

Asia/World Energy Outlook 2009
—The Role of Technology Towards the Resolution of
Energy & Environmental Issues in Asia—

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[Summary]

This report analyzes energy demand and supply in the world and in Asia over the long term through 2035, based on new trends in the world economy, including the economic development of emerging countries mainly in Asia, as well as changes in the international energy situation and technology trends. Currently, the role of low-carbon technology is expected to expand even further in tackling global warming issues and securing stable energy supply. Thus, in addition to the “reference scenario” which considers past trends and incorporates current energy and environment policies, the report provides “technologically advanced scenario” where advanced low-carbon technology becomes even more widespread around the world on the back of the promotion of international technology transfers.

[Main conclusions]

In the future, in Asian developing countries, including China and India, demand for fossil fuel such as oil will expand sharply reflecting on its strong economic growth, their dependence on oil imports will rise and CO₂ emissions will increase significantly. Under these circumstances, the best energy mix (efficient use of fossil fuels and diversification of energy sources), the securing of oil and gas resources, and the enhancement of measures against global warming through technology transfers will become important issues in Asia. It will be important for Japan to cooperate toward achieving sustainable economic growth in Asian countries, and at the same time contribute to tackling global warming issues and resolving energy security problems through transfers of Japan’s sophisticated energy conservation and environmental technology to Asian countries.

- The world’s primary energy consumption (reference scenario) will expand from 11.1 billion tons oil equivalent (Btoe) in 2007 to 16.9 Btoe in 2035. Fossil fuels will account for 79% of the primary energy consumption growth during this period, continuing to serve as an important major energy source.
- Global CO₂ emissions (reference scenario) will increase from 28.8 billion tons in 2007 to 33.9 billion tons in 2020 (up 60% from 1990 levels) and 41.5 billion tons in 2035 (up 96% from 1990 levels). In 2020, which is a key period in the framework of post-Kyoto Protocol

negotiations, CO₂ emissions will increase by 300 million tons from 2007 in developed countries (up 19% from 1990 levels), while increasing by 4.9 billion tons in developing countries (up 108% from 1990 levels and 16 times the increase of developed countries). Thus, there is an urgent need to strengthen measures to reduce emissions in developing countries.

- If low-carbon technology becomes even more widespread in countries around the world, global CO₂ emissions will peak out in 2026 and Asia's CO₂ emissions will peak in 2030.
- With regard to China, if advanced technology is introduced through the promotion of technology transfers, primary energy consumption will peak out in 2033, while CO₂ emissions will peak in 2030 if Carbon Capture and Storage (CCS) technology is not considered and in 2025 if they are considered.
- Due to the expansion of low-carbon technology, the world's CO₂ emissions in 2035 will be 12.3 billion tons (or 30%) less than in the reference scenario (The reduction is equivalent to approximately 10 times as much as Japan's emissions.) Of the 12.3-billion-ton CO₂ reduction, developed countries will be responsible for 4.2 billion tons and developing countries 8.1 billion tons. Thus, the CO₂ emissions reduction in developing countries will be nearly double that of developed countries. Asia's CO₂ emissions reduction will reach 6.8 billion tons, accounting for approximately 60% of the world's total reduction, indicating Asia's extremely high CO₂ reduction potential. It will thus be important to provide technology transfers and technology cooperation to the Asian region.
- Energy conservation, nuclear power, renewable energy, fuel switching and CCS will play a central role in realizing low-carbon energy system. Of the world's CO₂ reduction of 12.3 billion tons in 2035, energy conservation will be responsible for 5.7 billion tons (accounting for 46% of the total reduction), nuclear power 1.3 billion tons (10%), renewable energy 1.2 billion tons (10%), fuel switching 1.5 billion tons (12%) and CCS 2.6 billion tons (21%).

[Major assumptions]

- **Economic growth**

World: While global economic growth has slowed down following the U.S. subprime mortgage crisis, the economic stimulus measures of each country are gradually having an effect and growth will continue in the medium to long term. The world economy will grow at a rate of 2.8% per annum during the period from 2007 to 2035.

Asia: Asia (excluding Japan) will grow at a rate of 4.9% per annum, serving as the locomotive for the world economy. In particular, China and India will grow at respective rates of 5.6% and 6.1%, increasing their presence in the world economy.

- **Population**

The world population will grow from 6.6 billion in 2007 to 8.5 billion in 2035. Within Asia, the population will expand to 1.46 billion in China and 1.53 billion in India by 2035. The population of the entire Asian region will increase to 4.5 billion, accounting for 53% of the world total.

- **Crude oil price**

The crude oil price (the Japanese import price on a C.I.F. basis and the real price based on the currency value in 2008), which stood at \$103/barrel in 2008, will come to \$95/barrel in 2020, \$109/barrel in 2030 and \$117/barrel in 2035. (Crude oil prices are predicted in ranges, and are estimated to move in the range of around \$90/barrel to \$110/barrel in 2020 and around \$110/barrel to \$130/barrel in 2035. A roughly intermediate value of the range is used for the assumption of the model analysis.)

- **Scenario**

The “reference scenario,” which serves as the basis of analysis, is based on probable policies and technology developments. The “technologically advanced scenario” assumes major global progress in technology development and the spread of innovative technology in response to strengthened energy security and measures against global warming.

[Major results] (Reference Scenario)

- **World**

Primary energy consumption

The world’s primary energy consumption is expected to grow at a rate of 1.5% per annum, from 11.1 billion tons oil equivalent in 2007 to 16.9 Btoe in 2035. The share of fossil fuels, which is at 89% in 2007, will move to 86% in 2035. Fossil fuels will account for 79% of the primary energy consumption growth up to 2035, remaining a major energy source in the future.

Global oil demand will increase by 28 million barrels per day (at a rate of 1.0% per annum), from 85 million b/d in 2007 to 113 million b/d in 2035. However, it will decline at a rate of 0.3% per annum in developed countries (OECD) while rising at a rate of 2.4% per annum in developing countries (Non-OECD). In terms of liquefied natural gas (LNG), world natural gas demand will expand at a rate of 2.1% per annum from 2.0 billion tons in 2007 to 3.6 billion tons in 2035. Global coal demand will grow at a rate of 1.2% per annum from 4.6 billion tons coal equivalent (1 tce is equal to 0.7 toe) in 2007 to 6.4 Btce in 2035.

Renewable energy (Photovoltaic power generation, wind power generation, etc.)

The world’s photovoltaic power generation capacity will grow sharply from 15 million kilowatts in 2008 to 242 million kilowatts in 2035, a 16-fold increase. The world’s wind power generation capacity will expand from 121 million kilowatts in 2008 to 602 million kilowatts in 2035, a five-fold increase. Photovoltaic and wind power generation combined accounted for 0.9% of the world’s total

power generation in 2007 and will account for 3.6% in 2035. In addition, the proportion of renewable energy (excluding hydroelectric power) in the world's primary energy consumption will increase from 2.9% in 2007 to 5.4% in 2035.

Nuclear power

The world's nuclear power generation capacity will increase from 392 million kilowatts in 2007 to 602 million kilowatts in 2035. Nuclear power accounted for 14% of the world's total power generation in 2007 and will account for 12% in 2035.

● **Asia**

Primary energy consumption

Asia's primary energy consumption will grow at a rate of 2.5% per annum, accounting for 61% of the global increase through 2035. Fossil fuels will occupy 82% of Asia's primary energy consumption growth to 2035—33% in coal, 27% in oil and 22% in natural gas. Particularly, Asia will remarkably increase coal consumption, accounting for 90% of the global coal demand increase.

Oil demand and supply

Asia's net oil imports will expand from 730 million tons (15 million b/d) in 2007 to 1.7 billion tons (35 million b/d) in 2035, due to sluggish oil production within the Asian region while oil demand increases based on its progress in industrialization and motorization. Asia's dependence on imports for oil supply will rise from 67% in 2007 to 84% in 2035.

Progress in electrification and electricity supply

As electrification accelerates in Asia along with improvements in income levels and progress in urbanization, electricity consumption will grow 2.5-fold over the next 28 years. Coal-fired power plants backed by abundant coal resources and their economic efficiency will play a central role in meeting the fast electricity consumption growth (dominating 57% of total electricity generation in 2035). Natural gas-fired power plants, which feature higher generation efficiency, will also increase steadily, boosting their share of total electricity generation from 13% in 2007 to 17% in 2035. Asia will increase nuclear power plants rapidly, explaining 137 million kilowatts of the 210 million kilowatts in additional global nuclear power generation capacity to 2035.

Progress in motorization

The number of automobiles owned in Asia will increase from 200 million units in 2007 to 620 million units in 2035 as motorization makes further progress along with rising income levels in Asian developing countries. Despite the spread of innovative automobiles and improvements in fuel efficiency, Asia's oil consumption will double from 22.6 million b/d in 2007 to 42.2 million b/d in 2035.

● **CO2 emissions**

In parallel with the growth in fossil fuel consumption, global CO2 emissions will increase from 28.8 billion tons (carbon dioxide equivalent) in 2007 to 33.9 billion tons in 2020 (up 60% from 1990 levels) and 41.5 billion tons in 2035 (up 96% from 1990 levels). Asia's CO2 emissions will expand by a factor of 1.8, from 10.7 billion tons in 2007 to 19.1 billion tons in 2035. Asia will account for 66% of the total global emissions increase, with China alone accounting for around 30%.

Through 2020, a key period in the framework of post-Kyoto Protocol negotiations, CO2 emissions will increase by 300 million tons from 2007 in developed countries (up 19% from 1990 levels), while increasing by 4.9 billion tons in developing countries (up 108% from 1990 levels and 16 times the increase of developed countries). Thus, there is an urgent need to strengthen measures to reduce emissions in developing countries.

[Major results] (Technologically Advanced Scenario)

● **Impact of technology development on the world**

In the technologically advanced scenario, innovative technology will become widespread in the world in line with efforts toward securing a stable energy supply, tackling climate change and the promotion of international technology cooperation and international technology transfers. Specifically, this technology will include improved industrial process efficiency, the enhanced energy conservation effects of household appliances, and the expanded introduction of next-generation automobiles, biofuels, clean coal technology, renewable energy, nuclear power and CCS technology.

World: In the technologically advanced scenario, the world's primary energy consumption in 2035 will be 2.3 Btoe (or 14%) less than in the reference scenario. (The energy savings are approximately four times as much as Japan's total energy consumption of 500 million toe.) Of the 2.3 Btoe in energy savings, developed countries will account for 700 million toe and developing countries 1.6 Btoe. Thus, energy savings in developing countries will be more than double those in developed countries. The share of non-fossil energy in world primary energy mix in 2035 will be 21% in the technologically advanced scenario, higher than 15% in the reference scenario.

Asia: Asia's primary energy consumption in 2035 will be 1.3 Btoe (or 19%) less than in the reference scenario. (The energy savings are approximately twice as much as Japan's total energy consumption.) Asia's energy-saving potential is extremely high, with its 1.3 Btoe in energy savings accounting for approximately 60% of the world's energy savings of 2.3 Btoe. The share of non-fossil energy in 2035 will be 19% in the t technologically advanced scenario, higher than the 12% in the reference scenario.

● **Impact on CO2 emissions**

World: The world's CO2 emissions will increase by 3.4 billion tons (or 13%) between 2005 and 2020 but will peak out in 2026, due to further progress in energy and environmental technology. In 2035, the world's CO2 emissions will be 12.3 billion tons (or 30%) less than in the reference scenario. (The reduction is equivalent to approximately ten times as much as Japan's emissions.) Of the 12.3-billion-ton CO2 reduction, developed countries will be responsible for 4.2 billion tons and developing countries 8.1 billion tons. Thus, the CO2 emissions reduction in developing countries will be nearly double that of developed countries. Asia's CO2 emissions reduction will reach 6.8 billion tons, accounting for 55% of the world's total reduction, indicating Asia's extremely high CO2 reduction potential.

Asia: CO2 emissions in Asia will peak out in 2030 on the basis of technology developments. Asia's CO2 emissions in 2035 will be 6.8 billion tons (or 36%) less than in the reference scenario. (The reduction is equivalent to approximately six times as much as Japan's emissions.) Of the 6.8-billion-ton CO2 reduction, China will be responsible for 4.1 billion tons, India 1.5 billion tons and the rest of Asia 1.4 billion tons.

The role of technology: The reduction in CO2 emissions will be a result of combining various advanced technology, and all options are important. Of the world's CO2 reduction of 12.3 billion tons in 2035, energy conservation will be responsible for 5.7 billion tons (accounting for 46% of the total reduction), nuclear power 1.3 billion tons (10%), renewable energy 1.2 billion tons (10%), fuel switching 1.5 billion tons (12%) and CCS technology 2.6 billion tons (21%). Of Asia's CO2 reduction of 6.8 billion tons in 2035, energy conservation will be responsible for 3.6 billion tons (53%), nuclear power 700 million tons (10%), renewable energy 600 million tons (9%), fuel switching 800 million tons (12%) and CCS 1.1 billion tons (16%). Thus, energy conservation, nuclear power, renewable energy, fuel switching and CCS will play a central role in realizing low-carbon energy system.

[Major results] (China and India)

● **China**

China will shift from economic growth led by investments and exports to domestic consumption-led growth, and the Chinese GDP will grow at a rate of 5.6% per annum. China's primary energy consumption will expand at a rate of 2.4% per annum, from 1.77 Btoe in 2007 to 3.45 Btoe in 2035, accounting for 21% of the global total. In 2035, China will consume seven times as much energy as Japan and emit eight times as much CO2 as Japan. It will be the largest energy consumer and CO2 emitter in the world by 2035.

Oil: Oil demand will expand from 7.4 million b/d in 2007 to 18.8 million b/d in 2035 due to fast progress in motorization. As domestic oil production fails to increase, China's dependence on

imports for oil supply will rise from 48% in 2007 to 79% in 2035.

Coal: Chinese coal demand, mainly consumed in power generation, will increase from 1.29 Btoe in 2007 to 1.83 Btoe in 2035. Coal will remain the largest energy source, although its share of primary energy consumption will decline from 73% at present to 53%. Iron and steel production, which came to 490 million tons in 2007, will peak in the near future and decline to just under 400 million tons through 2035. As a result, industrial coal consumption will fall gradually.

Technologically advanced scenario: China's primary energy consumption will peak out in 2033 due to the introduction of advanced technology through technology transfers from developed countries. In 2035, energy savings of 800 million toe (or 23%) compared to the reference scenario will be achieved. Due to energy conservation efforts and the expanded introduction of nuclear power and other non-fossil energy, China's CO₂ emissions will peak out in 2030 if CCS is not considered and in 2025 if CCS is considered. In 2035, CO₂ will be reduced by 3.4 billion tons (or 35%) more than in the reference scenario if CCS is not considered (4.0 billion tons (or 41%) more if CCS is considered).

- **India**

The Indian economy will grow steadily at a rate of 6.1% per annum reflecting on an expanding labor population. India's primary energy consumption will increase at a rate of 3.7% per annum, faster than China, and will almost triple from 430 million toe in 2007 to 1.21 Btoe in 2035.

Oil: Oil demand will increase from 2.9 million b/d in 2007 to 7.0 million b/d in 2035. As a large increase in domestic oil production cannot be expected, India's dependence on imports for oil supply will rise sharply from 69% in 2007 to 86% in 2035.

Natural gas: Natural gas demand will grow at a high rate of 5.7% per annum, from 30 million toe in 2007 to 160 million toe in 2035.

Coal: Coal demand mainly used for electricity generation will grow at a rate of 3.4% per annum, more than double from 240 million toe in 2007 to 610 million toe in 2035. Coal will thus remain the largest energy supply source, accounting for 51% of primary energy consumption. As India's dependence on coal imports increases in the future, securing coal import sources will be a challenge amid growing coal demand in Asian countries.

Technologically advanced scenario: India's primary energy consumption in 2035 will be 300 million toe (or 25%) less than in the reference scenario, supported by the expanded introduction of advanced energy conservation technology. India's CO₂ emissions in the Technologically advanced scenario will peak out in 2034 if CCS is considered and will be 1.4 billion tons (or 42%) less than in the reference scenario in 2035.

[Implications]

● **Tackling climate change issues through technology transfers**

Given the rapid increase in CO₂ emissions in Asian developing countries, such as China and India, it is clear that reducing environmental burdens through international transfers of advanced energy conservation technology to these Asian countries will contribute to improving environmental problems in Asia, also from the viewpoint of cost effectiveness in Asia as a whole. It is important for Japan to cooperate toward achieving sustainable economic growth in Asian countries in an integrated manner, and at the same time contribute to grapple with global warming issues through transfers of sophisticated energy conservation technology to Asian countries.

● **Ensuring energy supply security**

In Asia, ensuring a stable energy supply will become an important issue as oil demand grows sharply and the dependence on imports for oil supply rises further in the future. To ensure a stable energy supply, the following point is important: to establish and strengthen emergency response systems as a countermeasure for short-term supply disruptions; to develop an international oil market that can respond flexibly to changes in supply and demand, enhance its functions and ensure transparency; to strengthen relations with oil-producing countries in the Middle East; and to implement domestic self-help measures in each country. On the other hand, excessive pursuit of self-interest by a single country could undermine the energy security of the entire region. As Asian countries share a mutual interest as major energy consuming nations, it is important that they deal with the issue as a problem concerning the entire region.

● **Challenges toward achieving the best energy mix**

Ensuring a stable supply of fossil fuels and their effective use

Fossil resources are ultimately finite, and their consumption is accompanied by greenhouse gas emissions. Nevertheless, when economic rationality, practicality and the lead time for the commercialization of innovative technology are considered, it is important to strive toward the effective utilization of fossil energy. In addition to ensuring a stable supply of fossil fuels, using them in a clean and highly efficient fashion is essential from the perspectives of energy security, environmental conservation.

[Oil] A substantial expansion in oil production cannot be expected in the Asian region, and its dependence on imports for oil supply will rise to 84% in 2035. Covering some 50% of Asia's oil consumption increase will be the Middle Eastern OPEC members that are rich with oil resources and more cost competitive than other oil-exporting countries. Steady investment in oil production capacity expansion to meet the rise in demand will be the key to the stability of the international oil market. On the demand side, an important issue will be to strive for the effective use of oil through the introduction of clean energy automobiles, whose full-fledged practical use is expected over the medium to long term.

[Natural gas] Natural gas production in the Asian region will peak while gas demand will increase due to fuel switching in the electricity generation and building sectors. Therefore, demand will expand for LNG and gas transported from Russia and central Asia via pipelines. As with oil, smooth investment toward the expansion of production and transportation capacity will be the key to the stabilization of natural gas demand and supply.

[Coal] Coal demand will increase for electricity generation due to its economic affordability and abundant resource endowment. In order to help prevent climate change, the development and introduction of high-efficiency coal-fired power generation and clean coal technology such as CCS are urgently required.

Nuclear power: Nuclear energy will play a major role in Asia, where ensuring energy security will become increasingly important due to fast-growing energy demand. Nuclear power, which is also important for helping to tackling global warming, should be increasingly introduced as a stable and core energy supply source.

Technology development of renewable energy: Wind power and photovoltaic power generation are an important option among measures to prevent global warming. The introduction of biofuels is expected to improve automobiles' fuel efficiency and help reduce CO₂ emissions in the transportation sector. It is necessary to enhance systems for effective and efficient promotion of renewable energy diffusion and introduce innovation-supporting policies to further expand the use of renewable energy. It will also become important to consider the time frame with regard to technology development that contributes to ensuring energy security and enhancing measures against global warming. If we look to around 2020, progress in technology development and change in the energy supply and demand structure will be limited. However, since current technology development and supply-demand structural change are expected to bear fruit around 2030, technology strategies with a long-term outlook beyond 2030 are required.

[Conclusion]

In order to simultaneously achieve “3E objectives”—Energy (stable energy supply), Economy (economic development) and Environment (environmental conservation)—in Asia, regional countries should enhance their efforts to attain the best energy mix by diversifying energy supply sources and promoting a shift to low-carbon energy sources through energy conservation and fuel switching.

Japan, which has technological, economic and institutional advantages over other Asian countries, has a great role to play in this respect. In particular, Japan is competitive in energy-saving and environmental conservation technology that plays a central role in achieving the 3E objectives simultaneously. Further development and utilization of these energy-saving and environmental conservation technology should be a key option of Japan's international energy strategy. In the

future, it will be important for Japan to utilize these excellent technologies to step up efforts to achieve the 3E objectives simultaneously and accomplish its sustainable economic growth as a leading technology-oriented nation.

[Position of this outlook]

This outlook represents an estimate based on theoretical and numerical integrity under certain assumptions. Given various uncertainties, estimated figures can be expected to change considerably. But we would be happy to see our outlook serve as a reference or base for predicting future energy supply and demand.

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Table 1 Population

(Unit: millions of people)

	Actual		Forecast			AAGR (%)				
	1980	2007	2020	2030	2035	2007 /1980	2020 /2007	2030 /2020	2035 /2030	2035 /2007
Asia	2,435 (55.0)	3,641 (55.2)	4,148 (54.6)	4,413 (53.7)	4,528 (53.3)	1.5	1.0	0.6	0.5	0.8
China	987 (22.3)	1,321 (20.0)	1,431 (18.8)	1,462 (17.8)	1,462 (17.2)	1.1	0.6	0.2	-0.0	0.4
India	687 (15.5)	1,145 (17.4)	1,357 (17.9)	1,468 (17.9)	1,526 (18.0)	1.9	1.3	0.8	0.8	1.0
Japan	117 (2.6)	128 (1.9)	123 (1.6)	115 (1.4)	111 (1.3)	0.3	-0.3	-0.6	-0.8	-0.5
South Korea	38 (0.9)	49 (0.7)	50 (0.7)	50 (0.6)	49 (0.6)	0.9	0.2	-0.1	-0.3	0.0
Taiwan	18 (0.4)	23 (0.3)	23 (0.3)	23 (0.3)	23 (0.3)	1.0	0.2	-0.2	-0.5	-0.0
Indonesia	148 (3.3)	226 (3.4)	255 (3.4)	271 (3.3)	278 (3.3)	1.6	0.9	0.6	0.5	0.7
Malaysia	14 (0.3)	26 (0.4)	32 (0.4)	35 (0.4)	36 (0.4)	2.4	1.5	1.0	0.8	1.2
Philippines	48 (1.1)	88 (1.3)	109 (1.4)	123 (1.5)	129 (1.5)	2.3	1.6	1.3	1.0	1.4
Thailand	47 (1.1)	64 (1.0)	68 (0.9)	70 (0.9)	71 (0.8)	1.2	0.5	0.3	0.1	0.4
Vietnam	54 (1.2)	85 (1.3)	97 (1.3)	104 (1.3)	107 (1.3)	1.7	1.0	0.7	0.5	0.8
Singapore	2 (0.1)	5 (0.1)	5 (0.1)	5 (0.1)	5 (0.1)	2.4	0.7	0.4	0.2	0.5
Asia(exc. Japan)	2,318 (52.3)	3,513 (53.3)	4,026 (53.0)	4,297 (52.3)	4,418 (52.0)	1.6	1.1	0.7	0.6	0.8
North America	252 (5.7)	334 (5.1)	376 (4.9)	405 (4.9)	419 (4.9)	1.1	0.9	0.8	0.7	0.8
Central and South America	359 (8.1)	565 (8.6)	639 (8.4)	682 (8.3)	697 (8.2)	1.7	1.0	0.7	0.5	0.8
OECD Europe	472 (10.7)	539 (8.2)	559 (7.4)	566 (6.9)	568 (6.7)	0.5	0.3	0.1	0.0	0.2
Non-OECD Europe	322 (7.3)	338 (5.1)	335 (4.4)	328 (4.0)	324 (3.8)	0.2	-0.1	-0.2	-0.3	-0.2
Africa	478 (10.8)	958 (14.5)	1,268 (16.7)	1,515 (18.4)	1,638 (19.3)	2.6	2.2	1.8	1.6	1.9
Middle East	93 (2.1)	195 (3.0)	244 (3.2)	279 (3.4)	295 (3.5)	2.8	1.8	1.3	1.1	1.5
Oceania	18 (0.4)	25 (0.4)	28 (0.4)	31 (0.4)	32 (0.4)	1.3	0.9	0.8	0.6	0.8
OECD	964 (21.8)	1,180 (17.9)	1,253 (16.5)	1,290 (15.7)	1,303 (15.3)	0.8	0.5	0.3	0.2	0.4
Non-OECD	3,464 (78.2)	5,415 (82.1)	6,345 (83.5)	6,929 (84.3)	7,197 (84.7)	1.7	1.2	0.9	0.8	1.0
World	4,428 (100.0)	6,595 (100.0)	7,598 (100.0)	8,219 (100.0)	8,500 (100.0)	1.5	1.1	0.8	0.7	0.9

Source: Based on data from "Population Estimates and Projections: The 2009 Revision" (United Nation) and "World Development Indicators" (World Bank).

Note: Figures in parentheses indicate percentage shares of totals.

Table 2 GDP

(Unit: billions of US dollars at 2000 value)

	Actual		Forecast			AAGR(%)				
	1980	2007	2020	2030	2035	2007 /1980	2020 /2007	2030 /2020	2035 /2030	2035 /2007
Asia	3,861 (21.5)	11,631 (29.0)	19,012 (33.6)	27,030 (35.8)	31,818 (36.9)	4.2	3.9	3.6	3.3	3.7
China	183 (1.0)	2,387 (6.0)	5,789 (10.2)	9,187 (12.2)	11,049 (12.8)	10.0	7.1	4.7	3.8	5.6
India	160 (0.9)	779 (1.9)	1,752 (3.1)	3,138 (4.2)	4,140 (4.8)	6.0	6.4	6.0	5.7	6.1
Japan	2,801 (15.6)	5,194 (12.9)	6,036 (10.7)	6,781 (9.0)	7,135 (8.3)	2.3	1.2	1.2	1.0	1.1
South Korea	123 (0.7)	866 (2.2)	1,234 (2.2)	1,643 (2.2)	1,878 (2.2)	7.5	2.8	2.9	2.7	2.8
Taiwan	79 (0.4)	416 (1.0)	606 (1.1)	799 (1.1)	908 (1.1)	6.3	2.9	2.8	2.6	2.8
Indonesia	59 (0.3)	233 (0.6)	416 (0.7)	616 (0.8)	742 (0.9)	5.2	4.6	4.0	3.8	4.2
Malaysia	25 (0.1)	126 (0.3)	223 (0.4)	333 (0.4)	398 (0.5)	6.1	4.5	4.1	3.6	4.2
Philippines	48 (0.3)	107 (0.3)	193 (0.3)	285 (0.4)	344 (0.4)	3.0	4.6	4.0	3.8	4.3
Thailand	37 (0.2)	173 (0.4)	286 (0.5)	449 (0.6)	557 (0.6)	5.9	4.0	4.6	4.4	4.3
Vietnam	9 (0.1)	52 (0.1)	119 (0.2)	217 (0.3)	290 (0.3)	6.7	6.6	6.2	6.0	6.3
Singapore	22 (0.1)	131 (0.3)	193 (0.3)	280 (0.4)	334 (0.4)	6.9	3.0	3.8	3.6	3.4
Asia(exc. Japan)	1,060 (5.9)	6,437 (16.0)	12,976 (22.9)	20,249 (26.8)	24,683 (28.7)	6.9	5.5	4.6	4.0	4.9
North America	5,540 (30.9)	12,412 (30.9)	16,348 (28.9)	21,087 (27.9)	23,508 (27.3)	3.0	2.1	2.6	2.2	2.3
Central and South America	1,325 (7.4)	2,584 (6.4)	3,905 (6.9)	5,412 (7.2)	6,312 (7.3)	2.5	3.2	3.3	3.1	3.2
OECD Europe	5,601 (31.2)	10,345 (25.8)	12,233 (21.6)	14,726 (19.5)	15,915 (18.5)	2.3	1.3	1.9	1.6	1.6
Non-OECD Europe	579 (3.2)	793 (2.0)	1,302 (2.3)	1,900 (2.5)	2,188 (2.5)	1.2	3.9	3.8	2.9	3.7
Africa	358 (2.0)	811 (2.0)	1,402 (2.5)	1,939 (2.6)	2,259 (2.6)	3.1	4.3	3.3	3.1	3.7
Middle East	436 (2.4)	969 (2.4)	1,646 (2.9)	2,437 (3.2)	2,936 (3.4)	3.0	4.2	4.0	3.8	4.0
Oceania	243 (1.4)	566 (1.4)	772 (1.4)	1,031 (1.4)	1,180 (1.4)	3.2	2.4	2.9	2.7	2.7
OECD	14,654 (81.7)	30,071 (75.0)	37,615 (66.4)	46,655 (61.7)	51,231 (59.5)	2.7	1.7	2.2	1.9	1.9
Non-OECD	3,289 (18.3)	10,040 (25.0)	19,004 (33.6)	28,907 (38.3)	34,885 (40.5)	4.2	5.0	4.3	3.8	4.5
World	17,943 (100.0)	40,111 (100.0)	56,620 (100.0)	75,563 (100.0)	86,116 (100.0)	3.0	2.7	2.9	2.6	2.8

Source: Based on data from "World Development Indicators" (World Bank) and other sources; forecast figures prepared by the IEEJ.

Note: Figures in parentheses indicate percentage shares of totals.

Table 3 Primary energy consumption (by region)

(Unit: Mtoe)

	Actual		Forecast			AAGR(%)				
	1980	2007	2020	2030	2035	2007 /1980	2020 /2007	2030 /2020	2035 /2030	2035 /2007
Asia	1,051 (16.1)	3,554 (32.1)	5,017 (37.1)	6,359 (40.4)	7,084 (42.0)	4.6	2.7	2.4	2.2	2.5
China	419 (6.4)	1,765 (15.9)	2,539 (18.8)	3,161 (20.1)	3,451 (20.4)	5.5	2.8	2.2	1.8	2.4
India	91 (1.4)	433 (3.9)	691 (5.1)	1,013 (6.4)	1,208 (7.2)	6.0	3.7	3.9	3.6	3.7
Japan	345 (5.3)	514 (4.6)	508 (3.8)	500 (3.2)	493 (2.9)	1.5	-0.1	-0.1	-0.3	-0.1
South Korea	41 (0.6)	222 (2.0)	306 (2.3)	332 (2.1)	341 (2.0)	6.4	2.5	0.8	0.6	1.5
Taiwan	28 (0.4)	109 (1.0)	134 (1.0)	148 (0.9)	152 (0.9)	5.2	1.6	1.0	0.5	1.2
Indonesia	26 (0.4)	138 (1.2)	226 (1.7)	321 (2.0)	378 (2.2)	6.4	3.8	3.6	3.3	3.7
Malaysia	11 (0.2)	70 (0.6)	97 (0.7)	126 (0.8)	144 (0.9)	7.3	2.5	2.7	2.7	2.6
Philippines	13 (0.2)	32 (0.3)	58 (0.4)	91 (0.6)	112 (0.7)	3.4	4.7	4.6	4.1	4.5
Thailand	11 (0.2)	86 (0.8)	145 (1.1)	200 (1.3)	234 (1.4)	7.8	4.1	3.3	3.1	3.6
Vietnam	4 (0.1)	31 (0.3)	66 (0.5)	114 (0.7)	154 (0.9)	7.7	6.0	5.5	6.3	5.9
Singapore	5 (0.1)	27 (0.2)	32 (0.2)	40 (0.3)	45 (0.3)	6.3	1.4	2.2	2.4	1.9
Asia(exc. Japan)	707 (10.8)	3,040 (27.4)	4,509 (33.3)	5,859 (37.3)	6,591 (39.1)	5.6	3.1	2.7	2.4	2.8
North America	1,997 (30.5)	2,609 (23.6)	2,679 (19.8)	2,788 (17.7)	2,845 (16.9)	1.0	0.2	0.4	0.4	0.3
Central and South America	317 (4.8)	636 (5.7)	850 (6.3)	1,054 (6.7)	1,174 (7.0)	2.6	2.3	2.2	2.2	2.2
OECD Europe	1,494 (22.8)	1,827 (16.5)	1,936 (14.3)	2,024 (12.9)	2,055 (12.2)	0.7	0.4	0.4	0.3	0.4
Non-OECD Europe	1,187 (18.1)	1,106 (10.0)	1,297 (9.6)	1,433 (9.1)	1,483 (8.8)	-0.3	1.2	1.0	0.7	1.1
Africa	121 (1.9)	314 (2.8)	483 (3.6)	629 (4.0)	713 (4.2)	3.6	3.4	2.7	2.5	3.0
Middle East	127 (1.9)	550 (5.0)	775 (5.7)	935 (5.9)	1,012 (6.0)	5.6	2.7	1.9	1.6	2.2
Oceania	79 (1.2)	141 (1.3)	159 (1.2)	174 (1.1)	181 (1.1)	2.2	0.9	0.9	0.9	0.9
OECD	4,051 (61.9)	5,497 (49.6)	5,799 (42.9)	6,074 (38.6)	6,200 (36.7)	1.1	0.4	0.5	0.4	0.4
Non-OECD	2,323 (35.5)	5,239 (47.3)	7,397 (54.7)	9,323 (59.3)	10,347 (61.3)	3.1	2.7	2.3	2.1	2.5
World	6,549 (100.0)	11,078 (100.0)	13,526 (100.0)	15,727 (100.0)	16,877 (100.0)	2.0	1.5	1.5	1.4	1.5

Source: Based on data from "Energy Balances of OECD Countries" (IEA) and "Energy Balances of Non-OECD Countries" (IEA) and forecast figures prepared by the IEEJ.

