[*2, *4]	317	235	235	218	171	146	124	-0.3	-3.4	-1.6	-1.7	-2.1
CO_2 per primary energy consumption[*2, *5]	2.7	2.4	2.3	2.7	2.4	2.4	2.4	0.5	-1.9	0.1	-0.1	-0.5
Automobile ownership (million)	38	58	72	77	77	74	71	1.2	0.0	-0.4	-0.4	-0.3
Automobile ownership rates[*6]	325	467	571	601	611	613	623	1.1	0.2	0.0	0.2	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

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Table A25 Korea [Reference Scenario]

Primary energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total[*1]	41	93	188	264	300	328	325	100	100	100	4.6	1.9	0.9	-0.1	0.8
Coal	14	25	42	78	80	89	86	27	30	26	5.0	0.5	1.1	-0.4	0.4
Oil	27	50	99	97	100	101	98	54	37	30	2.9	0.5	0.0	-0.3	0.0
Natural gas	-	2.7	17	48	47	57	58	2.9	18	18	13.2	-0.1	1.8	0.2	0.7
Nuclear	0.9	14	28	36	66	74	74	15	14	23	4.3	8.9	1.1	0.0	2.7
Hydro	0.2	0.5	0.3	0.4	0.4	0.4	0.4	0.6	0.1	0.1	-1.7	0.0	0.0	0.0	0.0
Geothermal	-	-	-	0.1	0.1	0.1	0.1	-	0.0	0.0	n.a.	-2.8	1.9	1.6	0.6
Solar, wind, etc.	-	0.0	0.0	0.4	0.8	1.6	2.7	0.0	0.1	0.8	16.8	12.8	6.5	5.5	7.8
Biomass and waste	-	0.7	1.4	4.7	5.1	5.8	6.6	0.8	1.8	2.0	8.4	1.0	1.4	1.2	1.2

Final energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	31	65	127	168	185	199	197	100	100	100	4.2	1.4	0.7	-0.1	0.6
Industry	10	19	38	48	55	59	58	30	28	29	4.0	2.0	0.8	-0.3	0.7
Transport	4.8	15	26	31	32	33	30	22	19	16	3.4	0.4	0.1	-0.7	-0.1
Buildings, etc.	13	24	37	45	48	53	53	38	27	27	2.7	0.8	1.0	0.0	0.6
Non-energy use	3.1	6.7	25	44	50	54	55	10	26	28	8.5	1.8	0.8	0.3	0.9
Coal	9.7	12	9.1	9.5	11	10	8.2	18	5.6	4.2	-0.9	2.2	-0.5	-2.4	-0.5
Oil	19	44	80	85	89	90	88	67	50	45	2.9	0.8	0.1	-0.2	0.1
Natural gas	-	0.7	11	24	25	28	27	1.0	14	14	16.8	0.7	1.0	-0.3	0.4
Electricity	2.8	8.1	23	42	51	62	64	13	25	33	7.4	2.9	1.9	0.5	1.6
Heat	-	-	3.3	4.3	4.0	3.8	3.5	-	2.5	1.8	n.a.	-0.9	-0.6	-0.6	-0.7
Hydrogen	-	-	-	-	0.0	0.0	0.0	-	-	0.0	n.a.	n.a.	39.3	5.7	n.a.
Renewables	-	0.7	1.3	3.5	3.9	4.4	5.1	1.1	2.1	2.6	7.0	1.4	1.4	1.4	1.4

Electricity generation

	(TWh)							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	37	105	289	538	647	777	812	100	100	100	7.3	2.7	1.9	0.4	1.5
Coal	2.5	18	111	223	228	279	291	17	41	36	11.7	0.3	2.0	0.4	1.0
Oil	29	19	35	21	11	8.1	6.1	18	4.0	0.8	0.6	-8.6	-3.4	-2.7	-4.5
Natural gas	-	9.6	29	145	139	183	195	9.1	27	24	12.5	-0.6	2.8	0.6	1.1
Nuclear	3.5	53	109	139	253	282	282	50	26	35	4.3	8.9	1.1	0.0	2.7
Hydro	2.0	6.4	4.0	4.3	4.3	4.3	4.3	6.0	0.8	0.5	-1.7	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	3.8	9.2	18	31	0.0	0.7	3.8	43.1	13.5	6.7	5.6	8.0
Biomass and waste	-	-	0.1	1.8	2.1	2.7	3.1	-	0.3	0.4	n.a.	2.4	2.6	1.5	2.1

Energy and economic indicators

								CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
GDP ($2010 billion)	149	377	710	1,195	1,525	1,985	2,375	5.1	3.5	2.7	1.8	2.6
Population (million)	38	43	47	50	52	53	53	0.7	0.4	0.2	0.0	0.2
CO_2 emissions[*2] (Mt)	126	239	433	582	583	631	606	3.9	0.0	0.8	-0.4	0.1
GDP per capita ($2010 thousand)	3.9	8.8	15	24	30	38	45	4.4	3.1	2.4	1.8	2.4
Primary energy consump. per capita (toe)	1.1	2.2	4.0	5.3	5.8	6.2	6.2	3.9	1.5	0.7	-0.1	0.6
Primary energy consumption per GDP[*3]	277	246	265	221	197	165	137	-0.5	-1.6	-1.7	-1.9	-1.8
CO_2 emissions per GDP[*2, *4]	845	634	610	487	383	318	255	-1.1	-3.4	-1.8	-2.2	-2.4
CO_2 per primary energy consumption[*2, *5]	3.1	2.6	2.3	2.2	1.9	1.9	1.9	-0.7	-1.8	-0.1	-0.3	-0.6
Automobile ownership (million)	0.5	3.4	12	19	22	26	29	7.9	2.0	1.6	1.0	1.5
Automobile ownership rates[*6]	14	79	257	386	433	494	546	7.1	1.6	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

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Table A26 Chinese Taipei [Reference Scenario]

Primary energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total[*1]	28	48	85	109	120	126	128	100	100	100	3.6	1.4	0.5	0.1	0.6
Coal	3.9	11	30	40	40	40	39	24	37	30	5.7	-0.1	-0.1	-0.3	-0.2
Oil	20	26	38	42	46	47	47	54	39	36	2.1	1.4	0.3	-0.2	0.4
Natural gas	1.6	1.4	5.6	13	19	27	30	2.9	12	23	10.2	5.7	3.3	1.0	3.1
Nuclear	2.1	8.6	10	11	11	8.2	8.2	18	10.0	6.4	1.0	0.0	-2.7	0.0	-1.0
Hydro	0.3	0.5	0.4	0.5	0.5	0.5	0.5	1.1	0.4	0.4	-0.7	0.0	0.0	0.0	0.0
Geothermal	-	0.0	-	-	-	-	-	0.0	-	-	-100	n.a.	n.a.	n.a.	n.a.
Solar, wind, etc.	-	0.0	0.1	0.2	0.5	0.7	1.1	0.0	0.2	0.8	12.1	10.7	3.6	3.9	5.5
Biomass and waste	-	-	0.6	1.7	2.1	2.9	3.3	-	1.5	2.6	n.a.	3.5	3.2	1.3	2.6

Final energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	19	29	49	68	75	81	82	100	100	100	3.7	1.6	0.7	0.2	0.7
Industry	10	12	19	23	26	27	28	42	34	34	2.8	1.5	0.7	0.2	0.7
Transport	2.9	6.6	12	12	13	14	13	22	18	16	2.6	1.1	0.4	-0.2	0.3
Buildings, etc.	3.6	6.5	10	12	13	14	14	22	17	17	2.5	1.5	0.5	0.1	0.6
Non-energy use	2.0	4.0	7.8	21	24	26	27	14	31	33	7.5	2.0	0.9	0.4	1.0
Coal	2.2	3.6	5.0	8.0	8.2	8.9	9.2	12	12	11	3.5	0.4	0.8	0.4	0.5
Oil	12	18	28	37	42	43	43	62	55	52	3.1	1.7	0.3	-0.1	0.5
Natural gas	1.4	0.9	1.6	2.5	2.8	3.4	3.8	3.0	3.7	4.7	4.7	1.7	1.8	1.3	1.6
Electricity	3.2	6.6	14	19	22	25	26	22	29	31	4.8	1.7	1.1	0.5	1.1
Heat	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Hydrogen	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Renewables	-	0.0	0.1	0.3	0.5	0.5	0.6	0.1	0.5	0.7	13.6	4.3	1.5	1.2	2.1

Electricity generation

	(TWh)							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	43	88	181	249	280	311	327	100	100	100	4.6	1.7	1.1	0.5	1.0
Coal	6.0	24	88	123	120	115	110	28	49	34	7.3	-0.4	-0.4	-0.4	-0.4
Oil	26	23	30	7.5	5.7	4.7	4.3	26	3.0	1.3	-4.8	-4.0	-1.9	-0.8	-2.0
Natural gas	-	1.2	17	66	98	141	157	1.4	27	48	18.8	5.8	3.7	1.1	3.3
Nuclear	8.2	33	39	42	42	32	32	37	17	9.7	1.0	0.0	-2.7	0.0	-1.0
Hydro	2.9	6.4	4.6	5.4	5.4	5.4	5.4	7.2	2.2	1.7	-0.7	0.0	0.0	0.0	0.0
Geothermal	-	0.0	-	-	-	-	-	0.0	-	-	-100	n.a.	n.a.	n.a.	n.a.
Solar, wind, etc.	-	-	0.0	1.7	4.4	6.7	10	-	0.7	3.2	n.a.	14.9	4.3	4.5	7.1
Biomass and waste	-	-	1.7	3.5	5.2	7.3	8.3	-	1.4	2.6	n.a.	5.7	3.5	1.3	3.2

Energy and economic indicators

								CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
GDP ($2010 billion)	80	167	305	482	636	790	900	4.7	4.0	2.2	1.3	2.3
Population (million)	18	20	22	23	23	23	22	0.6	0.0	-0.1	-0.4	-0.2
CO_2 emissions[*2] (Mt)	74	115	225	255	272	285	282	3.5	0.9	0.5	-0.1	0.4
GDP per capita ($2010 thousand)	4.5	8.2	14	21	27	34	40	4.1	4.0	2.3	1.7	2.5
Primary energy consump. per capita (toe)	1.6	2.3	3.8	4.6	5.1	5.4	5.7	3.0	1.3	0.7	0.5	0.8
Primary energy consumption per GDP[*3]	349	286	278	226	188	160	142	-1.0	-2.6	-1.6	-1.2	-1.7
CO_2 emissions per GDP[*2, *4]	931	691	736	529	428	361	313	-1.2	-3.0	-1.7	-1.4	-1.9
CO_2 per primary energy consumption[*2, *5]	2.7	2.4	2.6	2.3	2.3	2.3	2.2	-0.1	-0.4	-0.1	-0.3	-0.2
Automobile ownership (million)	0.5	2.9	5.5	7.3	8.1	8.9	9.3	4.1	1.5	1.0	0.4	0.9
Automobile ownership rates[*6]	27	141	249	313	346	386	417	3.5	1.5	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

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Table A27 ASEAN [Reference Scenario]

Primary energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total[*1]	142	233	380	587	776	1,035	1,327	100	100	100	4.1	4.1	2.9	2.5	3.1
Coal	3.6	13	32	91	131	197	280	5.4	16	21	9.0	5.2	4.2	3.6	4.2
Oil	58	88	153	209	256	333	422	38	36	32	3.8	2.9	2.7	2.4	2.6
Natural gas	8.6	30	74	133	175	236	305	13	23	23	6.7	4.0	3.0	2.6	3.1
Nuclear	-	-	-	-	-	14	35	-	-	2.6	n.a.	n.a.	n.a.	9.3	n.a.
Hydro	0.8	2.3	4.1	9.4	12	16	18	1.0	1.6	1.4	6.2	3.7	2.5	1.4	2.4
Geothermal	1.8	6.6	18	24	67	85	96	2.8	4.2	7.3	5.8	15.5	2.4	1.2	5.2
Solar, wind, etc.	-	-	-	0.1	0.4	0.8	1.4	-	0.0	0.1	n.a.	16.2	7.2	5.6	8.9
Biomass and waste	70	93	99	118	133	150	164	40	20	12	1.0	1.7	1.2	0.9	1.2

Final energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	112	173	271	425	532	701	897	100	100	100	4.0	3.3	2.8	2.5	2.8
Industry	22	43	76	116	153	212	279	25	27	31	4.5	4.0	3.3	2.8	3.3
Transport	17	32	62	112	140	189	250	19	26	28	5.5	3.3	3.0	2.8	3.0
Buildings, etc.	71	87	113	143	171	212	261	50	34	29	2.2	2.5	2.2	2.1	2.2
Non-energy use	2.4	11	21	53	68	87	106	6.3	13	12	7.1	3.4	2.6	2.0	2.6
Coal	2.1	6.0	13	27	34	44	54	3.5	6.4	6.0	6.7	3.4	2.6	2.0	2.6
Oil	41	67	123	194	243	319	407	38	46	45	4.8	3.3	2.8	2.5	2.8
Natural gas	2.5	7.5	17	40	56	80	106	4.4	9.4	12	7.5	4.9	3.6	2.9	3.7
Electricity	4.7	11	28	61	87	137	201	6.4	14	22	7.7	5.2	4.6	3.9	4.5
Heat	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Hydrogen	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Renewables	62	82	90	103	111	121	129	47	24	14	1.0	1.2	0.9	0.6	0.9

Electricity generation

	(TWh)							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	62	154	370	786	1,117	1,738	2,538	100	100	100	7.3	5.1	4.5	3.9	4.4
Coal	3.0	28	79	255	383	639	1,003	18	32	40	10.1	6.0	5.3	4.6	5.2
Oil	47	66	72	43	38	37	36	43	5.5	1.4	-1.8	-1.9	-0.1	-0.3	-0.7
Natural gas	0.7	26	154	349	480	720	1,025	17	44	40	11.9	4.7	4.1	3.6	4.1
Nuclear	-	-	-	-	-	55	133	-	-	5.2	n.a.	n.a.	n.a.	9.3	n.a.
Hydro	9.8	27	47	109	141	181	209	18	14	8.2	6.2	3.7	2.5	1.4	2.4
Geothermal	2.1	6.6	16	19	46	58	65	4.3	2.4	2.6	4.7	13.5	2.3	1.2	4.7
Solar, wind, etc.	-	-	-	1.7	4.9	9.8	17	-	0.2	0.7	n.a.	16.2	7.2	5.6	8.9
Biomass and waste	-	0.6	1.0	10	24	38	50	0.4	1.3	2.0	13.0	13.5	4.6	2.6	6.1

Energy and economic indicators

								CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
GDP ($2010 billion)	405	703	1,137	2,190	3,097	4,848	7,019	5.1	5.1	4.6	3.8	4.4
Population (million)	345	427	503	594	640	693	732	1.4	1.1	0.8	0.5	0.8
CO_2 emissions[*2] (Mt)	205	362	710	1,162	1,519	2,102	2,814	5.2	3.9	3.3	3.0	3.3
GDP per capita ($2010 thousand)	1.2	1.6	2.3	3.7	4.8	7.0	9.6	3.6	4.0	3.7	3.2	3.6
Primary energy consump. per capita (toe)	0.4	0.5	0.8	1.0	1.2	1.5	1.8	2.6	3.0	2.1	2.0	2.3
Primary energy consumption per GDP[*3]	352	332	334	268	251	214	189	-0.9	-0.9	-1.6	-1.2	-1.3
CO_2 emissions per GDP[*2, *4]	507	515	624	531	491	434	401	0.1	-1.1	-1.2	-0.8	-1.0
CO_2 per primary energy consumption[*2, *5]	1.4	1.6	1.9	2.0	2.0	2.0	2.1	1.1	-0.2	0.4	0.4	0.3
Automobile ownership (million)	4.4	10	21	52	70	98	133	7.4	4.4	3.4	3.2	3.6
Automobile ownership rates[*6]	13	24	41	87	110	141	182	5.9	3.3	2.5	2.6	2.8

*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

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Table A28 Indonesia [Reference Scenario]

Primary energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total[*1]	56	99	156	214	314	419	540	100	100	100	3.4	5.6	2.9	2.6	3.5
Coal	0.2	3.5	12	32	54	86	126	3.6	15	23	10.0	8.0	4.8	3.9	5.3
Oil	20	33	58	77	93	119	155	34	36	29	3.7	2.8	2.5	2.6	2.6
Natural gas	4.9	16	27	33	51	73	99	16	15	18	3.2	6.5	3.6	3.1	4.2
Nuclear	-	-	-	-	-	2.6	7.7	-	-	1.4	n.a.	n.a.	n.a.	11.6	n.a.
Hydro	0.1	0.5	0.9	1.5	1.6	1.8	1.9	0.5	0.7	0.4	4.8	1.3	1.3	0.7	1.1
Geothermal	-	1.9	8.4	16	54	71	80	2.0	7.6	15	9.7	18.9	2.7	1.2	6.1
Solar, wind, etc.	-	-	-	0.0	0.0	0.0	0.0	-	0.0	0.0	n.a.	30.1	6.3	6.4	12.1
Biomass and waste	30	43	50	55	59	66	71	44	26	13	1.0	1.1	1.0	0.7	0.9

Final energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	50	80	121	162	205	269	351	100	100	100	3.1	3.4	2.8	2.7	2.9
Industry	6.7	18	31	37	51	74	102	23	23	29	3.1	4.9	3.7	3.2	3.8
Transport	6.0	11	22	46	61	85	117	13	29	33	6.6	4.0	3.4	3.3	3.5
Buildings, etc.	36	44	59	68	79	96	115	55	42	33	1.9	2.2	1.9	1.9	2.0
Non-energy use	1.2	7.4	9.8	11	13	15	17	9.2	6.8	4.9	1.8	2.6	1.3	1.4	1.7
Coal	0.1	2.2	4.7	4.6	8.0	12	15	2.7	2.8	4.4	3.3	8.2	3.8	2.9	4.6
Oil	17	27	49	70	88	115	150	34	43	43	4.2	3.4	2.6	2.7	2.9
Natural gas	2.4	6.0	12	17	24	35	49	7.5	11	14	4.7	4.8	3.8	3.6	4.0
Electricity	0.6	2.4	6.8	16	26	43	66	3.0	10	19	8.6	7.0	5.2	4.4	5.3
Heat	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Hydrogen	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Renewables	29	42	49	54	58	65	69	53	33	20	1.1	1.1	1.0	0.7	0.9

