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The Short-Term Energy Supply/Demand Outlook
- Forecast through FY2008 and Analysis on the Effects of Crude Oil Prices, Economic Growth, and Temperatures -

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Introduction

This report presents forecasts on energy supply and demand in Japan for FY2007 and FY2008. Because energy demand can be defined as "derived demand arising out of more fundamental demand from economic activities", it is important to start by evaluating economic trends. Although the Japanese economy continues to expand for the longest period since World War II, there is no tangible sense of expansion due to stagnant wage growth and the failure to completely defeat deflation. Moreover, there is uncertainty about the future due to steep rises in the prices of mineral resources (including crude oil) and agricultural products, financial unrest caused by the housing loan issue in the United States, and a sharp decrease in the number of new housing projects in Japan following the amendment of the Building Standard Law. As for energy supply and demand, the protracted rise in crude oil prices is causing major changes in the energy demand structure, particularly in the manufacturing sector. The emergency shutdown of nuclear power plants in July 2007 due to the Niigata-ken Chuetsu-oki Earthquake impacted on the supply and demand of power generation fuels. Energy demand is sensitive to the ambient temperature; an unusually warm winter and exceptionally hot summer last year had a major impact on energy demand.

When producing the forecasts contained in this report, we first estimated a base case under various assumptions. Then we addressed uncertainties by repeating our estimations for different cases under different assumptions on variable factors, such as the crude oil price and ambient temperature. By comparing the latter estimations with the former (base case estimations), we quantitatively evaluated how each of these factors may affect energy supply and demand.

This report is organized as follows. Chapter 1 presents an outlook on economic and production trends until the end of FY2008, based on which we have estimated energy supply and demand. Assuming the economic and production trends outlined in Chapter 1, Chapter 2 presents estimates of energy supply and demand. These constitute the base case estimations in this report. Chapter 2 describes the attached tables, which show estimated energy supply and demand by energy source (based on industrial statistics), and the attached tables, which show the domestic primary energy supply and final energy consumption (based on energy balance sheets). Finally, Chapter 3 presents the results of sensitivity analyses for four different factors: the crude oil price, economic growth, ambient temperature, and nuclear power availability.

1. OUTLOOK ON KEY ECONOMIC INDICATORS FOR FY2007 AND FY2008

1-1 Framework for the Short-Term Prediction [See note.]

When estimating energy supply and demand for the given period, we studied the evolutions of various factors that would impact on the energy supply and demand from a qualitative viewpoint, while, on the other hand, relying upon two econometric models: a macro economy model, and an energy supply and demand model.

Concerning the major economic indicators on which our estimations are based, we made the following assumptions. Acknowledging that a mild slowing down in the world economy due to the housing loan issue in the United States is anticipated by the majority, our estimations on the world economy are based on the outlook published by the International Monetary Fund (IMF) in October 2007. The West Texas Intermediate (WTI) crude oil price, as an index of international crude oil prices, had risen to almost $100/barrel in November 2007. The CIF-based price of crude oil imported by Japan exceeded $80/barrel. Although the crude oil price has decreased a little in 2008, we assumed that it would remain high throughout FY2008 and took an annual mean of $76/barrel. (For more details, refer to "Prospects for the International Oil Market and Crude Oil Prices in 2008" by Ken Koyama, December 20, 2007.) As for the exchange rate, we assumed that it would continue to hover around 110 yen to the dollar. Regarding the ambient temperature, which affects energy supply and demand, particularly in the consumer sector, we assumed an average-year winter climate in the second half of FY2007 based on the three-month forecast announced by the Metrological Agency on November 22, while using the average over the last 10 years for both the summer and winter of FY2008.

Note: The estimations in this document incorporate information that was available to us until December 13, 2007.

1-2 Outlook on the Macro Economy

During FY2007, the Japanese economy continued to expand over the most extended period since World War II, even though growth has been slow. Driven by a growth in exports, the real GDP in FY2007 is expected to be 1.5% higher, compared with the previous fiscal year.