Note: Figures in parentheses indicate percentage shares of totals.

Table 4 Primary energy consumption (Coal)

(Unit: Mtoe)

	Actual		Forecast			AAGR(%)				
	1980	2007	2020	2030	2035	2007 /1980	2020 /2007	2030 /2020	2035 /2030	2035 /2007
Asia	474 (26.6)	1,848 (58.0)	2,335 (63.0)	2,764 (65.7)	3,022 (67.3)	5.2	1.8	1.7	1.8	1.8
China	313 (17.6)	1,285 (40.3)	1,579 (42.6)	1,751 (41.6)	1,834 (40.9)	5.4	1.6	1.0	0.9	1.3
India	52 (2.9)	242 (7.6)	348 (9.4)	508 (12.1)	612 (13.6)	5.9	2.8	3.9	3.8	3.4
Japan	60 (3.3)	115 (3.6)	103 (2.8)	99 (2.3)	97 (2.2)	2.5	-0.8	-0.4	-0.3	-0.6
South Korea	13 (0.8)	56 (1.8)	73 (2.0)	78 (1.8)	78 (1.7)	5.4	2.1	0.6	0.1	1.2
Taiwan	4 (0.2)	42 (1.3)	52 (1.4)	58 (1.4)	56 (1.2)	9.2	1.7	1.1	-0.8	1.0
Indonesia	0 (0.0)	37 (1.2)	52 (1.4)	79 (1.9)	106 (2.4)	22.1	2.7	4.3	6.0	3.9
Malaysia	0 (0.0)	9 (0.3)	16 (0.4)	25 (0.6)	31 (0.7)	22.1	4.4	4.7	4.6	4.6
Philippines	0 (0.0)	6 (0.2)	13 (0.4)	22 (0.5)	29 (0.6)	11.1	5.9	5.0	6.0	5.6
Thailand	0 (0.0)	14 (0.4)	29 (0.8)	44 (1.0)	52 (1.2)	13.5	5.6	4.2	3.6	4.7
Vietnam	2 (0.1)	10 (0.3)	22 (0.6)	37 (0.9)	54 (1.2)	5.6	6.4	5.3	7.9	6.3
Singapore	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	3.9	-	-	-	-
Asia(exc. Japan)	414 (23.3)	1,734 (54.4)	2,232 (60.3)	2,665 (63.4)	2,925 (65.1)	5.4	2.0	1.8	1.9	1.9
North America	397 (22.3)	584 (18.3)	602 (16.3)	653 (15.5)	672 (15.0)	1.4	0.2	0.8	0.6	0.5
Central and South America	14 (0.8)	32 (1.0)	55 (1.5)	71 (1.7)	80 (1.8)	3.2	4.3	2.7	2.5	3.4
OECD Europe	464 (26.1)	337 (10.6)	297 (8.0)	285 (6.8)	271 (6.0)	-1.2	-1.0	-0.4	-1.0	-0.8
Non-OECD Europe	350 (19.7)	213 (6.7)	196 (5.3)	184 (4.4)	174 (3.9)	-1.8	-0.6	-0.7	-1.1	-0.7
Africa	52 (2.9)	106 (3.3)	143 (3.9)	166 (3.9)	183 (4.1)	2.7	2.3	1.5	2.0	2.0
Middle East	1 (0.1)	10 (0.3)	14 (0.4)	18 (0.4)	21 (0.5)	8.1	2.6	2.7	2.8	2.7
Oceania	28 (1.6)	56 (1.8)	62 (1.7)	66 (1.6)	66 (1.5)	2.6	0.7	0.6	0.1	0.6
OECD	965 (54.2)	1,158 (36.3)	1,157 (31.2)	1,206 (28.7)	1,214 (27.0)	0.7	-0.01	0.4	0.1	0.2
Non-OECD	815 (45.8)	2,029 (63.7)	2,546 (68.8)	3,000 (71.3)	3,276 (73.0)	3.4	1.8	1.7	1.8	1.7
World	1,780 (100.0)	3,186 (100.0)	3,703 (100.0)	4,206 (100.0)	4,490 (100.0)	2.2	1.2	1.3	1.3	1.2

Source: Based on data from "Energy Balances of OECD Countries" (IEA) and "Energy Balances of Non-OECD Countries" (IEA), forecast figures prepared by the IEEJ.

Note: Figures in parentheses indicate percentage shares of totals.

Table 5 Primary energy consumption (Oil)

(Unit: Mtoe)

	Actual		Forecast			AAGR(%)				
	1980	2007	2020	2030	2035	2007 /1980	2020 /2007	2030 /2020	2035 /2030	2035 /2007
Asia	479 (15.5)	1,085 (26.6)	1,475 (32.1)	1,844 (35.9)	2,025 (37.5)	3.1	2.4	2.3	1.9	2.3
China	89 (2.9)	357 (8.8)	593 (12.9)	807 (15.7)	902 (16.7)	5.3	4.0	3.1	2.2	3.4
India	33 (1.1)	141 (3.5)	219 (4.8)	296 (5.8)	334 (6.2)	5.5	3.5	3.1	2.4	3.1
Japan	234 (7.6)	230 (5.6)	187 (4.1)	171 (3.3)	165 (3.0)	-0.1	-1.6	-0.9	-0.7	-1.2
South Korea	27 (0.9)	94 (2.3)	108 (2.4)	108 (2.1)	107 (2.0)	4.8	1.1	-0.0	-0.1	0.5
Taiwan	20 (0.7)	46 (1.1)	47 (1.0)	51 (1.0)	54 (1.0)	3.1	0.2	0.9	0.9	0.6
Indonesia	21 (0.7)	60 (1.5)	83 (1.8)	98 (1.9)	105 (1.9)	4.0	2.5	1.7	1.4	2.0
Malaysia	8 (0.3)	26 (0.6)	35 (0.8)	40 (0.8)	43 (0.8)	4.4	2.4	1.3	1.2	1.8
Philippines	11 (0.3)	13 (0.3)	22 (0.5)	33 (0.6)	40 (0.7)	0.8	4.0	4.0	4.0	4.0
Thailand	11 (0.3)	42 (1.0)	64 (1.4)	78 (1.5)	85 (1.6)	5.2	3.3	2.1	1.8	2.6
Vietnam	2 (0.1)	13 (0.3)	19 (0.4)	27 (0.5)	34 (0.6)	7.6	2.9	3.5	4.7	3.4
Singapore	5 (0.2)	20 (0.5)	21 (0.4)	23 (0.5)	25 (0.5)	5.2	0.2	1.3	1.4	0.8
Asia(exc. Japan)	245 (7.9)	855 (21.0)	1,287 (28.0)	1,674 (32.6)	1,861 (34.5)	4.7	3.2	2.7	2.1	2.8
North America	885 (28.7)	1,004 (24.6)	951 (20.7)	935 (18.2)	933 (17.3)	0.5	-0.4	-0.2	-0.1	-0.3
Central and South America	224 (7.2)	351 (8.6)	368 (8.0)	408 (8.0)	432 (8.0)	1.7	0.4	1.0	1.1	0.7
OECD Europe	688 (22.3)	634 (15.5)	589 (12.8)	581 (11.3)	573 (10.6)	-0.3	-0.6	-0.1	-0.3	-0.4
Non-OECD Europe	449 (14.5)	224 (5.5)	256 (5.6)	283 (5.5)	292 (5.4)	-2.5	1.0	1.0	0.6	1.0
Africa	56 (1.8)	119 (2.9)	165 (3.6)	196 (3.8)	214 (4.0)	2.9	2.5	1.8	1.7	2.1
Middle East	96 (3.1)	288 (7.1)	421 (9.2)	514 (10.0)	556 (10.3)	4.2	3.0	2.0	1.6	2.4
Oceania	34 (1.1)	43 (1.1)	43 (0.9)	44 (0.8)	44 (0.8)	0.9	0.0	0.1	0.2	0.1
OECD	1,933 (62.6)	2,110 (51.7)	1,968 (42.8)	1,938 (37.7)	1,929 (35.7)	0.3	-0.5	-0.2	-0.1	-0.3
Non-OECD	977 (31.7)	1,638 (40.2)	2,299 (50.0)	2,868 (55.8)	3,141 (58.2)	1.9	2.6	2.2	1.8	2.4
World	3,085 (100.0)	4,078 (100.0)	4,597 (100.0)	5,137 (100.0)	5,400 (100.0)	1.0	0.9	1.1	1.0	1.0

Source: Based on data from "Energy Balances of OECD Countries" (IEA) and "Energy Balances of Non-OECD Countries" (IEA), forecast figures prepared by the IEEJ.

Note: Figures in parentheses indicate percentage shares of totals.

Table 6 Primary energy consumption (Gas)

(Unit: Mtoe)

	Actual		Forecast			AAGR(%)				
	1980	2007	2020	2030	2035	2007 /1980	2020 /2007	2030 /2020	2035 /2030	2035 /2007
Asia	51 (4.1)	376 (14.9)	623 (18.9)	959 (23.6)	1,165 (25.9)	7.7	4.0	4.4	4.0	4.1
China	12 (1.0)	59 (2.4)	120 (3.6)	255 (6.3)	331 (7.4)	6.1	5.6	7.8	5.3	6.3
India	1 (0.1)	33 (1.3)	70 (2.1)	119 (2.9)	159 (3.5)	13.2	5.9	5.5	5.9	5.7
Japan	21 (1.7)	83 (3.3)	86 (2.6)	85 (2.1)	83 (1.8)	5.2	0.3	-0.1	-0.4	-0.0
South Korea	0 (0.0)	31 (1.2)	56 (1.7)	68 (1.7)	73 (1.6)	-	4.6	1.9	1.5	3.1
Taiwan	2 (0.1)	10 (0.4)	18 (0.6)	24 (0.6)	28 (0.6)	7.0	4.8	2.9	3.0	3.8
Indonesia	5 (0.4)	34 (1.4)	61 (1.9)	96 (2.4)	116 (2.6)	7.4	4.5	4.6	3.7	4.4
Malaysia	2 (0.2)	35 (1.4)	44 (1.3)	57 (1.4)	66 (1.5)	10.7	1.9	2.6	3.0	2.3
Philippines	0 (0.0)	3 (0.1)	9 (0.3)	16 (0.4)	20 (0.4)	-	8.8	5.7	4.5	6.9
Thailand	0 (0.0)	28 (1.1)	50 (1.5)	74 (1.8)	91 (2.0)	-	4.5	3.9	4.3	4.3
Vietnam	0 (0.0)	5 (0.2)	15 (0.5)	32 (0.8)	42 (0.9)	-	8.0	7.8	5.8	7.6
Singapore	0 (0.0)	7 (0.3)	12 (0.4)	17 (0.4)	20 (0.4)	-	4.3	3.7	3.7	4.0
Asia(exc. Japan)	30 (2.4)	293 (11.6)	537 (16.3)	875 (21.6)	1,082 (24.1)	8.9	4.8	5.0	4.3	4.8
North America	522 (42.5)	617 (24.6)	635 (19.3)	657 (16.2)	666 (14.8)	0.6	0.2	0.3	0.3	0.3
Central and South America	51 (4.1)	158 (6.3)	294 (8.9)	391 (9.6)	457 (10.2)	4.3	4.9	2.9	3.2	3.9
OECD Europe	206 (16.8)	448 (17.8)	538 (16.3)	588 (14.5)	610 (13.6)	2.9	1.4	0.9	0.7	1.1
Non-OECD Europe	352 (28.6)	560 (22.3)	677 (20.5)	778 (19.2)	821 (18.3)	1.7	1.5	1.4	1.1	1.4
Africa	9 (0.7)	76 (3.0)	159 (4.8)	244 (6.0)	291 (6.5)	8.2	5.8	4.4	3.6	4.9
Middle East	29 (2.4)	250 (9.9)	332 (10.1)	395 (9.7)	427 (9.5)	8.3	2.2	1.7	1.6	1.9
Oceania	8 (0.7)	29 (1.2)	39 (1.2)	47 (1.2)	52 (1.1)	4.8	2.3	1.9	2.0	2.1
OECD	777 (63.3)	1,259 (50.1)	1,430 (43.4)	1,545 (38.1)	1,602 (35.7)	1.8	1.0	0.8	0.7	0.9
Non-OECD	451 (36.7)	1,255 (49.9)	1,866 (56.6)	2,512 (61.9)	2,887 (64.3)	3.9	3.1	3.0	2.8	3.0
World	1,229 (100.0)	2,514 (100.0)	3,296 (100.0)	4,058 (100.0)	4,489 (100.0)	2.7	2.1	2.1	2.0	2.1

Source: Based on data from "Energy Balances of OECD Countries" (IEA) and "Energy Balances of Non-OECD Countries" (IEA), forecast figures prepared by the IEEJ.

Note: Figures in parentheses indicate percentage shares of totals.

Table 7 Final energy consumption (by region)

(Unit: Mtoe)

	Actual		Forecast			AAGR(%)				
	1980	2007	2020	2030	2035	2007 /1980	2020 /2007	2030 /2020	2035 /2030	2035 /2007
Asia	752 (16.4)	2,186 (30.9)	3,157 (36.1)	3,996 (39.3)	4,459 (40.8)	4.0	2.9	2.4	2.2	2.6
China	313 (6.8)	1,059 (14.9)	1,606 (18.4)	2,014 (19.8)	2,210 (20.2)	4.6	3.3	2.3	1.9	2.7
India	62 (1.4)	232 (3.3)	385 (4.4)	566 (5.6)	676 (6.2)	5.0	4.0	3.9	3.6	3.9
Japan	232 (5.1)	342 (4.8)	330 (3.8)	320 (3.1)	314 (2.9)	1.4	-0.3	-0.3	-0.4	-0.3
South Korea	31 (0.7)	147 (2.1)	199 (2.3)	217 (2.1)	225 (2.1)	5.9	2.4	0.9	0.7	1.5
Taiwan	19 (0.4)	65 (0.9)	85 (1.0)	95 (0.9)	98 (0.9)	4.7	2.1	1.1	0.7	1.5
Indonesia	20 (0.4)	94 (1.3)	142 (1.6)	199 (2.0)	236 (2.2)	5.8	3.2	3.4	3.5	3.3
Malaysia	6 (0.1)	42 (0.6)	57 (0.7)	74 (0.7)	84 (0.8)	7.3	2.5	2.6	2.5	2.5
Philippines	9 (0.2)	17 (0.2)	32 (0.4)	49 (0.5)	60 (0.6)	2.6	4.9	4.3	4.2	4.6
Thailand	8 (0.2)	58 (0.8)	97 (1.1)	130 (1.3)	149 (1.4)	7.4	4.1	3.0	2.7	3.4
Vietnam	3 (0.1)	25 (0.4)	47 (0.5)	81 (0.8)	108 (1.0)	7.6	5.0	5.6	5.9	5.4
Singapore	2 (0.0)	13 (0.2)	17 (0.2)	22 (0.2)	24 (0.2)	7.0	2.1	2.2	2.4	2.2
Asia(exc. Japan)	520 (11.4)	1,844 (26.0)	2,827 (32.4)	3,676 (36.1)	4,144 (37.9)	4.8	3.3	2.7	2.4	2.9
North America	1,466 (32.0)	1,793 (25.3)	1,815 (20.8)	1,866 (18.3)	1,897 (17.3)	0.7	0.1	0.3	0.3	0.2
Central and South America	227 (5.0)	463 (6.5)	593 (6.8)	729 (7.2)	811 (7.4)	2.7	1.9	2.1	2.1	2.0
OECD Europe	1,077 (23.5)	1,287 (18.2)	1,363 (15.6)	1,432 (14.1)	1,461 (13.4)	0.7	0.4	0.5	0.4	0.5
Non-OECD Europe	829 (18.1)	712 (10.1)	863 (9.9)	974 (9.6)	1,017 (9.3)	-0.6	1.5	1.2	0.9	1.3
Africa	86 (1.9)	189 (2.7)	276 (3.2)	350 (3.4)	392 (3.6)	3.0	2.9	2.4	2.3	2.6
Middle East	86 (1.9)	364 (5.1)	566 (6.5)	712 (7.0)	781 (7.1)	5.5	3.5	2.3	1.9	2.8
Oceania	54 (1.2)	88 (1.2)	101 (1.2)	111 (1.1)	118 (1.1)	1.9	1.0	1.0	1.1	1.0
OECD	2,926 (63.9)	3,771 (53.3)	3,933 (45.0)	4,095 (40.3)	4,179 (38.2)	0.9	0.3	0.4	0.4	0.4
Non-OECD	1,651 (36.1)	3,310 (46.7)	4,801 (55.0)	6,076 (59.7)	6,757 (61.8)	2.6	2.9	2.4	2.1	2.6
World	4,577 (100.0)	7,082 (100.0)	8,734 (100.0)	10,171 (100.0)	10,935 (100.0)	1.6	1.6	1.5	1.5	1.6

Source: Based on data from "Energy Balances of OECD Countries" (IEA) and "Energy Balances of Non-OECD Countries" (IEA), forecast figures prepared by the IEEJ.

Note: Figures in parentheses indicate percentage shares of totals.

Table 8 Final energy consumption (Industry)

(Unit: Mtoe)

	Actual		Forecast			AAGR(%)				
	1980	2007	2020	2030	2035	2007 /1980	2020 /2007	2030 /2020	2035 /2030	2035 /2007
Asia	364 (21.3)	952 (44.2)	1,311 (48.2)	1,499 (49.0)	1,617 (49.5)	3.6	2.5	1.4	1.5	1.9
China	186 (10.9)	573 (26.6)	743 (27.3)	758 (24.8)	762 (23.3)	4.3	2.0	0.2	0.1	1.0
India	24 (1.4)	86 (4.0)	154 (5.6)	227 (7.4)	273 (8.4)	4.8	4.5	4.0	3.8	4.2
Japan	91 (5.3)	99 (4.6)	94 (3.5)	93 (3.0)	92 (2.8)	0.3	-0.4	-0.1	-0.3	-0.3
South Korea	10 (0.6)	41 (1.9)	97 (3.6)	102 (3.3)	107 (3.3)	5.3	6.8	0.5	0.8	3.4
Taiwan	10 (0.6)	22 (1.0)	27 (1.0)	31 (1.0)	34 (1.0)	3.0	1.5	1.4	1.5	1.5
Indonesia	7 (0.4)	41 (1.9)	51 (1.9)	74 (2.4)	90 (2.8)	7.0	1.7	3.8	3.8	2.8
Malaysia	3 (0.2)	19 (0.9)	24 (0.9)	32 (1.1)	37 (1.1)	7.2	1.8	2.9	3.0	2.4
Philippines	3 (0.2)	4 (0.2)	6 (0.2)	7 (0.2)	8 (0.3)	1.2	3.2	1.9	2.0	2.5
Thailand	3 (0.2)	17 (0.8)	29 (1.1)	42 (1.4)	49 (1.5)	7.1	4.0	3.8	3.4	3.8
Vietnam	2 (0.1)	10 (0.5)	24 (0.9)	46 (1.5)	63 (1.9)	7.4	6.8	6.6	6.5	6.7
Singapore	0 (0.0)	1 (0.1)	2 (0.1)	3 (0.1)	3 (0.1)	3.7	3.7	3.6	3.5	3.6
Asia(exc. Japan)	273 (15.9)	853 (39.6)	1,216 (44.8)	1,406 (45.9)	1,525 (46.7)	4.3	2.8	1.5	1.6	2.1
North America	437 (25.6)	349 (16.2)	360 (13.2)	358 (11.7)	355 (10.9)	-0.8	0.2	-0.1	-0.2	0.1
Central and South America	77 (4.5)	135 (6.3)	190 (7.0)	245 (8.0)	276 (8.5)	2.1	2.7	2.5	2.4	2.6
OECD Europe	357 (20.9)	323 (15.0)	360 (13.2)	374 (12.2)	381 (11.7)	-0.4	0.8	0.4	0.4	0.6
Non-OECD Europe	386 (22.6)	218 (10.1)	263 (9.7)	285 (9.3)	293 (9.0)	-2.1	1.5	0.8	0.5	1.1
Africa	37 (2.2)	57 (2.6)	72 (2.7)	88 (2.9)	97 (3.0)	1.6	1.9	2.0	2.0	1.9
Middle East	33 (1.9)	92 (4.3)	127 (4.7)	174 (5.7)	206 (6.3)	3.9	2.5	3.2	3.4	2.9
Oceania	20 (1.2)	30 (1.4)	34 (1.3)	38 (1.2)	40 (1.2)	1.5	1.1	1.0	1.0	1.0
OECD	938 (54.8)	872 (40.4)	981 (36.1)	1,009 (33.0)	1,023 (31.3)	-0.3	0.9	0.3	0.3	0.6
Non-OECD	773 (45.2)	1,284 (59.6)	1,737 (63.9)	2,051 (67.0)	2,241 (68.7)	1.9	2.4	1.7	1.8	2.0
World	1,711 (100.0)	2,155 (100.0)	2,718 (100.0)	3,061 (100.0)	3,264 (100.0)	0.9	1.8	1.2	1.3	1.5

Source: Based on data from "Energy Balances of OECD Countries" (IEA) and "Energy Balances of Non-OECD Countries" (IEA), forecast figures prepared by the IEEJ.

Note: Figures in parentheses indicate percentage shares of totals.

Table 9 Final energy consumption (Transportation)

(Unit: Mtoe)

	Actual		Forecast			AAGR(%)				
	1980	2007	2020	2030	2035	2007 /1980	2020 /2007	2030 /2020	2035 /2030	2035 /2007
Asia	127 (11.9)	403 (20.5)	613 (25.5)	829 (30.0)	935 (31.9)	4.4	3.3	3.1	2.4	3.0
China	25 (2.3)	141 (7.2)	273 (11.4)	412 (14.9)	472 (16.1)	6.7	5.2	4.2	2.8	4.4
India	17 (1.6)	41 (2.1)	63 (2.6)	90 (3.3)	105 (3.6)	3.3	3.4	3.7	3.0	3.4
Japan	54 (5.1)	82 (4.2)	72 (3.0)	68 (2.5)	66 (2.3)	1.6	-1.1	-0.6	-0.5	-0.8
South Korea	5 (0.4)	30 (1.5)	40 (1.7)	42 (1.5)	43 (1.5)	7.1	2.1	0.6	0.3	1.3
Taiwan	3 (0.3)	12 (0.6)	16 (0.7)	17 (0.6)	17 (0.6)	5.6	1.9	0.7	0.4	1.2
Indonesia	6 (0.6)	24 (1.2)	36 (1.5)	45 (1.6)	50 (1.7)	5.4	3.0	2.3	2.4	2.6
Malaysia	2 (0.2)	14 (0.7)	20 (0.8)	23 (0.8)	24 (0.8)	7.0	3.1	1.4	0.9	2.1
Philippines	3 (0.3)	9 (0.4)	16 (0.7)	26 (0.9)	33 (1.1)	3.4	4.7	5.1	4.8	4.9
Thailand	3 (0.3)	18 (0.9)	28 (1.2)	35 (1.3)	38 (1.3)	6.6	3.4	2.2	2.0	2.7
Vietnam	1 (0.1)	8 (0.4)	8 (0.3)	10 (0.4)	12 (0.4)	9.7	0.4	2.2	3.4	1.6
Singapore	1 (0.1)	2 (0.1)	2 (0.1)	2 (0.1)	2 (0.1)	3.6	-0.4	-0.5	-0.2	-0.4
Asia(exc. Japan)	73 (6.9)	321 (16.3)	541 (22.5)	761 (27.6)	869 (29.6)	5.6	4.1	3.5	2.7	3.6
North America	470 (44.1)	693 (35.3)	708 (29.5)	721 (26.1)	734 (25.0)	1.5	0.2	0.2	0.3	0.2
Central and South America	86 (8.0)	180 (9.1)	198 (8.3)	229 (8.3)	251 (8.6)	2.8	0.8	1.5	1.8	1.2
OECD Europe	209 (19.6)	348 (17.7)	407 (17.0)	431 (15.6)	438 (14.9)	1.9	1.2	0.6	0.3	0.8
Non-OECD Europe	102 (9.6)	140 (7.1)	172 (7.2)	191 (6.9)	196 (6.7)	1.2	1.6	1.1	0.5	1.2
Africa	26 (2.4)	64 (3.3)	89 (3.7)	106 (3.9)	115 (3.9)	3.5	2.5	1.8	1.6	2.1
Middle East	27 (2.5)	104 (5.3)	177 (7.4)	215 (7.8)	225 (7.7)	5.1	4.2	2.0	0.9	2.8
Oceania	19 (1.8)	32 (1.6)	35 (1.4)	36 (1.3)	37 (1.3)	1.9	0.6	0.4	0.4	0.5
OECD	779 (73.1)	1,237 (63.0)	1,311 (54.6)	1,355 (49.1)	1,381 (47.1)	1.7	0.4	0.3	0.4	0.4
Non-OECD	286 (26.9)	728 (37.0)	1,088 (45.4)	1,404 (50.9)	1,550 (52.9)	3.5	3.1	2.6	2.0	2.7
World	1,065 (100.0)	1,965 (100.0)	2,399 (100.0)	2,759 (100.0)	2,930 (100.0)	2.3	1.5	1.4	1.2	1.4

Source: Based on data from "Energy Balances of OECD Countries" (IEA) and "Energy Balances of Non-OECD Countries" (IEA), forecast figures prepared by the IEEJ.

Note: Figures in parentheses indicate percentage shares of totals.

Table 10 Final energy consumption (Residential/Commercial)

(Unit: Mtoe)

	Actual		Forecast			AAGR(%)				
	1980	2007	2020	2030	2035	2007 /1980	2020 /2007	2030 /2020	2035 /2030	2035 /2007
Asia	207 (14.2)	551 (25.1)	836 (30.5)	1,168 (35.3)	1,358 (37.6)	3.7	3.3	3.4	3.1	3.3
China	92 (6.3)	236 (10.8)	382 (13.9)	574 (17.3)	677 (18.7)	3.6	3.8	4.1	3.4	3.8
India	16 (1.1)	66 (3.0)	113 (4.1)	174 (5.3)	214 (5.9)	5.4	4.2	4.4	4.2	4.3
Japan	58 (4.0)	118 (5.4)	127 (4.6)	129 (3.9)	128 (3.6)	2.6	0.6	0.1	-0.0	0.3
South Korea	13 (0.9)	41 (1.9)	59 (2.2)	69 (2.1)	72 (2.0)	4.3	2.9	1.5	0.9	2.1
Taiwan	4 (0.2)	12 (0.5)	18 (0.7)	20 (0.6)	19 (0.5)	4.5	3.3	0.9	-0.4	1.8
Indonesia	6 (0.4)	19 (0.9)	33 (1.2)	48 (1.5)	59 (1.6)	4.1	4.4	4.0	3.9	4.2
Malaysia	1 (0.1)	6 (0.3)	9 (0.3)	13 (0.4)	15 (0.4)	7.6	3.0	3.6	3.3	3.3
Philippines	2 (0.1)	4 (0.2)	10 (0.4)	15 (0.5)	19 (0.5)	2.8	6.8	4.5	4.3	5.5
Thailand	2 (0.2)	12 (0.5)	20 (0.7)	29 (0.9)	35 (1.0)	6.1	3.9	4.0	4.0	4.0
Vietnam	1 (0.1)	6 (0.3)	13 (0.5)	23 (0.7)	30 (0.8)	6.1	6.3	5.7	5.6	6.0
Singapore	0 (0.0)	2 (0.1)	3 (0.1)	5 (0.1)	6 (0.2)	6.4	3.9	4.4	4.5	4.1
Asia(exc. Japan)	149 (10.2)	433 (19.7)	708 (25.8)	1,039 (31.4)	1,230 (34.0)	4.0	3.9	3.9	3.4	3.8
North America	446 (30.6)	568 (25.9)	606 (22.1)	658 (19.9)	682 (18.9)	0.9	0.5	0.8	0.7	0.7
Central and South America	49 (3.3)	105 (4.8)	149 (5.4)	191 (5.8)	214 (5.9)	2.9	2.7	2.5	2.3	2.6
OECD Europe	425 (29.2)	497 (22.7)	532 (19.4)	560 (16.9)	573 (15.9)	0.6	0.5	0.5	0.5	0.5
Non-OECD Europe	276 (19.0)	284 (12.9)	326 (11.9)	356 (10.8)	369 (10.2)	0.1	1.1	0.9	0.7	0.9
Africa	19 (1.3)	57 (2.6)	98 (3.6)	138 (4.2)	161 (4.5)	4.1	4.3	3.4	3.2	3.8
Middle East	22 (1.5)	111 (5.1)	167 (6.1)	205 (6.2)	222 (6.1)	6.2	3.2	2.1	1.7	2.5
Oceania	11 (0.8)	21 (1.0)	27 (1.0)	32 (1.0)	35 (1.0)	2.3	1.7	1.8	1.9	1.8
OECD	970 (66.6)	1,272 (58.0)	1,383 (50.4)	1,485 (44.9)	1,533 (42.4)	1.0	0.6	0.7	0.6	0.7
Non-OECD	486 (33.4)	922 (42.0)	1,358 (49.6)	1,822 (55.1)	2,082 (57.6)	2.4	3.0	3.0	2.7	3.0
World	1,456 (100.0)	2,194 (100.0)	2,741 (100.0)	3,307 (100.0)	3,616 (100.0)	1.5	1.7	1.9	1.8	1.8

Source: Based on data from "Energy Balances of OECD Countries" (IEA) and "Energy Balances of Non-OECD Countries" (IEA) and forecast figures prepared by the IEEJ.

Note: Figures in parentheses indicate percentage shares of totals.