Electricity generation

	(TWh)							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	7.5	33	93	216	345	570	871	100	100	100	8.6	7.0	5.1	4.3	5.3
Coal	-	9.8	34	110	176	308	492	30	51	57	11.1	6.9	5.7	4.8	5.7
Oil	6.2	15	18	27	23	23	22	47	12	2.6	2.4	-2.0	-0.2	-0.2	-0.7
Natural gas	-	0.7	26	52	95	167	256	2.2	24	29	20.3	9.1	5.8	4.4	6.1
Nuclear	-	-	-	-	-	9.8	29	-	-	3.4	n.a.	n.a.	n.a.	11.6	n.a.
Hydro	1.3	5.7	10	17	19	21	23	17	7.9	2.6	4.8	1.3	1.3	0.7	1.1
Geothermal	-	1.1	4.9	9.4	32	41	47	3.4	4.4	5.3	9.7	18.9	2.7	1.2	6.1
Solar, wind, etc.	-	-	-	0.0	0.0	0.1	0.1	-	0.0	0.0	n.a.	30.3	6.3	6.4	12.1
Biomass and waste	-	-	0.0	0.3	0.5	0.8	1.1	-	0.1	0.1	n.a.	9.9	4.9	2.9	5.4

Energy and economic indicators

								CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
GDP ($2010 billion)	152	282	426	849	1,247	2,015	3,041	4.9	5.6	4.9	4.2	4.8
Population (million)	145	179	209	250	270	294	311	1.5	1.1	0.8	0.6	0.8
CO_2 emissions[*2] (Mt)	71	134	262	406	582	836	1,158	4.9	5.3	3.7	3.3	4.0
GDP per capita ($2010 thousand)	1.0	1.6	2.0	3.4	4.6	6.9	9.8	3.4	4.5	4.0	3.6	4.0
Primary energy consump. per capita (toe)	0.4	0.6	0.7	0.9	1.2	1.4	1.7	1.9	4.5	2.1	2.0	2.7
Primary energy consumption per GDP[*3]	367	350	365	252	252	208	178	-1.4	0.0	-1.9	-1.6	-1.3
CO_2 emissions per GDP[*2, *4]	471	475	615	478	467	415	381	0.0	-0.3	-1.2	-0.8	-0.8
CO_2 per primary energy consumption[*2, *5]	1.3	1.4	1.7	1.9	1.9	2.0	2.1	1.5	-0.3	0.7	0.7	0.4
Automobile ownership (million)	1.3	2.8	5.4	19	29	44	62	8.8	6.1	4.1	3.7	4.4
Automobile ownership rates[*6]	8.9	16	26	78	108	148	201	7.2	4.9	3.2	3.1	3.6

*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

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Table A29 Malaysia [Reference Scenario]

Primary energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total[*1]	12	22	49	89	109	135	160	100	100	100	6.2	3.0	2.1	1.7	2.2
Coal	0.1	1.4	2.3	15	20	26	32	6.1	17	20	11.1	3.6	2.7	2.1	2.7
Oil	7.9	11	19	31	38	46	52	51	35	33	4.5	3.0	1.9	1.3	2.0
Natural gas	2.2	6.8	25	38	44	51	57	31	43	36	7.8	2.1	1.5	1.2	1.5
Nuclear	-	-	-	-	-	2.6	7.7	-	-	4.8	n.a.	n.a.	n.a.	11.6	n.a.
Hydro	0.1	0.3	0.6	0.9	1.2	1.8	2.4	1.5	1.0	1.5	4.3	4.2	3.7	3.1	3.6
Geothermal	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Solar, wind, etc.	-	-	-	0.0	0.0	0.1	0.1	-	0.0	0.1	n.a.	16.9	9.0	4.8	9.4
Biomass and waste	1.8	2.3	2.8	3.7	6.0	7.5	8.4	10	4.1	5.3	2.0	7.3	2.2	1.2	3.1

Final energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	7.2	14	30	54	69	87	103	100	100	100	6.1	3.5	2.3	1.8	2.4
Industry	3.1	5.6	12	15	20	25	30	40	28	29	4.5	4.1	2.3	1.8	2.6
Transport	2.1	4.8	10	19	23	27	30	34	36	29	6.3	2.5	1.6	1.0	1.6
Buildings, etc.	1.8	2.8	5.4	10	14	20	27	20	19	26	5.7	4.9	3.6	2.7	3.6
Non-energy use	0.3	0.8	2.2	9.2	11	14	17	6.0	17	16	11.0	3.1	2.1	1.8	2.2
Coal	0.1	0.5	1.0	1.5	2.1	2.5	2.8	3.7	2.8	2.7	4.9	4.5	1.8	1.1	2.3
Oil	5.3	9.2	18	28	35	42	48	66	51	47	4.9	3.3	2.0	1.3	2.1
Natural gas	0.0	1.1	3.9	12	15	18	21	7.8	22	21	11.0	3.3	1.9	1.5	2.1
Electricity	0.7	1.7	5.3	11	15	21	29	12	20	28	8.4	4.2	3.8	3.1	3.7
Heat	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Hydrogen	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Renewables	1.1	1.5	1.7	2.0	2.5	2.5	2.4	11	3.6	2.3	1.3	3.2	0.3	-0.6	0.7

Electricity generation

	(TWh)							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	10	23	69	138	185	267	363	100	100	100	8.1	4.2	3.7	3.1	3.6
Coal	-	2.9	7.7	53	70	98	127	13	39	35	13.4	4.1	3.3	2.7	3.3
Oil	8.5	11	3.6	5.3	6.2	6.8	6.6	46	3.9	1.8	-2.9	2.1	1.0	-0.3	0.8
Natural gas	0.1	5.5	51	68	89	124	161	24	49	44	11.5	4.1	3.3	2.7	3.3
Nuclear	-	-	-	-	-	9.8	29	-	-	8.1	n.a.	n.a.	n.a.	11.6	n.a.
Hydro	1.4	4.0	7.0	11	14	20	28	17	7.7	7.7	4.3	4.2	3.7	3.1	3.6
Geothermal	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Solar, wind, etc.	-	-	-	0.1	0.4	1.0	1.6	-	0.1	0.4	n.a.	16.9	9.0	4.8	9.4
Biomass and waste	-	-	-	1.1	4.1	6.7	8.9	-	0.8	2.4	n.a.	20.1	4.9	2.9	7.9

Energy and economic indicators

								CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
GDP ($2010 billion)	44	79	158	288	408	633	872	5.8	5.1	4.5	3.3	4.2
Population (million)	14	18	23	30	33	36	39	2.2	1.4	1.1	0.7	1.0
CO_2 emissions[*2] (Mt)	29	54	120	222	269	327	377	6.3	2.8	2.0	1.4	2.0
GDP per capita ($2010 thousand)	3.2	4.4	6.7	9.7	13	17	22	3.5	3.7	3.4	2.5	3.1
Primary energy consump. per capita (toe)	0.9	1.2	2.1	3.0	3.3	3.7	4.1	4.0	1.6	1.0	1.0	1.1
Primary energy consumption per GDP[*3]	272	279	314	309	267	213	183	0.4	-2.0	-2.3	-1.5	-1.9
CO_2 emissions per GDP[*2, *4]	649	681	761	771	660	517	433	0.5	-2.2	-2.4	-1.8	-2.1
CO_2 per primary energy consumption[*2, *5]	2.4	2.4	2.4	2.5	2.5	2.4	2.4	0.1	-0.2	-0.2	-0.3	-0.2
Automobile ownership (million)	0.9	2.4	5.2	12	15	19	22	7.3	3.3	2.0	1.4	2.1
Automobile ownership rates[*6]	65	133	224	414	472	516	549	5.0	1.9	0.9	0.6	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

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Table A30 Myanmar [Reference Scenario]

Primary energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total[*1]	9.4	11	13	17	20	26	33	100	100	100	1.9	2.7	2.5	2.5	2.6
Coal	0.2	0.1	0.3	0.4	0.7	1.4	2.3	0.6	2.2	7.1	7.7	10.5	6.7	5.0	7.0
Oil	1.3	0.7	2.0	2.8	3.7	5.6	8.7	6.8	17	27	6.0	4.3	4.2	4.5	4.3
Natural gas	0.3	0.8	1.2	1.8	3.4	5.6	8.0	7.1	11	24	3.9	9.1	5.2	3.6	5.6
Nuclear	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Hydro	0.1	0.1	0.2	0.8	0.9	1.3	1.7	1.0	4.6	5.2	9.1	3.0	3.0	3.0	3.0
Geothermal	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Solar, wind, etc.	-	-	-	-	0.0	0.0	0.0	-	-	0.1	n.a.	n.a.	6.0	6.3	n.a.
Biomass and waste	7.6	9.0	9.2	11	11	12	12	84	65	37	0.8	0.5	0.4	0.3	0.4

Final energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	8.4	9.4	11	15	17	22	28	100	100	100	2.1	2.0	2.2	2.4	2.2
Industry	0.6	0.4	1.2	1.9	2.6	4.0	6.2	4.2	12	23	7.1	4.7	4.5	4.4	4.5
Transport	0.6	0.4	1.2	1.4	2.0	3.5	6.0	4.7	9.0	22	5.0	5.7	5.7	5.5	5.6
Buildings, etc.	7.0	8.5	9.1	12	13	14	15	90	77	55	1.4	1.0	0.9	0.9	0.9
Non-energy use	0.1	0.1	0.1	0.3	0.3	0.3	0.3	1.0	1.7	1.2	4.5	1.0	1.0	1.0	1.0
Coal	0.1	0.1	0.3	0.2	0.3	0.5	0.7	0.5	1.6	2.5	7.1	3.9	3.9	3.9	3.9
Oil	1.2	0.6	1.5	2.7	3.6	5.5	8.6	6.2	18	31	6.9	4.2	4.3	4.6	4.4
Natural gas	0.1	0.2	0.3	0.8	1.0	1.4	1.9	2.4	5.1	6.8	5.5	3.5	3.4	3.1	3.3
Electricity	0.1	0.1	0.3	0.7	1.4	2.6	4.4	1.6	4.9	16	7.3	9.2	6.6	5.3	6.7
Heat	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Hydrogen	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Renewables	6.9	8.4	9.0	11	11	12	12	89	71	44	1.1	0.5	0.4	0.3	0.4

Electricity generation

	(TWh)							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	1.5	2.5	5.1	12	22	40	65	100	100	100	7.1	8.9	6.3	5.0	6.5
Coal	0.0	0.0	-	0.5	1.8	4.2	7.6	1.6	4.3	12	11.7	19.6	8.9	6.0	10.5
Oil	0.5	0.3	0.7	0.1	0.1	0.1	0.1	11	0.5	0.1	-6.7	0.0	0.0	0.0	0.0
Natural gas	0.2	1.0	2.5	2.4	8.7	21	37	39	21	57	4.1	19.9	9.0	6.0	10.6
Nuclear	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Hydro	0.8	1.2	1.9	8.9	11	15	20	48	75	31	9.1	3.0	3.0	3.0	3.0
Geothermal	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Solar, wind, etc.	-	-	-	-	0.1	0.2	0.3	-	-	0.5	n.a.	n.a.	6.0	6.3	n.a.
Biomass and waste	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.

Energy and economic indicators

								CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
GDP ($2010 billion)	5.9	6.7	13	51	87	156	248	9.2	8.0	6.0	4.8	6.1
Population (million)	34	42	48	53	57	61	63	1.0	0.9	0.7	0.4	0.6
CO_2 emissions[*2] (Mt)	5.2	4.1	9.9	14	22	35	54	5.4	6.8	5.0	4.3	5.2
GDP per capita ($2010 thousand)	0.2	0.2	0.3	1.0	1.5	2.6	3.9	8.1	7.1	5.3	4.3	5.4
Primary energy consump. per capita (toe)	0.3	0.3	0.3	0.3	0.4	0.4	0.5	0.9	1.9	1.8	2.1	1.9
Primary energy consumption per GDP[*3]	1,603	1,599	964	327	230	164	132	-6.7	-4.9	-3.3	-2.2	-3.3
CO_2 emissions per GDP[*2, *4]	891	608	744	269	249	226	217	-3.5	-1.1	-0.9	-0.4	-0.8
CO_2 per primary energy consumption[*2, *5]	0.6	0.4	0.8	0.8	1.1	1.4	1.6	3.4	4.0	2.5	1.8	2.6
Automobile ownership (million)	0.1	0.1	0.3	0.5	0.9	1.8	3.4	9.3	7.4	7.2	6.9	7.2
Automobile ownership rates[*6]	2.2	1.6	5.2	10.0	15	29	54	8.2	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

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Table A31 Philippines [Reference Scenario]

Primary energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total[*1]	22	29	40	45	58	76	99	100	100	100	1.9	3.7	2.8	2.6	3.0
Coal	0.5	1.5	5.2	11	13	19	27	5.3	24	28	8.9	2.3	4.2	3.5	3.5
Oil	10	11	16	14	19	26	34	38	30	35	1.0	4.7	3.2	2.9	3.5
Natural gas	-	-	0.0	2.9	4.6	7.4	11	-	6.5	11	n.a.	6.7	4.9	3.8	4.9
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	1.9	1.0	2.2	1.9	0.0	0.0	0.5
Geothermal	1.8	4.7	10.0	8.3	13	14	16	16	19	16	2.5	6.1	1.4	1.2	2.5
Solar, wind, etc.	-	-	-	0.0	0.0	0.0	0.0	-	0.0	0.0	n.a.	14.6	6.2	4.0	7.5
Biomass and waste	9.4	11	8.1	8.2	8.0	8.4	9.3	39	18	9.4	-1.3	-0.4	0.5	1.1	0.5

Final energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	17	20	24	26	33	44	57	100	100	100	1.2	3.4	2.9	2.8	3.0
Industry	3.4	4.7	5.3	6.9	8.6	11	14	24	27	25	1.7	3.2	2.6	2.4	2.7
Transport	3.5	4.5	8.1	8.8	12	17	24	23	34	42	2.9	4.4	3.7	3.4	3.8
Buildings, etc.	9.4	10	10	9.8	12	15	19	52	38	32	-0.2	2.6	2.3	2.3	2.4
Non-energy use	0.3	0.2	0.3	0.3	0.4	0.6	0.8	1.2	1.2	1.4	1.4	4.4	3.4	3.1	3.6
Coal	0.2	0.6	0.8	2.1	1.8	1.4	1.1	3.1	8.3	1.9	5.6	-2.3	-2.3	-2.8	-2.5
Oil	7.0	8.1	13	12	17	24	32	41	47	56	1.8	4.8	3.4	3.0	3.7
Natural gas	-	-	-	0.1	0.5	1.0	1.5	-	0.2	2.6	n.a.	33.0	7.8	4.4	12.5
Electricity	1.5	1.8	3.1	5.3	7.3	11	15	9.3	21	26	4.7	4.7	3.9	3.3	3.9
Heat	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Hydrogen	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Renewables	7.8	9.1	6.9	6.1	6.1	6.7	7.7	46	24	13	-1.7	0.1	0.9	1.4	0.9

Electricity generation

	(TWh)							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	18	26	45	75	104	150	206	100	100	100	4.7	4.7	3.8	3.2	3.8
Coal	0.2	1.9	17	32	47	76	112	7.3	43	54	13.0	5.5	5.0	3.9	4.7
Oil	12	12	9.2	4.5	4.1	3.6	3.1	47	6.0	1.5	-4.3	-1.2	-1.3	-1.5	-1.3
Natural gas	-	-	0.0	19	26	41	59	-	25	29	n.a.	4.8	4.6	3.7	4.3
Nuclear	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Hydro	3.5	6.1	7.8	10	11	11	11	23	13	5.5	2.2	1.9	0.0	0.0	0.5
Geothermal	2.1	5.5	12	9.6	15	17	19	21	13	9.2	2.5	6.1	1.4	1.2	2.5
Solar, wind, etc.	-	-	-	0.1	0.2	0.3	0.5	-	0.1	0.2	n.a.	14.6	6.2	4.0	7.5
Biomass and waste	-	0.4	-	0.2	0.4	0.7	0.9	1.6	0.3	0.4	-3.0	10.0	4.9	2.9	5.4

Energy and economic indicators

								CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
GDP ($2010 billion)	80	95	125	237	360	563	838	4.1	6.2	4.6	4.0	4.8
Population (million)	47	62	78	98	109	125	138	2.0	1.5	1.3	1.0	1.3
CO_2 emissions[*2] (Mt)	33	39	69	90	117	171	235	3.8	3.8	3.8	3.3	3.6
GDP per capita ($2010 thousand)	1.7	1.5	1.6	2.4	3.3	4.5	6.1	2.0	4.6	3.2	3.0	3.5
Primary energy consump. per capita (toe)	0.5	0.5	0.5	0.5	0.5	0.6	0.7	-0.1	2.1	1.5	1.6	1.7
Primary energy consumption per GDP[*3]	280	304	319	188	160	135	118	-2.1	-2.3	-1.7	-1.4	-1.7
CO_2 emissions per GDP[*2, *4]	414	409	550	382	326	303	281	-0.3	-2.2	-0.7	-0.7	-1.1
CO_2 per primary energy consumption[*2, *5]	1.5	1.3	1.7	2.0	2.0	2.2	2.4	1.8	0.1	0.9	0.6	0.6
Automobile ownership (million)	0.9	1.2	2.4	3.4	5.1	8.6	14	4.6	6.0	5.4	5.1	5.4
Automobile ownership rates[*6]	18	20	31	35	47	69	103	2.5	4.4	4.0	4.0	4.1

*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

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Table A32 Thailand [Reference Scenario]