The world economy is growing firmly, but there are signs of a slowdown. The United States, which plays a pivotal role in the global economy, is facing financial unrest caused by the subprime lending (housing loans for individuals with low credit ratings) issue. Even though a serious credit contraction has been avoided by repeated lowering of the interest rate by the Federal Reserve Board (FRB), decreases in residential investments and the lowering of house prices, combined with other adverse trends such as the increasing gasoline price, may affect the growth of personal consumption. The subprime lending issue has affected not only the U.S. economy, but also the global economy through low stock prices, low dollar rates, and low interest rates. Even though European economies are basically firm, the stronger Euro threatens to suppress export growth and have a relatively great impact on the British economy, in which the financial sector plays a major role. The Chinese economy,

despite a mild slowing down in the growth of exports to the United States, is growing perhaps too fast on the back of strong growth in exports to other parts of the world and in fixed assets investments. In the NIES and ASEAN countries, exports are growing favorably, following a period of inventory adjustment for IT and digital products.

The Japanese economy has continued to expand since January 2002. Since 2005, favorable growth in exports, particularly to Asia, has led to the expansion of production and investment. Even though buoyant production improved employment conditions, sluggish growth in wages prevented households from experiencing a real sense of economic expansion. Moreover, the amendment of the Building Standard Law in June 2007, which prolonged the application review period, has sharply decreased the number of new housing projects. Although the contribution of residential investments to GDP is as small as about 3%, decreased investments may affect not only the demand for construction materials, but also housing-associated demand, such as for furniture and household electrical appliances. As a result, private final consumption in FY2007 is expected to be only slightly higher than in the previous fiscal year by 1.4% and private residential investments in FY2007 are expected to be much lower than in the previous year, by 11.5%. Private capital investments in FY2007 are expected to be higher than in the previous year by only 2.3%, recording a major drop in the growth rate, due to higher fuel prices and the stronger yen, which may decrease the profitability of small and medium-sized enterprises. As a result, the contribution to growth from entire domestic private demand is expected to be 0.7%. The Government's final consumption is expected to increase by 0.8% from the previous fiscal year, due to greater social security expenditures, but public fixed capital formation (public investment), is expected to fall by 4.3% from the previous fiscal year, because the Government will maintain the policy of curbing public works. The contribution of total public demand to growth is expected to be zero. Exports to the United States began to fall, while exports to Europe and Asia are growing favorably. Exports to oil-producing countries (the Middle-East and Russia) have also grown significantly. The strongest growth has been in automobile exports. Exports are also growing favorably in chemical products, general machinery, and electrical machinery. Even though future growth is expected to be slower than in the previous fiscal year due to a slight slowing down of the U.S. economy, exports in the current fiscal year are expected to be greater than those in the last fiscal year, by as much as 7.1%. Due to the slower growth in production activities and the stagnant growth of final consumption, imports in FY2007 are expected to be higher than in the previous fiscal year by only 2.1%, recording a small drop in the growth rate. As a result, the contribution of foreign demand to growth is expected to be 0.8%.

The prices of commodities, including crude oil, agricultural products, and foodstuffs have been increasing for a long time and many corporations have raised prices to recoup higher costs. The corporate price index for FY2007, therefore, is expected to be 1.9% higher than that of the previous fiscal year. Consumer prices for some goods such as oil products and foodstuffs have risen, but consumer prices in competitive markets such as those of household digital products and cellular phone services are falling. The consumer price index for FY2007, therefore, is expected to be only 0.1%

higher than that of the previous fiscal year. The phenomenon of nominal GDP growth being defeated by real GDP growth persists. Deflation has not been clearly defeated yet and it may take considerable time before the economy shakes off deflation.