Table 11 Final energy consumption (Electricity)

(Unit: TWh)

	Actual		Forecast			AAGR(%)				
	1980	2007	2020	2030	2035	2007 /1980	2020 /2007	2030 /2020	2035 /2030	2035 /2007
Asia	1,023 (15.2)	5,530 (33.7)	8,947 (39.8)	12,064 (42.8)	13,831 (44.2)	6.4	3.8	3.0	2.8	3.3
China	248 (3.7)	2,676 (16.3)	4,435 (19.7)	5,802 (20.6)	6,400 (20.4)	9.2	4.0	2.7	2.0	3.2
India	90 (1.3)	567 (3.5)	1,182 (5.3)	2,066 (7.3)	2,699 (8.6)	7.1	5.8	5.7	5.5	5.7
Japan	513 (7.6)	1,009 (6.1)	1,218 (5.4)	1,239 (4.4)	1,241 (4.0)	2.5	1.5	0.2	0.0	0.7
South Korea	33 (0.5)	391 (2.4)	542 (2.4)	589 (2.1)	600 (1.9)	9.6	2.5	0.8	0.4	1.5
Taiwan	37 (0.5)	213 (1.3)	283 (1.3)	323 (1.1)	332 (1.1)	6.7	2.2	1.3	0.6	1.6
Indonesia	6 (0.1)	121 (0.7)	275 (1.2)	450 (1.6)	564 (1.8)	11.6	6.5	5.0	4.6	5.6
Malaysia	9 (0.1)	89 (0.5)	172 (0.8)	259 (0.9)	314 (1.0)	9.0	5.2	4.2	4.0	4.6
Philippines	17 (0.3)	48 (0.3)	104 (0.5)	167 (0.6)	207 (0.7)	3.9	6.1	4.8	4.4	5.4
Thailand	13 (0.2)	133 (0.8)	228 (1.0)	357 (1.3)	443 (1.4)	9.0	4.2	4.6	4.4	4.4
Vietnam	3 (0.0)	61 (0.4)	144 (0.6)	273 (1.0)	380 (1.2)	12.2	6.8	6.6	6.8	6.7
Singapore	6 (0.1)	35 (0.2)	58 (0.3)	88 (0.3)	108 (0.3)	7.1	3.9	4.2	4.2	4.1
Asia(exc. Japan)	510 (7.6)	4,521 (27.5)	7,729 (34.4)	10,825 (38.4)	12,590 (40.2)	8.4	4.2	3.4	3.1	3.7
North America	2,329 (34.5)	4,333 (26.4)	4,916 (21.9)	5,538 (19.6)	5,841 (18.6)	2.3	1.0	1.2	1.1	1.1
Central and South America	305 (4.5)	1,002 (6.1)	1,547 (6.9)	2,103 (7.5)	2,420 (7.7)	4.5	3.4	3.1	2.9	3.2
OECD Europe	1,709 (25.3)	3,062 (18.6)	3,533 (15.7)	4,025 (14.3)	4,265 (13.6)	2.2	1.1	1.3	1.2	1.2
Non-OECD Europe	1,051 (15.6)	1,189 (7.2)	1,514 (6.7)	1,825 (6.5)	1,966 (6.3)	0.5	1.9	1.9	1.5	1.8
Africa	154 (2.3)	479 (2.9)	852 (3.8)	1,208 (4.3)	1,420 (4.5)	4.3	4.5	3.6	3.3	4.0
Middle East	75 (1.1)	573 (3.5)	858 (3.8)	1,048 (3.7)	1,141 (3.6)	7.8	3.2	2.0	1.7	2.5
Oceania	99 (1.5)	252 (1.5)	325 (1.4)	396 (1.4)	437 (1.4)	3.5	2.0	2.0	2.0	2.0
OECD	4,739 (70.3)	9,244 (56.3)	10,826 (48.1)	12,203 (43.3)	12,874 (41.1)	2.5	1.2	1.2	1.1	1.2
Non-OECD	2,005 (29.7)	7,177 (43.7)	11,664 (51.9)	16,004 (56.7)	18,447 (58.9)	4.8	3.8	3.2	2.9	3.4
World	6,745 (100.0)	16,420 (100.0)	22,491 (100.0)	28,207 (100.0)	31,322 (100.0)	3.4	2.4	2.3	2.1	2.3

Source: Based on data from "Energy Balances of OECD Countries" (IEA) and "Energy Balances of Non-OECD Countries" (IEA), forecast figures prepared by the IEEJ.

Note: Figures in parentheses indicate percentage shares of totals.

Table 12 Nuclear capacity

(Unit: GW)

	Actual		Forecast			AAGR(%)				
	1980	2007	2020	2030	2035	2007 /1980	2020 /2007	2030 /2020	2035 /2030	2035 /2007
Asia	18 (12.3)	86 (22.0)	157 (30.9)	211 (36.2)	224 (37.2)	6.0	4.7	3.0	1.2	3.5
China	0 (0.0)	9 (2.3)	41 (8.1)	73 (12.6)	81 (13.5)	-	12.3	5.9	2.1	8.1
India	1 (0.6)	4 (1.1)	20 (3.9)	33 (5.7)	36 (6.0)	6.0	12.9	5.2	1.6	8.0
Japan	15 (10.3)	50 (12.6)	60 (11.8)	63 (10.9)	63 (10.5)	4.5	1.5	0.5	0.0	0.9
South Korea	1 (0.4)	18 (4.5)	27 (5.4)	30 (5.2)	31 (5.2)	13.4	3.4	0.9	0.7	2.0
Taiwan	1 (0.9)	5 (1.3)	8 (1.5)	6 (1.1)	6 (1.1)	5.3	3.2	-1.8	0.0	0.8
Indonesia	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	-	-	-	-	-
Malaysia	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.2)	1 (0.2)	-	-	-	0.0	-
Philippines	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	-	-	-	-	-
Thailand	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.2)	1 (0.2)	-	-	-	0.0	-
Vietnam	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.2)	3 (0.4)	-	-	-	14.9	-
Singapore	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	-	-	-	-	-
Asia(exc. Japan)	3 (2.0)	37 (9.3)	97 (19.1)	147 (25.4)	160 (26.7)	9.9	7.8	4.3	1.7	5.4
North America	62 (42.5)	121 (30.8)	129 (25.4)	136 (23.4)	140 (23.2)	2.5	0.5	0.5	0.6	0.5
Central and South America	0 (0.2)	3 (0.8)	5 (1.0)	7 (1.2)	8 (1.4)	8.4	4.3	3.1	2.9	3.6
OECD Europe	49 (33.7)	137 (34.9)	137 (27.0)	135 (23.2)	132 (22.0)	3.9	0.0	-0.2	-0.4	-0.1
Non-OECD Europe	17 (11.4)	43 (11.0)	75 (14.9)	86 (14.8)	89 (14.8)	3.6	4.4	1.3	0.7	2.6
Africa	0 (0.0)	2 (0.5)	2 (0.4)	3 (0.6)	3 (0.6)	-	0.0	6.3	0.0	2.2
Middle East	0 (0.0)	0 (0.0)	3 (0.5)	4 (0.6)	5 (0.9)	-	-	3.3	7.6	-
Oceania	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	-	-	-	-	-
OECD	127 (86.5)	330 (84.2)	361 (71.1)	370 (63.7)	373 (61.9)	3.6	0.7	0.2	0.1	0.4
Non-OECD	20 (13.5)	62 (15.8)	147 (28.9)	211 (36.3)	229 (38.1)	4.3	6.9	3.7	1.7	4.8
World	146 (100.0)	392 (100.0)	508 (100.0)	581 (100.0)	602 (100.0)	3.7	2.0	1.3	0.7	1.5

Source: "World Nuclear Power Plants 2008" (Japan Atomic Industrial Forum, Inc.) and other sources; forecast figures prepared by the IEEJ.

Note: Figures in parentheses indicate percentage shares of totals.

Table 13 Biofuel

(Unit: Mtoe)

	Actual		Forecast			AAGR (%)				
	1980	2007	2020	2030	2035	2007 /1980	2020 /2007	2030 /2020	2035 /2030	2035 /2007
Asia	0 (0.0)	2.2 (6.0)	14.8 (14.4)	21 (15.1)	25 (15.8)	-	15.9	3.5	3.8	9.1
China	0 (0.0)	1 (3.6)	10.2 (9.9)	15 (10.9)	18 (11.6)	-	17.1	4.0	4.1	9.9
India	0 (0.0)	0.1 (0.4)	1.4 (1.3)	2.3 (1.7)	3.0 (1.9)	-	19.7	5.2	5.4	11.7
Japan	0 (0.0)	0 (0.0)	0.8 (0.7)	0.7 (0.5)	0.6 (0.4)	-	-	-1.3	-1.1	-
South Korea	0 (0.0)	0.1 (0.2)	0.5 (0.5)	0.5 (0.4)	0.5 (0.3)	-	15.0	0.2	-0.4	6.7
Taiwan	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	-	-	-	-	-
Indonesia	0 (0.0)	0 (1.3)	0.7 (0.7)	0.9 (0.6)	1.0 (0.6)	-	2.8	2.3	2.4	2.5
Malaysia	0 (0.0)	0 (0.0)	0.4 (0.4)	0.4 (0.3)	0.4 (0.3)	-	-	0.9	0.7	-
Philippines	0 (0.0)	0 (0.1)	0.1 (0.1)	0.2 (0.1)	0.2 (0.1)	-	12.0	3.3	3.2	7.3
Thailand	0 (0.0)	0 (0.4)	0.7 (0.7)	0.9 (0.7)	1.0 (0.6)	-	13.5	2.1	1.8	7.2
Vietnam	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	-	-	-	-	-
Singapore	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	-	-	-	-	-
Asia(exc. Japan)	0 (0.0)	2.2 (6.0)	14.0 (13.6)	20 (14.7)	24 (15.4)	-	15.4	3.7	3.9	9.0
North America	0 (0.0)	15.5 (42.5)	46 (44.6)	62 (45.1)	72 (45.5)	-	8.7	3.1	3.1	5.6
Central and South America	1.5 (100.0)	9.1 (25.0)	13 (12.4)	15 (11.0)	15 (9.5)	6.8	2.6	1.7	0.0	1.8
OECD Europe	0 (0.0)	9.4 (25.8)	29 (28.4)	39 (28.6)	46 (29.0)	-	9.1	3.1	3.2	5.8
Non-OECD Europe	0 (0.0)	0.2 (0.4)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	-	-14.6	0.0	0.0	-7.1
Africa	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	-	-	-	-	-
Middle East	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	-	-	-	-	-
Oceania	0 (0.0)	0.1 (0.3)	0.3 (0.3)	0.3 (0.2)	0.3 (0.2)	-	8.6	-0.0	0.0	3.9
OECD	0 (0.0)	25 (68.8)	77 (74.5)	103 (74.8)	120 (75.4)	-	8.9	3.0	3.1	5.7
Non-OECD	1.5 (100.0)	11.4 (31.2)	26 (25.5)	35 (25.2)	39 (24.6)	7.7	6.6	2.9	2.4	4.5
World	1.5 (100.0)	37 (100.0)	103 (100.0)	138 (100.0)	159 (100.0)	12.5	8.3	3.0	2.9	5.4

Source: Based on data from "Energy Balances of OECD Countries" (IEA) and "Energy Balances of Non-OECD Countries" (IEA), forecast figures prepared by the IEEJ.

Note: Figures in parentheses indicate percentage shares of totals.

Table 14 GDP per capita

(Unit: US dollars at 2000 value/person)

	Actual		Forecast			AAGR (%)				
	1980	2007	2020	2030	2035	2007 /1980	2020 /2007	2030 /2020	2035 /2030	2035 /2007
Asia	1,586	3,195	4,583	6,126	7,027	2.6	2.8	2.9	2.8	2.9
China	185	1,807	4,045	6,282	7,555	8.8	6.4	4.5	3.8	5.2
India	233	681	1,291	2,138	2,713	4.0	5.0	5.2	4.9	5.1
Japan	23,985	40,654	49,181	58,908	64,564	2.0	1.5	1.8	1.9	1.7
South Korea	3,221	17,784	24,568	32,936	38,200	6.5	2.5	3.0	3.0	2.8
Taiwan	4,499	18,234	25,847	34,602	40,314	5.3	2.7	3.0	3.1	2.9
Indonesia	397	1,033	1,633	2,269	2,670	3.6	3.6	3.3	3.3	3.4
Malaysia	1,848	4,803	7,050	9,549	10,998	3.6	3.0	3.1	2.9	3.0
Philippines	989	1,218	1,776	2,320	2,657	0.8	2.9	2.7	2.8	2.8
Thailand	790	2,712	4,203	6,408	7,900	4.7	3.4	4.3	4.3	3.9
Vietnam	168	612	1,226	2,080	2,715	4.9	5.5	5.4	5.5	5.5
Singapore	9,042	28,957	39,055	54,708	64,513	4.4	2.3	3.4	3.4	2.9
Asia(exc. Japan)	457	1,832	3,223	4,712	5,587	5.3	4.4	3.9	3.5	4.1
North America	22,000	37,135	43,531	52,045	56,126	2.0	1.2	1.8	1.5	1.5
Central and South America	3,696	4,575	6,111	7,937	9,050	0.8	2.3	2.6	2.7	2.5
OECD Europe	11,870	19,195	21,868	26,007	28,037	1.8	1.0	1.7	1.5	1.4
Non-OECD Europe	1,795	2,344	3,887	5,788	6,761	1.0	4.0	4.1	3.2	3.9
Africa	750	846	1,105	1,280	1,379	0.4	2.1	1.5	1.5	1.8
Middle East	4,673	4,970	6,737	8,725	9,939	0.2	2.4	2.6	2.6	2.5
Oceania	13,653	22,554	27,240	33,670	37,347	1.9	1.5	2.1	2.1	1.8
OECD	15,202	25,483	30,018	36,162	39,322	1.9	1.3	1.9	1.7	1.6
Non-OECD	949	1,854	2,995	4,172	4,847	2.5	3.8	3.4	3.0	3.5
World	4,052	6,082	7,451	9,194	10,131	1.5	1.6	2.1	2.0	1.8

Source: Based on data from "World Development Indicators" (World Bank) and other sources; forecast figures prepared by the IEEJ

Table 15 Primary energy consumption per capita

(Unit: toe/person)

	Actual		Forecast			AAGR(%)				
	1980	2007	2020	2030	2035	2007 /1980	2020 /2007	2030 /2020	2035 /2030	2035 /2007
Asia	0.43	0.98	1.21	1.44	1.56	3.1	1.7	1.8	1.7	1.7
China	0.42	1.34	1.77	2.16	2.36	4.3	2.2	2.0	1.8	2.1
India	0.13	0.38	0.51	0.69	0.79	4.0	2.3	3.1	2.8	2.7
Japan	2.95	4.02	4.14	4.35	4.46	1.2	0.2	0.5	0.5	0.4
South Korea	1.08	4.57	6.09	6.65	6.94	5.5	2.2	0.9	0.9	1.5
Taiwan	1.58	4.76	5.71	6.42	6.75	4.2	1.4	1.2	1.0	1.3
Indonesia	0.18	0.61	0.89	1.18	1.36	4.7	2.9	2.9	2.8	2.9
Malaysia	0.76	2.66	3.06	3.63	3.99	4.7	1.1	1.7	1.9	1.5
Philippines	0.27	0.37	0.54	0.74	0.86	1.1	3.0	3.2	3.1	3.1
Thailand	0.24	1.34	2.12	2.85	3.31	6.5	3.6	3.0	3.0	3.3
Vietnam	0.08	0.37	0.68	1.09	1.44	5.8	4.9	4.8	5.7	5.0
Singapore	2.12	5.91	6.52	7.82	8.69	3.9	0.8	1.8	2.1	1.4
Asia(exc. Japan)	0.30	0.87	1.12	1.36	1.49	3.9	2.0	2.0	1.8	2.0
North America	7.93	7.81	7.13	6.88	6.79	-0.1	-0.7	-0.4	-0.3	-0.5
Central and South America	0.88	1.13	1.33	1.55	1.68	0.9	1.3	1.5	1.7	1.4
OECD Europe	3.17	3.39	3.46	3.57	3.62	0.3	0.2	0.3	0.3	0.2
Non-OECD Europe	3.68	3.27	3.87	4.37	4.58	-0.4	1.3	1.2	1.0	1.2
Africa	0.25	0.33	0.38	0.42	0.44	0.9	1.2	0.9	0.9	1.0
Middle East	1.36	2.82	3.17	3.35	3.43	2.7	0.9	0.5	0.5	0.7
Oceania	4.41	5.61	5.60	5.67	5.74	0.9	-0.0	0.1	0.2	0.1
OECD	4.20	4.66	4.63	4.71	4.76	0.4	-0.1	0.2	0.2	0.1
Non-OECD	0.67	0.97	1.17	1.35	1.44	1.4	1.4	1.4	1.3	1.4
World	1.48	1.68	1.78	1.91	1.99	0.5	0.4	0.7	0.7	0.6

Table 16 Primary energy consumption per unit of GDP

(Unit: toe/millions of US dollars at 2000 value)

	Actual		Forecast			AAGR(%)				
	1980	2007	2020	2030	2035	2007 /1980	2020 /2007	2030 /2020	2035 /2030	2035 /2007
Asia	272	306	264	235	223	0.4	-1.1	-1.1	-1.1	-1.1
China	2288	739	439	344	312	-4.1	-3.9	-2.4	-1.9	-3.0
India	568	556	394	323	292	-0.1	-2.6	-2.0	-2.0	-2.3
Japan	123	99	84	74	69	-0.8	-1.2	-1.3	-1.3	-1.3
South Korea	336	257	248	202	182	-1.0	-0.3	-2.0	-2.1	-1.2
Taiwan	352	261	221	186	167	-1.1	-1.3	-1.7	-2.0	-1.6
Indonesia	443	593	542	522	509	1.1	-0.7	-0.4	-0.5	-0.5
Malaysia	413	553	433	380	363	1.1	-1.9	-1.3	-0.9	-1.5
Philippines	277	302	303	320	325	0.3	0.0	0.5	0.3	0.3
Thailand	307	495	505	445	419	1.8	0.2	-1.3	-1.2	-0.6
Vietnam	472	600	558	525	531	0.9	-0.6	-0.6	0.3	-0.4
Singapore	235	204	167	143	135	-0.5	-1.5	-1.5	-1.2	-1.5
Asia(exc. Japan)	667	472	348	289	267	-1.3	-2.3	-1.8	-1.6	-2.0
North America	361	210	164	132	121	-2.0	-1.9	-2.1	-1.8	-2.0
Central and South America	239	246	218	195	186	0.1	-0.9	-1.1	-0.9	-1.0
OECD Europe	267	177	158	137	129	-1.5	-0.8	-1.4	-1.2	-1.1
Non-OECD Europe	2051	1396	996	754	678	-1.4	-2.6	-2.7	-2.1	-2.5
Africa	338	387	345	324	315	0.5	-0.9	-0.6	-0.6	-0.7
Middle East	291	568	471	384	345	2.5	-1.4	-2.0	-2.1	-1.8
Oceania	323	249	205	168	154	-1.0	-1.5	-2.0	-1.8	-1.7
OECD	276	183	154	130	121	-1.5	-1.3	-1.7	-1.4	-1.5
Non-OECD	706	522	389	323	297	-1.1	-2.2	-1.9	-1.7	-2.0
World	365	276	239	208	196	-1.0	-1.1	-1.4	-1.2	-1.2

Table 17 CO₂ Emissions(Unit: Mt-CO₂)

	Actual		Forecast			AAGR(%)				
	1980	2007	2020	2030	2035	2007 /1980	2020 /2007	2030 /2020	2035 /2030	2035 /2007
Asia	3,302 (18.0)	10,669 (37.1)	13,948 (41.1)	17,233 (44.4)	19,128 (46.0)	4.4	2.1	2.1	2.1	2.1
China	1,507 (8.2)	5,978 (20.8)	7,666 (22.6)	9,100 (23.4)	9,795 (23.6)	5.2	1.9	1.7	1.5	1.8
India	295 (1.6)	1,357 (4.7)	1,942 (5.7)	2,831 (7.3)	3,403 (8.2)	5.8	2.8	3.8	3.8	3.3
Japan	916 (5.0)	1,224 (4.3)	1,066 (3.1)	1,007 (2.6)	984 (2.4)	1.1	-1.1	-0.6	-0.5	-0.8
South Korea	126 (0.7)	480 (1.7)	645 (1.9)	688 (1.8)	699 (1.7)	5.1	2.3	0.6	0.3	1.4
Taiwan	75 (0.4)	273 (0.9)	385 (1.1)	436 (1.1)	442 (1.1)	4.9	2.7	1.3	0.3	1.7
Indonesia	72 (0.4)	383 (1.3)	554 (1.6)	769 (2.0)	927 (2.2)	6.4	2.9	3.3	3.8	3.2
Malaysia	29 (0.2)	188 (0.7)	271 (0.8)	353 (0.9)	406 (1.0)	7.1	2.9	2.7	2.9	2.8
Philippines	34 (0.2)	72 (0.3)	142 (0.4)	224 (0.6)	284 (0.7)	2.9	5.3	4.6	4.9	5.0
Thailand	34 (0.2)	220 (0.8)	399 (1.2)	552 (1.4)	647 (1.6)	7.1	4.7	3.3	3.2	3.9
Vietnam	15 (0.1)	91 (0.3)	179 (0.5)	303 (0.8)	416 (1.0)	7.0	5.4	5.4	6.6	5.6
Singapore	15 (0.1)	54 (0.2)	89 (0.3)	109 (0.3)	122 (0.3)	4.9	3.9	2.1	2.2	3.0
Asia(exc. Japan)	2,386 (13.0)	9,445 (32.8)	12,882 (38.0)	16,226 (41.8)	18,144 (43.7)	5.2	2.4	2.3	2.3	2.4
North America	5,172 (28.2)	6,302 (21.9)	6,354 (18.7)	6,595 (17.0)	6,695 (16.1)	0.7	0.1	0.4	0.3	0.2
Central and South America	812 (4.4)	1,451 (5.0)	1,917 (5.7)	2,313 (6.0)	2,569 (6.2)	2.2	2.2	1.9	2.1	2.1
OECD Europe	4,178 (22.7)	3,978 (13.8)	4,076 (12.0)	4,111 (10.6)	4,080 (9.8)	-0.2	0.2	0.1	-0.2	0.1
Non-OECD Europe	3,401 (18.5)	2,653 (9.2)	2,873 (8.5)	3,038 (7.8)	3,081 (7.4)	-0.9	0.6	0.6	0.3	0.5
Africa	384 (2.1)	932 (3.2)	1,421 (4.2)	1,809 (4.7)	2,039 (4.9)	3.3	3.3	2.4	2.4	2.8
Middle East	352 (1.9)	1,353 (4.7)	1,871 (5.5)	2,254 (5.8)	2,442 (5.9)	5.1	2.5	1.9	1.6	2.1
Oceania	227 (1.2)	409 (1.4)	453 (1.3)	488 (1.3)	501 (1.2)	2.2	0.8	0.8	0.5	0.7
OECD	10,857 (59.1)	12,844 (44.7)	13,101 (38.6)	13,511 (34.8)	13,652 (32.9)	0.6	0.2	0.3	0.2	0.2
Non-OECD	6,971 (38.0)	14,903 (51.8)	19,812 (58.4)	24,330 (62.6)	26,883 (64.7)	2.9	2.2	2.1	2.0	2.1
World	18,366 (100.0)	28,761 (100.0)	33,927 (100.0)	38,855 (100.0)	41,549 (100.0)	1.7	1.3	1.4	1.3	1.3

Source: Based on data from "Energy Balances of OECD Countries" (IEA) and "Energy Balances of Non-OECD Countries" (IEA); forecast figures prepared by the IEEJ.

Note: Figures in parentheses indicate percentage shares of totals.

Table 18 Automobile Ownership

(Unit: millions of vehicles)

	Actual		Forecast			AAGR (%)				
	1980	2007	2020	2030	2035	2007 /1980	2020 /2007	2030 /2020	2035 /2030	2035 /2007
Asia	48 (19.8)	195 (53.7)	346 (83.4)	520 (117.9)	621 (137.1)	5.3	4.5	4.2	3.6	4.2
China	2 (1.8)	42 (31.8)	123 (86.2)	232 (158.4)	296 (202.1)	12.4	8.6	6.5	5.0	7.2
India	2 (2.4)	18 (15.9)	50 (36.7)	82 (55.6)	97 (63.6)	9.2	8.1	5.1	3.5	6.2
Japan	38 (324.2)	76 (592.6)	75 (612.8)	75 (648.9)	74 (671.1)	2.6	-0.1	-0.1	-0.1	-0.1
South Korea	1 (13.6)	16 (337.5)	24 (469.8)	27 (542.6)	28 (578.0)	13.7	2.8	1.4	1.0	2.0
Taiwan	0 (27.3)	7 (316.7)	10 (414.5)	10 (420.6)	9 (421.1)	10.5	2.3	-0.0	-0.5	1.0
Indonesia	1 (8.7)	8 (34.1)	15 (60.1)	26 (97.1)	34 (123.3)	6.8	5.4	5.6	5.4	5.5
Malaysia	1 (65.2)	8 (321.7)	12 (387.7)	14 (410.2)	15 (414.0)	8.7	2.9	1.5	0.9	2.1
Philippines	1 (17.7)	3 (33.1)	5 (49.8)	9 (71.1)	11 (85.6)	4.6	4.9	4.9	4.8	4.9
Thailand	1 (18.8)	10 (150.7)	18 (258.5)	24 (348.0)	29 (404.8)	9.3	4.8	3.3	3.2	4.0
Vietnam	0 (4.0)	1 (7.9)	1 (15.0)	2 (24.0)	3 (30.1)	4.4	6.1	5.6	5.2	5.7
Singapore	0 (102.9)	1 (159.2)	1 (159.8)	1 (170.3)	1 (176.1)	4.0	0.7	1.0	0.9	0.8
Asia(exc. Japan)	10 (4.5)	120 (34.1)	271 (67.3)	446 (103.7)	547 (123.8)	9.5	6.5	5.1	4.2	5.6
North America	169 (671.5)	267 (799.8)	308 (820.8)	345 (852.7)	363 (865.6)	1.7	1.1	1.1	1.0	1.1
Central and South America	29 (80.7)	81 (143.7)	145 (227.1)	241 (353.3)	310 (444.4)	3.9	4.6	5.2	5.2	4.9
OECD Europe	128 (270.6)	273 (506.7)	321 (573.9)	351 (620.5)	361 (636.1)	2.9	1.3	0.9	0.5	1.0
Non-OECD Europe	22 (67.9)	71 (209.5)	129 (384.5)	155 (471.0)	158 (486.9)	4.4	4.7	1.8	0.4	2.9
Africa	10 (20.5)	23 (24.4)	40 (31.6)	55 (36.3)	63 (38.6)	3.3	4.2	3.2	2.9	3.6
Middle East	6 (61.9)	24 (124.2)	48 (195.6)	63 (224.2)	67 (228.3)	5.5	5.4	2.7	1.5	3.7
Oceania	9 (495.3)	17 (688.6)	22 (775.2)	26 (843.5)	28 (881.4)	2.5	1.9	1.6	1.5	1.7
OECD	350 (362.7)	674 (571.4)	797 (635.7)	907 (703.1)	961 (737.6)	2.5	1.3	1.3	1.2	1.3
Non-OECD	71 (20.4)	278 (51.4)	562 (88.6)	849 (122.5)	1,010 (140.3)	5.2	5.6	4.2	3.5	4.7
World	420 (94.9)	953 (144.4)	1,359 (178.9)	1,756 (213.7)	1,971 (231.8)	3.1	2.8	2.6	2.3	2.6

Source: "World motor vehicle statistics" (Japan Automobile Manufacturers Association, Inc.) and other sources;

forecast figures prepared by the IEEJ.