Primary energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total[*1]	22	42	72	134	159	202	244	100	100	100	5.2	2.4	2.5	1.9	2.2
Coal	0.5	3.8	7.7	17	20	25	31	9.1	13	13	6.8	1.9	2.6	2.0	2.2
Oil	11	18	32	53	62	78	92	43	39	38	4.8	2.4	2.2	1.7	2.1
Natural gas	-	5.0	17	38	44	56	66	12	28	27	9.2	2.3	2.4	1.6	2.1
Nuclear	-	-	-	-	-	2.6	7.7	-	-	3.1	n.a.	n.a.	n.a.	11.6	n.a.
Hydro	0.1	0.4	0.5	0.5	0.5	0.5	0.6	1.0	0.4	0.2	0.6	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	19.4	1.5	1.3	5.8
Solar, wind, etc.	-	-	-	0.1	0.3	0.6	1.0	-	0.1	0.4	n.a.	15.0	6.9	4.7	8.1
Biomass and waste	11	15	15	25	30	37	42	35	18	17	2.3	2.9	2.0	1.4	2.0

Final energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	15	29	51	96	115	144	173	100	100	100	5.4	2.6	2.3	1.8	2.2
Industry	4.0	8.7	17	30	35	45	55	30	31	32	5.5	2.4	2.5	2.0	2.3
Transport	3.2	9.0	15	23	25	27	27	31	24	16	4.1	1.4	0.6	0.3	0.7
Buildings, etc.	7.8	11	14	21	26	33	40	37	22	23	3.0	2.6	2.4	2.1	2.4
Non-energy use	0.2	0.4	5.6	22	29	40	50	1.5	23	29	18.6	4.0	3.4	2.3	3.2
Coal	0.1	1.3	3.5	8.7	9.3	11	12	4.5	9.1	6.9	8.6	0.9	1.5	1.0	1.2
Oil	7.3	15	29	50	60	75	88	52	53	51	5.4	2.5	2.3	1.7	2.1
Natural gas	-	0.1	1.1	7.1	10.0	14	18	0.5	7.4	10	18.7	4.9	3.4	2.3	3.4
Electricity	1.1	3.3	7.6	14	17	25	33	11	15	19	6.5	3.0	3.6	3.0	3.2
Heat	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Hydrogen	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Renewables	6.7	9.2	9.4	15	18	20	22	32	16	13	2.3	2.4	1.0	0.7	1.2

Electricity generation

	(TWh)							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	14	44	96	166	201	280	367	100	100	100	5.9	2.8	3.4	2.7	3.0
Coal	1.4	11	18	33	42	61	84	25	20	23	4.9	3.4	4.0	3.1	3.5
Oil	12	10	10	1.7	1.6	1.6	1.5	23	1.0	0.4	-7.6	-0.4	-0.4	-0.5	-0.5
Natural gas	-	18	62	117	135	172	206	40	71	56	8.5	2.0	2.5	1.8	2.1
Nuclear	-	-	-	-	-	9.8	29	-	-	8.0	n.a.	n.a.	n.a.	11.6	n.a.
Hydro	1.3	5.0	6.0	5.7	6.0	6.3	6.6	11	3.5	1.8	0.6	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	19.4	1.5	1.3	5.8
Solar, wind, etc.	-	-	-	1.4	3.7	7.2	11	-	0.8	3.1	n.a.	15.0	6.9	4.7	8.1
Biomass and waste	-	-	0.5	7.0	14	22	29	-	4.2	7.9	n.a.	10.0	4.9	2.9	5.4

Energy and economic indicators

								CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
GDP ($2010 billion)	63	135	209	350	444	637	866	4.2	3.5	3.7	3.1	3.4
Population (million)	47	57	62	67	68	68	66	0.7	0.2	0.0	-0.3	-0.1
CO_2 emissions[*2] (Mt)	34	81	152	254	288	352	411	5.1	1.8	2.0	1.6	1.8
GDP per capita ($2010 thousand)	1.3	2.4	3.3	5.2	6.5	9.4	13	3.5	3.2	3.7	3.4	3.5
Primary energy consump. per capita (toe)	0.5	0.7	1.2	2.0	2.3	3.0	3.7	4.4	2.2	2.5	2.2	2.3
Primary energy consumption per GDP[*3]	347	311	346	383	358	317	282	0.9	-1.0	-1.2	-1.2	-1.1
CO_2 emissions per GDP[*2, *4]	537	598	727	726	648	552	474	0.8	-1.6	-1.6	-1.5	-1.6
CO_2 per primary energy consumption[*2, *5]	1.5	1.9	2.1	1.9	1.8	1.7	1.7	-0.1	-0.6	-0.4	-0.4	-0.4
Automobile ownership (million)	0.9	2.8	6.1	14	16	19	22	7.2	2.0	1.8	1.5	1.7
Automobile ownership rates[*6]	19	50	98	208	235	281	336	6.4	1.8	1.8	1.8	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

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Table A33 Viet Nam [Reference Scenario]

Primary energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total[*1]	14	18	29	60	83	136	206	100	100	100	5.4	4.7	5.1	4.2	4.7
Coal	2.3	2.2	4.4	16	23	38	61	12	26	30	8.9	5.8	5.0	4.8	5.2
Oil	1.8	2.7	7.8	16	21	37	56	15	26	27	7.9	4.4	5.7	4.4	4.9
Natural gas	-	0.0	1.1	8.4	15	29	49	0.0	14	24	41.9	8.8	6.7	5.4	6.7
Nuclear	-	-	-	-	-	6.6	12	-	-	5.7	n.a.	n.a.	n.a.	5.9	n.a.
Hydro	0.1	0.5	1.3	4.9	6.9	9.2	10	2.6	8.2	5.0	10.8	5.0	2.9	1.2	2.8
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.	15.1	8.2	9.0	10.2
Biomass and waste	10	12	14	15	16	16	17	70	25	8.2	0.9	0.6	0.4	0.3	0.4

Final energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	13	16	25	51	68	105	151	100	100	100	5.2	4.1	4.5	3.7	4.1
Industry	3.8	4.5	7.9	19	28	44	63	28	38	42	6.5	5.2	4.8	3.6	4.4
Transport	0.6	1.4	3.5	10	14	26	42	8.6	20	27	9.2	4.5	6.4	4.7	5.3
Buildings, etc.	8.6	10	14	19	23	31	41	63	38	27	2.9	2.7	2.7	3.0	2.8
Non-energy use	0.0	0.0	0.1	1.7	2.4	3.9	5.8	0.2	3.3	3.9	19.6	4.8	5.3	4.0	4.7
Coal	1.5	1.3	3.2	9.7	12	17	22	8.3	19	14	9.0	3.7	3.2	2.4	3.0
Oil	1.7	2.3	6.5	16	21	37	57	15	31	37	8.7	4.3	5.6	4.4	4.8
Natural gas	-	-	0.0	1.3	3.1	7.0	11	-	2.6	7.0	n.a.	12.5	8.5	4.2	7.9
Electricity	0.2	0.5	1.9	9.8	16	29	47	3.3	19	31	13.5	7.0	6.1	5.0	5.9
Heat	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Hydrogen	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Renewables	9.7	12	13	14	15	15	16	74	28	11	0.8	0.6	0.4	0.3	0.4

Electricity generation

	(TWh)							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	3.6	8.7	27	127	201	361	587	100	100	100	12.4	6.8	6.0	5.0	5.8
Coal	1.4	2.0	3.1	25	46	92	179	23	20	31	11.6	9.0	7.3	6.9	7.6
Oil	0.7	1.3	4.5	2.3	2.3	2.3	2.3	15	1.8	0.4	2.4	0.0	0.0	0.0	0.0
Natural gas	-	0.0	4.4	43	73	134	239	0.1	34	41	47.1	8.0	6.3	5.9	6.6
Nuclear	-	-	-	-	-	25	45	-	-	7.6	n.a.	n.a.	n.a.	5.9	n.a.
Hydro	1.5	5.4	15	57	80	107	120	62	45	21	10.8	5.0	2.9	1.2	2.8
Geothermal	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Solar, wind, etc.	-	-	-	0.1	0.2	0.5	1.2	-	0.1	0.2	n.a.	15.1	8.2	9.0	10.2
Biomass and waste	-	-	-	0.1	0.1	0.2	0.2	-	0.0	0.0	n.a.	9.0	4.9	2.9	5.2

Energy and economic indicators

								CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
GDP ($2010 billion)	17	29	61	137	205	388	631	6.9	6.0	6.6	5.0	5.8
Population (million)	54	66	78	90	96	103	108	1.3	1.0	0.7	0.4	0.7
CO_2 emissions[*2] (Mt)	15	17	43	125	185	319	512	9.0	5.9	5.6	4.8	5.4
GDP per capita ($2010 thousand)	0.3	0.4	0.8	1.5	2.1	3.8	5.8	5.5	4.9	5.8	4.5	5.1
Primary energy consump. per capita (toe)	0.3	0.3	0.4	0.7	0.9	1.3	1.9	4.0	3.6	4.4	3.8	4.0
Primary energy consumption per GDP[*3]	851	606	470	439	403	352	327	-1.4	-1.2	-1.3	-0.7	-1.1
CO_2 emissions per GDP[*2, *4]	860	579	711	911	905	824	811	2.0	-0.1	-0.9	-0.1	-0.4
CO_2 per primary energy consumption[*2, *5]	1.0	1.0	1.5	2.1	2.2	2.3	2.5	3.4	1.1	0.4	0.6	0.7
Automobile ownership (million)	0.2	0.2	0.4	1.3	2.2	4.5	8.1	9.1	7.9	7.5	6.1	7.1
Automobile ownership rates[*6]	2.9	2.6	4.8	14	22	43	75	7.6	6.8	6.8	5.7	6.4

*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

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Table A34 North America [Reference Scenario]

Primary energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total[*1]	1,997	2,124	2,525	2,442	2,519	2,538	2,463	100	100	100	0.6	0.4	0.1	-0.3	0.0
Coal	397	485	565	450	417	345	269	23	18	11	-0.3	-1.1	-1.9	-2.5	-1.9
Oil	885	833	958	859	865	854	792	39	35	32	0.1	0.1	-0.1	-0.8	-0.3
Natural gas	522	493	622	697	759	826	850	23	29	35	1.5	1.2	0.8	0.3	0.7
Nuclear	80	179	227	241	243	238	246	8.4	9.9	10.0	1.3	0.1	-0.2	0.3	0.1
Hydro	46	49	53	57	60	63	64	2.3	2.3	2.6	0.7	0.6	0.5	0.3	0.5
Geothermal	4.6	14	13	8.6	19	24	30	0.7	0.4	1.2	-2.1	12.1	2.2	2.3	4.7
Solar, wind, etc.	-	0.3	2.1	19	30	51	66	0.0	0.8	2.7	19.3	7.3	5.3	2.6	4.8
Biomass and waste	62	70	85	111	125	137	146	3.3	4.5	5.9	2.0	1.7	0.9	0.6	1.0

Final energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	1,466	1,452	1,736	1,694	1,752	1,785	1,740	100	100	100	0.7	0.5	0.2	-0.3	0.1
Industry	437	331	387	309	318	314	303	23	18	17	-0.3	0.4	-0.1	-0.4	-0.1
Transport	470	531	640	669	684	679	634	37	39	36	1.0	0.3	-0.1	-0.7	-0.2
Buildings, etc.	446	457	535	573	597	619	623	31	34	36	1.0	0.6	0.4	0.1	0.3
Non-energy use	114	134	173	143	153	173	180	9.2	8.4	10	0.3	1.0	1.2	0.4	0.9
Coal	60	59	36	26	27	24	21	4.0	1.5	1.2	-3.6	1.0	-1.1	-1.5	-0.7
Oil	769	752	874	826	827	820	764	52	49	44	0.4	0.0	-0.1	-0.7	-0.3
Natural gas	374	346	413	380	394	397	394	24	22	23	0.4	0.5	0.1	-0.1	0.1
Electricity	200	262	342	367	402	436	451	18	22	26	1.5	1.3	0.8	0.3	0.8
Heat	1.0	2.8	6.1	6.5	7.0	6.9	6.7	0.2	0.4	0.4	3.8	1.1	-0.2	-0.3	0.1
Hydrogen	-	-	-	-	0.0	0.0	0.0	-	-	0.0	n.a.	n.a.	35.5	6.9	n.a.
Renewables	62	30	64	89	95	100	103	2.1	5.3	5.9	4.8	1.0	0.5	0.3	0.5

Electricity generation

	(TWh)							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	2,801	3,685	4,631	4,939	5,381	5,811	5,999	100	100	100	1.3	1.2	0.8	0.3	0.7
Coal	1,303	1,782	2,247	1,778	1,675	1,422	1,128	48	36	19	0.0	-0.8	-1.6	-2.3	-1.7
Oil	277	147	133	44	40	32	21	4.0	0.9	0.4	-5.1	-1.5	-2.3	-4.0	-2.7
Natural gas	380	391	668	1,226	1,548	1,940	2,170	11	25	36	5.1	3.4	2.3	1.1	2.1
Nuclear	304	685	871	925	931	915	942	19	19	16	1.3	0.1	-0.2	0.3	0.1
Hydro	530	570	612	663	693	727	749	15	13	12	0.7	0.6	0.5	0.3	0.5
Geothermal	5.4	16	15	18	41	50	64	0.4	0.4	1.1	0.6	11.9	2.2	2.4	4.7
Solar, wind, etc.	-	3.8	6.7	202	336	571	738	0.1	4.1	12	18.9	7.6	5.5	2.6	4.9
Biomass and waste	1.8	90	80	84	117	154	187	2.5	1.7	3.1	-0.3	5.0	2.8	1.9	3.0

Energy and economic indicators

								CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
GDP ($2010 billion)	7,291	10,064	14,050	17,619	20,910	26,405	31,603	2.5	2.5	2.4	1.8	2.2
Population (million)	252	277	313	351	370	395	415	1.0	0.7	0.7	0.5	0.6
CO_2 emissions[*2] (Mt)	5,169	5,236	6,125	5,626	5,632	5,414	4,962	0.3	0.0	-0.4	-0.9	-0.5
GDP per capita ($2010 thousand)	29	36	45	50	57	67	76	1.4	1.7	1.7	1.3	1.6
Primary energy consump. per capita (toe)	7.9	7.7	8.1	7.0	6.8	6.4	5.9	-0.4	-0.3	-0.6	-0.8	-0.6
Primary energy consumption per GDP[*3]	274	211	180	139	120	96	78	-1.8	-2.0	-2.2	-2.1	-2.1
CO_2 emissions per GDP[*2, *4]	709	520	436	319	269	205	157	-2.1	-2.4	-2.7	-2.6	-2.6
CO_2 per primary energy consumption[*2, *5]	2.6	2.5	2.4	2.3	2.2	2.1	2.0	-0.3	-0.4	-0.5	-0.6	-0.5
Automobile ownership (million)	169	205	239	275	296	328	352	1.3	1.1	1.0	0.7	0.9
Automobile ownership rates[*6]	671	740	764	783	801	829	849	0.2	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

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Table A35 United States [Reference Scenario]

Primary energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total[*1]	1,805	1,915	2,273	2,188	2,254	2,260	2,181	100	100	100	0.6	0.4	0.0	-0.4	0.0
Coal	376	460	534	432	401	334	262	24	20	12	-0.3	-1.0	-1.8	-2.4	-1.8
Oil	797	757	871	780	782	765	702	40	36	32	0.1	0.0	-0.2	-0.9	-0.4
Natural gas	477	438	548	610	668	722	742	23	28	34	1.4	1.3	0.8	0.3	0.7
Nuclear	69	159	208	214	216	217	224	8.3	9.8	10	1.3	0.1	0.0	0.3	0.2
Hydro	24	23	22	23	24	25	25	1.2	1.1	1.2	0.0	0.6	0.2	0.1	0.3
Geothermal	4.6	14	13	8.6	19	24	30	0.7	0.4	1.4	-2.1	12.0	2.2	2.3	4.7
Solar, wind, etc.	-	0.3	2.1	18	28	48	62	0.0	0.8	2.8	19.0	7.2	5.4	2.6	4.8
Biomass and waste	54	62	73	97	109	121	129	3.3	4.4	5.9	2.0	1.6	1.0	0.7	1.1

Final energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	1,311	1,294	1,546	1,495	1,538	1,557	1,506	100	100	100	0.6	0.4	0.1	-0.3	0.0
Industry	387	284	332	261	267	257	243	22	17	16	-0.4	0.3	-0.4	-0.6	-0.3
Transport	425	488	588	608	618	611	569	38	41	38	1.0	0.2	-0.1	-0.7	-0.2
Buildings, etc.	397	403	473	507	528	548	550	31	34	37	1.0	0.6	0.4	0.0	0.3
Non-energy use	102	119	153	119	125	140	144	9.2	8.0	9.5	0.0	0.7	1.1	0.2	0.7
Coal	56	56	33	22	24	22	19	4.3	1.5	1.2	-3.9	1.3	-1.2	-1.5	-0.7
Oil	689	683	793	731	727	713	656	53	49	44	0.3	-0.1	-0.2	-0.8	-0.4
Natural gas	337	303	360	333	345	345	339	23	22	23	0.4	0.5	0.0	-0.2	0.1
Electricity	174	226	301	325	354	384	396	18	22	26	1.6	1.2	0.8	0.3	0.7
Heat	-	2.2	5.3	5.9	6.4	6.2	6.0	0.2	0.4	0.4	4.5	1.2	-0.3	-0.3	0.1
Hydrogen	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Renewables	54	23	54	77	81	86	89	1.8	5.2	5.9	5.4	0.7	0.6	0.4	0.5

Electricity generation

	(TWh)							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	2,427	3,203	4,026	4,287	4,652	5,037	5,188	100	100	100	1.3	1.2	0.8	0.3	0.7
Coal	1,243	1,700	2,129	1,712	1,617	1,385	1,108	53	40	21	0.0	-0.8	-1.5	-2.2	-1.6
Oil	263	131	118	37	33	24	14	4.1	0.9	0.3	-5.4	-1.8	-2.9	-5.2	-3.5
Natural gas	370	382	634	1,158	1,426	1,776	1,981	12	27	38	4.9	3.0	2.2	1.1	2.0
Nuclear	266	612	798	822	831	832	859	19	19	17	1.3	0.1	0.0	0.3	0.2
Hydro	279	273	253	271	283	290	293	8.5	6.3	5.6	0.0	0.6	0.2	0.1	0.3
Geothermal	5.4	16	15	18	40	50	63	0.5	0.4	1.2	0.6	11.9	2.2	2.4	4.7
Solar, wind, etc.	-	3.7	6.4	190	313	536	695	0.1	4.4	13	18.6	7.4	5.5	2.6	4.9
Biomass and waste	0.5	86	72	78	110	144	175	2.7	1.8	3.4	-0.4	5.0	2.8	1.9	3.0