Note: Figures in parentheses indicate automobile ownership volume per 1,000 population. (vehicles per 1,000 population)

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Asia / World Energy Outlook 2009

- The Role of Technology Towards the Resolution of Energy & Environmental Issues in Asia -

Country and Regional Report

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Table 1 World

Primary energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	6,549	7,993	11,078	13,526	15,727	16,877	100	100	100	2.0	1.5	1.5	1.4	1.5
Coal	1,780	2,221	3,186	3,703	4,206	4,490	27	29	27	2.2	1.2	1.3	1.3	1.2
Oil	3,085	3,211	4,078	4,597	5,137	5,400	47	37	32	1.0	0.9	1.1	1.0	1.0
Natural gas	1,229	1,667	2,514	3,296	4,058	4,489	19	23	27	2.7	2.1	2.1	2.0	2.1
Nuclear	186	526	709	961	1,108	1,158	2.8	6.4	6.9	5.1	2.4	1.4	0.9	1.8
Hydro	145	184	265	346	404	425	2.2	2.4	2.5	2.2	2.1	1.6	1.0	1.7
Geothermal	13	34	59	103	151	166	0.2	0.5	1.0	5.7	4.4	3.9	1.9	3.8
Other renewables	111	150	267	519	664	750	1.7	2.4	4.4	3.3	5.2	2.5	2.5	3.8

Final energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	4,577	5,386	7,082	8,734	10,171	10,935	100	100	100	1.6	1.6	1.5	1.5	1.6
Industry*	1,711	1,717	2,155	2,718	3,061	3,264	37	30	30	0.9	1.8	1.2	1.3	1.5
Trasnporation	1,065	1,378	1,965	2,399	2,759	2,930	23	28	27	2.3	1.5	1.4	1.2	1.4
Residential/Commercial	1,456	1,819	2,194	2,741	3,307	3,616	32	31	33	1.5	1.7	1.9	1.8	1.8
Non-energy, etc.*	345	474	767	876	1,043	1,124	7.5	11	10	3.0	1.0	1.8	1.5	1.4
Energy Source														
Total	4,577	5,386	7,082	8,734	10,171	10,935	100	100	100	1.6	1.6	1.5	1.5	1.6
Coal	697	761	729	786	790	806	15	10	7.4	0.2	0.6	0.1	0.4	0.4
Oil	2,248	2,404	3,197	3,765	4,320	4,593	49	45	42	1.3	1.3	1.4	1.2	1.3
Natural gas	825	956	1,294	1,664	1,975	2,138	18	18	20	1.7	2.0	1.7	1.6	1.8
Electricity	580	833	1,412	1,934	2,426	2,694	13	20	25	3.4	2.4	2.3	2.1	2.3
Heat	121	333	273	324	357	374	2.6	3.9	3.4	3.1	1.3	1.0	0.9	1.1
Renewables	105	97	168	252	296	323	2.3	2.4	3.0	1.8	3.2	1.6	1.7	2.3

Power generation	TWh						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	8,201	11,797	19,729	27,193	34,064	37,764	100	100	100	3.3	2.5	2.3	2.1	2.3
Coal	3,115	4,424	8,228	10,849	13,527	15,052	38	42	40	3.7	2.2	2.2	2.2	2.2
Oil	1,632	1,321	1,100	1,039	1,108	1,141	20	5.6	3.0	-1.5	-0.4	0.6	0.6	0.1
Natural gas	995	1,727	4,111	6,178	8,460	9,811	12	21	26	5.4	3.2	3.2	3.0	3.2
Nuclear	713	2,013	2,723	3,693	4,257	4,447	8.7	14	12	5.1	2.4	1.4	0.9	1.8
Hydro	1,688	2,143	3,080	4,018	4,693	4,941	21	16	13	2.3	2.1	1.6	1.0	1.7
Geothermal	14	36	65	114	170	188	0.2	0.3	0.5	5.9	4.5	4.1	2.0	3.9
Other renewables	45	136	438	1,346	1,909	2,252	0.6	2.2	6.0	8.8	9.0	3.6	3.4	6.0

Energy and economic indicators								AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035	
GDP (billions of US dollars at 2000 value)	17,943	24,258	40,111	56,620	75,563	86,116	3.0	2.7	2.9	2.6	2.8	
Population (millions of people)	4,428	5,251	6,595	7,598	8,219	8,500	1.5	1.1	0.8	0.7	0.9	
CO ₂ emissions (Mt-CO ₂)	18,366	21,158	28,761	33,927	38,855	41,549	1.7	1.3	1.4	1.3	1.3	
GDP per capita (US dollars at 2000value/person)	4,052	4,619	6,082	7,451	9,194	10,131	1.5	1.6	2.1	2.0	1.8	
Primary energy demand per capita	1.48	1.52	1.68	1.78	1.91	1.99	0.5	0.4	0.7	0.7	0.6	
Primary energy demand per unit of GDP**	365	329	276	239	208	196	-1.0	-1.1	-1.4	-1.2	-1.2	
CO ₂ emissions per unit of GDP***	1,024	872	717	599	514	482	-1.3	-1.4	-1.5	-1.3	-1.4	
CO ₂ emissions per unit of primary energy demand****	2.80	2.65	2.60	2.51	2.47	2.46	-0.3	-0.3	-0.2	-0.1	-0.2	
Automobile ownership (millions of vehicles)	420	585	953	1,359	1,756	1,971	3.1	2.8	2.6	2.3	2.6	
Automobile ownership per 1,000 population*****	95	111	144	179	214	232	1.6	1.7	1.8	1.6	1.7	

* Industry sector includes petrochemical feedstocks, ** toe / millions of US dollars at 2000 value, *** t-CO₂/ millions of US dollars at 2000 value
**** t-CO₂ / toe ***** vehicles per 1,000 population

Table 2 Asia

Primary energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	1,051	1,650	3,554	5,017	6,359	7,084	100	100	100	4.6	2.7	2.4	2.2	2.5
Coal	474	798	1,848	2,335	2,764	3,022	45	52	43	5.2	1.8	1.7	1.8	1.8
Oil	479	611	1,085	1,475	1,844	2,025	46	31	29	3.1	2.4	2.3	1.9	2.3
Natural gas	51	118	376	623	959	1,165	4.8	11	16	7.7	4.0	4.4	4.0	4.1
Nuclear	25	77	138	297	410	449	2.4	3.9	6.3	6.5	6.1	3.3	1.8	4.3
Hydro	20	32	70	109	127	131	1.9	2.0	1.9	4.8	3.4	1.6	0.6	2.3
Geothermal	2.6	7.2	18	44	69	74	0.2	0.5	1.0	7.4	7.2	4.6	1.6	5.3
Other renewables	0.3	7.3	29	135	185	217	0	0.8	3.1	18.0	12.4	3.2	3.3	7.4

Final energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	752	1,127	2,186	3,157	3,996	4,459	100	100	100	4.0	2.9	2.4	2.2	2.6
Industry*	364	479	952	1,311	1,499	1,617	48	44	36	3.6	2.5	1.4	1.5	1.9
Trasnporation	127	200	403	613	829	935	17	18	21	4.4	3.3	3.1	2.4	3.0
Residential/Commercial	207	332	551	836	1,168	1,358	28	25	30	3.7	3.3	3.4	3.1	3.3
Non-energy, etc.*	54	116	280	395	497	546	7.1	13	12	6.3	2.7	2.3	1.9	2.4
Energy Source														
Total	752	1,127	2,186	3,157	3,996	4,459	100	100	100	4.0	2.9	2.4	2.2	2.6
Coal	304	434	562	633	639	655	40	26	15	2.3	0.9	0.1	0.5	0.5
Oil	327	467	910	1,330	1,701	1,885	44	42	42	3.9	3.0	2.5	2.1	2.6
Natural gas	25	49	169	296	449	536	3.3	7.7	12	7.4	4.4	4.2	3.6	4.2
Electricity	88	158	476	769	1,038	1,189	12	22	27	6.4	3.8	3.0	2.8	3.3
Heat	7.5	14	58	104	138	155	1.0	2.6	3.5	7.8	4.6	2.9	2.4	3.6
Renewables	0	3.4	7.2	22	30	36	0	0.3	0.8	-	9.0	3.1	3.5	5.9

Power generation	TWh						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	1,195	2,212	6,651	10,704	14,403	16,463	100	100	100	6.6	3.7	3.0	2.7	3.3
Coal	302	864	4,015	6,050	8,113	9,375	25	60	57	10.1	3.2	3.0	2.9	3.1
Oil	470	428	373	390	423	429	39	5.6	2.6	-0.9	0.3	0.8	0.3	0.5
Natural gas	90	236	838	1,431	2,228	2,741	7.6	13	17	8.6	4.2	4.5	4.2	4.3
Nuclear	97	294	533	1,143	1,580	1,727	8.1	8.0	10	6.5	6.0	3.3	1.8	4.3
Hydro	233	371	822	1,267	1,480	1,528	19	12	9.3	4.8	3.4	1.6	0.6	2.2
Geothermal	3.0	8.3	23	51	80	86	0.2	0.3	0.5	7.8	6.4	4.6	1.6	4.9
Other renewables	0	12	59	404	540	621	0	0.9	3.8	-	16.0	2.9	2.9	8.8

Energy and economic indicators								AAGR(%)				
	1980	1990	2007	2020	2030	2035	2007	2020	2030	2035	2007-2035	
GDP (billions of US dollars at 2000 value)	3,861	6,079	11,631	19,012	27,030	31,818	4.2	3.9	3.6	3.3	3.7	
Population (millions of people)	2,435	2,903	3,641	4,148	4,413	4,528	1.5	1.0	0.6	0.5	0.8	
CO ₂ emissions (Mt-CO ₂)	3,302	4,952	10,669	13,948	17,233	19,128	4.4	2.1	2.1	2.1	2.1	
GDP per capita (US dollars at 2000value/person)	1,586	2,094	3,195	4,583	6,126	7,027	2.6	2.8	2.9	2.8	2.9	
Primary energy demand per capita	0.43	0.57	0.98	1.21	1.44	1.56	3.1	1.7	1.8	1.7	1.7	
Primary energy demand per unit of GDP**	272	271	306	264	235	223	0.4	-1.1	-1.1	-1.1	-1.1	
CO ₂ emissions per unit of GDP***	855	815	917	734	638	601	0.3	-1.7	-1.4	-1.2	-1.5	
CO ₂ emissions per unit of primary energy demand****	3.14	3.00	3.00	2.78	2.71	2.70	-0.2	-0.6	-0.3	-0.1	-0.4	
Automobile ownership (millions of vehicles)	48	86	195	346	520	621	5.3	4.5	4.2	3.6	4.2	
Automobile ownership per 1,000 population*****	20	30	54	83	118	137	3.8	3.5	3.5	3.1	3.4	

* Industry sector includes petrochemical feedstocks, ** toe / millions of US dollars at 2000 value, *** t-CO₂/ millions of US dollars at 2000 value
**** t-CO₂ / toe ***** vehicles per 1,000 population

Table 3 China

Primary energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	419	663	1,765	2,539	3,161	3,451	100	100	100	5.5	2.8	2.2	1.8	2.4
Coal	313	529	1,285	1,579	1,751	1,834	75	73	53	5.4	1.6	1.0	0.9	1.3
Oil	89	110	357	593	807	902	21	20	26	5.3	4.0	3.1	2.2	3.4
Natural gas	12	13	59	120	255	331	2.9	3.3	9.6	6.1	5.6	7.8	5.3	6.3
Nuclear	0	0	16	73	130	144	0	0.9	4.2	-	12.3	5.9	2.1	8.1
Hydro	5.0	11	42	70	80	80	1.2	2.4	2.3	8.2	4.0	1.4	0.0	2.4
Geothermal	0	0.2	-0.7	-0.4	0	0.4	0	0	0	-	-3.5	-31.1	-300.4	-
Other renewables	0.3	0.4	17	104	138	159	0.1	0.9	4.6	15.5	15.3	2.8	2.9	8.4

Final energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	313	463	1,059	1,606	2,014	2,210	100	100	100	4.6	3.3	2.3	1.9	2.7
Industry*	186	241	573	743	758	762	59	54	34	4.3	2.0	0.2	0.1	1.0
Transportation	25	37	141	273	412	472	7.9	13	21	6.7	5.2	4.2	2.8	4.4
Residential/Commercial	92	142	236	382	574	677	29	22	31	3.6	3.8	4.1	3.4	3.8
Non-energy, etc.*	10	43	107	208	271	299	3.4	10	14	9.0	5.2	2.7	1.9	3.7
Energy Source														
Total	313	463	1,059	1,606	2,014	2,210	100	100	100	4.6	3.3	2.3	1.9	2.7
Coal	218	315	411	452	411	396	70	39	18	2.4	0.7	-0.9	-0.7	-0.1
Oil	59	84	315	570	794	894	19	30	40	6.4	4.7	3.4	2.4	3.8
Natural gas	6.8	9.7	45	98	168	206	2.2	4.2	9.3	7.3	6.2	5.5	4.3	5.6
Electricity	21	41	230	381	499	550	6.8	22	25	9.2	4.0	2.7	2.0	3.2
Heat	7.4	13	52	95	128	145	2.4	4.9	6.5	7.5	4.8	3.0	2.5	3.7
Renewables	0	0	1.3	10	15	18	0	0.1	0.8	-	17.1	4.0	4.1	9.9

Power generation	TWh						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	301	621	3,277	5,377	6,979	7,667	100	100	100	9.3	3.9	2.6	1.9	3.1
Coal	164	443	2,656	3,856	4,850	5,333	55	81	70	10.9	2.9	2.3	1.9	2.5
Oil	78	49	34	49	48	47	26	1.0	0.6	-3.0	2.9	-0.2	-0.2	1.2
Natural gas	0.7	2.8	31	93	307	428	0.2	0.9	5.6	15.1	9.0	12.6	6.8	9.9
Nuclear	0	0	62	281	500	554	0	1.9	7.2	-	12.3	5.9	2.1	8.1
Hydro	58	127	485	810	933	933	19	15	12	8.2	4.0	1.4	0.0	2.4
Geothermal	0	0	0.2	0.5	1.0	1.4	0	0	0	-	7.2	7.2	7.2	7.2
Other renewables	0	0	11	288	340	371	0	0.3	4.8	-	28.4	1.7	1.7	13.3

Energy and economic indicators								AAGR(%)				
	1980	1990	2007	2020	2030	2035	2007-2020	2020-2030	2030-2035	2007-2035		
GDP (billions of US dollars at 2000 value)	183	445	2,387	5,789	9,187	11,049	10.0	7.1	4.7	3.8	5.6	
Population (millions of people)	987	1,143	1,321	1,431	1,462	1,462	1.1	0.6	0.2	0.0	0.4	
CO ₂ emissions (Mt-CO ₂)	1,507	2,317	5,978	7,666	9,100	9,795	5.2	1.9	1.7	1.5	1.8	
GDP per capita (US dollars at 2000 value/person)	185	389	1,807	4,045	6,282	7,555	8.8	6.4	4.5	3.8	5.2	
Primary energy demand per capita	0.42	0.58	1.34	1.77	2.16	2.36	4.3	2.2	2.0	1.8	2.1	
Primary energy demand per unit of GDP**	2,288	1,491	739	439	344	312	-4.1	-3.9	-2.4	-1.9	-3.0	
CO ₂ emissions per unit of GDP***	8,237	5,211	2,504	1,324	991	887	-4.3	-4.8	-2.9	-2.2	-3.6	
CO ₂ emissions per unit of primary energy demand****	3.60	3.50	3.39	3.02	2.88	2.84	-0.2	-0.9	-0.5	-0.3	-0.6	
Automobile ownership (millions of vehicles)	1.8	5.5	42	123	232	296	12.4	8.6	6.5	5.0	7.2	
Automobile ownership per 1,000 population*****	1.8	4.8	33	86	158	202	11.4	7.7	6.3	5.0	6.7	

* Industry sector includes petrochemical feedstocks, ** toe / millions of US dollars at 2000 value, *** t-CO₂ / millions of US dollars at 2000 value

**** t-CO₂ / toe ***** vehicles per 1,000 population

Table 4 India

Primary energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	91	185	433	691	1,013	1,208	100	100	100	6.0	3.7	3.9	3.6	3.7
Coal	52	106	242	348	508	612	57	56	51	5.9	2.8	3.9	3.8	3.4
Oil	33	61	141	219	296	334	36	32	28	5.5	3.5	3.1	2.4	3.1
Natural gas	1.2	9.8	33	70	119	159	1.3	7.7	13	13.2	5.9	5.5	5.9	5.7
Nuclear	0.8	1.6	4.4	33	60	67	0.9	1.0	5.6	6.6	16.9	6.1	2.4	10.3
Hydro	4.0	6.2	11	16	21	24	4.4	2.5	2.0	3.7	3.4	2.5	2.5	2.9
Geothermal	0	0.1	0.1	0.1	0.1	0.1	0	0	0	-214.8	0.0	0.0	0.0	0.0
Other renewables	0	0	1.3	4.4	8.7	12	0	0.3	1.0	-	10.0	7.0	6.2	8.2

Final energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	62	118	232	385	566	676	100	100	100	5.0	4.0	3.9	3.6	3.9
Industry*	24	48	86	154	227	273	39	37	40	4.8	4.5	4.0	3.8	4.2
Trasnpotation	17	27	41	63	90	105	27	18	16	3.3	3.4	3.7	3.0	3.4
Residential/Commercial	16	32	66	113	174	214	26	29	32	5.4	4.2	4.4	4.2	4.3
Non-energy, etc.*	5.2	12	39	56	75	84	8.4	17	12	7.7	2.8	3.0	2.5	2.8
Energy Source														
Total	62	118	232	385	566	676	100	100	100	5.0	4.0	3.9	3.6	3.9
Coal	28	42	47	53	68	77	44	20	11	2.0	1.0	2.5	2.5	1.8
Oil	27	52	119	199	272	306	43	51	45	5.7	4.1	3.1	2.4	3.4
Natural gas	0.7	5.6	18	29	46	58	1.1	7.7	8.5	12.9	3.8	4.6	4.8	4.3
Electricity	7.7	18	49	102	178	232	12	21	34	7.1	5.8	5.7	5.5	5.7
Heat	0	0	0	0	0	0	0	0	0	-	-	-	-	-
Renewables	0	0	0.1	1.4	2.3	3.0	0	0.1	0.4	-	19.7	5.2	5.4	11.7

Power generation	TWh						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	119	289	801	1,610	2,717	3,486	100	100	100	7.3	5.5	5.4	5.1	5.4
Coal	61	192	549	1,049	1,797	2,339	52	69	67	8.4	5.1	5.5	5.4	5.3
Oil	7.6	10	33	33	48	59	6.4	4.2	1.7	5.6	-0.2	3.9	4.3	2.1
Natural gas	0.6	10.0	67	177	326	453	0.5	8.3	13	18.9	7.8	6.3	6.8	7.1
Nuclear	3.0	6.1	17	127	230	259	2.5	2.1	7.4	6.6	16.9	6.1	2.4	10.3
Hydro	47	72	124	191	244	276	39	15	7.9	3.7	3.4	2.5	2.5	2.9
Geothermal	0	0	0	0	0	0	0	0	0	-	-	-	-	-
Other renewables	0	0	14	59	103	132	0	1.7	3.8	-	11.9	5.8	5.1	8.5

Energy and economic indicators								AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035	
GDP (billions of US dollars at 2000 value)	160	275	779	1,752	3,138	4,140	6.0	6.4	6.0	5.7	6.1	
Population (millions of people)	687	850	1,145	1,357	1,468	1,526	1.9	1.3	0.8	0.8	1.0	
CO ₂ emissions (Mt-CO ₂)	295	598	1,357	1,942	2,831	3,403	5.8	2.8	3.8	3.8	3.3	
GDP per capita (US dollars at 2000value/person)	233	324	681	1,291	2,138	2,713	4.0	5.0	5.2	4.9	5.1	
Primary energy demand per capita	0.13	0.22	0.38	0.51	0.69	0.79	4.0	2.3	3.1	2.8	2.7	
Primary energy demand per unit of GDP**	568	672	556	394	323	292	-0.1	-2.6	-2.0	-2.0	-2.3	
CO ₂ emissions per unit of GDP***	1,839	2,175	1,742	1,108	902	822	-0.2	-3.4	-2.0	-1.8	-2.6	
CO ₂ emissions per unit of primary energy demand****	3.24	3.24	3.13	2.81	2.79	2.82	-0.1	-0.8	-0.1	0.2	-0.4	
Automobile ownership (millions of vehicles)	1.7	4.3	18	50	82	97	9.2	8.1	5.1	3.5	6.2	
Automobile ownership per 1,000 population*****	2.4	5.1	16	37	56	64	7.3	6.4	4.3	2.7	4.9	

* Industry sector includes petrochemical feedstocks, ** toe / millions of US dollars at 2000 value, *** t-CO₂/ millions of US dollars at 2000 value
**** t-CO₂ / toe ***** vehicles per 1,000 population

Table 5 Japan

Primary energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	345	438	514	508	500	493	100	100	100	1.5	-0.1	-0.1	-0.3	-0.1
Coal	60	75	115	103	99	97	17	22	20	2.5	-0.8	-0.4	-0.3	-0.6
Oil	234	250	230	187	171	165	68	45	33	-0.1	-1.6	-0.9	-0.7	-1.2
Natural gas	21	44	83	86	85	83	6.2	16	17	5.2	0.3	-0.1	-0.4	0.0
Nuclear	22	53	69	111	121	121	6.2	13	25	4.4	3.8	0.8	0.0	2.0
Hydro	7.6	7.7	6.4	7.3	7.3	7.3	2.2	1.2	1.5	-0.7	1.0	0.1	0.0	0.5
Geothermal	0.8	1.6	2.8	3.0	3.0	3.0	0.2	0.5	0.6	4.9	0.4	0.0	0.0	0.2
Other renewables	0	6.2	8.1	10.0	15	17	0	1.6	3.5	-	1.6	4.0	3.1	2.7

Final energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	232	300	342	330	320	314	100	100	100	1.4	-0.3	-0.3	-0.4	-0.3
Industry*	91	103	99	94	93	92	39	29	29	0.3	-0.4	-0.1	-0.3	-0.3
Trasnpotation	54	72	82	72	68	66	23	24	21	1.6	-1.1	-0.6	-0.5	-0.8
Residential/Commercial	58	91	118	127	129	128	25	35	41	2.6	0.6	0.1	0.0	0.3
Non-energy, etc.*	28	35	42	37	30	28	12	12	8.9	1.5	-1.1	-1.9	-1.7	-1.5
Energy Source														
Total	232	300	342	330	320	314	100	100	100	1.4	-0.3	-0.3	-0.4	-0.3
Coal	21	33	31	26	26	27	9.2	9.0	8.5	1.4	-1.4	0.3	0.2	-0.5
Oil	157	184	187	159	144	140	68	55	44	0.7	-1.2	-0.9	-0.7	-1.0
Natural gas	9.7	15	34	36	37	36	4.2	9.8	11	4.7	0.5	0.4	-0.7	0.3
Electricity	44	64	87	105	107	107	19	25	34	2.5	1.5	0.2	0.0	0.7
Heat	0.1	0.2	0.6	0.6	0.6	0.6	0	0.2	0.2	6.6	0.0	0.0	0.0	0.0
Renewables	0	2.7	3.0	3.9	4.0	4.0	0	0.9	1.3	-	2.2	0.0	0.0	1.0

Power generation	TWh						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	573	836	1,123	1,311	1,355	1,359	100	100	100	2.5	1.2	0.3	0.1	0.7
Coal	55	117	311	334	325	321	9.6	28	24	6.6	0.6	-0.3	-0.3	0.1
Oil	265	248	156	107	86	76	46	14	5.6	-1.9	-2.9	-2.2	-2.5	-2.5
Natural gas	81	167	290	313	319	324	14	26	24	4.8	0.6	0.2	0.3	0.4
Nuclear	83	202	264	432	470	470	14	23	35	4.4	3.9	0.8	0.0	2.1
Hydro	88	89	74	84	85	85	15	6.6	6.3	-0.7	1.0	0.1	0.0	0.5
Geothermal	0.9	1.7	3.0	3.3	3.3	3.3	0.2	0.3	0.2	4.6	0.5	0.0	0.0	0.2
Other renewables	0	11	26	38	66	80	0	2.3	5.9	-	3.0	5.8	3.9	4.1

Energy and economic indicators								AAGR(%)				
	1980	1990	2007	2020	2030	2035	2007	2020	2030	2035	2007-2035	
GDP (billions of US dollars at 2000 value)	2,801	4,122	5,194	6,036	6,781	7,135	2.3	1.2	1.2	1.0	1.1	
Population (millions of people)	117	124	128	123	115	111	0.3	-0.3	-0.6	-0.8	-0.5	
CO ₂ emissions (Mt-CO ₂)	916	1,065	1,224	1,066	1,007	984	1.1	-1.1	-0.6	-0.5	-0.8	
GDP per capita (US dollars at 2000value/person)	23,985	33,367	40,654	49,181	58,908	64,564	2.0	1.5	1.8	1.9	1.7	
Primary energy demand per capita	2.95	3.55	4.02	4.14	4.35	4.46	1.2	0.2	0.5	0.5	0.4	
Primary energy demand per unit of GDP**	123	106	99	84	74	69	-0.8	-1.2	-1.3	-1.3	-1.3	
CO ₂ emissions per unit of GDP***	327	258	236	177	148	138	-1.2	-2.2	-1.7	-1.5	-1.9	
CO ₂ emissions per unit of primary energy demand****	2.66	2.43	2.38	2.10	2.01	2.00	-0.4	-1.0	-0.4	-0.2	-0.6	
Automobile ownership (millions of vehicles)	38	58	76	75	75	74	2.6	-0.1	-0.1	-0.1	-0.1	
Automobile ownership per 1,000 population*****	324	467	593	613	649	671	2.3	0.3	0.6	0.7	0.4	

* Industry sector includes petrochemical feedstocks, ** toe / millions of US dollars at 2000 value, *** t-CO₂/ millions of US dollars at 2000 value
**** t-CO₂ / toe ***** vehicles per 1,000 population

Table 6 Korea

Primary energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	41	93	222	306	332	341	100	100	100	6.4	2.5	0.8	0.6	1.5
Coal	13	26	56	73	78	78	33	25	23	5.4	2.1	0.6	0.1	1.2
Oil	27	50	94	108	108	107	65	43	31	4.8	1.1	0.0	-0.1	0.5
Natural gas	0	2.7	31	56	68	73	0	14	21	-	4.6	1.9	1.5	3.1
Nuclear	0.9	14	37	59	65	67	2.2	17	20	14.8	3.6	1.0	0.7	2.1
Hydro	0.2	0.5	0.3	0.5	0.5	0.5	0.4	0.1	0.1	2.3	3.0	0.0	0.0	1.4
Geothermal	0	0	0	0.1	0.1	0.1	0	0	0	-	8.4	4.2	3.2	5.9
Other renewables	0	0.7	2.7	8.7	13	16	0	1.2	4.6	-	9.5	4.0	3.8	6.5

Final energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	31	65	147	199	217	225	100	100	100	5.9	2.4	0.9	0.7	1.5
Industry*	10	19	41	97	102	107	33	28	47	5.3	6.8	0.5	0.8	3.4
Trasnporation	4.8	15	30	40	42	43	15	21	19	7.1	2.1	0.6	0.3	1.3
Residential/Commercial	13	24	41	59	69	72	42	28	32	4.3	2.9	1.5	0.9	2.1
Non-energy, etc.*	3.1	6.7	35	3.0	3.2	3.3	9.8	24	1.5	9.4	-17.2	0.6	0.6	-8.1
Energy Source														
Total	31	65	147	199	217	225	100	100	100	5.9	2.4	0.9	0.7	1.5
Coal	9.7	12	8.6	7.5	6.5	6.0	31	5.9	2.7	-0.5	-1.1	-1.4	-1.5	-1.3
Oil	19	44	81	94	95	95	60	55	42	5.6	1.2	0.1	0.0	0.6
Natural gas	0	0.7	17	39	49	55	0	12	24	-	6.5	2.5	2.1	4.3
Electricity	2.8	8.1	34	47	51	52	9.0	23	23	9.6	2.5	0.8	0.4	1.5
Heat	0	0	4.6	7.7	8.4	8.8	0	3.1	3.9	-	4.0	1.0	1.0	2.4
Renewables	0	0.7	2.1	4.8	6.5	7.9	0	1.5	3.5	-	6.3	3.2	3.8	4.8

Power generation	TWh						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	37	105	426	593	645	658	100	100	100	9.4	2.6	0.8	0.4	1.6
Coal	2.5	18	171	241	271	278	6.7	40	42	17.0	2.7	1.2	0.5	1.8
Oil	29	19	25	21	14	11	79	5.9	1.6	-0.6	-1.5	-3.5	-5.9	-3.0
Natural gas	0	9.6	82	97	100	98	0	19	15	-	1.2	0.3	-0.3	0.6
Nuclear	3.5	53	147	226	248	257	9.3	34	39	14.9	3.4	0.9	0.7	2.0
Hydro	2.0	6.4	4.2	5.3	5.3	5.3	5.3	1.0	0.8	2.8	1.8	0.0	0.0	0.8
Geothermal	0	0	0	0	0	0	0	0	0	-	-	-	-	-
Other renewables	0	0	0.6	3.6	6.6	8.8	0	0.1	1.3	-	14.4	6.2	5.9	9.9

Energy and economic indicators								AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035	
GDP (billions of US dollars at 2000 value)	123	284	866	1,234	1,643	1,878	7.5	2.8	2.9	2.7	2.8	
Population (millions of people)	38	43	49	50	50	49	0.9	0.2	-0.1	-0.3	0.0	
CO ₂ emissions (Mt-CO ₂)	126	240	480	645	688	699	5.1	2.3	0.6	0.3	1.4	
GDP per capita (US dollars at 2000value/person)	3,221	6,615	17,784	24,568	32,936	38,200	6.5	2.5	3.0	3.0	2.8	
Primary energy demand per capita	1.08	2.17	4.57	6.09	6.65	6.94	5.5	2.2	0.9	0.9	1.5	
Primary energy demand per unit of GDP**	336	328	257	248	202	182	-1.0	-0.3	-2.0	-2.1	-1.2	
CO ₂ emissions per unit of GDP***	1,024	845	554	523	419	372	-2.3	-0.4	-2.2	-2.3	-1.4	
CO ₂ emissions per unit of primary energy demand****	3.05	2.57	2.16	2.11	2.08	2.05	-1.3	-0.2	-0.2	-0.3	-0.2	
Automobile ownership (millions of vehicles)	0.5	3.4	16	24	27	28	13.7	2.8	1.4	1.0	2.0	
Automobile ownership per 1,000 population*****	14	79	338	470	543	578	12.6	2.6	1.5	1.3	1.9	

* Industry sector includes petrochemical feedstocks, ** toe / millions of US dollars at 2000 value, *** t-CO₂/ millions of US dollars at 2000 value
**** t-CO₂ / toe ***** vehicles per 1,000 population

Table 7 Chinese Taipei

Primary energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	28	48	109	134	148	152	100	100	100	5.2	1.6	1.0	0.5	1.2
Coal	3.9	11	42	52	58	56	14	38	37	9.2	1.7	1.1	-0.8	1.0
Oil	20	26	46	47	51	54	72	42	35	3.1	0.2	0.9	0.9	0.6
Natural gas	1.6	1.9	9.9	18	24	28	5.7	9.1	19	7.0	4.8	2.9	3.0	3.8
Nuclear	2.1	8.6	11	16	13	13	7.6	9.7	8.6	6.1	3.1	-1.8	0.0	0.8
Hydro	0.3	0.5	0.4	0.4	0.4	0.4	0.9	0.3	0.2	1.5	-0.6	0.0	0.0	-0.3
Geothermal	0	0	0	0	0	0	0	0	0	-	-	-	-	-
Other renewables	0	0	0.1	0.6	0.8	0.9	0	0.1	0.6	-	12.5	2.7	3.2	7.2

Final energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	19	30	65	85	95	98	100	100	100	4.7	2.1	1.1	0.7	1.5
Industry*	10	12	22	27	31	34	55	35	34	3.0	1.5	1.4	1.5	1.5
Trasnporation	2.9	6.7	12	16	17	17	15	19	18	5.6	1.9	0.7	0.4	1.2
Residential/Commercial	3.6	6.4	12	18	20	19	19	18	20	4.5	3.3	0.9	-0.4	1.8
Non-energy, etc.*	2.0	4.8	18	24	27	28	11	28	28	8.5	2.1	1.1	0.7	1.5
Energy Source														
Total	19	30	65	85	95	98	100	100	100	4.7	2.1	1.1	0.7	1.5
Coal	2.2	3.6	6.8	8.7	9.5	9.9	12	10	10	4.3	1.9	0.9	0.9	1.4
Oil	12	19	38	49	54	55	64	58	57	4.4	2.0	1.0	0.7	1.4
Natural gas	1.4	0.9	1.8	2.6	3.0	3.3	7.3	2.9	3.3	1.2	2.6	1.5	1.5	2.1
Electricity	3.2	6.6	18	24	28	29	17	28	29	6.7	2.2	1.3	0.6	1.6
Heat	0	0	0	0	0	0	0	0	0	-	-	-	-	-
Renewables	0	0	0	0	0	0	0	0	0	-	-	-	-	-

Power generation	TWh						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	43	88	239	322	366	376	100	100	100	6.6	2.3	1.3	0.5	1.6
Coal	6.0	24	132	169	195	185	14	55	49	12.2	1.9	1.4	-1.0	1.2
Oil	26	23	16	7.3	6.1	6.1	60	6.5	1.6	-1.8	-5.7	-1.8	0.1	-3.3
Natural gas	0	1.2	43	76	105	123	0	18	33	-	4.5	3.3	3.3	3.9
Nuclear	8.2	33	41	60	50	50	19	17	13	6.1	3.1	-1.8	0.0	0.8
Hydro	2.9	6.4	4.4	4.1	4.1	4.1	6.9	1.8	1.1	1.5	-0.6	0.0	0.0	-0.3
Geothermal	0	0	0	0	0	0	0	0	0	-	-	-	-	-
Other renewables	0	0	4.1	5.0	6.0	7.0	0	1.7	1.9	-	1.4	1.9	3.1	1.9

Energy and economic indicators								AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035	
GDP (billions of US dollars at 2000 value)	79	171	416	606	799	908	6.3	2.9	2.8	2.6	2.8	
Population (millions of people)	18	20	23	23	23	23	1.0	0.2	-0.2	-0.5	0.0	
CO ₂ emissions (Mt-CO ₂)	75	114	273	385	436	442	4.9	2.7	1.3	0.3	1.7	
GDP per capita (US dollars at 2000value/person)	4,499	8,451	18,234	25,847	34,602	40,314	5.3	2.7	3.0	3.1	2.9	
Primary energy demand per capita	1.58	2.38	4.76	5.71	6.42	6.75	4.2	1.4	1.2	1.0	1.3	
Primary energy demand per unit of GDP**	352	282	261	221	186	167	-1.1	-1.3	-1.7	-2.0	-1.6	
CO ₂ emissions per unit of GDP***	939	667	656	635	546	486	-1.3	-0.2	-1.5	-2.3	-1.1	
CO ₂ emissions per unit of primary energy demand****	2.67	2.37	2.51	2.88	2.94	2.90	-0.2	1.0	0.2	-0.3	0.5	
Automobile ownership (millions of vehicles)	0.5	2.8	7.2	9.7	9.7	9.5	10.5	2.3	0.0	-0.5	1.0	
Automobile ownership per 1,000 population*****	27	137	317	414	421	421	9.5	2.1	0.1	0.0	1.0	

* Industry sector includes petrochemical feedstocks, ** toe / millions of US dollars at 2000 value, *** t-CO₂/ millions of US dollars at 2000 value
**** t-CO₂ / toe ***** vehicles per 1,000 population