Energy and economic indicators

								CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
GDP ($2010 billion)	6,514	9,056	12,713	15,902	18,932	23,986	28,725	2.5	2.5	2.4	1.8	2.2
Population (million)	227	250	282	316	332	355	373	1.0	0.7	0.6	0.5	0.6
CO_2 emissions[*2] (Mt)	4,743	4,820	5,617	5,184	5,186	4,954	4,517	0.3	0.0	-0.5	-0.9	-0.5
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	6.8	6.4	5.9	-0.4	-0.3	-0.6	-0.8	-0.6
Primary energy consumption per GDP[*3]	277	211	179	138	119	94	76	-1.9	-2.0	-2.3	-2.1	-2.2
CO_2 emissions per GDP[*2, *4]	728	532	442	326	274	207	157	-2.1	-2.5	-2.8	-2.7	-2.7
CO_2 per primary energy consumption[*2, *5]	2.6	2.5	2.5	2.4	2.3	2.2	2.1	-0.3	-0.4	-0.5	-0.6	-0.5
Automobile ownership (million)	156	189	221	253	272	301	323	1.3	1.1	1.0	0.7	0.9
Automobile ownership rates[*6]	686	756	785	799	819	848	867	0.2	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

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Table A36 Latin America [Reference Scenario]

Primary energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total[*1]	383	464	594	849	964	1,194	1,381	100	100	100	2.7	1.8	2.2	1.5	1.8
Coal	13	20	27	43	45	60	74	4.4	5.0	5.3	3.3	0.6	3.1	2.0	2.0
Oil	223	237	303	390	416	476	506	51	46	37	2.2	0.9	1.4	0.6	1.0
Natural gas	48	72	112	199	235	328	411	16	23	30	4.5	2.4	3.4	2.3	2.7
Nuclear	0.6	3.2	5.3	8.5	12	14	17	0.7	1.0	1.2	4.3	4.4	2.2	1.8	2.6
Hydro	19	33	50	63	69	78	86	7.2	7.4	6.2	2.8	1.4	1.1	1.0	1.2
Geothermal	1.2	5.1	6.3	6.6	19	28	41	1.1	0.8	3.0	1.1	16.7	3.6	4.1	7.0
Solar, wind, etc.	-	0.0	0.2	2.0	4.1	6.7	11	0.0	0.2	0.8	22.8	11.1	4.9	4.7	6.4
Biomass and waste	79	92	89	137	163	203	235	20	16	17	1.7	2.5	2.2	1.5	2.0

Final energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	288	344	449	610	685	841	963	100	100	100	2.5	1.7	2.1	1.4	1.7
Industry	98	115	148	199	220	279	335	33	33	35	2.4	1.5	2.4	1.9	2.0
Transport	85	103	141	216	252	312	346	30	35	36	3.3	2.2	2.2	1.0	1.8
Buildings, etc.	89	101	120	154	169	202	230	29	25	24	1.9	1.3	1.8	1.3	1.5
Non-energy use	16	26	41	40	45	49	52	7.5	6.6	5.4	2.0	1.4	0.9	0.6	0.9
Coal	6.1	8.5	11	17	15	16	16	2.5	2.7	1.7	2.9	-1.6	0.6	0.5	0.0
Oil	159	179	241	307	340	403	436	52	50	45	2.4	1.5	1.7	0.8	1.3
Natural gas	27	38	54	77	88	111	135	11	13	14	3.1	2.0	2.4	1.9	2.1
Electricity	27	44	70	109	127	172	214	13	18	22	4.0	2.2	3.1	2.2	2.5
Heat	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Hydrogen	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Renewables	69	74	74	101	115	140	161	22	16	17	1.3	2.0	1.9	1.4	1.8

Electricity generation

	(TWh)							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	380	623	1,003	1,553	1,787	2,377	2,937	100	100	100	4.0	2.0	2.9	2.1	2.4
Coal	7.8	23	44	99	131	207	275	3.8	6.4	9.3	6.5	4.1	4.7	2.9	3.9
Oil	111	128	194	210	174	164	150	21	14	5.1	2.2	-2.6	-0.6	-0.9	-1.2
Natural gas	35	60	138	398	475	815	1,136	9.6	26	39	8.6	2.6	5.5	3.4	4.0
Nuclear	2.3	12	20	33	44	55	66	2.0	2.1	2.2	4.3	4.4	2.2	1.8	2.6
Hydro	218	386	584	730	806	903	1,002	62	47	34	2.8	1.4	1.1	1.0	1.2
Geothermal	1.4	5.9	7.8	10	23	33	49	1.0	0.6	1.7	2.3	12.6	3.6	4.0	6.0
Solar, wind, etc.	-	0.0	0.3	14	38	61	89	0.0	0.9	3.0	47.1	14.8	5.0	3.8	7.0
Biomass and waste	3.9	7.6	14	59	95	138	172	1.2	3.8	5.8	9.3	7.1	3.9	2.2	4.1

Energy and economic indicators

								CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
GDP ($2010 billion)	2,407	2,764	3,744	5,691	6,515	8,993	11,569	3.2	2.0	3.3	2.6	2.7
Population (million)	360	441	521	611	656	710	749	1.4	1.0	0.8	0.5	0.8
CO_2 emissions[*2] (Mt)	801	905	1,187	1,718	1,881	2,333	2,664	2.8	1.3	2.2	1.3	1.6
GDP per capita ($2010 thousand)	6.7	6.3	7.2	9.3	9.9	13	15	1.7	0.9	2.5	2.0	1.9
Primary energy consump. per capita (toe)	1.1	1.1	1.1	1.4	1.5	1.7	1.8	1.2	0.8	1.4	0.9	1.1
Primary energy consumption per GDP[*3]	159	168	159	149	148	133	119	-0.5	-0.1	-1.1	-1.1	-0.8
CO_2 emissions per GDP[*2, *4]	333	327	317	302	289	259	230	-0.4	-0.6	-1.1	-1.2	-1.0
CO_2 per primary energy consumption[*2, *5]	2.1	2.0	2.0	2.0	2.0	2.0	1.9	0.2	-0.5	0.0	-0.1	-0.2
Automobile ownership (million)	28	38	55	114	141	191	227	4.8	3.1	3.0	1.8	2.6
Automobile ownership rates[*6]	79	87	105	187	215	269	303	3.4	2.1	2.2	1.2	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

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Table A37 OECD Europe [Reference Scenario]

Primary energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total[*1]	1,494	1,620	1,746	1,737	1,788	1,807	1,795	100	100	100	0.3	0.4	0.1	-0.1	0.1
Coal	464	449	330	307	294	285	265	28	18	15	-1.6	-0.6	-0.3	-0.7	-0.5
Oil	688	606	650	549	519	490	454	37	32	25	-0.4	-0.8	-0.6	-0.8	-0.7
Natural gas	206	260	393	415	454	485	498	16	24	28	2.1	1.3	0.7	0.2	0.7
Nuclear	60	205	245	229	223	204	207	13	13	12	0.5	-0.4	-0.9	0.1	-0.4
Hydro	36	38	47	50	51	52	53	2.4	2.9	2.9	1.1	0.3	0.3	0.1	0.2
Geothermal	3.0	4.9	7.2	13	16	20	23	0.3	0.7	1.3	4.3	3.0	2.1	1.6	2.2
Solar, wind, etc.	0.1	0.3	2.7	32	42	53	62	0.0	1.8	3.4	22.8	4.0	2.4	1.5	2.5
Biomass and waste	36	54	70	141	188	217	233	3.4	8.1	13	4.2	4.2	1.4	0.7	1.9

Final energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	1,081	1,122	1,225	1,219	1,256	1,268	1,254	100	100	100	0.4	0.4	0.1	-0.1	0.1
Industry	356	323	323	281	294	296	292	29	23	23	-0.6	0.6	0.1	-0.1	0.1
Transport	209	266	316	320	314	299	276	24	26	22	0.8	-0.3	-0.5	-0.8	-0.6
Buildings, etc.	425	433	473	511	529	548	559	39	42	45	0.7	0.5	0.4	0.2	0.3
Non-energy use	90	100	113	106	119	125	128	8.9	8.7	10	0.3	1.6	0.5	0.2	0.7
Coal	156	124	63	49	47	43	38	11	4.0	3.0	-4.0	-0.4	-1.0	-1.1	-0.9
Oil	551	518	568	496	472	447	415	46	41	33	-0.2	-0.7	-0.5	-0.7	-0.7
Natural gas	161	201	268	278	294	308	314	18	23	25	1.4	0.8	0.5	0.2	0.5
Electricity	147	192	233	262	286	308	325	17	22	26	1.4	1.2	0.8	0.5	0.8
Heat	35	40	40	47	48	48	48	3.6	3.8	3.8	0.7	0.3	0.1	-0.1	0.1
Hydrogen	-	-	-	-	0.0	0.5	0.8	-	-	0.1	n.a.	n.a.	62.6	6.2	n.a.
Renewables	31	47	54	87	109	113	114	4.2	7.2	9.1	2.8	3.2	0.3	0.1	1.0

Electricity generation

	(TWh)							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	2,049	2,662	3,223	3,559	3,876	4,171	4,388	100	100	100	1.3	1.2	0.7	0.5	0.8
Coal	887	1,030	968	930	907	932	901	39	26	21	-0.4	-0.3	0.3	-0.3	-0.1
Oil	364	206	179	56	40	26	18	7.7	1.6	0.4	-5.5	-4.6	-4.4	-3.8	-4.2
Natural gas	138	168	512	597	738	851	918	6.3	17	21	5.7	3.1	1.4	0.8	1.6
Nuclear	230	787	939	877	854	783	793	30	25	18	0.5	-0.4	-0.9	0.1	-0.4
Hydro	416	446	546	579	592	609	612	17	16	14	1.1	0.3	0.3	0.1	0.2
Geothermal	2.7	3.6	6.2	13	16	21	26	0.1	0.4	0.6	5.6	3.9	2.6	1.9	2.7
Solar, wind, etc.	0.5	1.4	24	325	455	583	683	0.1	9.1	16	26.9	4.9	2.5	1.6	2.8
Biomass and waste	11	21	48	181	272	366	437	0.8	5.1	10.0	9.9	6.0	3.0	1.8	3.3

Energy and economic indicators

								CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
GDP ($2010 billion)	9,906	12,611	15,826	18,688	21,167	24,766	27,948	1.7	1.8	1.6	1.2	1.5
Population (million)	476	499	521	557	570	580	585	0.5	0.3	0.2	0.1	0.2
CO_2 emissions[*2] (Mt)	4,164	3,952	3,891	3,560	3,468	3,398	3,227	-0.5	-0.4	-0.2	-0.5	-0.4
GDP per capita ($2010 thousand)	21	25	30	34	37	43	48	1.2	1.5	1.4	1.1	1.3
Primary energy consump. per capita (toe)	3.1	3.2	3.4	3.1	3.1	3.1	3.1	-0.2	0.1	-0.1	-0.2	-0.1
Primary energy consumption per GDP[*3]	151	128	110	93	84	73	64	-1.4	-1.4	-1.5	-1.3	-1.4
CO_2 emissions per GDP[*2, *4]	420	313	246	190	164	137	115	-2.1	-2.1	-1.8	-1.7	-1.8
CO_2 per primary energy consumption[*2, *5]	2.8	2.4	2.2	2.0	1.9	1.9	1.8	-0.8	-0.8	-0.3	-0.4	-0.5
Automobile ownership (million)	124	179	238	300	327	354	368	2.3	1.3	0.8	0.4	0.8
Automobile ownership rates[*6]	261	360	457	538	574	611	629	1.8	0.9	0.6	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

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Table A38 Non-OECD Europe [Reference Scenario]

Primary energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total[*1]	1,241	1,537	1,003	1,156	1,185	1,266	1,323	100	100	100	-1.2	0.4	0.7	0.4	0.5
Coal	362	367	209	219	210	198	192	24	19	15	-2.2	-0.7	-0.6	-0.3	-0.5
Oil	464	468	203	242	248	260	262	30	21	20	-2.8	0.3	0.5	0.1	0.3
Natural gas	355	603	489	569	579	615	641	39	49	48	-0.2	0.2	0.6	0.4	0.4
Nuclear	21	59	64	75	89	124	142	3.9	6.4	11	1.0	2.6	3.4	1.4	2.4
Hydro	20	23	24	27	28	29	30	1.5	2.4	2.3	0.7	0.4	0.3	0.3	0.4
Geothermal	-	0.0	0.1	0.5	1.3	1.7	1.9	0.0	0.0	0.1	14.6	13.7	2.1	1.5	4.8
Solar, wind, etc.	-	-	0.0	1.0	1.8	4.0	7.6	-	0.1	0.6	n.a.	8.8	8.2	6.5	7.7
Biomass and waste	21	17	16	22	28	34	45	1.1	1.9	3.4	1.0	3.6	2.1	2.8	2.8

Final energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	869	1,073	654	704	757	838	896	100	100	100	-1.8	1.0	1.0	0.7	0.9
Industry	394	396	206	203	211	254	287	37	29	32	-2.9	0.6	1.8	1.3	1.3
Transport	107	172	110	144	155	170	178	16	20	20	-0.8	1.0	0.9	0.5	0.8
Buildings, etc.	301	439	288	272	296	314	326	41	39	36	-2.1	1.2	0.6	0.4	0.7
Non-energy use	67	66	49	85	94	101	104	6.2	12	12	1.1	1.5	0.7	0.4	0.8
Coal	152	114	37	40	43	46	48	11	5.7	5.4	-4.4	0.9	0.8	0.4	0.7
Oil	310	280	146	194	199	213	217	26	28	24	-1.6	0.4	0.7	0.2	0.4
Natural gas	215	261	201	209	235	260	280	24	30	31	-1.0	1.7	1.0	0.7	1.1
Electricity	95	126	87	108	115	136	157	12	15	18	-0.7	0.8	1.8	1.4	1.4
Heat	78	279	172	139	149	166	176	26	20	20	-3.0	1.0	1.1	0.6	0.9
Hydrogen	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Renewables	21	13	12	15	16	17	17	1.2	2.1	1.9	0.6	1.4	0.1	0.0	0.4

Electricity generation

	(TWh)							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	1,461	1,894	1,432	1,740	1,827	2,156	2,465	100	100	100	-0.4	0.7	1.7	1.3	1.3
Coal	471	429	338	413	402	396	414	23	24	17	-0.2	-0.4	-0.2	0.4	0.0
Oil	357	256	70	18	17	17	16	14	1.0	0.6	-10.9	-0.5	-0.5	-0.5	-0.5
Natural gas	295	715	504	694	709	863	1,015	38	40	41	-0.1	0.3	2.0	1.6	1.4
Nuclear	79	226	242	284	340	474	543	12	16	22	1.0	2.6	3.4	1.4	2.4
Hydro	232	267	274	316	326	337	348	14	18	14	0.7	0.4	0.3	0.3	0.4
Geothermal	-	0.0	0.1	0.4	1.4	1.7	2.0	0.0	0.0	0.1	12.8	17.3	2.3	1.6	5.7
Solar, wind, etc.	-	-	0.0	11	20	45	86	-	0.6	3.5	n.a.	9.6	8.5	6.7	8.1
Biomass and waste	27	0.0	2.6	4.8	12	23	41	0.0	0.3	1.7	22.1	14.3	6.4	6.2	8.3

Energy and economic indicators

								CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
GDP ($2010 billion)	1,769	2,168	1,509	2,705	2,958	4,019	5,121	1.0	1.3	3.1	2.5	2.4
Population (million)	319	344	341	342	347	347	342	0.0	0.2	0.0	-0.2	0.0
CO_2 emissions[*2] (Mt)	3,497	4,123	2,462	2,720	2,698	2,757	2,794	-1.8	-0.1	0.2	0.1	0.1
GDP per capita ($2010 thousand)	5.5	6.3	4.4	7.9	8.5	12	15	1.0	1.0	3.1	2.6	2.4
Primary energy consump. per capita (toe)	3.9	4.5	2.9	3.4	3.4	3.6	3.9	-1.2	0.1	0.7	0.6	0.5
Primary energy consumption per GDP[*3]	702	709	665	427	400	315	258	-2.2	-0.9	-2.4	-2.0	-1.8
CO_2 emissions per GDP[*2, *4]	1,977	1,902	1,632	1,005	912	686	546	-2.7	-1.4	-2.8	-2.3	-2.2
CO_2 per primary energy consumption[*2, *5]	2.8	2.7	2.5	2.4	2.3	2.2	2.1	-0.6	-0.5	-0.4	-0.3	-0.4
Automobile ownership (million)	22	32	47	92	104	121	132	4.7	1.7	1.5	0.9	1.3
Automobile ownership rates[*6]	69	93	137	270	300	348	385	4.8	1.5	1.5	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

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Table A39 European Union [Reference Scenario]

Primary energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total[*1]	n.a.	1,645	1,692	1,626	1,674	1,693	1,682	100	100	100	-0.1	0.4	0.1	-0.1	0.1
Coal	n.a.	456	321	286	273	266	247	28	18	15	-2.0	-0.7	-0.3	-0.8	-0.5
Oil	n.a.	606	623	513	489	463	430	37	32	26	-0.7	-0.7	-0.5	-0.8	-0.7
Natural gas	n.a.	297	396	387	420	449	461	18	24	27	1.2	1.2	0.7	0.2	0.7
Nuclear	n.a.	207	246	229	223	204	205	13	14	12	0.4	-0.4	-0.9	0.1	-0.4
Hydro	n.a.	25	31	32	32	33	33	1.5	2.0	2.0	1.1	0.3	0.2	0.0	0.1
Geothermal	n.a.	3.2	4.6	5.9	7.2	8.2	9.2	0.2	0.4	0.5	2.7	2.9	1.3	1.1	1.6
Solar, wind, etc.	n.a.	0.3	2.4	31	41	53	64	0.0	1.9	3.8	23.2	4.2	2.7	1.8	2.7
Biomass and waste	n.a.	47	66	140	186	213	230	2.8	8.6	14	4.9	4.1	1.4	0.8	1.8

Final energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	n.a.	1,130	1,176	1,139	1,176	1,190	1,179	100	100	100	0.0	0.5	0.1	-0.1	0.1
Industry	n.a.	343	308	258	270	274	273	30	23	23	-1.2	0.7	0.2	-0.1	0.2
Transport	n.a.	259	304	303	300	286	263	23	27	22	0.7	-0.1	-0.5	-0.8	-0.5
Buildings, etc.	n.a.	429	453	478	494	513	523	38	42	44	0.5	0.5	0.4	0.2	0.3
Non-energy use	n.a.	99	111	100	111	117	120	8.7	8.8	10	0.1	1.6	0.5	0.2	0.7
Coal	n.a.	122	52	38	37	34	31	11	3.4	2.6	-4.9	-0.4	-0.9	-1.0	-0.8
Oil	n.a.	503	540	463	444	422	392	45	41	33	-0.4	-0.6	-0.5	-0.7	-0.6
Natural gas	n.a.	226	272	266	280	294	299	20	23	25	0.7	0.8	0.5	0.2	0.4
Electricity	n.a.	186	218	238	259	280	296	16	21	25	1.1	1.2	0.8	0.5	0.8
Heat	n.a.	54	45	48	49	50	50	4.8	4.2	4.2	-0.5	0.4	0.1	0.0	0.1
Hydrogen	n.a.	-	-	-	n.a.	n.a.	n.a.	-	-	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Renewables	n.a.	39	49	85	107	110	111	3.5	7.5	9.4	3.5	3.3	0.3	0.1	1.0

Electricity generation

	(TWh)							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	n.a.	2,576	3,005	3,230	3,511	3,806	4,041	100	100	100	1.0	1.2	0.8	0.6	0.8
Coal	n.a.	1,050	968	905	883	909	876	41	28	22	-0.6	-0.3	0.3	-0.4	-0.1
Oil	n.a.	224	181	61	46	32	23	8.7	1.9	0.6	-5.5	-4.0	-3.7	-3.0	-3.5
Natural gas	n.a.	193	480	507	617	724	793	7.5	16	20	4.3	2.8	1.6	0.9	1.7
Nuclear	n.a.	795	945	877	854	782	788	31	27	19	0.4	-0.4	-0.9	0.1	-0.4
Hydro	n.a.	290	356	371	378	384	384	11	11	9.5	1.1	0.3	0.2	0.0	0.1
Geothermal	n.a.	3.2	4.8	5.9	7.4	8.4	9.3	0.1	0.2	0.2	2.7	3.1	1.3	1.1	1.7
Solar, wind, etc.	n.a.	1.3	24	324	457	602	728	0.1	10	18	27.1	5.0	2.8	1.9	3.0
Biomass and waste	n.a.	20	46	178	269	363	439	0.8	5.5	11	10.1	6.1	3.1	1.9	3.4

Energy and economic indicators

								CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
GDP ($2010 billion)	n.a.	11,862	14,721	17,159	19,411	22,767	25,759	1.6	1.8	1.6	1.2	1.5
Population (million)	n.a.	478	488	507	516	523	526	0.3	0.3	0.1	0.0	0.1
CO_2 emissions[*2] (Mt)	n.a.	4,068	3,783	3,320	3,239	3,184	3,023	-0.9	-0.4	-0.2	-0.5	-0.3
GDP per capita ($2010 thousand)	n.a.	25	30	34	38	44	49	1.4	1.5	1.5	1.2	1.4
Primary energy consump. per capita (toe)	n.a.	3.4	3.5	3.2	3.2	3.2	3.2	-0.3	0.2	0.0	-0.1	0.0
Primary energy consumption per GDP[*3]	n.a.	139	115	95	86	74	65	-1.6	-1.3	-1.5	-1.3	-1.4
CO_2 emissions per GDP[*2, *4]	n.a.	343	257	193	167	140	117	-2.5	-2.1	-1.8	-1.7	-1.8
CO_2 per primary energy consumption[*2, *5]	n.a.	2.5	2.2	2.0	1.9	1.9	1.8	-0.8	-0.8	-0.3	-0.5	-0.5
Automobile ownership (million)	n.a.	177	235	294	319	345	358	2.2	1.2	0.8	0.4	0.7
Automobile ownership rates[*6]	n.a.	371	482	580	619	660	681	2.0	0.9	0.6	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

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Table A40 Africa [Reference Scenario]

Primary energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total[*1]	272	391	494	747	906	1,134	1,368	100	100	100	2.9	2.8	2.3	1.9	2.3
Coal	52	74	90	104	126	144	167	19	14	12	1.5	2.7	1.4	1.5	1.8
Oil	61	86	98	168	207	248	284	22	23	21	2.9	3.0	1.8	1.4	2.0
Natural gas	12	30	47	100	133	192	260	7.6	13	19	5.4	4.1	3.8	3.1	3.6
Nuclear	-	2.2	3.4	3.7	3.7	7.9	8.2	0.6	0.5	0.6	2.3	0.1	7.9	0.3	3.0
Hydro	4.1	4.8	6.4	10	11	12	13	1.2	1.3	0.9	3.2	0.9	0.9	0.8	0.8
Geothermal	-	0.3	0.4	1.7	5.1	7.4	8.3	0.1	0.2	0.6	8.3	16.6	3.8	1.1	6.0
Solar, wind, etc.	-	0.0	0.0	0.5	1.4	2.5	5.0	0.0	0.1	0.4	34.9	16.6	5.6	7.3	9.0
Biomass and waste	142	194	248	358	419	520	622	50	48	45	2.7	2.3	2.2	1.8	2.1

Final energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	218	292	370	555	673	846	1,028	100	100	100	2.8	2.8	2.3	2.0	2.3
Industry	46	55	58	85	107	142	183	19	15	18	1.9	3.4	2.9	2.5	2.9
Transport	27	38	54	97	121	145	164	13	17	16	4.2	3.3	1.8	1.2	2.0
Buildings, etc.	139	188	243	354	421	530	647	64	64	63	2.8	2.5	2.3	2.0	2.3
Non-energy use	5.4	11	15	19	24	29	35	3.8	3.5	3.4	2.4	3.0	2.0	1.8	2.2
Coal	22	20	19	22	28	35	42	6.7	3.9	4.1	0.4	3.5	2.3	2.0	2.5
Oil	54	71	89	148	186	227	264	24	27	26	3.3	3.4	2.0	1.5	2.2
Natural gas	2.8	8.6	14	32	38	51	66	2.9	5.8	6.4	5.9	2.5	2.9	2.7	2.7
Electricity	14	22	31	51	66	91	121	7.6	9.2	12	3.7	3.7	3.2	2.9	3.2
Heat	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Hydrogen	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Renewables	126	171	217	302	355	442	535	59	54	52	2.5	2.3	2.2	1.9	2.1

Electricity generation

	(TWh)							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	184	316	442	732	933	1,271	1,678	100	100	100	3.7	3.5	3.1	2.8	3.1
Coal	100	165	209	258	315	379	466	52	35	28	2.0	2.9	1.9	2.1	2.2
Oil	22	41	51	73	75	77	79	13	10.0	4.7	2.6	0.4	0.2	0.2	0.3
Natural gas	14	45	92	263	382	611	886	14	36	53	8.0	5.5	4.8	3.8	4.6
Nuclear	-	8.4	13	14	14	30	31	2.7	1.9	1.9	2.3	0.1	7.9	0.3	3.0
Hydro	47	56	75	116	124	135	146	18	16	8.7	3.2	0.9	0.9	0.8	0.8
Geothermal	-	0.3	0.4	2.0	5.9	8.7	9.7	0.1	0.3	0.6	8.3	16.6	3.8	1.1	6.0
Solar, wind, etc.	-	-	0.2	4.2	15	27	57	-	0.6	3.4	n.a.	20.7	5.8	7.6	10.2
Biomass and waste	0.2	0.5	1.1	1.3	2.0	2.6	3.5	0.1	0.2	0.2	4.5	6.9	2.7	2.8	3.8

Energy and economic indicators

								CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
GDP ($2010 billion)	730	886	1,145	2,117	2,924	4,566	6,928	3.9	4.7	4.6	4.3	4.5
Population (million)	476	627	806	1,109	1,318	1,652	2,030	2.5	2.5	2.3	2.1	2.3
CO_2 emissions[*2] (Mt)	403	593	718	1,108	1,377	1,702	2,050	2.8	3.2	2.1	1.9	2.3
GDP per capita ($2010 thousand)	1.5	1.4	1.4	1.9	2.2	2.8	3.4	1.3	2.2	2.2	2.1	2.2
Primary energy consump. per capita (toe)	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.3	0.3	0.0	-0.2	0.0
Primary energy consumption per GDP[*3]	372	441	432	353	310	248	198	-1.0	-1.8	-2.2	-2.3	-2.1
CO_2 emissions per GDP[*2, *4]	552	669	627	523	471	373	296	-1.1	-1.5	-2.3	-2.3	-2.1
CO_2 per primary energy consumption[*2, *5]	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-0.1	0.3	-0.1	0.0	0.0
Automobile ownership (million)	9.8	14	20	35	49	70	95	4.0	4.7	3.7	3.1	3.7
Automobile ownership rates[*6]	21	23	24	32	37	42	47	1.4	2.1	1.4	1.0	1.4

*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

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Table A41 Middle East [Reference Scenario]

Primary energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total[*1]	121	222	374	713	837	1,006	1,160	100	100	100	5.2	2.3	1.9	1.4	1.8
Coal	1.2	3.0	8.1	10	12	16	21	1.3	1.4	1.8	5.4	2.9	2.8	2.6	2.7
Oil	90	146	217	342	393	455	509	66	48	44	3.8	2.0	1.5	1.1	1.5
Natural gas	29	72	148	356	422	510	593	32	50	51	7.2	2.5	1.9	1.5	1.9
Nuclear	-	-	-	1.4	4.4	19	29	-	0.2	2.5	n.a.	17.6	15.9	4.4	11.9
Hydro	0.8	1.0	0.7	2.2	2.0	2.0	2.0	0.5	0.3	0.2	3.3	-1.0	0.0	0.0	-0.2
Geothermal	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Solar, wind, etc.	-	0.4	0.7	1.3	2.2	3.4	5.0	0.2	0.2	0.4	5.2	7.2	4.7	4.0	5.0
Biomass and waste	0.3	0.4	0.4	0.9	1.0	1.1	1.2	0.2	0.1	0.1	3.1	1.3	0.9	0.8	0.9

Final energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	84	157	255	467	558	685	801	100	100	100	4.9	2.6	2.1	1.6	2.0
Industry	30	47	73	150	180	231	277	30	32	35	5.2	2.6	2.5	1.8	2.3
Transport	26	50	74	135	155	189	216	32	29	27	4.4	2.1	1.9	1.4	1.8
Buildings, etc.	22	40	76	122	144	175	207	26	26	26	4.9	2.4	1.9	1.7	2.0
Non-energy use	5.6	20	32	60	78	91	101	12	13	13	5.0	3.9	1.6	1.0	2.0
Coal	0.3	0.2	0.5	2.2	3.0	4.2	5.2	0.1	0.5	0.7	11.3	4.7	3.3	2.2	3.3
Oil	67	108	154	229	265	318	365	69	49	45	3.3	2.1	1.8	1.4	1.7
Natural gas	9.8	31	68	162	196	239	274	20	35	34	7.4	2.8	2.0	1.4	2.0
Electricity	6.5	17	33	72	90	121	153	11	15	19	6.4	3.3	2.9	2.4	2.8
Heat	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Hydrogen	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Renewables	0.2	0.7	1.0	2.1	2.6	3.4	4.3	0.5	0.4	0.5	4.5	3.3	2.7	2.5	2.8

Electricity generation

	(TWh)							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	95	244	472	1,012	1,262	1,671	2,115	100	100	100	6.4	3.2	2.8	2.4	2.8
Coal	0.1	11	30	33	40	52	70	4.3	3.2	3.3	5.0	2.8	2.9	2.9	2.9
Oil	47	108	188	318	380	464	541	44	31	26	4.8	2.6	2.0	1.5	2.0
Natural gas	39	114	246	630	796	1,046	1,348	47	62	64	7.7	3.4	2.8	2.6	2.9
Nuclear	-	-	-	5.4	17	74	113	-	0.5	5.3	n.a.	17.6	15.9	4.4	11.9
Hydro	9.7	12	8.0	25	24	24	24	4.9	2.5	1.1	3.3	-1.0	0.0	0.0	-0.2
Geothermal	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Solar, wind, etc.	-	0.0	0.0	0.7	5.0	11	19	0.0	0.1	0.9	33.0	32.1	8.3	5.8	13.1
Biomass and waste	-	-	-	0.1	0.2	0.3	0.4	-	0.0	0.0	n.a.	9.4	4.8	2.8	5.2

Energy and economic indicators

								CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
GDP ($2010 billion)	821	902	1,393	2,419	2,984	4,054	5,153	4.4	3.0	3.1	2.4	2.8
Population (million)	92	132	166	226	256	296	332	2.4	1.8	1.5	1.1	1.4
CO_2 emissions[*2] (Mt)	332	571	952	1,756	2,028	2,402	2,754	5.0	2.1	1.7	1.4	1.7
GDP per capita ($2010 thousand)	8.9	6.9	8.4	11	12	14	16	2.0	1.2	1.6	1.3	1.4
Primary energy consump. per capita (toe)	1.3	1.7	2.2	3.2	3.3	3.4	3.5	2.8	0.5	0.4	0.3	0.4
Primary energy consumption per GDP[*3]	148	246	269	295	280	248	225	0.8	-0.7	-1.2	-1.0	-1.0
CO_2 emissions per GDP[*2, *4]	405	634	683	726	680	593	534	0.6	-0.9	-1.4	-1.0	-1.1
CO_2 per primary energy consumption[*2, *5]	2.7	2.6	2.5	2.5	2.4	2.4	2.4	-0.2	-0.2	-0.2	-0.1	-0.1
Automobile ownership (million)	5.8	10	14	37	45	62	77	5.8	2.9	3.1	2.2	2.7
Automobile ownership rates[*6]	63	78	85	164	177	208	232	3.3	1.1	1.6	1.1	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

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Table A42 Oceania [Reference Scenario]

Primary energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total[*1]	79	99	125	149	162	169	172	100	100	100	1.8	1.2	0.4	0.2	0.5
Coal	28	36	49	47	48	47	45	37	32	26	1.1	0.3	-0.2	-0.6	-0.2
Oil	34	35	40	52	57	61	63	35	35	37	1.8	1.3	0.7	0.3	0.7
Natural gas	8.3	19	24	34	36	36	37	19	23	21	2.6	0.8	0.2	0.1	0.3
Nuclear	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Hydro	2.7	3.2	3.5	3.5	3.6	4.1	4.4	3.2	2.4	2.6	0.4	0.3	1.2	0.9	0.8
Geothermal	1.0	1.5	1.9	4.2	7.3	7.6	8.0	1.5	2.9	4.6	4.7	8.0	0.4	0.5	2.4
Solar, wind, etc.	0.0	0.1	0.1	1.5	2.8	4.8	7.2	0.1	1.0	4.2	11.3	9.8	5.4	4.2	6.1
Biomass and waste	4.1	4.7	6.1	6.2	7.0	7.6	8.1	4.8	4.2	4.7	1.2	1.8	0.9	0.6	1.0

Final energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	54	66	83	94	105	114	120	100	100	100	1.5	1.6	0.8	0.5	0.9
Industry	20	23	28	29	33	35	36	35	31	30	1.1	1.5	0.6	0.3	0.7
Transport	19	24	30	36	39	42	44	36	38	36	1.7	1.2	0.7	0.4	0.7
Buildings, etc.	11	15	19	23	26	29	32	22	25	27	1.9	1.8	1.2	0.9	1.2
Non-energy use	3.1	4.6	6.1	5.9	7.4	8.1	8.4	6.9	6.3	7.0	1.1	3.2	1.0	0.4	1.3
Coal	5.3	5.2	4.7	3.9	4.9	5.5	5.9	7.9	4.2	4.9	-1.2	3.3	1.1	0.7	1.5
Oil	31	33	40	47	52	57	59	50	50	49	1.6	1.4	0.8	0.4	0.8
Natural gas	5.4	10	14	16	17	18	18	16	17	15	1.8	1.3	0.5	0.2	0.6
Electricity	8.5	14	18	21	24	27	29	20	22	24	1.9	1.7	1.2	1.0	1.2
Heat	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Hydrogen	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Renewables	4.0	4.1	5.6	6.1	6.8	7.2	7.4	6.2	6.5	6.2	1.7	1.5	0.7	0.3	0.8

Electricity generation

	(TWh)							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	118	187	249	292	329	370	408	100	100	100	2.0	1.7	1.2	1.0	1.2
Coal	70	122	176	164	173	179	177	65	56	44	1.3	0.8	0.4	-0.1	0.3
Oil	5.2	3.6	1.8	3.4	2.8	2.6	1.8	1.9	1.2	0.4	-0.2	-2.7	-1.0	-3.6	-2.4
Natural gas	8.7	20	26	62	68	75	80	11	21	20	5.0	1.4	0.9	0.8	1.0
Nuclear	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Hydro	32	37	41	41	42	47	52	20	14	13	0.4	0.3	1.2	0.9	0.8
Geothermal	1.2	2.1	2.9	6.4	11	12	12	1.1	2.2	3.0	4.9	8.4	0.3	0.5	2.4
Solar, wind, etc.	-	0.1	0.3	13	28	51	79	0.0	4.5	19	25.8	11.6	6.0	4.5	6.9
Biomass and waste	0.7	1.3	1.7	2.6	3.2	4.0	4.9	0.7	0.9	1.2	3.2	3.1	2.2	2.1	2.4