Table 8 Indonesia

Primary energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
	Total	26	57	138	226	321	378	100	100	100	6.4	3.8	3.6	3.3
Coal	0.2	3.6	37	52	79	106	0.6	27	28	22.1	2.7	4.3	6.0	3.9
Oil	21	34	60	83	98	105	80	43	28	4.0	2.5	1.7	1.4	2.0
Natural gas	4.9	19	34	61	96	116	19	25	31	7.4	4.5	4.6	3.7	4.4
Nuclear	0	0	0	0	0	0	0	0	0	-	-	-	-	-
Hydro	0.2	0.6	1.0	1.1	1.2	1.3	0.7	0.7	0.3	6.1	0.9	1.3	0.7	1.0
Geothermal	0	0.9	6.0	28	45	49	0	4.4	13	-	12.5	5.0	1.4	7.8
Other renewables	0	0	0.5	0.7	0.9	1.0	0	0.3	0.3	-	3.0	2.3	2.5	2.6

Final energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
	Total	20	37	94	142	199	236	100	100	100	5.8	3.2	3.4	3.5
Industry*	6.6	9.4	41	51	74	90	32	44	38	7.0	1.7	3.8	3.8	2.8
Trasnporation	6.0	11	24	36	45	50	29	26	21	5.4	3.0	2.3	2.4	2.6
Residential/Commercial	6.4	8.9	19	33	48	59	31	20	25	4.1	4.4	4.0	3.9	4.2
Non-energy, etc.*	1.5	7.8	10	19	28	34	7.2	11	14	7.4	5.1	3.8	3.8	4.4
Energy Source														
Total	20	37	94	142	199	236	100	100	100	5.8	3.2	3.4	3.5	3.3
Coal	0.1	0.6	21	29	41	50	0.7	22	21	20.1	2.6	3.4	4.3	3.2
Oil	17	27	48	67	86	98	85	51	41	3.9	2.5	2.5	2.6	2.5
Natural gas	2.4	6.6	15	22	33	38	12	16	16	7.0	3.2	4.0	3.3	3.5
Electricity	0.5	2.3	10	24	39	48	2.6	11	21	11.6	6.5	5.0	4.6	5.6
Heat	0	0	0	0	0	0	0	0	0	-	-	-	-	-
Renewables	0	0	0.5	0.7	0.9	1.0	0	0.5	0.4	-	2.8	2.3	2.4	2.5

Power generation	TWh						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
	Total	8.1	33	142	325	531	665	100	100	100	11.2	6.6	5.0	4.6
Coal	0	11	64	103	180	262	0	45	39	-	3.7	5.7	7.9	5.2
Oil	5.8	14	38	53	37	14	72	27	2.1	7.2	2.6	-3.6	-17.2	-3.4
Natural gas	0	0.8	22	124	247	316	0	16	48	44.9	14.1	7.1	5.0	9.9
Nuclear	0	0	0	0	0	0	0	0	0	-	-	-	-	-
Hydro	2.3	6.7	11	13	14	15	28	7.7	2.2	6.0	1.1	1.3	0.7	1.1
Geothermal	0	1.1	8.8	32	53	57	0	6.2	8.5	-	10.5	5.0	1.4	6.9
Other renewables	0	0	0.1	1.0	1.7	2.1	0	0.1	0.3	-	18.1	5.3	3.8	10.8

Energy and economic indicators								AAGR(%)				
	1980	1990	2007	2020	2030	2035	2007	2020	2030	2035	2007-2035	
GDP (billions of US dollars at 2000 value)	59	109	233	416	616	742	5.2	4.6	4.0	3.8	4.2	
Population (millions of people)	148	178	226	255	271	278	1.6	0.9	0.6	0.5	0.7	
CO ₂ emissions (Mt-CO ₂)	72	140	383	554	769	927	6.4	2.9	3.3	3.8	3.2	
GDP per capita (US dollars at 2000value/person)	397	612	1,033	1,633	2,269	2,670	3.6	3.6	3.3	3.3	3.4	
Primary energy demand per capita	0.18	0.32	0.61	0.89	1.18	1.36	4.7	2.9	2.9	2.8	2.9	
Primary energy demand per unit of GDP**	443	527	593	542	522	509	1.1	-0.7	-0.4	-0.5	-0.5	
CO ₂ emissions per unit of GDP***	1,231	1,287	1,644	1,332	1,249	1,250	1.1	-1.6	-0.6	0.0	-1.0	
CO ₂ emissions per unit of primary energy demand****	2.78	2.44	2.77	2.46	2.39	2.45	0.0	-0.9	-0.3	0.5	-0.4	
Automobile ownership (millions of vehicles)	1.3	2.8	7.7	15	26	34	6.8	5.4	5.6	5.4	5.5	
Automobile ownership per 1,000 population*****	8.7	16	34	60	97	123	5.2	4.5	4.9	4.8	4.7	

* Industry sector includes petrochemical feedstocks, ** toe / millions of US dollars at 2000 value, *** t-CO₂/ millions of US dollars at 2000 value
**** t-CO₂ / toe ***** vehicles per 1,000 population

Table 9 Malaysia

Primary energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	11	21	70	97	126	144	100	100	100	7.3	2.5	2.7	2.7	2.6
Coal	0	1.0	8.9	16	25	31	0.4	13	21	22.1	4.4	4.7	4.6	4.6
Oil	8.1	12	26	35	40	43	77	37	30	4.4	2.4	1.3	1.2	1.8
Natural gas	2.2	6.8	35	44	57	66	21	50	46	10.7	1.9	2.6	3.0	2.3
Nuclear	0	0	0	0	2.4	2.4	0	0	1.6	-	-	-	0.0	-
Hydro	0.1	0.3	0.6	1.3	1.4	1.5	1.1	0.8	1.1	5.9	6.7	1.1	1.0	3.6
Geothermal	0	0	0	0	0	0	0.1	0	0	-100.0	-	-	-	-
Other renewables	0	0	0	0.5	0.5	0.6	0	0	0.4	-	93.3	1.4	1.8	36.9

Final energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	6.2	13	42	57	74	84	100	100	100	7.3	2.5	2.6	2.5	2.5
Industry*	2.9	5.2	19	24	32	37	47	46	45	7.2	1.8	2.9	3.0	2.4
Trasnporation	2.2	4.8	14	20	23	24	35	33	29	7.0	3.1	1.4	0.9	2.1
Residential/Commercial	0.8	1.7	6.0	8.9	13	15	14	14	18	7.6	3.0	3.6	3.3	3.3
Non-energy, etc.*	0.3	0.8	3.0	4.0	6.1	7.5	4.4	7.1	8.9	9.3	2.4	4.3	4.1	3.3
Energy Source														
Total	6.2	13	42	57	74	84	100	100	100	7.3	2.5	2.6	2.5	2.5
Coal	0	0.4	1.4	1.8	2.5	3.0	0.7	3.3	3.6	13.9	2.3	3.3	3.3	2.8
Oil	5.4	9.4	22	29	33	35	87	53	42	5.4	2.1	1.2	1.1	1.6
Natural gas	0	1.1	10	11	16	18	0.6	25	22	23.5	0.4	3.8	3.2	2.1
Electricity	0.7	1.7	7.7	15	22	27	12	18	32	9.0	5.2	4.2	4.0	4.6
Heat	0	0	0	0	0	0	0	0	0	-	-	-	-	-
Renewables	0	0	0	0.4	0.4	0.4	0	0	0.5	-	-	0.9	0.7	-

Power generation	TWh						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	10	23	101	194	291	353	100	100	100	8.9	5.1	4.1	3.9	4.6
Coal	0	2.8	30	64	105	133	0	30	38	-	6.0	5.1	4.9	5.5
Oil	8.5	11	2.1	0.2	0.1	0.2	85	2.0	0	-5.1	-17.2	-2.9	4.2	-8.7
Natural gas	0.1	5.1	63	113	158	190	1.2	62	54	26.1	4.6	3.4	3.8	4.0
Nuclear	0	0	0	0	9.1	9.1	0	0	2.6	-	-	-	0.0	-
Hydro	1.4	4.0	7.6	15	17	18	14	7.5	5.0	6.5	5.5	1.1	1.0	3.1
Geothermal	0	0	0	0	0	0	0	0	0	-	-	-	-	-
Other renewables	0	0	0.1	2.0	2.8	3.5	0	0.1	1.0	-	30.3	3.4	4.0	15.2

Energy and economic indicators								AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035	
GDP (billions of US dollars at 2000 value)	25	45	126	223	333	398	6.1	4.5	4.1	3.6	4.2	
Population (millions of people)	14	18	26	32	35	36	2.4	1.5	1.0	0.8	1.2	
CO ₂ emissions (Mt-CO ₂)	29	56	188	271	353	406	7.1	2.9	2.7	2.9	2.8	
GDP per capita (US dollars at 2000value/person)	1,848	2,547	4,803	7,050	9,549	10,998	3.6	3.0	3.1	2.9	3.0	
Primary energy demand per capita	0.76	1.15	2.66	3.06	3.63	3.99	4.7	1.1	1.7	1.9	1.5	
Primary energy demand per unit of GDP**	413	452	553	433	380	363	1.1	-1.9	-1.3	-0.9	-1.5	
CO ₂ emissions per unit of GDP***	1,157	1,230	1,494	1,217	1,060	1,020	1.0	-1.6	-1.4	-0.8	-1.4	
CO ₂ emissions per unit of primary energy demand****	2.80	2.72	2.70	2.81	2.79	2.81	-0.1	0.3	-0.1	0.2	0.1	
Automobile ownership (millions of vehicles)	0.9	2.4	8.4	12	14	15	8.7	2.9	1.5	0.9	2.1	
Automobile ownership per 1,000 population*****	65	133	322	388	410	414	6.1	1.4	0.6	0.2	0.9	

* Industry sector includes petrochemical feedstocks, ** toe / millions of US dollars at 2000 value, *** t-CO₂/ millions of US dollars at 2000 value
**** t-CO₂ / toe ***** vehicles per 1,000 population

Table 10 Philippines

Primary energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	13	18	32	58	91	112	100	100	100	3.4	4.7	4.6	4.1	4.5
Coal	0.4	1.4	6.3	13	22	29	2.8	20	26	11.1	5.9	5.0	6.0	5.6
Oil	11	11	13	22	33	40	81	42	36	0.8	4.0	4.0	4.0	4.0
Natural gas	0	0	3.0	9.1	16	20	0	9.4	18	-	8.8	5.7	4.5	6.9
Nuclear	0	0	0	0	0	0	0	0	0	-	-	-	-	-
Hydro	0.3	0.5	0.7	1.0	1.4	1.5	2.3	2.3	1.3	3.3	2.6	2.9	1.3	2.5
Geothermal	1.8	4.7	8.8	13	19	21	14	27	19	6.1	2.8	4.3	1.8	3.2
Other renewables	0	0	0	0.2	0.3	0.3	0	0.1	0.3	-	11.8	5.0	3.5	7.8

Final energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	8.7	10	17	32	49	60	100	100	100	2.6	4.9	4.3	4.2	4.6
Industry*	3.0	3.0	4.1	6.2	7.4	8.2	34	24	14	1.2	3.2	1.9	2.0	2.5
Trasnpotation	3.5	4.6	8.7	16	26	33	40	50	54	3.4	4.7	5.1	4.8	4.9
Residential/Commercial	2.0	2.2	4.2	9.9	15	19	23	24	31	2.8	6.8	4.5	4.3	5.5
Non-energy, etc.*	0.3	0.4	0.3	0.3	0.3	0.3	3.0	1.9	0.6	0.9	-0.3	0.5	0.5	0.1
Energy Source														
Total	8.7	10	17	32	49	60	100	100	100	2.6	4.9	4.3	4.2	4.6
Coal	0.2	0.7	1.6	1.6	1.9	2.2	2.4	9.2	3.6	7.8	0.1	1.9	2.3	1.1
Oil	7.1	7.6	11	20	31	38	81	66	63	1.8	4.5	4.3	4.3	4.4
Natural gas	0	0	0.1	1.3	1.9	2.2	0	0.4	3.6	-	23.9	4.0	3.1	12.6
Electricity	1.5	1.8	4.1	8.9	14	18	17	24	29	3.9	6.1	4.8	4.4	5.4
Heat	0	0	0	0	0	0	0	0	0	-	-	-	-	-
Renewables	0	0	0	0.1	0.2	0.2	0	0.2	0.4	-	11.8	3.3	3.2	7.2

Power generation	TWh						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	18	26	60	128	205	255	100	100	100	4.5	6.1	4.8	4.4	5.3
Coal	0.2	1.9	17	50	87	119	1.0	28	47	18.3	8.7	5.8	6.6	7.2
Oil	12	12	4.5	4.2	4.1	4.0	68	7.5	1.6	-3.6	-0.5	-0.4	-0.4	-0.4
Natural gas	0	0	18	47	75	89	0	31	35	-	7.6	4.8	3.5	5.8
Nuclear	0	0	0	0	0	0	0	0	0	-	-	-	-	-
Hydro	3.5	6.1	10	12	16	17	20	17	6.6	4.0	1.3	2.9	1.3	1.9
Geothermal	2.1	5.5	11	15	22	25	12	18	9.6	6.3	2.5	4.3	1.8	3.0
Other renewables	0	1.6	0.1	0.6	1.8	2.2	0	0.1	0.9	-	19.5	11.7	3.9	13.8

Energy and economic indicators								AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035	
GDP (billions of US dollars at 2000 value)	48	56	107	193	285	344	3.0	4.6	4.0	3.8	4.3	
Population (millions of people)	48	61	88	109	123	129	2.3	1.6	1.3	1.0	1.4	
CO ₂ emissions (Mt-CO ₂)	34	39	72	142	224	284	2.9	5.3	4.6	4.9	5.0	
GDP per capita (US dollars at 2000value/person)	989	918	1,218	1,776	2,320	2,657	0.8	2.9	2.7	2.8	2.8	
Primary energy demand per capita	0.27	0.29	0.37	0.54	0.74	0.86	1.1	3.0	3.2	3.1	3.1	
Primary energy demand per unit of GDP**	277	317	302	303	320	325	0.3	0.0	0.5	0.3	0.3	
CO ₂ emissions per unit of GDP***	705	686	675	738	784	825	-0.2	0.7	0.6	1.0	0.7	
CO ₂ emissions per unit of primary energy demand****	2.55	2.16	2.23	2.43	2.45	2.54	-0.5	0.7	0.1	0.7	0.5	
Automobile ownership (millions of vehicles)	0.9	1.2	2.9	5.4	8.7	11	4.6	4.9	4.9	4.8	4.9	
Automobile ownership per 1,000 population*****	18	20	33	50	71	86	2.3	3.2	3.6	3.8	3.5	

* Industry sector includes petrochemical feedstocks, ** toe / millions of US dollars at 2000 value, *** t-CO₂/ millions of US dollars at 2000 value
**** t-CO₂ / toe ***** vehicles per 1,000 population

Table 11 Thailand

Primary energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	11	27	86	145	200	234	100	100	100	7.8	4.1	3.3	3.1	3.6
Coal	0.5	3.8	14	29	44	52	4.1	17	22	13.5	5.6	4.2	3.6	4.7
Oil	11	18	42	64	78	85	94	49	37	5.2	3.3	2.1	1.8	2.6
Natural gas	0	5.1	28	50	74	91	0	33	39	-	4.5	3.9	4.3	4.3
Nuclear	0	0	0	0	2.4	2.4	0	0	1.0	-	-	-	0.0	-
Hydro	0.1	0.4	0.7	0.7	0.7	0.7	1.0	0.8	0.3	7.1	0.0	0.0	0.0	0.0
Geothermal	0.1	0.1	0.3	0.3	0.5	0.5	0.6	0.4	0.2	5.9	0.5	3.2	3.1	1.9
Other renewables	0	0	0.1	0.9	1.2	1.5	0	0.2	0.7	-	15.0	3.3	4.7	8.8

Final energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	8.4	20	58	97	130	149	100	100	100	7.4	4.1	3.0	2.7	3.4
Industry*	2.7	5.7	17	29	42	49	32	30	33	7.1	4.0	3.8	3.4	3.8
Trasnporation	3.2	9.0	18	28	35	38	38	32	26	6.6	3.4	2.2	2.0	2.7
Residential/Commercial	2.4	4.5	12	20	29	35	28	21	24	6.1	3.9	4.0	4.0	4.0
Non-energy, etc.*	0.2	0.4	10	21	25	26	1.8	18	17	16.9	5.4	1.8	1.0	3.3
Energy Source														
Total	8.4	20	58	97	130	149	100	100	100	7.4	4.1	3.0	2.7	3.4
Coal	0.1	1.3	7.0	13	18	20	1.1	12	14	17.3	4.9	3.3	2.3	3.9
Oil	7.2	15	37	58	71	78	86	64	52	6.2	3.6	2.1	1.8	2.7
Natural gas	0	0.2	2.4	5.7	9.2	11	0	4.1	7.7	-	6.9	5.0	4.5	5.8
Electricity	1.1	3.3	11	20	31	38	13	20	26	9.0	4.2	4.6	4.4	4.4
Heat	0	0	0	0	0	0	0	0	0	-	-	-	-	-
Renewables	0	0	0.1	0.7	0.9	1.0	0	0.2	0.7	-	13.5	2.1	1.8	7.2

Power generation	TWh						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	14	44	143	252	392	485	100	100	100	8.9	4.4	4.5	4.4	4.5
Coal	1.4	11	31	73	118	148	9.8	21	30	12.1	6.8	5.0	4.5	5.8
Oil	12	10	3.8	2.4	3.1	3.8	81	2.7	0.8	-4.0	-3.4	2.3	4.5	0.0
Natural gas	0	18	97	163	244	304	0	67	63	-	4.1	4.1	4.5	4.2
Nuclear	0	0	0	0	9.1	9.1	0	0	1.9	-	-	-	0.0	-
Hydro	1.3	5.0	8.1	8.1	8.2	8.2	8.8	5.7	1.7	7.1	0.0	0.0	0.0	0.0
Geothermal	0	0	0	0	0	0	0	0	0	-	0.0	0.0	0.0	0.0
Other renewables	0	0	3.2	5.6	9.0	12	0	2.2	2.5	-	4.5	4.8	6.5	5.0

Energy and economic indicators								AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035	
GDP (billions of US dollars at 2000 value)	37	79	173	286	449	557	5.9	4.0	4.6	4.4	4.3	
Population (millions of people)	47	54	64	68	70	71	1.2	0.5	0.3	0.1	0.4	
CO ₂ emissions (Mt-CO ₂)	34	81	220	399	552	647	7.1	4.7	3.3	3.2	3.9	
GDP per capita (US dollars at 2000value/person)	790	1,455	2,712	4,203	6,408	7,900	4.7	3.4	4.3	4.3	3.9	
Primary energy demand per capita	0.24	0.50	1.34	2.12	2.85	3.31	6.5	3.6	3.0	3.0	3.3	
Primary energy demand per unit of GDP**	307	346	495	505	445	419	1.8	0.2	-1.3	-1.2	-0.6	
CO ₂ emissions per unit of GDP***	926	1,025	1,270	1,394	1,228	1,161	1.2	0.7	-1.3	-1.1	-0.3	
CO ₂ emissions per unit of primary energy demand****	3.02	2.96	2.57	2.76	2.76	2.77	-0.6	0.6	0.0	0.1	0.3	
Automobile ownership (millions of vehicles)	0.9	2.8	9.6	18	24	29	9.3	4.8	3.3	3.2	4.0	
Automobile ownership per 1,000 population*****	19	52	151	258	348	405	8.0	4.2	3.0	3.1	3.6	

* Industry sector includes petrochemical feedstocks, ** toe / millions of US dollars at 2000 value, *** t-CO₂ / millions of US dollars at 2000 value
**** t-CO₂ / toe ***** vehicles per 1,000 population

Table 12 Vietnam

Primary energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
	Total	4.2	5.4	31	66	114	154	100	100	100	7.7	6.0	5.5	6.3
Coal	2.3	2.2	9.9	22	37	54	54	32	35	5.6	6.4	5.3	7.9	6.3
Oil	1.8	2.7	13	19	27	34	43	43	22	7.6	2.9	3.5	4.7	3.4
Natural gas	0	0	5.5	15	32	42	0	17	27	-	8.0	7.8	5.8	7.6
Nuclear	0	0	0	0	2.4	4.7	0	0	3.1	-	-	-	14.9	-
Hydro	0.1	0.5	2.6	5.4	7.8	9.0	3.0	8.2	5.8	11.8	5.8	3.8	2.9	4.6
Geothermal	0	0	0	0	0	0	0	0	0	-	-	-	-	-
Other renewables	0	0	0	4.8	7.6	10.0	0	0	6.5	-	-	4.8	5.5	-

Final energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
	Total	3.4	4.2	25	47	81	108	100	100	100	7.6	5.0	5.6	5.9
Industry*	1.5	1.7	10	24	46	63	45	42	58	7.4	6.8	6.6	6.5	6.7
Trasnporation	0.6	1.4	7.8	8.2	10	12	19	32	11	9.7	0.4	2.2	3.4	1.6
Residential/Commercial	1.2	1.1	5.9	13	23	30	35	24	27	6.1	6.3	5.7	5.6	6.0
Non-energy, etc.*	0	0	0.8	1.6	2.7	3.6	1.3	3.1	3.3	11.3	5.7	5.7	5.7	5.7
Energy Source														
Total	3.4	4.2	25	47	81	108	100	100	100	7.6	5.0	5.6	5.9	5.4
Coal	1.5	1.3	6.2	10	13	16	44	25	15	5.4	3.7	2.3	4.5	3.3
Oil	1.7	2.4	13	18	26	33	49	52	31	7.9	2.9	3.6	4.8	3.5
Natural gas	0	0	0.5	6.1	19	27	0	2.2	25	-	20.6	12.0	7.0	14.9
Electricity	0.2	0.5	5.3	12	23	33	6.8	21	30	12.2	6.8	6.6	6.8	6.7
Heat	0	0	0	0	0	0	0	0	0	-	-	-	-	-
Renewables	0	0	0	0	0	0	0	0	0	-	-	-	-	-

Power generation	TWh						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
	Total	3.6	8.7	69	162	278	380	100	100	100	11.6	6.7	5.6	6.5
Coal	1.4	2.0	15	54	111	175	40	21	46	9.1	10.5	7.4	9.5	9.2
Oil	0.7	1.3	2.5	3.5	4.6	5.3	18	3.5	1.4	5.1	2.8	2.7	2.7	2.8
Natural gas	0	0	23	40	60	74	0	33	20	-	4.3	4.2	4.2	4.3
Nuclear	0	0	0	0	9.1	18	0	0	4.8	-	-	-	14.9	-
Hydro	1.5	5.4	30	62	90	104	42	43	28	11.8	5.8	3.8	2.9	4.6
Geothermal	0	0	0	0	0	0	0	0	0	-	-	-	-	-
Other renewables	0	0	0	1.3	1.7	1.9	0	0	0.5	-	-	2.2	3.0	-

Energy and economic indicators								AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035	
	GDP (billions of US dollars at 2000 value)	9.0	15	52	119	217	290	6.7	6.6	6.2	6.0	6.3
Population (millions of people)	54	66	85	97	104	107	1.7	1.0	0.7	0.5	0.8	
CO ₂ emissions (Mt-CO ₂)	15	17	91	179	303	416	7.0	5.4	5.4	6.6	5.6	
GDP per capita (US dollars at 2000value/person)	168	227	612	1,226	2,080	2,715	4.9	5.5	5.4	5.5	5.5	
Primary energy demand per capita	0.08	0.08	0.37	0.68	1.09	1.44	5.8	4.9	4.8	5.7	5.0	
Primary energy demand per unit of GDP**	472	362	600	558	525	531	0.9	-0.6	-0.6	0.3	-0.4	
CO ₂ emissions per unit of GDP***	1,616	1,142	1,738	1,508	1,395	1,435	0.3	-1.1	-0.8	0.6	-0.7	
CO ₂ emissions per unit of primary energy demand****	3.42	3.16	2.90	2.70	2.66	2.70	-0.6	-0.5	-0.2	0.3	-0.3	
Automobile ownership (millions of vehicles)	0.2	0.2	0.7	1.5	2.5	3.2	4.4	6.1	5.6	5.2	5.7	
Automobile ownership per 1,000 population*****	4.0	3.6	7.9	15	24	30	2.6	5.1	4.8	4.6	4.9	

* Industry sector includes petrochemical feedstocks, ** toe / millions of US dollars at 2000 value, *** t-CO₂/ millions of US dollars at 2000 value
**** t-CO₂ / toe ***** vehicles per 1,000 population

Table 13 North America

Primary energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	1,997	2,122	2,609	2,679	2,788	2,845	100	100	100	1.0	0.2	0.4	0.4	0.3
Coal	397	483	584	602	653	672	20	22	24	1.4	0.2	0.8	0.6	0.5
Oil	885	833	1,004	951	935	933	44	38	33	0.5	-0.4	-0.2	-0.1	-0.3
Natural gas	522	493	617	635	657	666	26	24	23	0.6	0.2	0.3	0.3	0.3
Nuclear	80	179	242	259	273	281	4.0	9.3	9.9	4.2	0.5	0.5	0.6	0.5
Hydro	46	49	53	60	63	65	2.3	2.0	2.3	0.6	1.0	0.5	0.6	0.7
Geothermal	4.6	14	8.6	12	13	13	0.2	0.3	0.5	2.4	2.3	0.9	0.9	1.6
Other renewables	62	71	99	161	195	214	3.1	3.8	7.5	1.7	3.8	1.9	1.9	2.8

Final energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	1,466	1,451	1,793	1,815	1,866	1,897	100	100	100	0.7	0.1	0.3	0.3	0.2
Industry*	437	330	349	360	358	355	30	19	19	-0.8	0.2	-0.1	-0.2	0.1
Trasnporation	470	531	693	708	721	734	32	39	39	1.5	0.2	0.2	0.3	0.2
Residential/Commercial	446	457	568	606	658	682	30	32	36	0.9	0.5	0.8	0.7	0.7
Non-energy, etc.*	114	134	182	141	129	126	7.7	10	6.6	1.8	-1.9	-0.9	-0.5	-1.3
Energy Source														
Total	1,466	1,451	1,793	1,815	1,866	1,897	100	100	100	0.7	0.1	0.3	0.3	0.2
Coal	60	57	34	34	35	34	4.1	1.9	1.8	-2.1	0.1	0.3	-0.4	0.1
Oil	769	752	927	849	834	832	52	52	44	0.7	-0.7	-0.2	-0.1	-0.4
Natural gas	374	346	377	387	384	382	25	21	20	0.0	0.2	-0.1	-0.1	0.0
Electricity	200	262	373	423	476	502	14	21	26	2.3	1.0	1.2	1.1	1.1
Heat	1.0	2.8	8.0	8.2	8.3	8.3	0.1	0.4	0.4	7.9	0.1	0.2	0.0	0.1
Renewables	62	30	74	110	127	137	4.2	4.1	7.2	0.7	3.1	1.4	1.6	2.2

Power generation	TWh						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	2,801	3,685	4,963	5,667	6,365	6,705	100	100	100	2.1	1.0	1.2	1.0	1.1
Coal	1,303	1,782	2,234	2,556	2,918	3,083	47	45	46	2.0	1.0	1.3	1.1	1.2
Oil	277	147	88	48	41	40	9.9	1.8	0.6	-4.2	-4.6	-1.7	-0.5	-2.8
Natural gas	380	391	956	1,028	1,202	1,286	14	19	19	3.5	0.6	1.6	1.4	1.1
Nuclear	304	685	930	995	1,048	1,080	11	19	16	4.2	0.5	0.5	0.6	0.5
Hydro	530	570	618	699	737	758	19	12	11	0.6	1.0	0.5	0.6	0.7
Geothermal	5.4	16	17	21	23	24	0.2	0.3	0.4	4.4	1.4	0.9	0.9	1.2
Other renewables	1.8	94	121	320	397	434	0.1	2.4	6.5	17.0	7.7	2.2	1.8	4.7

Energy and economic indicators								AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035	
GDP (billions of US dollars at 2000 value)	5,540	7,599	12,412	16,348	21,087	23,508	3.0	2.1	2.6	2.2	2.3	
Population (millions of people)	252	277	334	376	405	419	1.1	0.9	0.8	0.7	0.8	
CO ₂ emissions (Mt-CO ₂)	5,172	5,228	6,302	6,354	6,595	6,695	0.7	0.1	0.4	0.3	0.2	
GDP per capita (US dollars at 2000value/person)	22,000	27,391	37,135	43,531	52,045	56,126	2.0	1.2	1.8	1.5	1.5	
Primary energy demand per capita	7.93	7.65	7.81	7.13	6.88	6.79	-0.1	-0.7	-0.4	-0.3	-0.5	
Primary energy demand per unit of GDP**	361	279	210	164	132	121	-2.0	-1.9	-2.1	-1.8	-2.0	
CO ₂ emissions per unit of GDP***	934	688	508	389	313	285	-2.2	-2.0	-2.2	-1.9	-2.0	
CO ₂ emissions per unit of primary energy demand****	2.59	2.46	2.42	2.37	2.36	2.35	-0.3	-0.1	0.0	-0.1	-0.1	
Automobile ownership (millions of vehicles)	169	205	267	308	345	363	1.7	1.1	1.1	1.0	1.1	
Automobile ownership per 1,000 population*****	672	740	800	821	853	866	0.6	0.2	0.4	0.3	0.3	

* Industry sector includes petrochemical feedstocks, ** toe / millions of US dollars at 2000 value, *** t-CO₂/ millions of US dollars at 2000 value
**** t-CO₂ / toe ***** vehicles per 1,000 population

Table 14 Central and South America

Primary energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
	Total	317	388	636	850	1,054	1,174	100	100	100	2.6	2.3	2.2	2.2
Coal	14	20	32	55	71	80	4.3	5.0	6.9	3.2	4.3	2.7	2.5	3.4
Oil	224	236	351	368	408	432	71	55	37	1.7	0.4	1.0	1.1	0.7
Natural gas	51	76	158	294	391	457	16	25	39	4.3	4.9	2.9	3.2	3.9
Nuclear	0.6	3.2	7.8	13	17	19	0.2	1.2	1.7	9.9	4.1	2.8	2.3	3.3
Hydro	19	33	60	81	109	119	5.9	9.4	10	4.4	2.4	2.9	1.9	2.5
Geothermal	1.2	5.0	9.4	15	30	36	0.4	1.5	3.1	8.1	3.8	7.1	3.4	4.9
Other renewables	8.4	13	18	23	27	29	2.7	2.8	2.5	2.8	2.0	1.8	1.1	1.8

Final energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
	Total	227	285	463	593	729	811	100	100	100	2.7	1.9	2.1	2.1
Industry*	77	87	135	190	245	276	34	29	34	2.1	2.7	2.5	2.4	2.6
Transportation	86	104	180	198	229	251	38	39	31	2.8	0.8	1.5	1.8	1.2
Residential/Commercial	49	69	105	149	191	214	21	23	26	2.9	2.7	2.5	2.3	2.6
Non-energy, etc.*	16	26	44	55	65	70	7.0	9.4	8.6	3.8	1.8	1.6	1.5	1.7
Energy Source														
Total	227	285	463	593	729	811	100	100	100	2.7	1.9	2.1	2.1	2.0
Coal	6.4	8.7	13	16	18	19	2.8	2.7	2.4	2.6	1.9	1.3	1.2	1.5
Oil	158	180	271	315	366	397	69	59	49	2.0	1.2	1.5	1.7	1.4
Natural gas	28	40	76	108	142	164	13	17	20	3.7	2.7	2.7	2.8	2.8
Electricity	26	43	86	133	181	208	12	19	26	4.5	3.4	3.1	2.9	3.2
Heat	0	0	0	0	0	0	0	0	0	-	-	-	-	-
Renewables	8.3	13	16	20	22	22	3.7	3.5	2.7	2.5	1.6	1.1	0.0	1.2