Energy and economic indicators

								CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
GDP ($2010 billion)	524	719	993	1,447	1,769	2,206	2,598	3.1	2.9	2.2	1.7	2.2
Population (million)	18	20	23	28	30	33	36	1.3	1.3	1.0	0.8	1.0
CO_2 emissions[*2] (Mt)	227	281	357	410	428	437	433	1.7	0.6	0.2	-0.1	0.2
GDP per capita ($2010 thousand)	29	35	43	52	59	66	72	1.7	1.6	1.2	0.8	1.2
Primary energy consump. per capita (toe)	4.4	4.9	5.4	5.4	5.4	5.1	4.8	0.4	-0.1	-0.6	-0.6	-0.5
Primary energy consumption per GDP[*3]	150	138	126	103	91	77	66	-1.3	-1.7	-1.7	-1.4	-1.6
CO_2 emissions per GDP[*2, *4]	433	390	360	283	242	198	167	-1.4	-2.2	-2.0	-1.7	-1.9
CO_2 per primary energy consumption[*2, *5]	2.9	2.8	2.9	2.8	2.7	2.6	2.5	-0.1	-0.5	-0.2	-0.3	-0.3
Automobile ownership (million)	8.8	12	15	20	22	25	27	2.3	1.8	1.2	0.8	1.2
Automobile ownership rates[*6]	495	567	644	711	737	754	755	1.0	0.5	0.2	0.0	0.2

*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

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Table A43 OECD [Reference Scenario]

Primary energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total[*1]	4,060	4,511	5,274	5,276	5,520	5,627	5,558	100	100	100	0.7	0.6	0.2	-0.1	0.2
Coal	966	1,078	1,094	1,022	978	916	818	24	19	15	-0.2	-0.6	-0.6	-1.1	-0.8
Oil	1,938	1,861	2,103	1,874	1,848	1,803	1,692	41	36	30	0.0	-0.2	-0.2	-0.6	-0.4
Natural gas	778	843	1,156	1,365	1,477	1,612	1,662	19	26	30	2.1	1.1	0.9	0.3	0.7
Nuclear	162	451	586	511	589	560	563	10	9.7	10	0.5	2.0	-0.5	0.1	0.4
Hydro	94	102	115	122	127	132	135	2.3	2.3	2.4	0.8	0.6	0.4	0.2	0.4
Geothermal	10	27	30	32	59	77	99	0.6	0.6	1.8	0.8	9.2	2.7	2.6	4.3
Solar, wind, etc.	0.1	1.9	5.8	55	81	118	149	0.0	1.0	2.7	15.7	5.7	3.9	2.4	3.8
Biomass and waste	111	147	182	293	359	406	436	3.3	5.6	7.9	3.0	2.9	1.2	0.7	1.5

Final energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	2,937	3,099	3,631	3,631	3,783	3,867	3,819	100	100	100	0.7	0.6	0.2	-0.1	0.2
Industry	940	826	908	794	839	851	843	27	22	22	-0.2	0.8	0.1	-0.1	0.2
Transport	781	938	1,143	1,189	1,215	1,202	1,133	30	33	30	1.0	0.3	-0.1	-0.6	-0.2
Buildings, etc.	972	1,044	1,209	1,305	1,358	1,415	1,434	34	36	38	1.0	0.6	0.4	0.1	0.4
Non-energy use	243	290	370	343	371	400	409	9.3	9.5	11	0.7	1.1	0.7	0.2	0.7
Coal	259	234	140	119	122	113	101	7.6	3.3	2.6	-2.9	0.4	-0.8	-1.2	-0.6
Oil	1,570	1,586	1,840	1,705	1,700	1,669	1,571	51	47	41	0.3	0.0	-0.2	-0.6	-0.3
Natural gas	559	589	746	745	783	808	811	19	21	21	1.0	0.7	0.3	0.0	0.3
Electricity	408	550	714	800	882	968	1,018	18	22	27	1.6	1.4	0.9	0.5	0.9
Heat	36	43	50	58	61	64	65	1.4	1.6	1.7	1.3	0.8	0.3	0.2	0.4
Hydrogen	-	-	-	-	0.0	0.7	1.3	-	-	0.0	n.a.	n.a.	36.4	6.6	n.a.
Renewables	105	97	140	203	233	244	252	3.1	5.6	6.6	3.3	2.0	0.5	0.3	0.8

Electricity generation

	(TWh)							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	5,656	7,608	9,685	10,736	11,789	12,883	13,513	100	100	100	1.5	1.3	0.9	0.5	0.9
Coal	2,319	3,082	3,759	3,493	3,390	3,281	3,004	41	33	22	0.5	-0.4	-0.3	-0.9	-0.6
Oil	980	676	580	328	191	141	108	8.9	3.1	0.8	-3.1	-7.4	-3.0	-2.6	-4.0
Natural gas	618	782	1,543	2,608	3,054	3,769	4,178	10	24	31	5.4	2.3	2.1	1.0	1.8
Nuclear	621	1,729	2,249	1,962	2,259	2,149	2,162	23	18	16	0.5	2.0	-0.5	0.1	0.4
Hydro	1,093	1,182	1,341	1,413	1,476	1,535	1,569	16	13	12	0.8	0.6	0.4	0.2	0.4
Geothermal	11	29	33	46	87	113	146	0.4	0.4	1.1	2.1	9.5	2.6	2.6	4.4
Solar, wind, etc.	0.5	5.2	32	568	877	1,298	1,636	0.1	5.3	12	22.7	6.4	4.0	2.3	4.0
Biomass and waste	13	124	148	317	454	595	710	1.6	2.9	5.3	4.2	5.3	2.8	1.8	3.0

Energy and economic indicators

								CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
GDP ($2010 billion)	21,337	29,024	37,701	46,008	53,678	65,412	76,233	2.0	2.2	2.0	1.5	1.9
Population (million)	982	1,062	1,150	1,254	1,299	1,348	1,380	0.7	0.5	0.4	0.2	0.4
CO_2 emissions[*2] (Mt)	10,863	11,096	12,396	11,975	11,898	11,753	11,118	0.3	-0.1	-0.1	-0.6	-0.3
GDP per capita ($2010 thousand)	22	27	33	37	41	49	55	1.3	1.7	1.6	1.3	1.5
Primary energy consump. per capita (toe)	4.1	4.2	4.6	4.2	4.2	4.2	4.0	0.0	0.1	-0.2	-0.4	-0.2
Primary energy consumption per GDP[*3]	190	155	140	115	103	86	73	-1.3	-1.5	-1.8	-1.6	-1.7
CO_2 emissions per GDP[*2, *4]	509	382	329	260	222	180	146	-1.7	-2.3	-2.1	-2.1	-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	-0.5
Automobile ownership (million)	347	468	593	729	795	871	922	1.9	1.3	0.9	0.6	0.9
Automobile ownership rates[*6]	353	441	516	581	612	646	668	1.2	0.7	0.5	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

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Table A44 Non-OECD [Reference Scenario]

Primary energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total[*1]	2,966	4,055	4,509	7,925	9,251	11,055	12,796	100	100	100	3.0	2.2	1.8	1.5	1.8
Coal	818	1,143	1,248	2,905	3,165	3,451	3,759	28	37	29	4.1	1.2	0.9	0.9	1.0
Oil	986	1,169	1,283	1,982	2,340	2,811	3,230	29	25	25	2.3	2.4	1.9	1.4	1.8
Natural gas	454	820	911	1,536	1,873	2,462	3,044	20	19	24	2.8	2.9	2.8	2.1	2.6
Nuclear	24	74	89	135	255	421	563	1.8	1.7	4.4	2.6	9.5	5.1	3.0	5.4
Hydro	54	83	110	204	242	270	299	2.0	2.6	2.3	4.0	2.5	1.1	1.0	1.4
Geothermal	2.2	7.6	22	35	87	113	129	0.2	0.4	1.0	6.8	14.2	2.6	1.3	5.0
Solar, wind, etc.	-	0.5	2.1	40	64	102	152	0.0	0.5	1.2	21.3	6.8	4.8	4.0	5.0
Biomass and waste	630	758	843	1,084	1,221	1,420	1,612	19	14	13	1.6	1.7	1.5	1.3	1.5

Final energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	2,259	2,980	3,180	5,188	6,091	7,339	8,564	100	100	100	2.4	2.3	1.9	1.6	1.9
Industry	832	981	987	1,830	2,091	2,460	2,835	33	35	33	2.7	1.9	1.6	1.4	1.6
Transport	289	435	549	1,009	1,233	1,560	1,847	15	19	22	3.7	2.9	2.4	1.7	2.3
Buildings, etc.	1,028	1,377	1,396	1,894	2,211	2,655	3,119	46	37	36	1.4	2.2	1.8	1.6	1.9
Non-energy use	111	187	249	456	556	664	763	6.3	8.8	8.9	3.9	2.9	1.8	1.4	1.9
Coal	451	532	438	835	885	887	893	18	16	10	2.0	0.8	0.0	0.1	0.2
Oil	697	819	1,013	1,644	1,986	2,439	2,847	27	32	33	3.1	2.7	2.1	1.6	2.1
Natural gas	256	355	375	655	821	1,073	1,328	12	13	16	2.7	3.3	2.7	2.2	2.7
Electricity	178	283	377	876	1,105	1,478	1,873	9.5	17	22	5.0	3.4	2.9	2.4	2.9
Heat	85	293	198	216	238	261	274	9.8	4.2	3.2	-1.3	1.4	1.0	0.5	0.9
Hydrogen	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Renewables	593	699	779	961	1,056	1,200	1,349	23	19	16	1.4	1.4	1.3	1.2	1.3

Electricity generation

	(TWh)							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	2,628	4,218	5,741	12,571	15,625	20,663	25,996	100	100	100	4.9	3.2	2.8	2.3	2.7
Coal	817	1,342	2,243	6,120	7,037	8,798	10,684	32	49	41	6.8	2.0	2.3	2.0	2.1
Oil	678	636	625	700	757	850	924	15	5.6	3.6	0.4	1.1	1.2	0.8	1.0
Natural gas	381	979	1,210	2,467	3,284	5,046	7,027	23	20	27	4.1	4.2	4.4	3.4	4.0
Nuclear	93	283	341	516	977	1,612	2,159	6.7	4.1	8.3	2.6	9.5	5.1	3.0	5.4
Hydro	624	963	1,279	2,377	2,817	3,144	3,478	23	19	13	4.0	2.5	1.1	1.0	1.4
Geothermal	2.6	7.8	19	26	63	81	93	0.2	0.2	0.4	5.3	13.7	2.5	1.4	4.9
Solar, wind, etc.	-	0.0	3.1	221	449	759	1,143	0.0	1.8	4.4	44.8	10.7	5.4	4.2	6.3
Biomass and waste	31	7.7	21	145	240	372	488	0.2	1.2	1.9	13.6	7.5	4.5	2.7	4.6

Energy and economic indicators

								CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
GDP ($2010 billion)	6,444	8,490	11,654	24,534	33,461	52,623	76,047	4.7	4.5	4.6	3.8	4.3
Population (million)	3,453	4,209	4,943	5,860	6,386	7,071	7,688	1.4	1.2	1.0	0.8	1.0
CO_2 emissions[*2] (Mt)	7,000	9,484	10,284	19,859	22,489	26,137	29,732	3.3	1.8	1.5	1.3	1.5
GDP per capita ($2010 thousand)	1.9	2.0	2.4	4.2	5.2	7.4	9.9	3.2	3.3	3.6	2.9	3.2
Primary energy consump. per capita (toe)	0.9	1.0	0.9	1.4	1.4	1.6	1.7	1.5	1.0	0.8	0.6	0.8
Primary energy consumption per GDP[*3]	460	478	387	323	276	210	168	-1.7	-2.2	-2.7	-2.2	-2.4
CO_2 emissions per GDP[*2, *4]	1,086	1,117	882	809	672	497	391	-1.4	-2.6	-3.0	-2.4	-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	-0.3	-0.2	-0.3
Automobile ownership (million)	69	109	173	467	654	931	1,220	6.5	4.9	3.6	2.7	3.6
Automobile ownership rates[*6]	20	26	35	80	102	132	159	5.0	3.7	2.5	1.9	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

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Table A45 World [Advanced Technologies Scenario]

Primary energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total[*1]	7,205	8,768	10,057	13,555	14,615	15,702	16,396	100	100	100	1.9	1.1	0.7	0.4	0.7
Coal	1,783	2,221	2,343	3,928	3,854	3,503	3,105	25	29	19	2.5	-0.3	-0.9	-1.2	-0.9
Oil	3,102	3,232	3,660	4,210	4,402	4,583	4,658	37	31	28	1.2	0.6	0.4	0.2	0.4
Natural gas	1,232	1,663	2,067	2,902	3,166	3,484	3,665	19	21	22	2.4	1.3	1.0	0.5	0.9
Nuclear	186	526	676	646	883	1,270	1,597	6.0	4.8	9.7	0.9	4.6	3.7	2.3	3.4
Hydro	148	184	225	326	375	410	443	2.1	2.4	2.7	2.5	2.0	0.9	0.8	1.1
Geothermal	12	34	52	66	158	293	395	0.4	0.5	2.4	2.9	13.3	6.3	3.0	6.8
Solar, wind, etc.	0.1	2.4	7.9	95	176	305	462	0.0	0.7	2.8	17.3	9.2	5.6	4.2	6.0
Biomass and waste	741	905	1,025	1,377	1,593	1,846	2,061	10	10	13	1.8	2.1	1.5	1.1	1.5

Final energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	5,375	6,281	7,085	9,173	9,942	10,740	11,313	100	100	100	1.7	1.2	0.8	0.5	0.8
Industry	1,773	1,807	1,895	2,623	2,829	3,030	3,201	29	29	28	1.6	1.1	0.7	0.6	0.7
Transport	1,248	1,576	1,965	2,552	2,795	3,037	3,171	25	28	28	2.1	1.3	0.8	0.4	0.8
Buildings, etc.	2,000	2,421	2,605	3,199	3,391	3,609	3,771	39	35	33	1.2	0.8	0.6	0.4	0.6
Non-energy use	354	477	619	799	927	1,064	1,171	7.6	8.7	10	2.3	2.1	1.4	1.0	1.4
Coal	709	766	578	954	977	908	839	12	10	7.4	1.0	0.3	-0.7	-0.8	-0.5
Oil	2,446	2,606	3,127	3,704	3,924	4,129	4,225	41	40	37	1.5	0.8	0.5	0.2	0.5
Natural gas	814	944	1,121	1,400	1,586	1,769	1,915	15	15	17	1.7	1.8	1.1	0.8	1.2
Electricity	586	834	1,091	1,677	1,902	2,207	2,450	13	18	22	3.1	1.8	1.5	1.1	1.4
Heat	121	335	247	274	284	288	279	5.3	3.0	2.5	-0.9	0.5	0.1	-0.3	0.1
Hydrogen	-	-	-	-	0.1	7.3	15	-	-	0.1	n.a.	n.a.	51.3	7.3	n.a.
Renewables	698	796	920	1,164	1,269	1,432	1,590	13	13	14	1.7	1.2	1.2	1.1	1.2

Electricity generation

	(TWh)							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	8,283	11,826	15,426	23,307	26,292	30,411	33,671	100	100	100	3.0	1.7	1.5	1.0	1.4
Coal	3,137	4,424	6,002	9,613	9,442	9,011	8,205	37	41	24	3.4	-0.3	-0.5	-0.9	-0.6
Oil	1,659	1,311	1,205	1,028	871	830	814	11	4.4	2.4	-1.1	-2.3	-0.5	-0.2	-0.9
Natural gas	999	1,760	2,752	5,075	5,573	6,484	6,999	15	22	21	4.7	1.3	1.5	0.8	1.2
Nuclear	713	2,013	2,591	2,478	3,386	4,870	6,127	17	11	18	0.9	4.6	3.7	2.3	3.4
Hydro	1,717	2,145	2,620	3,790	4,355	4,769	5,150	18	16	15	2.5	2.0	0.9	0.8	1.1
Geothermal	14	36	52	72	164	311	419	0.3	0.3	1.2	3.0	12.6	6.6	3.0	6.8
Solar, wind, etc.	0.5	5.2	35	789	1,697	3,059	4,685	0.0	3.4	14	24.4	11.6	6.1	4.4	6.8
Biomass and waste	44	132	170	461	802	1,074	1,272	1.1	2.0	3.8	5.6	8.2	3.0	1.7	3.8

Energy and economic indicators

								CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
GDP ($2010 billion)	27,780	37,514	49,355	70,542	87,153	118,071	152,341	2.8	3.1	3.1	2.6	2.9
Population (million)	4,435	5,271	6,093	7,114	7,685	8,420	9,068	1.3	1.1	0.9	0.7	0.9
CO_2 emissions[*2] (Mt)	18,411	21,200	23,520	32,920	33,470	32,986	31,762	1.9	0.2	-0.1	-0.4	-0.1
GDP per capita ($2010 thousand)	6.3	7.1	8.1	9.9	11	14	17	1.5	1.9	2.1	1.8	2.0
Primary energy consump. per capita (toe)	1.6	1.7	1.7	1.9	1.9	1.9	1.8	0.6	0.0	-0.2	-0.3	-0.2
Primary energy consumption per GDP[*3]	259	234	204	192	168	133	108	-0.8	-1.9	-2.3	-2.1	-2.1
CO_2 emissions per GDP[*2, *4]	663	565	477	467	384	279	208	-0.8	-2.7	-3.1	-2.9	-2.9
CO_2 per primary energy consumption[*2, *5]	2.6	2.4	2.3	2.4	2.3	2.1	1.9	0.0	-0.8	-0.9	-0.8	-0.8
Automobile ownership (million)	416	577	767	1,195	1,449	1,800	2,138	3.2	2.8	2.2	1.7	2.2
Automobile ownership rates[*6]	94	109	126	168	189	214	236	1.9	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

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Table A46 Asia [Advanced Technologies Scenario]

Primary energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total[*1]	1,440	2,110	2,920	5,409	6,213	6,961	7,534	100	100	100	4.2	2.0	1.1	0.8	1.2
Coal	466	786	1,063	2,747	2,832	2,692	2,460	37	51	33	5.6	0.4	-0.5	-0.9	-0.4
Oil	477	618	917	1,254	1,434	1,623	1,778	29	23	24	3.1	1.9	1.3	0.9	1.3
Natural gas	51	116	232	532	684	943	1,149	5.5	9.8	15	6.9	3.7	3.3	2.0	2.9
Nuclear	25	77	132	89	292	520	760	3.6	1.6	10	0.6	18.6	5.9	3.9	8.3
Hydro	20	32	41	113	152	173	195	1.5	2.1	2.6	5.7	4.2	1.3	1.2	2.0
Geothermal	2.6	8.2	23	31	83	148	199	0.4	0.6	2.6	6.0	14.8	6.0	3.0	7.1
Solar, wind, etc.	-	1.2	2.1	38	74	135	206	0.1	0.7	2.7	16.1	9.8	6.2	4.3	6.4
Biomass and waste	397	472	510	602	659	721	781	22	11	10	1.1	1.3	0.9	0.8	1.0

Final energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	1,136	1,572	2,039	3,476	3,979	4,490	4,940	100	100	100	3.5	1.9	1.2	1.0	1.3
Industry	390	518	672	1,367	1,524	1,622	1,715	33	39	35	4.3	1.6	0.6	0.6	0.8
Transport	126	190	325	581	701	853	987	12	17	20	5.0	2.7	2.0	1.5	2.0
Buildings, etc.	567	748	852	1,188	1,346	1,526	1,676	48	34	34	2.0	1.8	1.3	0.9	1.3
Non-energy use	54	116	190	340	408	489	564	7.4	9.8	11	4.8	2.6	1.8	1.4	1.9
Coal	308	435	408	795	817	755	693	28	23	14	2.7	0.4	-0.8	-0.9	-0.5
Oil	327	464	742	1,102	1,301	1,491	1,646	30	32	33	3.8	2.4	1.4	1.0	1.5
Natural gas	21	47	89	248	329	464	599	3.0	7.1	12	7.5	4.1	3.5	2.6	3.3
Electricity	88	156	278	686	855	1,065	1,236	9.9	20	25	6.7	3.2	2.2	1.5	2.2
Heat	7.5	14	30	82	93	97	96	0.9	2.4	1.9	7.9	1.8	0.4	-0.1	0.6
Hydrogen	-	-	-	-	0.1	0.8	2.7	-	-	0.1	n.a.	n.a.	28.5	13.1	n.a.
Renewables	386	456	493	562	584	619	668	29	16	14	0.9	0.6	0.6	0.8	0.6

Electricity generation

	(TWh)							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	1,196	2,215	3,974	9,481	11,701	14,446	16,649	100	100	100	6.5	3.1	2.1	1.4	2.1
Coal	298	862	1,990	5,939	6,292	6,582	6,385	39	63	38	8.8	0.8	0.5	-0.3	0.3
Oil	476	422	386	306	199	176	156	19	3.2	0.9	-1.4	-6.0	-1.2	-1.2	-2.5
Natural gas	90	247	567	1,206	1,444	2,072	2,571	11	13	15	7.1	2.6	3.7	2.2	2.8
Nuclear	97	294	505	340	1,122	1,995	2,916	13	3.6	18	0.6	18.6	5.9	3.9	8.3
Hydro	232	370	481	1,319	1,763	2,014	2,266	17	14	14	5.7	4.2	1.3	1.2	2.0
Geothermal	3.0	8.4	20	22	54	97	130	0.4	0.2	0.8	4.2	14.0	5.9	3.0	6.8
Solar, wind, etc.	-	0.0	3.0	219	591	1,173	1,816	0.0	2.3	11	44.7	15.2	7.1	4.5	8.1
Biomass and waste	0.0	11	22	129	236	337	409	0.5	1.4	2.5	11.1	8.9	3.7	1.9	4.4

Energy and economic indicators

								CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
GDP ($2010 billion)	4,333	7,400	10,696	19,855	27,926	43,063	61,421	4.4	5.0	4.4	3.6	4.3
Population (million)	2,442	2,931	3,401	3,890	4,137	4,406	4,579	1.2	0.9	0.6	0.4	0.6
CO_2 emissions[*2] (Mt)	3,269	4,920	6,989	14,936	15,977	16,376	16,195	4.9	1.0	0.2	-0.1	0.3
GDP per capita ($2010 thousand)	1.8	2.5	3.1	5.1	6.7	9.8	13	3.1	4.1	3.8	3.2	3.6
Primary energy consump. per capita (toe)	0.6	0.7	0.9	1.4	1.5	1.6	1.6	2.9	1.1	0.5	0.4	0.6
Primary energy consumption per GDP[*3]	332	285	273	272	222	162	123	-0.2	-2.9	-3.1	-2.7	-2.9
CO_2 emissions per GDP[*2, *4]	754	665	653	752	572	380	264	0.5	-3.8	-4.0	-3.6	-3.8
CO_2 per primary energy consumption[*2, *5]	2.3	2.3	2.4	2.8	2.6	2.4	2.1	0.7	-1.0	-0.9	-0.9	-0.9
Automobile ownership (million)	48	86	140	322	463	650	861	5.9	5.3	3.4	2.8	3.7
Automobile ownership rates[*6]	19	29	41	83	112	148	188	4.6	4.4	2.8	2.4	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

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Table A47 China [Advanced Technologies Scenario]

Primary energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total[*1]	598	871	1,161	3,022	3,367	3,547	3,533	100	100	100	5.6	1.6	0.5	0.0	0.6
Coal	313	528	691	2,045	2,038	1,834	1,515	61	68	43	6.1	0.0	-1.0	-1.9	-1.1
Oil	89	119	221	478	572	638	678	14	16	19	6.2	2.6	1.1	0.6	1.3
Natural gas	12	13	21	140	253	400	491	1.5	4.6	14	11.0	8.8	4.7	2.1	4.8
Nuclear	-	-	4.4	29	117	236	355	-	1.0	10	n.a.	22.1	7.2	4.2	9.7
Hydro	5.0	11	19	78	107	115	122	1.3	2.6	3.5	8.9	4.6	0.7	0.6	1.7
Geothermal	-	-	1.7	4.5	6.4	8.7	10	-	0.1	0.3	n.a.	5.1	3.2	1.6	3.1
Solar, wind, etc.	-	0.0	1.0	32	56	93	136	0.0	1.1	3.9	34.9	8.2	5.2	3.9	5.5
Biomass and waste	180	200	203	216	219	224	227	23	7.1	6.4	0.3	0.2	0.2	0.1	0.2

Final energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	494	664	815	1,814	2,046	2,202	2,277	100	100	100	4.5	1.7	0.7	0.3	0.8
Industry	188	244	329	878	933	907	867	37	48	38	5.7	0.9	-0.3	-0.4	0.0
Transport	24	33	88	245	309	378	433	5.0	14	19	9.1	3.3	2.0	1.4	2.1
Buildings, etc.	272	344	337	548	627	709	740	52	30	33	2.0	2.0	1.2	0.4	1.1
Non-energy use	10	43	62	143	176	208	236	6.5	7.9	10	5.4	3.0	1.7	1.3	1.9
Coal	220	318	304	603	594	509	425	48	33	19	2.8	-0.2	-1.5	-1.8	-1.3
Oil	59	85	181	435	526	590	628	13	24	28	7.4	2.8	1.2	0.6	1.4
Natural gas	6.4	8.9	12	94	145	228	308	1.3	5.2	14	10.8	6.4	4.6	3.0	4.5
Electricity	21	39	89	386	484	575	610	5.9	21	27	10.5	3.3	1.7	0.6	1.7
Heat	7.4	13	25	76	85	87	83	2.0	4.2	3.7	7.9	1.6	0.2	-0.4	0.3
Hydrogen	-	-	-	-	-	-	1.2	-	-	0.1	n.a.	n.a.	n.a.	n.a.	n.a.
Renewables	180	200	204	220	212	213	222	30	12	9.7	0.4	-0.5	0.0	0.4	0.0

Electricity generation

	(TWh)							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	301	621	1,356	5,422	6,681	7,848	8,224	100	100	100	9.9	3.0	1.6	0.5	1.6
Coal	159	441	1,061	4,090	4,189	4,223	3,636	71	75	44	10.2	0.3	0.1	-1.5	-0.4
Oil	82	50	47	6.6	6.5	6.3	6.2	8.1	0.1	0.1	-8.5	-0.3	-0.2	-0.2	-0.2
Natural gas	0.7	2.8	5.8	99	301	534	603	0.4	1.8	7.3	16.9	17.2	5.9	1.2	6.9
Nuclear	-	-	17	112	451	906	1,362	-	2.1	17	n.a.	22.1	7.2	4.2	9.7
Hydro	58	127	222	909	1,247	1,337	1,418	20	17	17	8.9	4.6	0.7	0.6	1.7
Geothermal	-	0.1	0.1	0.1	0.3	0.4	0.5	0.0	0.0	0.0	2.9	15.0	3.7	2.6	6.1
Solar, wind, etc.	-	0.0	0.6	155	390	697	1,019	0.0	2.9	12	51.5	14.1	6.0	3.9	7.2
Biomass and waste	-	-	2.4	50	96	144	179	-	0.9	2.2	n.a.	9.8	4.1	2.1	4.8

Energy and economic indicators

								CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
GDP ($2010 billion)	334	811	2,189	7,513	11,641	19,762	29,180	10.2	6.5	5.4	4.0	5.2
Population (million)	981	1,135	1,263	1,357	1,398	1,410	1,389	0.8	0.4	0.1	-0.1	0.1
CO_2 emissions[*2] (Mt)	1,505	2,339	3,258	9,437	9,857	9,502	8,493	6.3	0.6	-0.4	-1.1	-0.4
GDP per capita ($2010 thousand)	0.3	0.7	1.7	5.5	8.3	14	21	9.3	6.0	5.3	4.1	5.1
Primary energy consump. per capita (toe)	0.6	0.8	0.9	2.2	2.4	2.5	2.5	4.7	1.1	0.4	0.1	0.5
Primary energy consumption per GDP[*3]	1,790	1,073	530	402	289	179	121	-4.2	-4.6	-4.7	-3.9	-4.3
CO_2 emissions per GDP[*2, *4]	4,505	2,882	1,489	1,256	847	481	291	-3.5	-5.5	-5.5	-4.9	-5.3
CO_2 per primary energy consumption[*2, *5]	2.5	2.7	2.8	3.1	2.9	2.7	2.4	0.7	-0.9	-0.9	-1.1	-1.0
Automobile ownership (million)	1.2	5.3	16	127	217	309	398	14.8	8.0	3.6	2.6	4.3
Automobile ownership rates[*6]	1.2	4.7	12	93	155	219	286	13.9	7.5	3.5	2.7	4.2

*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

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Table A48 India [Advanced Technologies Scenario]

Primary energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total[*1]	200	307	441	775	987	1,259	1,582	100	100	100	4.1	3.5	2.5	2.3	2.7
Coal	45	94	146	341	416	445	513	31	44	32	5.8	2.9	0.7	1.4	1.5
Oil	33	61	112	176	241	324	396	20	23	25	4.7	4.6	3.0	2.0	3.0
Natural gas	1.3	11	23	44	68	112	174	3.4	5.7	11	6.4	6.3	5.1	4.5	5.2
Nuclear	0.8	1.6	4.4	8.9	21	90	154	0.5	1.2	9.7	7.8	13.1	15.6	5.5	11.1
Hydro	4.0	6.2	6.4	12	16	23	32	2.0	1.6	2.0	3.0	3.8	3.8	3.4	3.6
Geothermal	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Solar, wind, etc.	-	0.0	0.2	3.6	12	30	49	0.0	0.5	3.1	29.0	19.0	9.5	4.9	10.1
Biomass and waste	116	133	149	188	212	233	264	44	24	17	1.5	1.7	1.0	1.2	1.3

Final energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	174	243	315	528	667	842	1,049	100	100	100	3.4	3.4	2.4	2.2	2.6
Industry	42	67	83	179	228	288	359	27	34	34	4.4	3.5	2.4	2.2	2.6
Transport	17	21	32	75	107	152	189	8.6	14	18	5.7	5.2	3.6	2.2	3.5
Buildings, etc.	110	142	173	238	283	332	405	59	45	39	2.3	2.5	1.6	2.0	2.0
Non-energy use	5.7	13	27	36	48	70	96	5.5	6.9	9.1	4.5	4.2	3.7	3.2	3.6
Coal	25	39	35	103	122	133	150	16	20	14	4.3	2.4	0.8	1.2	1.4
Oil	27	50	94	150	214	295	366	21	28	35	4.9	5.2	3.3	2.2	3.4
Natural gas	0.7	5.6	9.7	27	35	51	71	2.3	5.0	6.8	7.0	4.2	3.7	3.4	3.7
Electricity	7.8	18	32	77	112	172	250	7.6	14	24	6.4	5.5	4.4	3.8	4.5
Heat	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Hydrogen	-	-	-	-	0.0	0.1	0.3	-	-	0.0	n.a.	n.a.	50.1	9.8	n.a.
Renewables	114	130	144	172	184	192	212	54	32	20	1.2	1.0	0.4	1.0	0.8

Electricity generation

	(TWh)							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	120	293	570	1,193	1,718	2,591	3,715	100	100	100	6.3	5.3	4.2	3.7	4.3
Coal	61	192	390	869	1,114	1,248	1,535	65	73	41	6.8	3.6	1.1	2.1	2.1
Oil	8.8	13	29	23	23	21	18	4.5	1.9	0.5	2.4	0.0	-1.0	-1.5	-0.9
Natural gas	0.6	10.0	56	65	134	290	545	3.4	5.5	15	8.5	10.9	8.0	6.5	8.2
Nuclear	3.0	6.1	17	34	81	347	591	2.1	2.9	16	7.8	13.1	15.6	5.5	11.1
Hydro	47	72	74	142	184	267	373	24	12	10	3.0	3.8	3.8	3.4	3.6
Geothermal	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Solar, wind, etc.	-	0.0	1.7	37	138	349	569	0.0	3.1	15	35.9	20.7	9.7	5.0	10.6
Biomass and waste	-	-	1.3	23	44	68	85	-	1.9	2.3	n.a.	9.5	4.4	2.4	5.0

Energy and economic indicators

								CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
GDP ($2010 billion)	279	479	825	2,039	3,391	6,462	11,298	6.5	7.5	6.7	5.7	6.5
Population (million)	699	869	1,042	1,252	1,359	1,495	1,599	1.6	1.2	1.0	0.7	0.9
CO_2 emissions[*2] (Mt)	265	546	901	1,894	2,409	2,820	3,377	5.6	3.5	1.6	1.8	2.2
GDP per capita ($2010 thousand)	0.4	0.6	0.8	1.6	2.5	4.3	7.1	4.8	6.3	5.6	5.0	5.6
Primary energy consump. per capita (toe)	0.3	0.4	0.4	0.6	0.7	0.8	1.0	2.5	2.3	1.5	1.6	1.8
Primary energy consumption per GDP[*3]	718	640	535	380	291	195	140	-2.2	-3.8	-3.9	-3.2	-3.6
CO_2 emissions per GDP[*2, *4]	950	1,139	1,092	929	710	436	299	-0.9	-3.8	-4.8	-3.7	-4.1
CO_2 per primary energy consumption[*2, *5]	1.3	1.8	2.0	2.4	2.4	2.2	2.1	1.4	0.0	-0.9	-0.5	-0.5
Automobile ownership (million)	1.7	4.3	9.4	32	59	119	200	9.2	8.9	7.3	5.3	7.0
Automobile ownership rates[*6]	2.4	5.0	9.0	26	43	80	125	7.4	7.6	6.3	4.6	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

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Table A49 Japan [Advanced Technologies Scenario]

Primary energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total[*1]	345	439	519	455	461	426	388	100	100	100	0.1	0.2	-0.8	-0.9	-0.6
Coal	60	77	97	121	109	105	95	17	27	25	2.0	-1.5	-0.4	-1.0	-0.9
Oil	234	250	255	202	167	139	112	57	45	29	-0.9	-2.7	-1.8	-2.1	-2.2
Natural gas	21	44	66	106	82	80	72	10	23	19	3.9	-3.6	-0.2	-1.0	-1.4
Nuclear	22	53	84	2.4	73	61	56	12	0.5	15	-12.5	62.5	-1.8	-0.7	12.4
Hydro	7.6	7.7	7.5	6.7	7.8	8.4	8.4	1.7	1.5	2.2	-0.6	2.2	0.8	0.0	0.9
Geothermal	0.8	1.6	3.1	2.4	3.9	10	15	0.4	0.5	4.0	1.9	7.0	10.3	4.2	7.1
Solar, wind, etc.	-	1.2	0.8	2.0	3.9	6.6	9.0	0.3	0.4	2.3	2.3	10.0	5.5	3.2	5.8
Biomass and waste	-	4.9	5.7	11	15	17	18	1.1	2.5	4.7	3.6	3.8	1.3	1.0	1.9

Final energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	232	298	341	311	302	278	251	100	100	100	0.2	-0.4	-0.8	-1.0	-0.8
Industry	91	101	96	82	87	85	81	34	26	32	-0.9	0.9	-0.3	-0.5	0.0
Transport	54	72	88	73	66	55	47	24	24	19	0.1	-1.4	-1.8	-1.6	-1.6
Buildings, etc.	58	91	116	118	113	103	90	31	38	36	1.1	-0.6	-0.9	-1.3	-1.0
Non-energy use	28	34	41	38	36	35	33	12	12	13	0.4	-0.9	-0.2	-0.6	-0.5
Coal	25	32	25	26	27	25	23	11	8.3	9.0	-0.9	0.3	-0.5	-1.0	-0.5
Oil	157	182	208	166	148	122	98	61	53	39	-0.4	-1.6	-1.9	-2.2	-1.9
Natural gas	5.8	15	23	34	35	34	32	5.1	11	13	3.5	0.5	-0.3	-0.7	-0.2
Electricity	44	64	81	82	85	86	85	22	26	34	1.0	0.6	0.1	-0.1	0.1
Heat	0.1	0.2	0.5	0.5	3.0	5.1	7.2	0.1	0.2	2.9	4.5	27.3	5.6	3.5	10.0
Hydrogen	-	-	-	-	0.1	0.5	0.9	-	-	0.3	n.a.	n.a.	22.7	6.5	n.a.
Renewables	-	3.9	3.7	3.6	4.2	4.9	5.9	1.3	1.1	2.3	-0.4	2.4	1.6	1.8	1.9