Power generation	TWh						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
	Total	364	614	1,259	1,996	2,719	3,123	100	100	100	4.7	3.6	3.1	2.8
Coal	7.5	24	65	160	238	283	2.1	5.2	9.1	8.3	7.2	4.1	3.5	5.4
Oil	97	122	178	126	135	140	27	14	4.5	2.3	-2.6	0.7	0.7	-0.8
Natural gas	35	59	254	650	910	1,112	9.7	20	36	7.6	7.5	3.4	4.1	5.4
Nuclear	2.3	12	30	51	67	74	0.6	2.4	2.4	9.9	4.1	2.8	2.3	3.3
Hydro	218	386	696	948	1,266	1,387	60	55	44	4.4	2.4	2.9	1.9	2.5
Geothermal	1.4	5.9	10	17	35	41	0.4	0.8	1.3	7.6	4.0	7.3	3.4	5.1
Other renewables	4.2	6.6	29	52	80	99	1.2	2.3	3.2	7.3	4.6	4.5	4.4	4.5

Energy and economic indicators									AAGR(%)				
	1980	1990	2007	2020	2030	2035	2007-2020	2020-2030	2030-2035	2007-2035			
	GDP (billions of US dollars at 2000 value)	1,325	1,496	2,584	3,905	5,412	6,312	2.5	3.2	3.3	3.1	3.2	
Population (millions of people)	359	439	565	639	682	697	1.7	1.0	0.7	0.5	0.8		
CO ₂ emissions (Mt-CO ₂)	812	911	1,451	1,917	2,313	2,569	2.2	2.2	1.9	2.1	2.1		
GDP per capita (US dollars at 2000 value/person)	3,696	3,407	4,575	6,111	7,937	9,050	0.8	2.3	2.6	2.7	2.5		
Primary energy demand per capita	0.88	0.88	1.13	1.33	1.55	1.68	0.9	1.3	1.5	1.7	1.4		
Primary energy demand per unit of GDP**	239	259	246	218	195	186	0.1	-0.9	-1.1	-0.9	-1.0		
CO ₂ emissions per unit of GDP***	613	609	561	491	427	407	-0.3	-1.0	-1.4	-1.0	-1.1		
CO ₂ emissions per unit of primary energy demand****	2.56	2.35	2.28	2.26	2.19	2.19	-0.4	-0.1	-0.3	-0.1	-0.1		
Automobile ownership (millions of vehicles)	29	39	81	145	241	310	3.9	4.6	5.2	5.2	4.9		
Automobile ownership per 1,000 population*****	81	89	144	227	353	444	2.2	3.6	4.5	4.7	4.1		

* Industry sector includes petrochemical feedstocks, ** toe / millions of US dollars at 2000 value, *** t-CO₂ / millions of US dollars at 2000 value
**** t-CO₂ / toe ***** vehicles per 1,000 population

Table 15 OECD Europe

Primary energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	1,494	1,604	1,827	1,936	2,024	2,055	100	100	100	0.7	0.4	0.4	0.3	0.4
Coal	464	442	337	297	285	271	31	18	13	-1.2	-1.0	-0.4	-1.0	-0.8
Oil	688	603	634	589	581	573	46	35	28	-0.3	-0.6	-0.1	-0.3	-0.4
Natural gas	206	258	448	538	588	610	14	25	30	2.9	1.4	0.9	0.7	1.1
Nuclear	60	204	241	255	250	245	4.0	13	12	5.3	0.4	-0.2	-0.4	0.1
Hydro	36	38	43	50	57	60	2.4	2.3	2.9	0.7	1.2	1.2	1.2	1.2
Geothermal	4.4	6.7	12	18	22	25	0.3	0.7	1.2	3.9	3.0	2.3	2.0	2.6
Other renewables	36	53	113	189	240	270	2.4	6.2	13	4.4	4.0	2.4	2.3	3.2

Final energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	1,077	1,115	1,287	1,363	1,432	1,461	100	100	100	0.7	0.4	0.5	0.4	0.5
Industry*	357	319	323	360	374	381	33	25	26	-0.4	0.8	0.4	0.4	0.6
Transportation	209	266	348	407	431	438	19	27	30	1.9	1.2	0.6	0.3	0.8
Residential/Commercial	425	432	497	532	560	573	40	39	39	0.6	0.5	0.5	0.5	0.5
Non-energy, etc.*	86	99	118	66	70	72	8.0	9.2	4.9	1.2	-4.4	0.5	0.5	-1.8
Energy Source														
Total	1,077	1,115	1,287	1,363	1,432	1,461	100	100	100	0.7	0.4	0.5	0.4	0.5
Coal	151	121	56	36	29	26	14	4.3	1.8	-3.6	-3.3	-2.1	-1.9	-2.6
Oil	547	516	565	539	539	534	51	44	37	0.1	-0.4	0.0	-0.2	-0.2
Natural gas	167	204	281	332	348	353	15	22	24	2.0	1.3	0.5	0.3	0.8
Electricity	147	190	263	304	346	367	14	20	25	2.2	1.1	1.3	1.2	1.2
Heat	35	37	55	57	58	58	3.2	4.3	4.0	1.8	0.2	0.1	0.1	0.2
Renewables	31	46	66	94	110	121	2.9	5.1	8.2	2.8	2.7	1.7	1.8	2.2

Power generation	TWh						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	2,049	2,632	3,577	4,138	4,704	4,980	100	100	100	2.1	1.1	1.3	1.1	1.2
Coal	887	1,011	1,013	1,006	1,028	1,000	43	28	20	0.5	0.0	0.2	-0.6	0.0
Oil	364	203	110	63	46	39	18	3.1	0.8	-4.3	-4.2	-3.1	-2.9	-3.6
Natural gas	138	167	802	960	1,181	1,298	6.7	22	26	6.7	1.4	2.1	1.9	1.7
Nuclear	230	782	925	980	961	942	11	26	19	5.3	0.4	-0.2	-0.4	0.1
Hydro	416	443	498	583	658	699	20	14	14	0.7	1.2	1.2	1.2	1.2
Geothermal	2.7	3.6	9.5	16	21	23	0.1	0.3	0.5	4.7	3.9	2.8	2.4	3.2
Other renewables	11	22	218	529	810	978	0.6	6.1	20	11.6	7.1	4.3	3.8	5.5

Energy and economic indicators									AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035		
GDP (billions of US dollars at 2000 value)	5,601	7,128	10,345	12,233	14,726	15,915	2.3	1.3	1.9	1.6	1.6		
Population (millions of people)	472	496	539	559	566	568	0.5	0.3	0.1	0.0	0.2		
CO ₂ emissions (Mt-CO ₂)	4,178	3,909	3,978	4,076	4,111	4,080	-0.2	0.2	0.1	-0.2	0.1		
GDP per capita (US dollars at 2000 value/person)	11,870	14,369	19,195	21,868	26,007	28,037	1.8	1.0	1.7	1.5	1.4		
Primary energy demand per capita	3.17	3.23	3.39	3.46	3.57	3.62	0.3	0.2	0.3	0.3	0.2		
Primary energy demand per unit of GDP**	267	225	177	158	137	129	-1.5	-0.8	-1.4	-1.2	-1.1		
CO ₂ emissions per unit of GDP***	746	548	385	333	279	256	-2.4	-1.1	-1.8	-1.7	-1.4		
CO ₂ emissions per unit of primary energy demand****	2.80	2.44	2.18	2.11	2.03	1.99	-0.9	-0.3	-0.4	-0.5	-0.3		
Automobile ownership (millions of vehicles)	128	185	273	321	351	361	2.9	1.3	0.9	0.5	1.0		
Automobile ownership per 1,000 population*****	271	373	507	574	621	636	2.4	1.0	0.8	0.5	0.8		

* Industry sector includes petrochemical feedstocks, ** toe / millions of US dollars at 2000 value, *** t-CO₂ / millions of US dollars at 2000 value
**** t-CO₂ / toe ***** vehicles per 1,000 population

Table 16 Non-OECD Europe

Primary energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
	Total	1,187	1,527	1,106	1,297	1,433	1,483	100	100	100	-0.3	1.2	1.0	0.7
Coal	350	365	213	196	184	174	29	19	12	-1.8	-0.6	-0.7	-1.1	-0.7
Oil	449	475	224	256	283	292	38	20	20	-2.5	1.0	1.0	0.6	1.0
Natural gas	352	604	560	677	778	821	30	51	55	1.7	1.5	1.4	1.1	1.4
Nuclear	21	61	77	130	149	154	1.7	6.9	10	5.0	4.2	1.3	0.7	2.5
Hydro	18	23	25	29	30	30	1.5	2.3	2.0	1.3	1.0	0.4	0.4	0.7
Geothermal	-1.3	-1.5	7.6	8.3	8.9	9.3	-0.1	0.7	0.6	-206.7	0.8	0.7	0.7	0.7
Other renewables	0	0	0.3	0.6	1.3	1.9	0	0	0.1	-	5.6	7.7	8.2	6.8

Final energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
	Total	829	1,072	712	863	974	1,017	100	100	100	-0.6	1.5	1.2	0.9
Industry*	386	392	218	263	285	293	47	31	29	-2.1	1.5	0.8	0.5	1.1
Transportation	102	169	140	172	191	196	12	20	19	1.2	1.6	1.1	0.5	1.2
Residential/Commercial	276	448	284	326	356	369	33	40	36	0.1	1.1	0.9	0.7	0.9
Non-energy, etc.*	64	63	70	102	141	159	7.8	9.8	16	0.3	2.9	3.3	2.4	3.0
Energy Source														
Total	829	1,072	712	863	974	1,017	100	100	100	-0.6	1.5	1.2	0.9	1.3
Coal	150	115	43	44	45	45	18	6.1	4.5	-4.5	0.0	0.3	0.2	0.2
Oil	299	283	175	208	235	244	36	25	24	-2.0	1.4	1.2	0.8	1.2
Natural gas	212	267	239	326	383	405	26	34	40	0.4	2.4	1.6	1.2	1.9
Electricity	90	128	102	130	157	169	11	14	17	0.5	1.9	1.9	1.5	1.8
Heat	78	279	152	155	154	153	9.4	21	15	2.5	0.1	-0.1	-0.1	0.0
Renewables	0	0	0.2	0.1	0.1	0.1	0	0	0	-	-3.8	1.0	1.0	-1.2

Power generation	TWh						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
	Total	1,402	1,924	1,685	2,185	2,629	2,835	100	100	100	0.7	2.0	1.9	1.5
Coal	445	448	400	381	377	358	32	24	13	-0.4	-0.4	-0.1	-1.0	-0.4
Oil	353	271	47	57	68	74	25	2.8	2.6	-7.2	1.5	1.9	1.6	1.7
Natural gas	294	706	651	903	1,248	1,431	21	39	50	3.0	2.5	3.3	2.8	2.9
Nuclear	79	231	293	501	570	592	5.6	17	21	5.0	4.2	1.3	0.7	2.5
Hydro	204	269	290	332	346	352	15	17	12	1.3	1.0	0.4	0.4	0.7
Geothermal	0	0	0.5	1.4	2.1	2.4	0	0	0.1	-	8.0	4.1	3.1	5.7
Other renewables	27	0	3.4	9.4	18	25	1.9	0.2	0.9	-7.4	8.1	6.6	7.2	7.4

Energy and economic indicators									AAGR(%)				
	1980	1990	2007	2020	2030	2035	2007	2020	2030	2035	2007-2035		
	GDP (billions of US dollars at 2000 value)	579	713	793	1,302	1,900	2,188	1.2	3.9	3.8	2.9	3.7	
Population (millions of people)	322	349	338	335	328	324	0.2	-0.1	-0.2	-0.3	-0.2		
CO ₂ emissions (Mt-CO ₂)	3,401	4,146	2,653	2,873	3,038	3,081	-0.9	0.6	0.6	0.3	0.5		
GDP per capita (US dollars at 2000 value/person)	1,795	2,042	2,344	3,887	5,788	6,761	1.0	4.0	4.1	3.2	3.9		
Primary energy demand per capita	3.68	4.38	3.27	3.87	4.37	4.58	-0.4	1.3	1.2	1.0	1.2		
Primary energy demand per unit of GDP**	2,051	2,142	1,396	996	754	678	-1.4	-2.6	-2.7	-2.1	-2.5		
CO ₂ emissions per unit of GDP***	5,875	5,819	3,348	2,206	1,599	1,408	-2.1	-3.2	-3.2	-2.5	-3.0		
CO ₂ emissions per unit of primary energy demand****	2.86	2.72	2.40	2.22	2.12	2.08	-0.7	-0.6	-0.4	-0.4	-0.5		
Automobile ownership (millions of vehicles)	22	33	71	129	155	158	4.4	4.7	1.8	0.4	2.9		
Automobile ownership per 1,000 population*****	68	96	210	385	471	487	4.3	4.8	2.0	0.7	3.1		

* Industry sector includes petrochemical feedstocks, ** toe / millions of US dollars at 2000 value, *** t-CO₂ / millions of US dollars at 2000 value
**** t-CO₂ / toe ***** vehicles per 1,000 population

Table 17 Africa

Primary energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	121	185	314	483	629	713	100	100	100	3.6	3.4	2.7	2.5	3.0
Coal	52	74	106	143	166	183	43	34	26	2.7	2.3	1.5	2.0	2.0
Oil	56	78	119	165	196	214	46	38	30	2.9	2.5	1.8	1.7	2.1
Natural gas	9.1	25	76	159	244	291	7.5	24	41	8.2	5.8	4.4	3.6	4.9
Nuclear	0	2.2	2.9	2.6	4.8	4.8	0	0.9	0.7	-	-0.9	6.3	0.0	1.8
Hydro	4.0	4.7	8.1	10	11	12	3.3	2.6	1.7	2.7	1.7	1.1	1.0	1.4
Geothermal	0.8	0.1	1.2	3.8	5.3	6.0	0.7	0.4	0.8	1.3	9.5	3.3	2.7	6.0
Other renewables	0	0	0.1	0.6	1.0	1.6	0	0	0.2	-	12.9	5.9	8.8	9.6

Final energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	86	114	189	276	350	392	100	100	100	3.0	2.9	2.4	2.3	2.6
Industry*	37	43	57	72	88	97	43	30	25	1.6	1.9	2.0	2.0	1.9
Trasnporation	26	34	64	89	106	115	30	34	29	3.5	2.5	1.8	1.6	2.1
Residential/Commercial	19	27	57	98	138	161	22	30	41	4.1	4.3	3.4	3.2	3.8
Non-energy, etc.*	4.1	9.4	11	16	18	19	4.7	5.9	4.8	3.8	3.0	0.9	0.9	1.9
Energy Source														
Total	86	114	189	276	350	392	100	100	100	3.0	2.9	2.4	2.3	2.6
Coal	21	19	17	18	19	20	24	8.7	5.2	-0.9	0.7	0.6	1.0	0.7
Oil	50	66	106	151	185	203	58	56	52	2.8	2.8	2.0	1.9	2.4
Natural gas	2.3	7.8	26	34	42	47	2.6	14	12	9.4	2.0	2.3	2.2	2.2
Electricity	13	21	41	73	104	122	15	22	31	4.3	4.5	3.6	3.3	4.0
Heat	0	0	0	0	0	0	0	0	0	-	-	-	-	-
Renewables	0	0	0	0	0	0	0	0	0	-	-	-	-	-

Power generation	TWh						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	177	304	583	1,069	1,521	1,790	100	100	100	4.5	4.8	3.6	3.3	4.1
Coal	100	165	267	395	495	572	56	46	32	3.7	3.1	2.3	3.0	2.8
Oil	17	32	54	67	71	74	9.7	9.2	4.1	4.3	1.6	0.7	0.7	1.1
Natural gas	14	43	155	469	790	965	7.9	27	54	9.3	8.9	5.3	4.1	6.8
Nuclear	0	8.4	11	10	19	19	0	1.9	1.0	-	-0.9	6.3	0.0	1.8
Hydro	46	55	94	117	130	137	26	16	7.6	2.7	1.7	1.1	1.0	1.4
Geothermal	0	0.3	1.0	4.1	5.8	6.6	0	0.2	0.4	-	11.2	3.6	2.8	6.9
Other renewables	0.2	0.2	1.9	13	21	28	0.1	0.3	1.6	9.0	16.1	4.6	6.6	10.2

Energy and economic indicators								AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035	
GDP (billions of US dollars at 2000 value)	358	452	811	1,402	1,939	2,259	3.1	4.3	3.3	3.1	3.7	
Population (millions of people)	478	634	958	1,268	1,515	1,638	2.6	2.2	1.8	1.6	1.9	
CO ₂ emissions (Mt-CO ₂)	384	564	932	1,421	1,809	2,039	3.3	3.3	2.4	2.4	2.8	
GDP per capita (US dollars at 2000value/person)	750	713	846	1,105	1,280	1,379	0.4	2.1	1.5	1.5	1.8	
Primary energy demand per capita	0.25	0.29	0.33	0.38	0.42	0.44	0.9	1.2	0.9	0.9	1.0	
Primary energy demand per unit of GDP**	338	409	387	345	324	315	0.5	-0.9	-0.6	-0.6	-0.7	
CO ₂ emissions per unit of GDP***	1,071	1,246	1,150	1,014	933	903	0.3	-1.0	-0.8	-0.7	-0.9	
CO ₂ emissions per unit of primary energy demand****	3.17	3.05	2.97	2.94	2.88	2.86	-0.2	-0.1	-0.2	-0.1	-0.1	
Automobile ownership (millions of vehicles)	9.8	14	23	40	55	63	3.3	4.2	3.2	2.9	3.6	
Automobile ownership per 1,000 population*****	20	23	25	32	36	39	0.7	1.9	1.4	1.3	1.6	

* Industry sector includes petrochemical feedstocks, ** toe / millions of US dollars at 2000 value, *** t-CO₂/ millions of US dollars at 2000 value
**** t-CO₂ / toe ***** vehicles per 1,000 population

Table 18 Middle East

Primary energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	127	219	550	775	935	1,012	100	100	100	5.6	2.7	1.9	1.6	2.2
Coal	1.2	3.1	9.8	14	18	21	0.9	1.8	2.0	8.1	2.6	2.7	2.8	2.7
Oil	96	141	288	421	514	556	75	52	55	4.2	3.0	2.0	1.6	2.4
Natural gas	29	73	250	332	395	427	23	45	42	8.3	2.2	1.7	1.6	1.9
Nuclear	0	0	0	3.7	3.7	3.7	0	0	0.4	-	-	0.0	0.0	-
Hydro	0.8	1.0	1.9	2.7	3.1	3.3	0.7	0.4	0.3	3.2	2.5	1.4	1.3	1.9
Geothermal	0	0	0	0	0	0	0	0	0	3.4	0.0	0.0	0.0	0.0
Other renewables	0	0.4	0.9	1.5	2.2	2.6	0	0.2	0.3	-	4.3	3.7	3.7	4.0

Final energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	86	156	364	566	712	781	100	100	100	5.5	3.5	2.3	1.9	2.8
Industry*	33	45	92	127	174	206	38	25	26	3.9	2.5	3.2	3.4	2.9
Trasnporation	27	50	104	177	215	225	31	29	29	5.1	4.2	2.0	0.9	2.8
Residential/Commercial	22	40	111	167	205	222	25	30	28	6.2	3.2	2.1	1.7	2.5
Non-energy, etc.*	5.0	21	57	95	119	128	5.8	16	16	9.5	3.9	2.3	1.5	2.9
Energy Source														
Total	86	156	364	566	712	781	100	100	100	5.5	3.5	2.3	1.9	2.8
Coal	0.5	0.3	0.7	0.6	0.7	0.7	0.6	0.2	0.1	1.2	-0.7	0.1	0.1	-0.3
Oil	68	107	202	327	414	452	79	55	58	4.1	3.8	2.4	1.8	2.9
Natural gas	11	32	111	163	206	229	13	31	29	8.8	3.0	2.4	2.1	2.6
Electricity	6.5	17	49	74	90	98	7.5	14	13	7.8	3.2	2.0	1.7	2.5
Heat	0	0	0	0	0	0	0	0	0	-	-	-	-	-
Renewables	0	0	0	0	0	0	0	0	0	-	-	-	-	-

Power generation	TWh						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	95	240	714	1,047	1,251	1,346	100	100	100	7.7	3.0	1.8	1.5	2.3
Coal	0	10	37	54	73	85	0	5.2	6.3	-	2.9	3.0	3.1	3.0
Oil	49	114	249	287	322	342	52	35	25	6.2	1.1	1.1	1.2	1.1
Natural gas	36	104	404	658	799	856	38	57	64	9.4	3.8	2.0	1.4	2.7
Nuclear	0	0	0	14	14	14	0	0	1.0	-	-	0.0	0.0	-
Hydro	9.7	12	23	31	36	39	10	3.2	2.9	3.2	2.5	1.4	1.3	1.9
Geothermal	0	0	0	0	0	0	0	0	0	-	-	-	-	-
Other renewables	0	0	0.2	2.5	6.8	10	0	0	0.8	-	24.1	10.5	8.5	16.2

Energy and economic indicators								AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035	
GDP (billions of US dollars at 2000 value)	436	471	969	1,646	2,437	2,936	3.0	4.2	4.0	3.8	4.0	
Population (millions of people)	93	132	195	244	279	295	2.8	1.8	1.3	1.1	1.5	
CO ₂ emissions (Mt-CO ₂)	352	561	1,353	1,871	2,254	2,442	5.1	2.5	1.9	1.6	2.1	
GDP per capita (US dollars at 2000value/person)	4,673	3,575	4,970	6,737	8,725	9,939	0.2	2.4	2.6	2.6	2.5	
Primary energy demand per capita	1.36	1.66	2.82	3.17	3.35	3.43	2.7	0.9	0.5	0.5	0.7	
Primary energy demand per unit of GDP**	291	464	568	471	384	345	2.5	-1.4	-2.0	-2.1	-1.8	
CO ₂ emissions per unit of GDP***	809	1,190	1,396	1,136	925	832	2.0	-1.6	-2.0	-2.1	-1.8	
CO ₂ emissions per unit of primary energy demand****	2.78	2.56	2.46	2.41	2.41	2.41	-0.5	-0.1	0.0	0.0	-0.1	
Automobile ownership (millions of vehicles)	5.8	10	24	48	63	67	5.5	5.4	2.7	1.5	3.7	
Automobile ownership per 1,000 population*****	62	77	125	196	224	228	2.6	3.5	1.4	0.4	2.2	

* Industry sector includes petrochemical feedstocks, ** toe / millions of US dollars at 2000 value, *** t-CO₂/ millions of US dollars at 2000 value
**** t-CO₂ / toe ***** vehicles per 1,000 population

Table 19 Oceania

Primary energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	79	100	141	159	174	181	100	100	100	2.2	0.9	0.9	0.9	0.9
Coal	28	36	56	62	66	66	36	40	36	2.6	0.7	0.6	0.1	0.6
Oil	34	35	43	43	44	44	43	31	24	0.9	0.0	0.1	0.2	0.1
Natural gas	8.3	19	29	39	47	52	11	21	28	4.8	2.3	1.9	2.0	2.1
Nuclear	0	0	0	0	0	0	0	0	0	-	-	-	-	-
Hydro	2.7	3.2	3.3	3.4	3.4	3.5	3.5	2.3	1.9	0.6	0.3	0.0	0.2	0.2
Geothermal	1.0	2.2	2.3	2.8	2.9	3.0	1.3	1.6	1.7	3.0	1.6	0.6	0.6	1.1
Other renewables	4.2	4.6	6.9	8.6	11	13	5.3	4.9	7.2	1.9	1.7	2.5	3.2	2.3

Final energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	54	66	88	101	111	118	100	100	100	1.9	1.0	1.0	1.1	1.0
Industry*	20	22	30	34	38	40	37	34	34	1.5	1.1	1.0	1.0	1.0
Trasnporation	19	24	32	35	36	37	36	36	31	1.9	0.6	0.4	0.4	0.5
Residential/Commercial	11	15	21	27	32	35	21	24	30	2.3	1.7	1.8	1.9	1.8
Non-energy, etc.*	3.1	4.8	4.4	4.9	5.2	5.4	5.8	5.0	4.6	1.3	0.7	0.7	0.7	0.7
Energy Source														
Total	54	66	88	101	111	118	100	100	100	1.9	1.0	1.0	1.1	1.0
Coal	5.0	5.0	4.0	4.2	4.6	4.7	9.3	4.5	4.0	-0.8	0.5	0.8	0.5	0.6
Oil	31	33	42	45	45	45	57	48	39	1.2	0.5	0.0	0.1	0.2
Natural gas	5.7	10	15	18	21	23	11	17	20	3.6	1.3	1.8	1.7	1.6
Electricity	8.5	14	22	28	34	38	16	25	32	3.5	2.0	2.0	2.0	2.0
Heat	0	0	0	0	0	0	0	0	0	-	-	-	-	-
Renewables	3.9	4.0	5.3	6.2	6.9	7.3	7.3	6.0	6.2	1.1	1.2	1.1	1.1	1.1

Power generation	TWh						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	118	187	298	387	471	521	100	100	100	3.5	2.0	2.0	2.0	2.0
Coal	70	120	197	247	284	295	60	66	57	3.9	1.7	1.4	0.8	1.5
Oil	5.2	4.2	2.2	2.5	2.8	2.9	4.4	0.7	0.6	-3.2	1.1	1.0	0.7	1.0
Natural gas	8.7	22	51	77	103	122	7.4	17	23	6.8	3.2	3.0	3.4	3.2
Nuclear	0	0	0	0	0	0	0	0	0	-	-	-	-	-
Hydro	32	37	39	40	40	40	27	13	7.7	0.8	0.1	0.0	0.2	0.1
Geothermal	1.2	2.2	3.5	4.5	4.7	4.9	1.0	1.2	0.9	4.0	2.0	0.5	0.5	1.2
Other renewables	0.7	1.0	5.6	16	37	55	0.6	1.9	11	8.0	8.6	8.5	8.3	8.5

Energy and economic indicators								AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035	
GDP (billions of US dollars at 2000 value)	243	321	566	772	1,031	1,180	3.2	2.4	2.9	2.7	2.7	
Population (millions of people)	18	21	25	28	31	32	1.3	0.9	0.8	0.6	0.8	
CO ₂ emissions (Mt-CO ₂)	227	279	409	453	488	501	2.2	0.8	0.8	0.5	0.7	
GDP per capita (US dollars at 2000value/person)	13,653	15,639	22,554	27,240	33,670	37,347	1.9	1.5	2.1	2.1	1.8	
Primary energy demand per capita	4.41	4.85	5.61	5.60	5.67	5.74	0.9	0.0	0.1	0.2	0.1	
Primary energy demand per unit of GDP**	323	310	249	205	168	154	-1.0	-1.5	-2.0	-1.8	-1.7	
CO ₂ emissions per unit of GDP***	934	871	723	587	473	425	-0.9	-1.6	-2.1	-2.1	-1.9	
CO ₂ emissions per unit of primary energy demand****	2.89	2.81	2.91	2.86	2.81	2.76	0.0	-0.1	-0.2	-0.3	-0.2	
Automobile ownership (millions of vehicles)	8.8	12	17	22	26	28	2.5	1.9	1.6	1.5	1.7	
Automobile ownership per 1,000 population*****	495	564	689	775	844	881	1.2	0.9	0.8	0.9	0.9	

* Industry sector includes petrochemical feedstocks, ** toe / millions of US dollars at 2000 value, *** t-CO₂/ millions of US dollars at 2000 value
**** t-CO₂ / toe ***** vehicles per 1,000 population

Table 20 OECD

Primary energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
	Total	4,051	4,478	5,497	5,799	6,074	6,200	100	100	100	1.1	0.4	0.5	0.4
Coal	965	1,065	1,158	1,157	1,206	1,214	24	21	20	0.7	0.0	0.4	0.1	0.2
Oil	1,933	1,851	2,110	1,968	1,938	1,929	48	38	31	0.3	-0.5	-0.2	-0.1	-0.3
Natural gas	777	840	1,259	1,430	1,545	1,602	19	23	26	1.8	1.0	0.8	0.7	0.9
Nuclear	162	450	592	688	713	718	4.0	11	12	4.9	1.2	0.3	0.2	0.7
Hydro	93	101	108	125	135	140	2.3	2.0	2.3	0.6	1.1	0.8	0.8	0.9
Geothermal	12	29	32	44	51	55	0.3	0.6	0.9	3.9	2.4	1.5	1.4	1.9
Other renewables	109	143	238	387	485	542	2.7	4.3	8.7	2.9	3.8	2.3	2.2	3.0

Final energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
	Total	2,926	3,084	3,771	3,933	4,095	4,179	100	100	100	0.9	0.3	0.4	0.4
Industry*	938	820	872	981	1,009	1,023	32	23	24	-0.3	0.9	0.3	0.3	0.6
Transportation	779	936	1,237	1,311	1,355	1,381	27	33	33	1.7	0.4	0.3	0.4	0.4
Residential/Commercial	970	1,039	1,272	1,383	1,485	1,533	33	34	37	1.0	0.6	0.7	0.6	0.7
Non-energy, etc.*	239	289	390	261	247	244	8.2	10	5.8	1.8	-3.0	-0.5	-0.3	-1.7
Energy Source														
Total	2,926	3,084	3,771	3,933	4,095	4,179	100	100	100	0.9	0.3	0.4	0.4	0.4
Coal	249	230	135	109	103	100	8.5	3.6	2.4	-2.2	-1.6	-0.5	-0.7	-1.1
Oil	1,562	1,584	1,874	1,754	1,735	1,729	53	50	41	0.7	-0.5	-0.1	-0.1	-0.3
Natural gas	568	590	738	833	866	878	19	20	21	1.0	0.9	0.4	0.3	0.6
Electricity	408	548	795	931	1,049	1,107	14	21	26	2.5	1.2	1.2	1.1	1.2
Heat	36	40	68	73	75	76	1.2	1.8	1.8	2.4	0.5	0.2	0.2	0.4
Renewables	104	91	157	226	261	284	3.5	4.2	6.8	1.6	2.8	1.5	1.7	2.1

Power generation	TWh						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
	Total	5,644	7,569	10,645	12,485	14,092	14,872	100	100	100	2.4	1.2	1.2	1.1
Coal	2,317	3,055	3,957	4,468	4,948	5,112	41	37	34	2.0	0.9	1.0	0.7	0.9
Oil	979	692	434	272	222	205	17	4.1	1.4	-3.0	-3.5	-2.0	-1.6	-2.6
Natural gas	618	771	2,307	2,676	3,221	3,521	11	22	24	5.0	1.1	1.9	1.8	1.5
Nuclear	621	1,725	2,276	2,646	2,740	2,762	11	21	19	4.9	1.2	0.3	0.2	0.7
Hydro	1,085	1,170	1,260	1,454	1,568	1,630	19	12	11	0.6	1.1	0.8	0.8	0.9
Geothermal	11	29	40	54	63	68	0.2	0.4	0.5	4.9	2.2	1.5	1.4	1.8
Other renewables	14	128	374	914	1,330	1,573	0.2	3.5	11	13.0	7.1	3.8	3.4	5.3