Electricity generation

	(TWh)							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	573	836	1,049	1,038	1,075	1,060	1,015	100	100	100	0.9	0.5	-0.1	-0.4	-0.1
Coal	55	116	229	337	276	261	226	14	32	22	4.7	-2.8	-0.6	-1.4	-1.5
Oil	265	237	135	150	61	48	40	28	14	3.9	-2.0	-12.0	-2.4	-1.9	-4.8
Natural gas	81	179	256	402	269	275	250	21	39	25	3.6	-5.6	0.2	-0.9	-1.7
Nuclear	83	202	322	9.3	279	233	216	24	0.9	21	-12.5	62.5	-1.8	-0.7	12.4
Hydro	88	89	87	78	91	98	98	11	7.5	9.7	-0.6	2.2	0.8	0.0	0.9
Geothermal	0.9	1.7	3.3	2.6	4.3	12	18	0.2	0.2	1.7	1.8	7.4	10.6	4.2	7.4
Solar, wind, etc.	-	0.0	0.5	19	38	67	93	0.0	1.9	9.1	53.6	10.1	5.7	3.3	5.9
Biomass and waste	-	11	16	41	57	67	74	1.3	3.9	7.3	6.0	4.9	1.6	1.0	2.2

Energy and economic indicators

								CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
GDP ($2010 billion)	2,894	4,553	5,093	5,656	6,561	7,602	8,429	0.9	2.1	1.5	1.0	1.5
Population (million)	117	124	127	127	125	120	114	0.1	-0.2	-0.4	-0.5	-0.4
CO_2 emissions[*2] (Mt)	916	1,070	1,196	1,234	1,029	922	791	0.6	-2.6	-1.1	-1.5	-1.6
GDP per capita ($2010 thousand)	25	37	40	44	52	63	74	0.8	2.4	1.9	1.6	1.9
Primary energy consump. per capita (toe)	3.0	3.6	4.1	3.6	3.7	3.5	3.4	0.0	0.4	-0.4	-0.4	-0.2
Primary energy consumption per GDP[*3]	119	96	102	80	70	56	46	-0.8	-1.9	-2.2	-2.0	-2.0
CO_2 emissions per GDP[*2, *4]	317	235	235	218	157	121	94	-0.3	-4.6	-2.5	-2.5	-3.1
CO_2 per primary energy consumption[*2, *5]	2.7	2.4	2.3	2.7	2.2	2.2	2.0	0.5	-2.8	-0.3	-0.6	-1.1
Automobile ownership (million)	38	58	72	77	77	74	71	1.2	0.0	-0.4	-0.4	-0.3
Automobile ownership rates[*6]	325	467	571	601	611	614	624	1.1	0.2	0.0	0.2	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

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Table A50 ASEAN [Advanced Technologies Scenario]

Primary energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total[*1]	142	233	380	587	755	1,004	1,268	100	100	100	4.1	3.7	2.9	2.4	2.9
Coal	3.6	13	32	91	121	164	212	5.4	16	17	9.0	4.1	3.1	2.6	3.2
Oil	58	88	153	209	251	312	377	38	36	30	3.8	2.6	2.2	1.9	2.2
Natural gas	8.6	30	74	133	158	197	238	13	23	19	6.7	2.5	2.2	1.9	2.2
Nuclear	-	-	-	-	2.0	27	73	-	-	5.8	n.a.	n.a.	29.7	10.5	n.a.
Hydro	0.8	2.3	4.1	9.4	12	16	19	1.0	1.6	1.5	6.2	3.8	2.6	1.7	2.6
Geothermal	1.8	6.6	18	24	72	128	172	2.8	4.2	14	5.8	16.7	5.9	3.0	7.5
Solar, wind, etc.	-	-	-	0.1	0.6	1.5	3.3	-	0.0	0.3	n.a.	22.7	9.3	8.2	12.2
Biomass and waste	70	93	99	118	137	155	169	40	20	13	1.0	2.1	1.3	0.8	1.3

Final energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	112	173	271	425	516	656	811	100	100	100	4.0	2.8	2.4	2.1	2.4
Industry	22	43	76	116	146	196	251	25	27	31	4.5	3.4	2.9	2.5	2.9
Transport	17	32	62	112	135	174	217	19	26	27	5.5	2.8	2.5	2.3	2.5
Buildings, etc.	71	87	113	143	166	200	237	50	34	29	2.2	2.2	1.8	1.7	1.9
Non-energy use	2.4	11	21	53	67	87	106	6.3	13	13	7.1	3.4	2.6	2.0	2.6
Coal	2.1	6.0	13	27	33	41	48	3.5	6.4	5.9	6.7	2.9	2.2	1.5	2.1
Oil	41	67	123	194	237	298	362	38	46	45	4.8	3.0	2.3	2.0	2.3
Natural gas	2.5	7.5	17	40	51	70	92	4.4	9.4	11	7.5	3.4	3.3	2.8	3.1
Electricity	4.7	11	28	61	82	124	176	6.4	14	22	7.7	4.3	4.1	3.6	4.0
Heat	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Hydrogen	-	-	-	-	-	-	-	-	-	-	n.a.	n.a.	n.a.	n.a.	n.a.
Renewables	62	82	90	103	112	124	133	47	24	16	1.0	1.3	1.0	0.7	1.0

Electricity generation

	(TWh)							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	62	154	370	786	1,048	1,562	2,211	100	100	100	7.3	4.2	4.1	3.5	3.9
Coal	3.0	28	79	255	348	519	733	18	32	33	10.1	4.6	4.1	3.5	4.0
Oil	47	66	72	43	37	36	35	43	5.5	1.6	-1.8	-2.1	-0.2	-0.5	-0.8
Natural gas	0.7	26	154	349	426	572	739	17	44	33	11.9	2.9	3.0	2.6	2.8
Nuclear	-	-	-	-	7.7	104	280	-	-	13	n.a.	n.a.	29.7	10.5	n.a.
Hydro	9.8	27	47	109	142	184	219	18	14	9.9	6.2	3.8	2.6	1.7	2.6
Geothermal	2.1	6.6	16	19	49	84	110	4.3	2.4	5.0	4.7	14.6	5.4	2.8	6.7
Solar, wind, etc.	-	-	-	1.7	7.1	17	38	-	0.2	1.7	n.a.	22.7	9.3	8.2	12.2
Biomass and waste	-	0.6	1.0	10	30	46	57	0.4	1.3	2.6	13.0	16.8	4.4	2.1	6.6

Energy and economic indicators

								CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
GDP ($2010 billion)	405	703	1,137	2,190	3,097	4,848	7,019	5.1	5.1	4.6	3.8	4.4
Population (million)	345	427	503	594	640	693	732	1.4	1.1	0.8	0.5	0.8
CO_2 emissions[*2] (Mt)	205	362	710	1,162	1,424	1,816	2,247	5.2	2.9	2.5	2.1	2.5
GDP per capita ($2010 thousand)	1.2	1.6	2.3	3.7	4.8	7.0	9.6	3.6	4.0	3.7	3.2	3.6
Primary energy consump. per capita (toe)	0.4	0.5	0.8	1.0	1.2	1.4	1.7	2.6	2.6	2.1	1.8	2.1
Primary energy consumption per GDP[*3]	352	332	334	268	244	207	181	-0.9	-1.3	-1.6	-1.4	-1.5
CO_2 emissions per GDP[*2, *4]	507	515	624	531	460	375	320	0.1	-2.0	-2.0	-1.6	-1.9
CO_2 per primary energy consumption[*2, *5]	1.4	1.6	1.9	2.0	1.9	1.8	1.8	1.1	-0.7	-0.4	-0.2	-0.4
Automobile ownership (million)	4.4	10	21	52	70	96	130	7.4	4.3	3.3	3.0	3.4
Automobile ownership rates[*6]	13	24	41	87	109	139	177	5.9	3.2	2.4	2.5	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

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Table A51 United States [Advanced Technologies Scenario]

Primary energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total[*1]	1,805	1,915	2,273	2,188	2,130	1,988	1,755	100	100	100	0.6	-0.4	-0.7	-1.2	-0.8
Coal	376	460	534	432	348	238	128	24	20	7.3	-0.3	-3.1	-3.7	-6.0	-4.4
Oil	797	757	871	780	739	641	523	40	36	30	0.1	-0.8	-1.4	-2.0	-1.5
Natural gas	477	438	548	610	626	595	492	23	28	28	1.4	0.4	-0.5	-1.9	-0.8
Nuclear	69	159	208	214	216	223	252	8.3	9.8	14	1.3	0.1	0.3	1.2	0.6
Hydro	24	23	22	23	24	25	25	1.2	1.1	1.4	0.0	0.6	0.2	0.1	0.3
Geothermal	4.6	14	13	8.6	21	44	56	0.7	0.4	3.2	-2.1	13.9	7.4	2.4	7.1
Solar, wind, etc.	-	0.3	2.1	18	37	73	118	0.0	0.8	6.7	19.0	11.1	7.1	5.0	7.3
Biomass and waste	54	62	73	97	113	145	157	3.3	4.4	9.0	2.0	2.2	2.5	0.8	1.8

Final energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	1,311	1,294	1,546	1,495	1,467	1,380	1,228	100	100	100	0.6	-0.3	-0.6	-1.2	-0.7
Industry	387	284	332	261	256	232	203	22	17	16	-0.4	-0.3	-1.0	-1.3	-0.9
Transport	425	488	588	608	594	551	477	38	41	39	1.0	-0.3	-0.8	-1.4	-0.9
Buildings, etc.	397	403	473	507	491	457	405	31	34	33	1.0	-0.5	-0.7	-1.2	-0.8
Non-energy use	102	119	153	119	125	140	144	9.2	8.0	12	0.0	0.7	1.1	0.2	0.7
Coal	56	56	33	22	24	20	16	4.3	1.5	1.3	-3.9	0.9	-1.7	-2.3	-1.3
Oil	689	683	793	731	688	597	487	53	49	40	0.3	-0.9	-1.4	-2.0	-1.5
Natural gas	337	303	360	333	338	312	276	23	22	23	0.4	0.2	-0.8	-1.2	-0.7
Electricity	174	226	301	325	330	337	323	18	22	26	1.6	0.2	0.2	-0.4	0.0
Heat	-	2.2	5.3	5.9	6.2	5.7	5.1	0.2	0.4	0.4	4.5	0.7	-0.8	-1.0	-0.5
Hydrogen	-	-	-	-	0.0	4.5	8.4	-	-	0.7	n.a.	n.a.	67.8	6.4	n.a.
Renewables	54	23	54	77	80	104	112	1.8	5.2	9.1	5.4	0.4	2.7	0.7	1.4

Electricity generation

	(TWh)							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	2,427	3,203	4,026	4,287	4,354	4,465	4,310	100	100	100	1.3	0.2	0.3	-0.4	0.0
Coal	1,243	1,700	2,129	1,712	1,395	967	489	53	40	11	0.0	-2.9	-3.6	-6.6	-4.5
Oil	263	131	118	37	28	17	6.3	4.1	0.9	0.1	-5.4	-3.8	-5.0	-9.4	-6.3
Natural gas	370	382	634	1,158	1,230	1,241	877	12	27	20	4.9	0.9	0.1	-3.4	-1.0
Nuclear	266	612	798	822	830	855	965	19	19	22	1.3	0.1	0.3	1.2	0.6
Hydro	279	273	253	271	283	290	293	8.5	6.3	6.8	0.0	0.6	0.2	0.1	0.3
Geothermal	5.4	16	15	18	46	94	119	0.5	0.4	2.8	0.6	13.8	7.5	2.4	7.1
Solar, wind, etc.	-	3.7	6.4	190	410	834	1,370	0.1	4.4	32	18.6	11.6	7.4	5.1	7.6
Biomass and waste	0.5	86	72	78	132	167	192	2.7	1.8	4.5	-0.4	7.8	2.3	1.4	3.4

Energy and economic indicators

								CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
GDP ($2010 billion)	6,514	9,056	12,713	15,902	18,932	23,986	28,725	2.5	2.5	2.4	1.8	2.2
Population (million)	227	250	282	316	332	355	373	1.0	0.7	0.6	0.5	0.6
CO_2 emissions[*2] (Mt)	4,743	4,820	5,617	5,184	4,744	3,893	2,848	0.3	-1.3	-2.0	-3.1	-2.2
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	6.4	5.6	4.7	-0.4	-1.1	-1.3	-1.7	-1.4
Primary energy consumption per GDP[*3]	277	211	179	138	113	83	61	-1.9	-2.8	-3.0	-3.0	-3.0
CO_2 emissions per GDP[*2, *4]	728	532	442	326	251	162	99	-2.1	-3.7	-4.3	-4.8	-4.3
CO_2 per primary energy consumption[*2, *5]	2.6	2.5	2.5	2.4	2.2	2.0	1.6	-0.3	-0.9	-1.3	-1.9	-1.4
Automobile ownership (million)	156	189	221	253	272	301	323	1.3	1.1	1.0	0.7	0.9
Automobile ownership rates[*6]	686	756	785	799	819	848	867	0.2	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

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Table A52 European Union [Advanced Technologies Scenario]

Primary energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total[*1]	n.a.	1,645	1,692	1,626	1,578	1,471	1,324	100	100	100	-0.1	-0.4	-0.7	-1.0	-0.8
Coal	n.a.	456	321	286	232	168	127	28	18	9.6	-2.0	-3.0	-3.1	-2.7	-3.0
Oil	n.a.	606	623	513	463	395	326	37	32	25	-0.7	-1.5	-1.6	-1.9	-1.7
Natural gas	n.a.	297	396	387	378	336	282	18	24	21	1.2	-0.3	-1.2	-1.7	-1.2
Nuclear	n.a.	207	246	229	233	263	255	13	14	19	0.4	0.3	1.2	-0.3	0.4
Hydro	n.a.	25	31	32	32	33	33	1.5	2.0	2.5	1.1	0.3	0.2	0.0	0.1
Geothermal	n.a.	3.2	4.6	5.9	7.3	10	12	0.2	0.4	0.9	2.7	3.1	3.5	1.3	2.6
Solar, wind, etc.	n.a.	0.3	2.4	31	47	64	80	0.0	1.9	6.0	23.2	6.3	3.0	2.3	3.6
Biomass and waste	n.a.	47	66	140	183	199	205	2.8	8.6	15	4.9	3.9	0.8	0.3	1.4

Final energy consumption

	Mtoe							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	n.a.	1,130	1,176	1,139	1,109	1,017	904	100	100	100	0.0	-0.4	-0.9	-1.2	-0.9
Industry	n.a.	343	308	258	261	252	236	30	23	26	-1.2	0.2	-0.3	-0.6	-0.3
Transport	n.a.	259	304	303	290	250	207	23	27	23	0.7	-0.6	-1.5	-1.9	-1.4
Buildings, etc.	n.a.	429	453	478	447	398	341	38	42	38	0.5	-1.0	-1.1	-1.5	-1.2
Non-energy use	n.a.	99	111	100	111	117	120	8.7	8.8	13	0.1	1.6	0.5	0.2	0.7
Coal	n.a.	122	52	38	35	29	23	11	3.4	2.6	-4.9	-1.2	-1.8	-2.1	-1.8
Oil	n.a.	503	540	463	420	359	296	45	41	33	-0.4	-1.4	-1.6	-1.9	-1.7
Natural gas	n.a.	226	272	266	262	244	215	20	23	24	0.7	-0.2	-0.7	-1.2	-0.8
Electricity	n.a.	186	218	238	246	246	239	16	21	26	1.1	0.5	0.0	-0.3	0.0
Heat	n.a.	54	45	48	45	41	36	4.8	4.2	3.9	-0.5	-0.8	-1.1	-1.4	-1.1
Hydrogen	n.a.	-	-	-	n.a.	n.a.	n.a.	-	-	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Renewables	n.a.	39	49	85	100	98	95	3.5	7.5	11	3.5	2.4	-0.2	-0.3	0.4

Electricity generation

	(TWh)							Shares (%)			CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990	2013	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
Total	n.a.	2,576	3,005	3,230	3,349	3,394	3,344	100	100	100	1.0	0.5	0.1	-0.1	0.1
Coal	n.a.	1,050	968	905	715	493	355	41	28	11	-0.6	-3.3	-3.6	-3.2	-3.4
Oil	n.a.	224	181	61	39	21	12	8.7	1.9	0.4	-5.5	-6.1	-6.1	-5.4	-5.9
Natural gas	n.a.	193	480	507	498	386	267	7.5	16	8.0	4.3	-0.3	-2.5	-3.6	-2.4
Nuclear	n.a.	795	945	877	893	1,010	979	31	27	29	0.4	0.3	1.2	-0.3	0.4
Hydro	n.a.	290	356	371	378	384	384	11	11	11	1.1	0.3	0.2	0.0	0.1
Geothermal	n.a.	3.2	4.8	5.9	7.5	11	12	0.1	0.2	0.4	2.7	3.4	3.7	1.3	2.7
Solar, wind, etc.	n.a.	1.3	24	324	533	730	923	0.1	10	28	27.1	7.4	3.2	2.4	4.0
Biomass and waste	n.a.	20	46	178	285	358	410	0.8	5.5	12	10.1	7.0	2.3	1.3	3.1

Energy and economic indicators

								CAGR (%)				
	1980	1990	2000	2013	2020	2030	2040	1990/ 2013	2013/ 2020	2020/ 2030	2030/ 2040	2013/ 2040
GDP ($2010 billion)	n.a.	11,862	14,721	17,159	19,411	22,767	25,759	1.6	1.8	1.6	1.2	1.5
Population (million)	n.a.	478	488	507	516	523	526	0.3	0.3	0.1	0.0	0.1
CO_2 emissions[*2] (Mt)	n.a.	4,068	3,783	3,320	2,894	2,318	1,811	-0.9	-1.9	-2.2	-2.4	-2.2
GDP per capita ($2010 thousand)	n.a.	25	30	34	38	44	49	1.4	1.5	1.5	1.2	1.4
Primary energy consump. per capita (toe)	n.a.	3.4	3.5	3.2	3.1	2.8	2.5	-0.3	-0.7	-0.8	-1.1	-0.9
Primary energy consumption per GDP[*3]	n.a.	139	115	95	81	65	51	-1.6	-2.2	-2.3	-2.3	-2.2
CO_2 emissions per GDP[*2, *4]	n.a.	343	257	193	149	102	70	-2.5	-3.7	-3.7	-3.6	-3.7
CO_2 per primary energy consumption[*2, *5]	n.a.	2.5	2.2	2.0	1.8	1.6	1.4	-0.8	-1.5	-1.5	-1.4	-1.5
Automobile ownership (million)	n.a.	177	235	294	319	345	358	2.2	1.2	0.8	0.4	0.7
Automobile ownership rates[*6]	n.a.	371	482	580	619	660	681	2.0	0.9	0.6	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

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