Energy and economic indicators								AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035	
GDP (billions of US dollars at 2000 value)	14,654	19,866	30,071	37,615	46,655	51,231	2.7	1.7	2.2	1.9	1.9	
Population (millions of people)	964	1,044	1,180	1,253	1,290	1,303	0.8	0.5	0.3	0.2	0.4	
CO ₂ emissions (Mt-CO ₂)	10,857	11,008	12,844	13,101	13,511	13,652	0.6	0.2	0.3	0.2	0.2	
GDP per capita (US dollars at 2000 value/person)	15,202	19,036	25,483	30,018	36,162	39,322	1.9	1.3	1.9	1.7	1.6	
Primary energy demand per capita	4.20	4.29	4.66	4.63	4.71	4.76	0.4	-0.1	0.2	0.2	0.1	
Primary energy demand per unit of GDP**	276	225	183	154	130	121	-1.5	-1.3	-1.7	-1.4	-1.5	
CO ₂ emissions per unit of GDP***	741	554	427	348	290	266	-2.0	-1.6	-1.8	-1.6	-1.7	
CO ₂ emissions per unit of primary energy demand****	2.68	2.46	2.34	2.26	2.22	2.20	-0.5	-0.3	-0.2	-0.2	-0.2	
Automobile ownership (millions of vehicles)	350	473	674	797	907	961	2.5	1.3	1.3	1.2	1.3	
Automobile ownership per 1,000 population*****	363	453	571	636	703	738	1.7	0.8	1.0	1.0	0.9	

* Industry sector includes petrochemical feedstocks, ** toe / millions of US dollars at 2000 value, *** t-CO₂ / millions of US dollars at 2000 value
**** t-CO₂ / toe ***** vehicles per 1,000 population

Table 21 Non-OECD

Primary energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	2,323	3,316	5,239	7,397	9,323	10,347	100	100	100	3.1	2.7	2.3	2.1	2.5
Coal	815	1,156	2,029	2,546	3,000	3,276	35	39	32	3.4	1.8	1.7	1.8	1.7
Oil	977	1,162	1,638	2,299	2,868	3,141	42	31	30	1.9	2.6	2.2	1.8	2.4
Natural gas	451	828	1,255	1,866	2,512	2,887	19	24	28	3.9	3.1	3.0	2.8	3.0
Nuclear	24	76	117	273	395	439	1.0	2.2	4.2	6.0	6.8	3.8	2.1	4.8
Hydro	52	84	156	220	269	285	2.2	3.0	2.8	4.2	2.7	2.0	1.2	2.2
Geothermal	1.6	4.9	27	60	100	112	0.1	0.5	1.1	11.1	6.4	5.3	2.2	5.2
Other renewables	1.9	6.8	29	132	178	207	0.1	0.6	2.0	10.7	12.3	3.0	3.1	7.2

Final energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	1,651	2,302	3,310	4,801	6,076	6,757	100	100	100	2.6	2.9	2.4	2.1	2.6
Industry*	773	896	1,284	1,737	2,051	2,241	47	39	33	1.9	2.4	1.7	1.8	2.0
Transportation	286	441	728	1,088	1,404	1,550	17	22	23	3.5	3.1	2.6	2.0	2.7
Residential/Commercial	486	780	922	1,358	1,822	2,082	29	28	31	2.4	3.0	3.0	2.7	3.0
Non-energy, etc.*	106	185	377	615	796	880	6.4	11	13	4.8	3.8	2.6	2.0	3.1
Energy Source														
Total	1,651	2,302	3,310	4,801	6,076	6,757	100	100	100	2.6	2.9	2.4	2.1	2.6
Coal	448	532	594	677	687	706	27	18	10	1.0	1.0	0.2	0.5	0.6
Oil	687	821	1,322	2,011	2,585	2,864	42	40	42	2.5	3.3	2.5	2.1	2.8
Natural gas	257	365	556	831	1,109	1,260	16	17	19	2.9	3.1	2.9	2.6	3.0
Electricity	172	285	617	1,003	1,376	1,586	10	19	23	4.8	3.8	3.2	2.9	3.4
Heat	85	293	205	251	282	298	5.1	6.2	4.4	3.3	1.6	1.2	1.1	1.4
Renewables	1.4	5.9	11	26	35	39	0.1	0.3	0.6	8.0	6.7	2.9	2.4	4.5

Power generation	TWh						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	2,557	4,229	9,084	14,708	19,972	22,892	100	100	100	4.8	3.8	3.1	2.8	3.4
Coal	797	1,370	4,271	6,381	8,579	9,940	31	47	43	6.4	3.1	3.0	3.0	3.1
Oil	654	630	667	768	886	935	26	7.3	4.1	0.1	1.1	1.4	1.1	1.2
Natural gas	378	956	1,804	3,502	5,239	6,290	15	20	27	6.0	5.2	4.1	3.7	4.6
Nuclear	93	288	446	1,047	1,518	1,685	3.6	4.9	7.4	6.0	6.8	3.8	2.1	4.9
Hydro	603	973	1,819	2,564	3,125	3,311	24	20	14	4.2	2.7	2.0	1.2	2.2
Geothermal	2.6	7.7	24	60	107	120	0.1	0.3	0.5	8.6	7.3	6.0	2.3	5.9
Other renewables	31	8.5	64	432	579	679	1.2	0.7	3.0	2.6	15.9	3.0	3.2	8.8

Energy and economic indicators								AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035	
GDP (billions of US dollars at 2000 value)	3,289	4,392	10,040	19,004	28,907	34,885	4.2	5.0	4.3	3.8	4.5	
Population (millions of people)	3,464	4,208	5,415	6,345	6,929	7,197	1.7	1.2	0.9	0.8	1.0	
CO ₂ emissions (Mt-CO ₂)	6,971	9,542	14,903	19,812	24,330	26,883	2.9	2.2	2.1	2.0	2.1	
GDP per capita (US dollars at 2000 value/person)	949	1,044	1,854	2,995	4,172	4,847	2.5	3.8	3.4	3.0	3.5	
Primary energy demand per capita	0.67	0.79	0.97	1.17	1.35	1.44	1.4	1.4	1.4	1.3	1.4	
Primary energy demand per unit of GDP**	706	755	522	389	323	297	-1.1	-2.2	-1.9	-1.7	-2.0	
CO ₂ emissions per unit of GDP***	2,119	2,173	1,484	1,043	842	771	-1.3	-2.7	-2.1	-1.7	-2.3	
CO ₂ emissions per unit of primary energy demand****	3.00	2.88	2.84	2.68	2.61	2.60	-0.2	-0.5	-0.3	-0.1	-0.3	
Automobile ownership (millions of vehicles)	71	112	278	562	849	1,010	5.2	5.6	4.2	3.5	4.7	
Automobile ownership per 1,000 population*****	20	27	51	89	123	140	3.5	4.3	3.3	2.7	3.6	

* Industry sector includes petrochemical feedstocks, ** toe / millions of US dollars at 2000 value, *** t-CO₂ / millions of US dollars at 2000 value
**** t-CO₂ / toe ***** vehicles per 1,000 population

Table 22 Asia (excluding Japan)

Primary energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	707	1,212	3,040	4,509	5,859	6,591	100	100	100	5.6	3.1	2.7	2.4	2.8
Coal	414	722	1,734	2,232	2,665	2,925	59	57	44	5.4	2.0	1.8	1.9	1.9
Oil	245	361	855	1,287	1,674	1,861	35	28	28	4.7	3.2	2.7	2.1	2.8
Natural gas	30	74	293	537	875	1,082	4.2	9.6	16	8.9	4.8	5.0	4.3	4.8
Nuclear	3.8	24	69	185	289	328	0.5	2.3	5.0	11.3	7.9	4.6	2.5	5.7
Hydro	12	24	64	102	120	124	1.8	2.1	1.9	6.3	3.6	1.7	0.7	2.4
Geothermal	1.8	5.7	15	41	66	71	0.3	0.5	1.1	8.2	8.1	4.9	1.7	5.8
Other renewables	0.3	1.1	21	125	171	200	0	0.7	3.0	16.6	14.6	3.1	3.3	8.3

Final energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	520	826	1,844	2,827	3,676	4,144	100	100	100	4.8	3.3	2.7	2.4	2.9
Industry*	273	376	853	1,216	1,406	1,525	52	46	37	4.3	2.8	1.5	1.6	2.1
Transportation	73	128	321	541	761	869	14	17	21	5.6	4.1	3.5	2.7	3.6
Residential/Commercial	149	241	433	708	1,039	1,230	29	23	30	4.0	3.9	3.9	3.4	3.8
Non-energy, etc.*	25	82	238	358	466	518	4.8	13	13	8.7	3.2	2.7	2.1	2.8
Energy Source														
Total	520	826	1,844	2,827	3,676	4,144	100	100	100	4.8	3.3	2.7	2.4	2.9
Coal	282	402	531	608	612	628	54	29	15	2.4	1.0	0.1	0.5	0.6
Oil	171	283	723	1,172	1,557	1,746	33	39	42	5.5	3.8	2.9	2.3	3.2
Natural gas	15	34	136	260	412	500	2.9	7.4	12	8.4	5.1	4.7	4.0	4.8
Electricity	44	93	389	665	931	1,083	8.4	21	26	8.4	4.2	3.4	3.1	3.7
Heat	7.4	14	57	103	137	154	1.4	3.1	3.7	7.9	4.7	2.9	2.4	3.6
Renewables	0	0.7	4.2	18	26	32	0	0.2	0.8	-	11.9	3.7	4.0	7.5

Power generation	TWh						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	623	1,377	5,527	9,393	13,048	15,104	100	100	100	8.4	4.2	3.3	3.0	3.7
Coal	247	748	3,704	5,715	7,788	9,054	40	67	60	10.5	3.4	3.1	3.1	3.2
Oil	205	180	217	283	337	353	33	3.9	2.3	0.2	2.1	1.8	0.9	1.8
Natural gas	9.2	68	548	1,118	1,909	2,417	1.5	9.9	16	16.4	5.6	5.5	4.8	5.4
Nuclear	15	92	269	711	1,109	1,257	2.4	4.9	8.3	11.4	7.8	4.6	2.5	5.7
Hydro	144	281	748	1,183	1,395	1,443	23	14	9.6	6.3	3.6	1.7	0.7	2.4
Geothermal	2.1	6.6	20	47	76	83	0.3	0.4	0.5	8.7	7.0	4.9	1.6	5.3
Other renewables	0	1.6	33	366	473	541	0	0.6	3.6	-	20.3	2.6	2.7	10.5

Energy and economic indicators								AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035	
GDP (billions of US dollars at 2000 value)	1,060	1,957	6,437	12,976	20,249	24,683	6.9	5.5	4.6	4.0	4.9	
Population (millions of people)	2,318	2,780	3,513	4,026	4,297	4,418	1.6	1.1	0.7	0.6	0.8	
CO ₂ emissions (Mt-CO ₂)	2,386	3,888	9,445	12,882	16,226	18,144	5.2	2.4	2.3	2.3	2.4	
GDP per capita (US dollars at 2000 value/person)	457	704	1,832	3,223	4,712	5,587	5.3	4.4	3.9	3.5	4.1	
Primary energy demand per capita	0.30	0.44	0.87	1.12	1.36	1.49	3.9	2.0	2.0	1.8	2.0	
Primary energy demand per unit of GDP**	667	620	472	348	289	267	-1.3	-2.3	-1.8	-1.6	-2.0	
CO ₂ emissions per unit of GDP***	2,252	1,987	1,467	993	801	735	-1.6	-3.0	-2.1	-1.7	-2.4	
CO ₂ emissions per unit of primary energy demand****	3.38	3.21	3.11	2.86	2.77	2.75	-0.3	-0.6	-0.3	-0.1	-0.4	
Automobile ownership (millions of vehicles)	10	28	120	271	446	547	9.5	6.5	5.1	4.2	5.6	
Automobile ownership per 1,000 population*****	4.5	10	34	67	104	124	7.8	5.4	4.4	3.6	4.7	

* Industry sector includes petrochemical feedstocks, ** toe / millions of US dollars at 2000 value, *** t-CO₂ / millions of US dollars at 2000 value
**** t-CO₂ / toe ***** vehicles per 1,000 population

Table 23 ASEAN

Primary energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	72	142	387	628	897	1,071	100	100	100	6.4	3.8	3.6	3.6	3.7
Coal	3.3	12	76	132	206	272	4.6	20	25	12.3	4.3	4.6	5.7	4.7
Oil	57	90	175	245	301	334	80	45	31	4.2	2.6	2.1	2.1	2.3
Natural gas	8.3	32	115	194	294	358	12	30	33	10.2	4.1	4.3	4.0	4.2
Nuclear	0	0	0	0	7.1	9.5	0	0	0.9	-	-	-	5.9	-
Hydro	0.9	2.3	5.5	9.5	13	14	1.2	1.4	1.3	7.2	4.2	2.8	2.2	3.4
Geothermal	1.8	5.7	15	41	65	70	2.6	3.9	6.6	8.1	7.9	4.8	1.6	5.6
Other renewables	0	0	0.7	7.0	11	13	0	0.2	1.2	-	19.9	4.2	4.9	11.3

Final energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	49	89	250	395	558	664	100	100	100	6.2	3.6	3.5	3.6	3.6
Industry*	17	26	93	137	205	252	35	37	38	6.5	3.0	4.1	4.2	3.6
Transportation	17	32	75	111	142	161	33	30	24	5.8	3.0	2.5	2.6	2.8
Residential/Commercial	13	19	49	88	134	164	27	20	25	5.0	4.6	4.3	4.2	4.4
Non-energy, etc.*	2.5	12	32	56	73	84	5.1	13	13	9.9	4.3	2.8	2.6	3.5
Energy Source														
Total	49	89	250	395	558	664	100	100	100	6.2	3.6	3.5	3.6	3.6
Coal	2.0	4.4	37	55	76	91	4.1	15	14	11.4	3.1	3.2	3.8	3.3
Oil	40	66	142	206	263	298	82	57	45	4.8	2.9	2.5	2.6	2.7
Natural gas	2.4	8.0	28	46	79	97	4.9	11	15	9.5	3.9	5.5	4.3	4.5
Electricity	4.6	11	42	85	138	174	9.3	17	26	8.6	5.5	5.0	4.8	5.2
Heat	0	0	0	0	0	0	0	0	0	-	-	-	-	-
Renewables	0	0	0.7	1.9	2.4	2.6	0	0.3	0.4	-	8.6	2.0	2.0	5.0

Power generation	TWh						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	61	152	561	1,121	1,788	2,249	100	100	100	8.5	5.5	4.8	4.7	5.1
Coal	3.0	28	156	343	601	837	4.9	28	37	15.7	6.2	5.8	6.9	6.2
Oil	46	65	59	74	64	46	75	11	2.0	1.0	1.8	-1.5	-6.4	-0.9
Natural gas	0.5	25	259	542	867	1,075	0.7	46	48	26.4	5.9	4.8	4.4	5.2
Nuclear	0	0	0	0	27	36	0	0	1.6	-	-	-	5.9	-
Hydro	9.9	27	67	110	146	162	16	12	7.2	7.3	3.9	2.8	2.2	3.2
Geothermal	2.1	6.6	19	47	75	81	3.4	3.5	3.6	8.6	7.0	4.8	1.5	5.2
Other renewables	0	1.6	3.4	11	17	22	0	0.6	1.0	-	9.2	4.9	5.3	6.9

Energy and economic indicators								AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035	
GDP (billions of US dollars at 2000 value)	205	354	830	1,442	2,197	2,685	5.3	4.3	4.3	4.1	4.3	
Population (millions of people)	313	381	494	565	609	627	1.7	1.1	0.7	0.6	0.9	
CO ₂ emissions (Mt-CO ₂)	202	365	1,015	1,644	2,320	2,814	6.2	3.8	3.5	3.9	3.7	
GDP per capita (US dollars at 2000 value/person)	656	930	1,681	2,550	3,606	4,285	3.5	3.3	3.5	3.5	3.4	
Primary energy demand per capita	0.23	0.37	0.78	1.11	1.47	1.71	4.7	2.7	2.9	3.0	2.8	
Primary energy demand per unit of GDP**	350	400	466	435	408	399	1.1	-0.5	-0.6	-0.5	-0.6	
CO ₂ emissions per unit of GDP***	984	1,031	1,224	1,140	1,056	1,048	0.8	-0.5	-0.8	-0.2	-0.6	
CO ₂ emissions per unit of primary energy demand****	2.82	2.58	2.63	2.62	2.59	2.63	-0.3	0.0	-0.1	0.3	0.0	
Automobile ownership (millions of vehicles)	4.4	10	30	53	78	94	7.4	4.4	3.8	3.8	4.1	
Automobile ownership per 1,000 population*****	14	26	62	94	128	149	5.6	3.3	3.1	3.2	3.2	

* Industry sector includes petrochemical feedstocks, ** toe / millions of US dollars at 2000 value, *** t-CO₂ / millions of US dollars at 2000 value
**** t-CO₂ / toe ***** vehicles per 1,000 population

Table 24 United States of America

Primary energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
	1980	1990	2007	2020	2030	2035	1980	2007	2035	2007	2020	2030	2035	2035
Total	1,805	1,913	2,340	2,395	2,495	2,546	100	100	100	1.0	0.2	0.4	0.4	0.3
Coal	376	458	554	576	627	647	21	24	25	1.4	0.3	0.9	0.6	0.6
Oil	797	757	910	863	848	846	44	39	33	0.5	-0.4	-0.2	-0.1	-0.3
Natural gas	477	438	538	544	564	572	26	23	22	0.5	0.1	0.4	0.3	0.2
Nuclear	69	159	218	233	243	250	3.8	9.3	9.8	4.3	0.5	0.5	0.6	0.5
Hydro	24	23	21	25	25	25	1.3	0.9	1.0	-0.4	1.2	0.0	0.0	0.6
Geothermal	6.9	14	10	13	14	15	0.4	0.4	0.6	1.5	1.7	0.8	0.8	1.2
Other renewables	54	63	87	140	173	192	3.0	3.7	7.5	1.7	3.8	2.1	2.1	2.9

Final energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
	1980	1990	2007	2020	2030	2035	1980	2007	2035	2007	2020	2030	2035	2035
Total	1,311	1,292	1,588	1,609	1,653	1,681	100	100	100	0.7	0.1	0.3	0.3	0.2
Industry*	387	283	292	286	283	279	30	18	17	-1.0	-0.2	-0.1	-0.3	-0.2
Transportation	425	488	636	648	660	672	32	40	40	1.5	0.2	0.2	0.4	0.2
Residential/Commercial	397	403	502	540	588	610	30	32	36	0.9	0.6	0.9	0.7	0.7
Non-energy, etc.*	102	119	158	135	122	119	7.8	10.0	7.1	1.6	-1.2	-1.0	-0.6	-1.0
Energy Source														
Total	1,311	1,292	1,588	1,609	1,653	1,681	100	100	100	0.7	0.1	0.3	0.3	0.2
Coal	56	54	30	31	33	32	4.3	1.9	1.9	-2.3	0.3	0.4	-0.3	0.2
Oil	689	683	835	776	762	760	53	53	45	0.7	-0.6	-0.2	-0.1	-0.3
Natural gas	337	303	321	323	317	313	26	20	19	-0.2	0.0	-0.2	-0.2	-0.1
Electricity	174	226	329	373	422	446	13	21	27	2.4	1.0	1.2	1.1	1.1
Heat	0	2.2	7.2	7.3	7.5	7.5	0	0.5	0.4	-	0.2	0.2	0.0	0.1
Renewables	54	23	64	94	110	121	4.1	4.0	7.2	0.6	3.0	1.6	1.8	2.3

Power generation	TWh						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
	1980	1990	2007	2020	2030	2035	1980	2007	2035	2007	2020	2030	2035	2035
Total	2,427	3,203	4,323	4,971	5,603	5,908	100	100	100	2.2	1.1	1.2	1.1	1.1
Coal	1,243	1,700	2,118	2,450	2,807	2,970	51	49	50	2.0	1.1	1.4	1.1	1.2
Oil	263	131	78	41	35	34	11	1.8	0.6	-4.4	-4.8	-1.7	-0.5	-3.0
Natural gas	370	382	915	984	1,154	1,237	15	21	21	3.4	0.6	1.6	1.4	1.1
Nuclear	266	612	837	892	934	960	11	19	16	4.3	0.5	0.5	0.6	0.5
Hydro	279	273	250	293	294	294	11	5.8	5.0	-0.4	1.2	0.0	0.0	0.6
Geothermal	5.4	16	17	20	22	23	0.2	0.4	0.4	4.3	1.3	0.9	0.9	1.1
Other renewables	0.5	90	110	291	358	391	0	2.5	6.6	22.5	7.8	2.1	1.8	4.6

Energy and economic indicators									AAGR(%)				
	1980	1990	2007	2020	2030	2035	2007	2020	2030	2035	2035		
GDP (billions of US dollars at 2000 value)	5,128	7,055	11,544	15,235	19,704	21,973	3.1	2.2	2.6	2.2	2.3		
Population (millions of people)	227	250	301	339	366	378	1.1	0.9	0.8	0.7	0.8		
CO ₂ emissions (Mt-CO ₂)	4,743	4,813	5,776	5,799	6,037	6,137	0.7	0.0	0.4	0.3	0.2		
GDP per capita (US dollars at 2000 value/person)	22,568	28,263	38,316	44,956	53,838	58,081	2.0	1.2	1.8	1.5	1.5		
Primary energy demand per capita	7.94	7.66	7.77	7.07	6.82	6.73	-0.1	-0.7	-0.4	-0.3	-0.5		
Primary energy demand per unit of GDP**	352	271	203	157	127	116	-2.0	-1.9	-2.1	-1.8	-2.0		
CO ₂ emissions per unit of GDP***	925	682	500	381	306	279	-2.2	-2.1	-2.1	-1.8	-2.1		
CO ₂ emissions per unit of primary energy demand****	2.63	2.52	2.47	2.42	2.42	2.41	-0.2	-0.1	0.0	-0.1	-0.1		
Automobile ownership (millions of vehicles)	156	189	247	285	319	335	1.7	1.1	1.2	1.0	1.1		
Automobile ownership per 1,000 population*****	686	756	821	840	872	886	0.7	0.2	0.4	0.3	0.3		

* Industry sector includes petrochemical feedstocks, ** toe / millions of US dollars at 2000 value, *** t-CO₂ / millions of US dollars at 2000 value
**** t-CO₂ / toe ***** vehicles per 1,000 population

Table 25 World (Technologically Advanced Scenario)

Primary energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	6,549	7,993	11,078	12,673	14,025	14,572	100	100	100	2.0	1.0	1.0	0.8	1.0
Coal	1,780	2,221	3,186	3,163	3,055	2,926	27	29	20	2.2	-0.1	-0.3	-0.9	-0.3
Oil	3,085	3,211	4,078	4,354	4,636	4,708	47	37	32	1.0	0.5	0.6	0.3	0.5
Natural gas	1,229	1,667	2,514	3,107	3,639	3,921	19	23	27	2.7	1.6	1.6	1.5	1.6
Nuclear	186	526	709	1,022	1,317	1,426	2.8	6.4	9.8	5.1	2.9	2.6	1.6	2.5
Hydro	145	184	265	346	404	438	2.2	2.4	3.0	2.2	2.1	1.6	1.7	1.8
Geothermal	13	34	59	103	151	166	0.2	0.5	1.1	5.7	4.4	3.9	1.9	3.8
Other renewables	111	150	267	578	824	985	1.7	2.4	6.8	3.3	6.1	3.6	3.6	4.8

Final energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	4,577	5,386	7,082	8,301	9,315	9,759	100	100	100	1.6	1.2	1.2	0.9	1.2
Industry*	1,711	1,717	2,155	2,617	2,857	2,959	37	30	30	0.9	1.5	0.9	0.7	1.1
Transportation	1,065	1,378	1,965	2,230	2,449	2,521	23	28	26	2.3	1.0	0.9	0.6	0.9
Residential/Commercial	1,456	1,819	2,194	2,557	2,932	3,112	32	31	32	1.5	1.2	1.4	1.2	1.3
Non-energy, etc.*	345	474	767	869	1,016	1,088	7.5	11	11	3.0	1.0	1.6	1.4	1.3
Energy Source														
Total	4,577	5,386	7,082	8,301	9,315	9,759	100	100	100	1.6	1.2	1.2	0.9	1.2
Coal	697	761	729	752	732	706	15	10	7.2	0.2	0.2	-0.3	-0.7	-0.1
Oil	2,248	2,404	3,197	3,537	3,861	3,971	49	45	41	1.3	0.8	0.9	0.6	0.8
Natural gas	825	956	1,294	1,607	1,847	1,968	18	18	20	1.7	1.7	1.4	1.3	1.5
Electricity	580	833	1,412	1,812	2,168	2,344	13	20	24	3.4	1.9	1.8	1.6	1.8
Heat	121	333	273	316	336	340	2.6	3.9	3.5	3.1	1.1	0.6	0.3	0.8
Renewables	105	97	168	272	360	419	2.3	2.4	4.3	1.8	3.7	2.9	3.1	3.3

Power generation	TWh						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	8,201	11,797	19,729	25,413	30,181	32,443	100	100	100	3.3	2.0	1.7	1.5	1.8
Coal	3,115	4,424	8,228	9,295	9,645	9,462	38	42	29	3.7	0.9	0.4	-0.4	0.5
Oil	1,632	1,321	1,100	889	833	794	20	5.6	2.4	-1.5	-1.6	-0.6	-0.9	-1.2
Natural gas	995	1,727	4,111	5,684	7,315	8,258	12	21	25	5.4	2.5	2.6	2.5	2.5
Nuclear	713	2,013	2,723	3,928	5,059	5,478	8.7	14	17	5.1	2.9	2.6	1.6	2.5
Hydro	1,688	2,143	3,080	4,018	4,693	5,097	21	16	16	2.3	2.1	1.6	1.7	1.8
Geothermal	14	36	65	114	170	188	0.2	0.3	0.6	5.9	4.5	4.1	2.0	3.9
Other renewables	45	136	438	1,548	2,566	3,286	0.6	2.2	10	8.8	10.2	5.2	5.1	7.5

Energy and economic indicators								AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035	
GDP (billions of US dollars at 2000 value)	17,943	24,258	40,111	56,620	75,423	85,965	3.0	2.7	2.9	2.7	2.8	
Population (millions of people)	4,428	5,251	6,595	7,598	8,219	8,500	1.5	1.1	0.8	0.7	0.9	
CO ₂ emissions (Mt-CO ₂)	18,366	21,158	28,761	30,536	30,805	29,281	1.7	0.5	0.1	-1.0	0.1	
GDP per capita (US dollars at 2000 value/person)	4,052	4,619	6,082	7,451	9,177	10,113	1.5	1.6	2.1	2.0	1.8	
Primary energy demand per capita	1.48	1.52	1.68	1.67	1.71	1.71	0.5	-0.1	0.2	0.1	0.1	
Primary energy demand per unit of GDP**	365	329	276	224	186	170	-1.0	-1.6	-1.8	-1.8	-1.7	
CO ₂ emissions per unit of GDP***	1,024	872	717	539	408	341	-1.3	-2.2	-2.7	-3.6	-2.6	
CO ₂ emissions per unit of primary energy demand****	2.80	2.65	2.60	2.41	2.20	2.01	-0.3	-0.6	-0.9	-1.8	-0.9	
Automobile ownership (millions of vehicles)	420	585	953	1,359	1,754	1,969	3.1	2.8	2.6	2.3	2.6	
Automobile ownership per 1,000 population*****	95	111	144	179	213	232	1.6	1.7	1.8	1.7	1.7	

*Industry sector includes petrochemical feedstocks, ** toe / millions of US dollars at 2000 value, *** t-CO₂ / millions of US dollars at 2000 value

**** t-CO₂ / toe ***** vehicles per 1,000 population

Table 26 Asia (Technologically Advanced Scenario)

Primary energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	1,051	1,650	3,554	4,608	5,452	5,746	100	100	100	4.6	2.0	1.7	1.1	1.7
Coal	474	798	1,848	1,987	2,012	1,959	45	52	34	5.2	0.6	0.1	-0.5	0.2
Oil	479	611	1,085	1,385	1,622	1,677	46	31	29	3.1	1.9	1.6	0.7	1.6
Natural gas	51	118	376	580	850	994	4.8	11	17	7.7	3.4	3.9	3.2	3.5
Nuclear	25	77	138	331	512	578	2.4	3.9	10	6.5	7.0	4.5	2.4	5.2
Hydro	20	32	70	109	127	145	1.9	2.0	2.5	4.8	3.4	1.6	2.6	2.6
Geothermal	2.6	7.2	18	44	69	74	0.2	0.5	1.3	7.4	7.2	4.6	1.6	5.3
Other renewables	0.3	7.3	29	172	260	320	0	0.8	5.6	18.0	14.6	4.2	4.3	8.9

Final energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	752	1,127	2,186	2,985	3,590	3,826	100	100	100	4.0	2.4	1.9	1.3	2.0
Industry*	364	479	952	1,248	1,357	1,382	48	44	36	3.6	2.1	0.8	0.4	1.3
Transportation	127	200	403	566	703	739	17	18	19	4.4	2.6	2.2	1.0	2.2
Residential/Commercial	207	332	551	769	1,020	1,142	28	25	30	3.7	2.6	2.9	2.3	2.6
Non-energy, etc.*	54	116	280	391	487	531	7.1	13	14	6.3	2.6	2.2	1.8	2.3
Energy Source														
Total	752	1,127	2,186	2,985	3,590	3,826	100	100	100	4.0	2.4	1.9	1.3	2.0
Coal	304	434	562	606	589	564	40	26	15	2.3	0.6	-0.3	-0.9	0.0
Oil	327	467	910	1,257	1,518	1,602	44	42	42	3.9	2.5	1.9	1.1	2.0
Natural gas	25	49	169	281	407	471	3.3	7.7	12	7.4	4.0	3.8	2.9	3.7
Electricity	88	158	476	715	910	1,003	12	22	26	6.4	3.2	2.4	2.0	2.7
Heat	7.5	14	58	98	121	127	1.0	2.6	3.3	7.8	4.2	2.1	1.0	2.9
Renewables	0	3.4	7.2	26	43	56	0	0.3	1.5	-	10.4	5.1	5.6	7.6

Power generation	TWh						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	1,195	2,212	6,651	9,839	12,297	13,362	100	100	100	6.6	3.1	2.3	1.7	2.5
Coal	302	864	4,015	5,046	5,610	5,619	25	60	42	10.1	1.8	1.1	0.0	1.2
Oil	470	428	373	350	361	356	39	5.6	2.7	-0.9	-0.5	0.3	-0.2	-0.2
Natural gas	90	236	838	1,353	2,057	2,475	7.6	13	19	8.6	3.7	4.3	3.8	3.9
Nuclear	97	294	533	1,273	1,970	2,222	8.1	8.0	17	6.5	6.9	4.5	2.4	5.2
Hydro	233	371	822	1,267	1,480	1,684	19	12	13	4.8	3.4	1.6	2.6	2.6
Geothermal	3.0	8.3	23	51	80	86	0.2	0.3	0.6	7.8	6.4	4.6	1.6	4.9
Other renewables	0	12	59	546	811	1,001	0	0.9	7.5	-	18.7	4.0	4.3	10.7

Energy and economic indicators								AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035	
GDP (billions of US dollars at 2000 value)	3,861	6,079	11,631	19,012	27,032	31,830	4.2	3.9	3.6	3.3	3.7	
Population (millions of people)	2,435	2,903	3,641	4,148	4,413	4,528	1.5	1.0	0.6	0.5	0.8	
CO ₂ emissions (Mt-CO ₂)	3,302	4,952	10,669	12,209	13,028	12,331	4.4	1.0	0.7	-1.1	0.5	
GDP per capita (US dollars at 2000 value/person)	1,586	2,094	3,195	4,583	6,126	7,030	2.6	2.8	2.9	2.8	2.9	
Primary energy demand per capita	0.43	0.57	0.98	1.11	1.24	1.27	3.1	1.0	1.1	0.5	0.9	
Primary energy demand per unit of GDP**	272	271	306	242	202	181	0.4	-1.8	-1.8	-2.2	-1.9	
CO ₂ emissions per unit of GDP***	855	815	917	642	482	387	0.3	-2.7	-2.8	-4.3	-3.0	
CO ₂ emissions per unit of primary energy demand****	3.14	3.00	3.00	2.65	2.39	2.15	-0.2	-1.0	-1.0	-2.1	-1.2	
Automobile ownership (millions of vehicles)	48	86	195	346	520	621	5.3	4.5	4.2	3.6	4.2	
Automobile ownership per 1,000 population*****	20	30	54	83	118	137	3.8	3.5	3.5	3.1	3.4	

*Industry sector includes petrochemical feedstocks, ** toe / millions of US dollars at 2000 value, *** t-CO₂ / millions of US dollars at 2000 value

**** t-CO₂ / toe ***** vehicles per 1,000 population

Table 27 China (Technologically Advanced Scenario)

Primary energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	419	663	1,765	2,324	2,644	2,657	100	100	100	5.5	2.1	1.3	0.1	1.5
Coal	313	529	1,285	1,362	1,329	1,234	75	73	46	5.4	0.4	-0.2	-1.5	-0.1
Oil	89	110	357	550	667	651	21	20	25	5.3	3.4	1.9	-0.5	2.2
Natural gas	12	13	59	104	198	229	2.9	3.3	8.6	6.1	4.5	6.6	2.9	4.9
Nuclear	0	0	16	107	178	214	0	0.9	8.1	-	15.6	5.2	3.7	9.7
Hydro	5.0	11	42	70	80	94	1.2	2.4	3.5	8.2	4.0	1.4	3.1	2.9
Geothermal	0	0.2	-0.7	-0.4	0	0.4	0	0	0	-	-3.5	-31.1	-300.4	-
Other renewables	0.3	0.4	17	131	192	235	0.1	0.9	8.8	15.5	17.3	3.9	4.1	9.9

Final energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	313	463	1,059	1,513	1,761	1,797	100	100	100	4.6	2.8	1.5	0.4	1.9
Industry*	186	241	573	707	669	627	59	54	35	4.3	1.6	-0.6	-1.3	0.3
Trasnporation	25	37	141	253	341	343	7.9	13	19	6.7	4.6	3.0	0.1	3.2
Residential/Commercial	92	142	236	346	487	540	29	22	30	3.6	3.0	3.5	2.1	3.0
Non-energy, etc.*	10	43	107	206	264	287	3.4	10	16	9.0	5.1	2.5	1.7	3.6
Energy Source														
Total	313	463	1,059	1,513	1,761	1,797	100	100	100	4.6	2.8	1.5	0.4	1.9
Coal	218	315	411	429	369	340	70	39	19	2.4	0.3	-1.5	-1.7	-0.7
Oil	59	84	315	533	675	689	19	30	38	6.4	4.1	2.4	0.4	2.8
Natural gas	6.8	9.7	45	91	144	164	2.2	4.2	9.1	7.3	5.6	4.7	2.6	4.7
Electricity	21	41	230	358	437	455	6.8	22	25	9.2	3.4	2.0	0.8	2.5
Heat	7.4	13	52	89	111	117	2.4	4.9	6.5	7.5	4.3	2.2	1.0	3.0
Renewables	0	0	1.3	13	24	33	0	0.1	1.8	-	19.1	6.4	6.8	12.2

Power generation	TWh						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	301	621	3,277	5,023	5,986	6,111	100	100	100	9.3	3.3	1.8	0.4	2.3
Coal	164	443	2,656	3,292	3,583	3,290	55	81	54	10.9	1.7	0.9	-1.7	0.8
Oil	78	49	34	49	48	47	26	1.0	0.8	-3.0	2.9	-0.2	-0.2	1.2
Natural gas	0.7	2.8	31	78	231	273	0.2	0.9	4.5	15.1	7.5	11.4	3.4	8.1
Nuclear	0	0	62	411	684	821	0	1.9	13	-	15.6	5.2	3.7	9.7
Hydro	58	127	485	810	933	1,088	19	15	18	8.2	4.0	1.4	3.1	2.9
Geothermal	0	0	0.2	0.5	1.0	1.4	0	0	0	-	7.2	7.2	7.2	7.2
Other renewables	0	0	11	382	506	589	0	0.3	9.6	-	31.2	2.9	3.1	15.2

Energy and economic indicators								AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035	
GDP (billions of US dollars at 2000 value)	183	445	2,387	5,789	9,187	11,049	10.0	7.1	4.7	3.8	5.6	
Population (millions of people)	987	1,143	1,321	1,431	1,462	1,462	1.1	0.6	0.2	0.0	0.4	
CO ₂ emissions (Mt-CO ₂)	1,507	2,317	5,978	6,644	6,700	5,782	5.2	0.8	0.1	-2.9	-0.1	
GDP per capita (US dollars at 2000value/person)	185	389	1,807	4,045	6,282	7,555	8.8	6.4	4.5	3.8	5.2	
Primary energy demand per capita	0.42	0.58	1.34	1.62	1.81	1.82	4.3	1.5	1.1	0.1	1.1	
Primary energy demand per unit of GDP**	2,288	1,491	739	401	288	240	-4.1	-4.6	-3.3	-3.5	-3.9	
CO ₂ emissions per unit of GDP***	8,237	5,211	2,504	1,148	729	523	-4.3	-5.8	-4.4	-6.4	-5.4	
CO ₂ emissions per unit of primary energy demand****	3.60	3.50	3.39	2.86	2.53	2.18	-0.2	-1.3	-1.2	-3.0	-1.6	
Automobile ownership (millions of vehicles)	1.8	5.5	42	123	232	296	12.4	8.6	6.5	5.0	7.2	
Automobile ownership per 1,000 population*****	1.8	4.8	33	86	158	202	11.4	7.7	6.3	5.0	6.7	

*Industry sector includes petrochemical feedstocks, ** toe / millions of US dollars at 2000 value, *** t-CO₂/ millions of US dollars at 2000 value

**** t-CO₂ / toe ***** vehicles per 1,000 population

Table 28 India (Technologically Advanced Scenario)

Primary energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	91	185	433	612	823	912	100	100	100	6.0	2.7	3.0	2.1	2.7
Coal	52	106	242	268	292	296	57	56	32	5.9	0.8	0.9	0.3	0.7
Oil	33	61	141	210	278	311	36	32	34	5.5	3.1	2.8	2.3	2.9
Natural gas	1.2	9.8	33	78	136	174	1.3	7.7	19	13.2	6.8	5.6	5.2	6.1
Nuclear	0.8	1.6	4.4	33	84	87	0.9	1.0	9.5	6.6	16.9	9.7	0.8	11.3
Hydro	4.0	6.2	11	16	21	24	4.4	2.5	2.6	3.7	3.4	2.5	2.5	2.9
Geothermal	0	0.1	0.1	0.1	0.1	0.1	0	0	0	-214.8	0.0	0.0	0.0	0.0
Other renewables	0	0	1.3	5.5	13	19	0	0.3	2.1	-	11.8	9.0	8.3	10.2

Final energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	62	118	232	370	526	594	100	100	100	5.0	3.6	3.6	2.4	3.4
Industry*	24	48	86	146	209	220	39	37	37	4.8	4.1	3.7	1.0	3.4
Trasnpotation	17	27	41	55	67	76	27	18	13	3.3	2.3	2.1	2.4	2.2
Residential/Commercial	16	32	66	114	175	213	26	29	36	5.4	4.2	4.4	4.0	4.3
Non-energy, etc.*	5.2	12	39	56	75	84	8.4	17	14	7.7	2.8	3.0	2.5	2.8
Energy Source														
Total	62	118	232	370	526	594	100	100	100	5.0	3.6	3.6	2.4	3.4
Coal	28	42	47	53	68	52	44	20	8.8	2.0	0.9	2.5	-5.0	0.4
Oil	27	52	119	193	259	290	43	51	49	5.7	3.8	3.0	2.3	3.2
Natural gas	0.7	5.6	18	28	42	52	1.1	7.7	8.8	12.9	3.4	4.2	4.6	3.9
Electricity	7.7	18	49	94	153	192	12	21	32	7.1	5.2	5.0	4.6	5.0
Heat	0	0	0	0	0	0	0	0	0	-	-	-	-	-
Renewables	0	0	0.1	1.9	4.6	7.3	0	0.1	1.2	-	22.5	9.4	9.8	15.4

Power generation	TWh						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	119	289	801	1,422	2,167	2,622	100	100	100	7.3	4.5	4.3	3.9	4.3
Coal	61	192	549	794	986	1,175	52	69	45	8.4	2.9	2.2	3.6	2.8
Oil	7.6	10	33	25	29	33	6.4	4.2	1.2	5.6	-2.0	1.2	2.6	-0.1
Natural gas	0.6	10.0	67	245	492	668	0.5	8.3	25	18.9	10.5	7.2	6.3	8.6
Nuclear	3.0	6.1	17	127	321	334	2.5	2.1	13	6.6	16.9	9.7	0.8	11.3
Hydro	47	72	124	191	244	276	39	15	11	3.7	3.4	2.5	2.5	2.9
Geothermal	0	0	0	0	0	0	0	0	0	-	-	-	-	-
Other renewables	0	0	14	81	156	207	0	1.7	7.9	-	14.7	6.8	5.9	10.2

Energy and economic indicators								AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035	
GDP (billions of US dollars at 2000 value)	160	275	779	1,752	3,138	4,140	6.0	6.4	6.0	5.7	6.1	
Population (millions of people)	687	850	1,145	1,357	1,468	1,526	1.9	1.3	0.8	0.8	1.0	
CO ₂ emissions (Mt-CO ₂)	295	598	1,357	1,619	1,910	1,958	5.8	1.4	1.7	0.5	1.3	
GDP per capita (US dollars at 2000 value/person)	233	324	681	1,291	2,138	2,713	4.0	5.0	5.2	4.9	5.1	
Primary energy demand per capita	0.13	0.22	0.38	0.45	0.56	0.60	4.0	1.4	2.2	1.3	1.6	
Primary energy demand per unit of GDP**	568	672	556	349	262	220	-0.1	-3.5	-2.8	-3.4	-3.3	
CO ₂ emissions per unit of GDP***	1,839	2,175	1,742	924	609	473	-0.2	-4.8	-4.1	-4.9	-4.5	
CO ₂ emissions per unit of primary energy demand****	3.24	3.24	3.13	2.65	2.32	2.15	-0.1	-1.3	-1.3	-1.5	-1.3	
Automobile ownership (millions of vehicles)	1.7	4.3	18	50	82	97	9.2	8.1	5.1	3.5	6.2	
Automobile ownership per 1,000 population*****	2.4	5.1	16	37	56	64	7.3	6.4	4.3	2.7	4.9	

*Industry sector includes petrochemical feedstocks, ** toe / millions of US dollars at 2000 value, *** t-CO₂/ millions of US dollars at 2000 value

**** t-CO₂ / toe ***** vehicles per 1,000 population

Table 29 Japan (Technologically Advanced Scenario)

Primary energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	345	438	514	476	448	433	100	100	100	1.5	-0.6	-0.6	-0.7	-0.6
Coal	60	75	115	90	80	75	17	22	17	2.5	-1.8	-1.3	-1.2	-1.5
Oil	234	250	230	172	146	136	68	45	31	-0.1	-2.2	-1.7	-1.4	-1.9
Natural gas	21	44	83	76	69	66	6.2	16	15	5.2	-0.7	-0.9	-0.9	-0.8
Nuclear	22	53	69	111	121	121	6.2	13	28	4.4	3.8	0.8	0.0	2.0
Hydro	7.6	7.7	6.4	7.3	7.3	7.3	2.2	1.2	1.7	-0.7	1.0	0.1	0.0	0.5
Geothermal	0.8	1.6	2.8	3.0	3.0	3.0	0.2	0.5	0.7	4.9	0.4	0.0	0.0	0.2
Other renewables	0	6.2	8.1	16	22	25	0	1.6	5.7	-	5.3	3.5	1.9	4.0

Final energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	232	300	342	311	286	274	100	100	100	1.4	-0.7	-0.9	-0.8	-0.8
Industry*	91	103	99	93	90	88	39	29	32	0.3	-0.5	-0.3	-0.4	-0.4
Transportation	54	72	82	64	53	49	23	24	18	1.6	-1.9	-1.9	-1.6	-1.8
Residential/Commercial	58	91	118	118	112	109	25	35	40	2.6	0.0	-0.5	-0.6	-0.3
Non-energy, etc.*	28	35	42	37	30	28	12	12	10	1.5	-1.1	-1.9	-1.7	-1.5
Energy Source														
Total	232	300	342	311	286	274	100	100	100	1.4	-0.7	-0.9	-0.8	-0.8
Coal	21	33	31	25	26	26	9.2	9.0	9.4	1.4	-1.5	0.2	0.1	-0.6
Oil	157	184	187	149	125	117	68	55	43	0.7	-1.7	-1.7	-1.3	-1.6
Natural gas	9.7	15	34	34	33	32	4.2	9.8	12	4.7	0.1	-0.1	-1.1	-0.2
Electricity	44	64	87	98	94	93	19	25	34	2.5	0.9	-0.3	-0.4	0.2
Heat	0.1	0.2	0.6	0.6	0.6	0.6	0	0.2	0.2	6.6	0.0	0.0	0.0	0.0
Renewables	0	2.7	3.0	4.4	5.0	4.8	0	0.9	1.7	-	3.0	1.3	-0.8	1.7

Power generation	TWh						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	573	836	1,123	1,198	1,167	1,140	100	100	100	2.5	0.5	-0.3	-0.5	0.1
Coal	55	117	311	269	224	204	9.6	28	18	6.6	-1.1	-1.8	-1.8	-1.5
Oil	265	248	156	86	60	49	46	14	4.3	-1.9	-4.5	-3.5	-4.1	-4.1
Natural gas	81	167	290	262	235	228	14	26	20	4.8	-0.8	-1.1	-0.6	-0.9
Nuclear	83	202	264	432	470	470	14	23	41	4.4	3.9	0.8	0.0	2.1
Hydro	88	89	74	84	85	85	15	6.6	7.5	-0.7	1.0	0.1	0.0	0.5
Geothermal	0.9	1.7	3.0	3.3	3.3	3.3	0.2	0.3	0.3	4.6	0.5	0.0	0.0	0.2
Other renewables	0	11	26	61	90	101	0	2.3	8.9	-	6.9	3.9	2.3	5.0

Energy and economic indicators								AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035	
GDP (billions of US dollars at 2000 value)	2,801	4,122	5,194	6,036	6,781	7,135	2.3	1.2	1.2	1.0	1.1	
Population (millions of people)	117	124	128	123	115	111	0.3	-0.3	-0.6	-0.8	-0.5	
CO ₂ emissions (Mt-CO ₂)	916	1,065	1,224	956	830	782	1.1	-1.9	-1.4	-1.2	-1.6	
GDP per capita (US dollars at 2000 value/person)	23,985	33,367	40,654	49,181	58,908	64,564	2.0	1.5	1.8	1.9	1.7	
Primary energy demand per capita	2.95	3.55	4.02	3.88	3.89	3.92	1.2	-0.3	0.0	0.1	-0.1	
Primary energy demand per unit of GDP**	123	106	99	79	66	61	-0.8	-1.7	-1.8	-1.7	-1.7	
CO ₂ emissions per unit of GDP***	327	258	236	158	122	110	-1.2	-3.0	-2.5	-2.2	-2.7	
CO ₂ emissions per unit of primary energy demand****	2.66	2.43	2.38	2.01	1.85	1.81	-0.4	-1.3	-0.8	-0.5	-1.0	
Automobile ownership (millions of vehicles)	38	58	76	75	75	74	2.6	-0.1	-0.1	-0.1	-0.1	
Automobile ownership per 1,000 population*****	324	467	593	613	649	671	2.3	0.3	0.6	0.7	0.4	

*Industry sector includes petrochemical feedstocks, ** toe / millions of US dollars at 2000 value, *** t-CO₂ / millions of US dollars at 2000 value

**** t-CO₂ / toe ***** vehicles per 1,000 population

Table 30 Asia (excluding Japan) (Technologically Advanced Scenario)

Primary energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	707	1,212	3,040	4,132	5,004	5,313	100	100	100	5.6	2.4	1.9	1.2	2.0
Coal	414	722	1,734	1,896	1,933	1,884	59	57	35	5.4	0.7	0.2	-0.5	0.3
Oil	245	361	855	1,213	1,476	1,541	35	28	29	4.7	2.7	2.0	0.9	2.1
Natural gas	30	74	293	504	781	928	4.2	9.6	17	8.9	4.3	4.5	3.5	4.2
Nuclear	3.8	24	69	219	391	457	0.5	2.3	8.6	11.3	9.3	6.0	3.2	7.0
Hydro	12	24	64	102	120	138	1.8	2.1	2.6	6.3	3.6	1.7	2.8	2.8
Geothermal	1.8	5.7	15	41	66	71	0.3	0.5	1.3	8.2	8.1	4.9	1.7	5.8
Other renewables	0.3	1.1	21	157	237	295	0	0.7	5.6	16.6	16.6	4.2	4.5	9.9

Final energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	520	826	1,844	2,673	3,305	3,552	100	100	100	4.8	2.9	2.1	1.5	2.4
Industry*	273	376	853	1,155	1,266	1,294	52	46	36	4.3	2.4	0.9	0.4	1.5
Transportation	73	128	321	502	650	690	14	17	19	5.6	3.5	2.6	1.2	2.8
Residential/Commercial	149	241	433	651	909	1,033	29	23	29	4.0	3.2	3.4	2.6	3.2
Non-energy, etc.*	25	82	238	355	456	503	4.8	13	14	8.7	3.1	2.6	2.0	2.7
Energy Source														
Total	520	826	1,844	2,673	3,305	3,552	100	100	100	4.8	2.9	2.1	1.5	2.4
Coal	282	402	531	580	563	538	54	29	15	2.4	0.7	-0.3	-0.9	0.0
Oil	171	283	723	1,109	1,392	1,485	33	39	42	5.5	3.3	2.3	1.3	2.6
Natural gas	15	34	136	247	374	439	2.9	7.4	12	8.4	4.7	4.2	3.3	4.3
Electricity	44	93	389	617	816	911	8.4	21	26	8.4	3.6	2.8	2.2	3.1
Heat	7.4	14	57	98	121	127	1.4	3.1	3.6	7.9	4.3	2.1	1.0	2.9
Renewables	0	0.7	4.2	22	38	51	0	0.2	1.4	-	13.3	5.8	6.3	9.3

Power generation	TWh						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	623	1,377	5,527	8,641	11,130	12,222	100	100	100	8.4	3.5	2.6	1.9	2.9
Coal	247	748	3,704	4,777	5,386	5,415	40	67	44	10.5	2.0	1.2	0.1	1.4
Oil	205	180	217	264	301	307	33	3.9	2.5	0.2	1.5	1.3	0.5	1.3
Natural gas	9.2	68	548	1,091	1,822	2,248	1.5	9.9	18	16.4	5.4	5.3	4.3	5.2
Nuclear	15	92	269	841	1,499	1,752	2.4	4.9	14	11.4	9.2	6.0	3.2	6.9
Hydro	144	281	748	1,183	1,395	1,599	23	14	13	6.3	3.6	1.7	2.8	2.8
Geothermal	2.1	6.6	20	47	76	83	0.3	0.4	0.7	8.7	7.0	4.9	1.6	5.3
Other renewables	0	1.6	33	485	721	901	0	0.6	7.4	-	23.0	4.0	4.6	12.5

Energy and economic indicators								AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035	
GDP (billions of US dollars at 2000 value)	1,060	1,957	6,437	12,976	20,251	24,695	6.9	5.5	4.6	4.0	4.9	
Population (millions of people)	2,318	2,780	3,513	4,026	4,297	4,418	1.6	1.1	0.7	0.6	0.8	
CO ₂ emissions (Mt-CO ₂)	2,386	3,888	9,445	11,255	12,290	11,893	5.2	1.4	0.9	-0.7	0.8	
GDP per capita (US dollars at 2000 value/person)	457	704	1,832	3,223	4,712	5,590	5.3	4.4	3.9	3.5	4.1	
Primary energy demand per capita	0.30	0.44	0.87	1.03	1.16	1.20	3.9	1.3	1.3	0.6	1.2	
Primary energy demand per unit of GDP**	667	620	472	318	247	215	-1.3	-3.0	-2.5	-2.7	-2.8	
CO ₂ emissions per unit of GDP***	2,252	1,987	1,467	867	607	482	-1.6	-4.0	-3.5	-4.5	-3.9	
CO ₂ emissions per unit of primary energy demand****	3.38	3.21	3.11	2.72	2.46	2.24	-0.3	-1.0	-1.0	-1.8	-1.2	
Automobile ownership (millions of vehicles)	10	28	120	271	446	547	9.5	6.5	5.1	4.2	5.6	
Automobile ownership per 1,000 population*****	4.5	10	34	67	104	124	7.8	5.4	4.4	3.6	4.7	

*Industry sector includes petrochemical feedstocks, ** toe / millions of US dollars at 2000 value, *** t-CO₂ / millions of US dollars at 2000 value

**** t-CO₂ / toe ***** vehicles per 1,000 population

Table 31 ASEAN (Technologically Advanced Scenario)

Primary energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	72	142	387	576	805	953	100	100	100	6.4	3.1	3.4	3.4	3.3
Coal	3.3	12	76	112	162	212	4.6	20	22	12.3	3.0	3.7	5.6	3.7
Oil	57	90	175	228	275	304	80	45	32	4.2	2.0	1.9	2.0	2.0
Natural gas	8.3	32	115	175	257	311	12	30	33	10.2	3.3	3.9	3.9	3.6
Nuclear	0	0	0	0	18	22	0	0	2.3	-	-	-	3.8	-
Hydro	0.9	2.3	5.5	9.5	13	14	1.2	1.4	1.5	7.2	4.2	2.8	2.2	3.4
Geothermal	1.8	5.7	15	41	65	70	2.6	3.9	7.4	8.1	7.9	4.8	1.6	5.6
Other renewables	0	0	0.7	10	16	20	0	0.2	2.1	-	23.7	4.5	3.9	12.9

Final energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	49	89	250	365	507	603	100	100	100	6.2	3.0	3.4	3.5	3.2
Industry*	17	26	93	128	189	232	35	37	38	6.5	2.5	4.0	4.2	3.3
Trasnporation	17	32	75	100	125	141	33	30	23	5.8	2.2	2.2	2.4	2.2
Residential/Commercial	13	19	49	78	117	144	27	20	24	5.0	3.6	4.2	4.2	3.9
Non-energy, etc.*	2.5	12	32	55	73	83	5.1	13	14	9.9	4.3	2.8	2.7	3.5
Energy Source														
Total	49	89	250	365	507	603	100	100	100	6.2	3.0	3.4	3.5	3.2
Coal	2.0	4.4	37	52	70	84	4.1	15	14	11.4	2.6	3.0	3.8	3.0
Oil	40	66	142	192	240	271	82	57	45	4.8	2.4	2.2	2.5	2.3
Natural gas	2.4	8.0	28	44	76	94	4.9	11	16	9.5	3.6	5.5	4.4	4.4
Electricity	4.6	11	42	74	119	152	9.3	17	25	8.6	4.4	4.9	4.9	4.7
Heat	0	0	0	0	0	0	0	0	0	-	-	-	-	-
Renewables	0	0	0.7	1.8	2.5	2.7	0	0.3	0.4	-	8.2	3.1	1.4	5.2

Power generation	TWh						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	61	152	561	979	1,543	1,949	100	100	100	8.5	4.4	4.6	4.8	4.6
Coal	3.0	28	156	274	443	638	4.9	28	33	15.7	4.4	4.9	7.6	5.2
Oil	46	65	59	65	56	42	75	11	2.1	1.0	0.7	-1.4	-5.9	-1.3
Natural gas	0.5	25	259	477	740	922	0.7	46	47	26.4	4.8	4.5	4.5	4.6
Nuclear	0	0	0	0	69	83	0	0	4.2	-	-	-	3.8	-
Hydro	9.9	27	67	110	146	162	16	12	8.3	7.3	3.9	2.8	2.2	3.2
Geothermal	2.1	6.6	19	47	75	81	3.4	3.5	4.2	8.6	7.0	4.8	1.5	5.2
Other renewables	0	1.6	3.4	12	23	33	0	0.6	1.7	-	10.1	6.8	7.3	8.4

Energy and economic indicators									AAGR(%)				
	1980	1990	2007	2020	2030	2035	2007	2020	2030	2035	2007-2035		
GDP (billions of US dollars at 2000 value)	205	354	830	1,442	2,198	2,697	5.3	4.3	4.3	4.2	4.3		
Population (millions of people)	313	381	494	565	609	627	1.7	1.1	0.7	0.6	0.9		
CO ₂ emissions (Mt-CO ₂)	202	365	1,015	1,469	1,947	2,270	6.2	2.9	2.9	3.1	2.9		
GDP per capita (US dollars at 2000 value/person)	656	930	1,681	2,550	3,608	4,304	3.5	3.3	3.5	3.6	3.4		
Primary energy demand per capita	0.23	0.37	0.78	1.02	1.32	1.52	4.7	2.0	2.6	2.8	2.4		
Primary energy demand per unit of GDP**	350	400	466	399	366	353	1.1	-1.2	-0.9	-0.7	-1.0		
CO ₂ emissions per unit of GDP***	984	1,031	1,224	1,020	899	880	0.8	-1.4	-1.3	-0.4	-1.2		
CO ₂ emissions per unit of primary energy demand****	2.82	2.58	2.63	2.55	2.45	2.49	-0.3	-0.2	-0.4	0.3	-0.2		
Automobile ownership (millions of vehicles)	4.4	10	30	53	78	94	7.4	4.4	3.8	3.8	4.1		
Automobile ownership per 1,000 population*****	14	26	62	94	128	149	5.6	3.3	3.1	3.2	3.2		

*Industry sector includes petrochemical feedstocks, ** toe / millions of US dollars at 2000 value, *** t-CO₂/ millions of US dollars at 2000 value

**** t-CO₂ / toe ***** vehicles per 1,000 population

Table 32 United States of America (Technologically Advanced Scenario)

Primary energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	1,805	1,913	2,340	2,251	2,277	2,301	100	100	100	1.0	-0.3	0.1	0.2	-0.1
Coal	376	458	554	487	460	442	21	24	19	1.4	-1.0	-0.6	-0.8	-0.8
Oil	797	757	910	824	784	769	44	39	33	0.5	-0.8	-0.5	-0.4	-0.6
Natural gas	477	438	538	509	500	493	26	23	21	0.5	-0.4	-0.2	-0.3	-0.3
Nuclear	69	159	218	238	269	284	3.8	9.3	12	4.3	0.7	1.2	1.1	0.9
Hydro	24	23	21	25	25	25	1.3	0.9	1.1	-0.4	1.2	0.0	0.0	0.6
Geothermal	6.9	14	10	13	14	14	0.4	0.4	0.6	1.5	1.7	0.8	0.8	1.2
Other renewables	54	63	87	155	225	273	3.0	3.7	12	1.7	4.6	3.8	4.0	4.2

Final energy demand	Mtoe						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	1,311	1,292	1,588	1,548	1,587	1,618	100	100	100	0.7	-0.2	0.2	0.4	0.1
Industry*	387	283	292	287	298	302	30	18	19	-1.0	-0.1	0.4	0.2	0.1
Trasnporation	425	488	636	610	624	646	32	40	40	1.5	-0.3	0.2	0.7	0.1
Residential/Commercial	397	403	502	509	526	531	30	32	33	0.9	0.1	0.3	0.2	0.2
Non-energy, etc.*	102	119	158	135	122	119	7.8	10.0	7.3	1.6	-1.2	-1.0	-0.6	-1.0
Energy Source														
Total	1,311	1,292	1,588	1,548	1,587	1,618	100	100	100	0.7	-0.2	0.2	0.4	0.1
Coal	56	54	30	28	30	30	4.3	1.9	1.9	-2.3	-0.6	0.7	-0.1	0.0
Oil	689	683	835	737	697	682	53	53	42	0.7	-1.0	-0.5	-0.4	-0.7
Natural gas	337	303	321	311	304	298	26	20	18	-0.2	-0.2	-0.3	-0.3	-0.3
Electricity	174	226	329	357	391	407	13	21	25	2.4	0.6	0.9	0.8	0.8
Heat	0	2.2	7.2	7.3	7.6	7.7	0	0.5	0.5	-	0.1	0.4	0.2	0.2
Renewables	54	23	64	107	152	188	4.1	4.0	12	0.6	4.0	3.6	4.3	3.9

Power generation	TWh						Share, %			AAGR(%)				
	1980	1990	2007	2020	2030	2035	1980	2007	2035	1980-2007	2007-2020	2020-2030	2030-2035	2007-2035
Total	2,427	3,203	4,323	4,755	5,197	5,404	100	100	100	2.2	0.7	0.9	0.8	0.8
Coal	1,243	1,700	2,118	2,268	2,378	2,412	51	49	45	2.0	0.5	0.5	0.3	0.5
Oil	263	131	78	34	25	22	11	1.8	0.4	-4.4	-6.1	-3.3	-2.1	-4.4
Natural gas	370	382	915	910	976	1,002	15	21	19	3.4	0.0	0.7	0.5	0.3
Nuclear	266	612	837	915	1,033	1,088	11	19	20	4.3	0.7	1.2	1.1	0.9
Hydro	279	273	250	293	294	294	11	5.8	5.4	-0.4	1.2	0.0	0.0	0.6
Geothermal	5.4	16	17	20	22	23	0.2	0.4	0.4	4.3	1.3	0.9	0.9	1.1
Other renewables	0.5	90	110	315	470	563	0	2.5	10	22.5	8.4	4.1	3.7	6.0

Energy and economic indicators									AAGR(%)				
	1980	1990	2007	2020	2030	2035	2007	2020	2030	2035	2007-2035		
GDP (billions of US dollars at 2000 value)	5,128	7,055	11,544	15,235	19,704	21,973	3.1	2.2	2.6	2.2	2.3		
Population (millions of people)	227	250	301	339	366	378	1.1	0.9	0.8	0.7	0.8		
CO ₂ emissions (Mt-CO ₂)	4,743	4,813	5,776	5,231	4,754	4,389	0.7	-0.8	-1.0	-1.6	-1.0		
GDP per capita (US dollars at 2000value/person)	22,568	28,263	38,316	44,956	53,838	58,081	2.0	1.2	1.8	1.5	1.5		
Primary energy demand per capita	7.94	7.66	7.77	6.64	6.22	6.08	-0.1	-1.2	-0.7	-0.5	-0.9		
Primary energy demand per unit of GDP**	352	271	203	148	116	105	-2.0	-2.4	-2.4	-1.9	-2.3		
CO ₂ emissions per unit of GDP***	925	682	500	343	254	222	-2.2	-2.9	-3.0	-2.7	-2.9		
CO ₂ emissions per unit of primary energy demand****	2.63	2.52	2.47	2.32	2.20	2.12	-0.2	-0.5	-0.5	-0.7	-0.5		
Automobile ownership (millions of vehicles)	156	189	247	285	319	335	1.7	1.1	1.2	1.0	1.1		
Automobile ownership per 1,000 population*****	686	756	821	840	872	886	0.7	0.2	0.4	0.3	0.3		

*Industry sector includes petrochemical feedstocks, ** toe / millions of US dollars at 2000 value, *** t-CO₂/ millions of US dollars at 2000 value

**** t-CO₂ / toe ***** vehicles per 1,000 population

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