For FY2008, we expect Japan to shift to economic growth driven by domestic demand. As for the external factors incorporated into our estimations, we expect that the crude oil price (the CIF-based price of crude oil imported by Japan) will remain high, even though it is expected to fall slightly from the beginning of 2008, resulting in an annual mean of $75.8/barrel for FY2008 (up 1.9% from the previous fiscal year). The U.S. economy has slowed down, due mainly to the subprime lending issue, but is expected to recover in the second half of the fiscal year. The consensus is that the annual growth rate for FY2008 will be around 2%; the IMF predicts 1.9% growth. The Euro economy is also expected to continue showing mild growth, recording 2.1% growth (IMF) over the previous fiscal year, driven mostly by domestic demand. The Asian economies will be challenged by decreasing exports to the United States. Nevertheless, they are expected to post a significant growth of 8.8% (IMF) from the previous fiscal year, due to China's great appetite for consumption and investment, and also due to the completion of the inventory adjustment for IT and digital products. Given these external factors, exports from Japan are expected to continue growing in FY2008, although more slowly than in the previous fiscal year. Exports in FY2008 are expected to be 6.0% higher than exports in FY2007. Due to buoyant production, imports by Japan are expected to grow by 4.1% over the previous fiscal year, driven by the growth of imports of intermediate commodities. The contribution to growth by total foreign demand is expected to be 0.5%.

As for internal demand, the confusion caused by the amendment of the Building Standard Law will end in the beginning of 2008 and the number of new housing projects (in terms of the number of houses) is expected to recover to the level that prevailed before the amendment. Residential investments in FY2008, rebounding from the depression, are expected to be higher than in the previous fiscal year by as much as 7.0%. The growth in wages is expected to remain stagnant, but an increase in employment will firmly sustain a slight growth in private final consumption, which will be 1.4% higher than in the previous fiscal year. Private capital investments will be supported by firmness in exports and production trends, but will have to meet the challenge of shrinking corporate profits due to increases in fuel prices and personnel expenses, resulting in 3.9% growth over the previous fiscal year, which is slightly better than the level attained in the previous fiscal year. The contribution to growth from domestic private demand in FY2008 is expected to be 1.6%, significantly better than in the previous fiscal year. Since the new Fukuda administration intends to continue financial restructuring, public investment is expected to decrease by 3.7% from the previous fiscal year. The Government's final consumption expenditure is expected to increase by 0.9% over the previous fiscal year, due to increases in social security expenditure despite the Government's efforts to curb public employees' labor costs and other forms of expenditure. The contribution to growth from public demand is expected to be zero. Given all these factors, the real GDP in FY2008 is expected to grow by

2.1% from the previous fiscal year.

The growth in the corporate price index will be lower because the crude oil price is expected to fall slightly from the end of 2007. The corporate price index for FY2008 is expected to be 0.8% higher than that of the previous fiscal year. Higher consumer prices for fuels and foodstuffs are slowly spreading into markets, but the consumption trend is not strong. The consumer price index for FY2008, therefore, is expected to be only 0.3% higher than that of the previous fiscal year.

1-3 Outlook on Production Activities in Different Sectors

In the first half of FY2007, raw material production was active with factories operating mostly at maximum capacity, while machinery production, particularly that of automobiles and electrical machinery, was also active due to major growth in exports. Even though the growth slowed down temporarily in the second half of the fiscal year, due to the slowing down of the U.S. economy and the confusion that resulted from the amendment of the Building Standard Law, production activities in general have grown firmly. It is expected that the index of industrial production, in total, for FY2007 will be 2.6% higher, compared with the previous fiscal year.

The growth of exports may slow down a little in FY2008 as the world economy cools. Nevertheless, we expect favorable growth in raw material and machinery production due to the recovery in domestic demand, and the indices of industrial production, in total, for FY2008 are expected to be 2.7% higher, compared with the previous fiscal year. The following subsections describe the trends in production in major industrial sectors.

(1) Crude steel

Crude steel production in the first half of FY2007 was buoyant, driven by high domestic and foreign demand, with factories operating at maximum capacity. Production in the first half of FY2007 was up by 3.0% over the same period in the previous fiscal year. Because domestic demand remained high due to significant demand for the production of automobiles, ships and the like, and also for civil engineering and construction, the production of both common and special steels increased. As for foreign demand, exports to the United States decreased, but exports to Asia (South Korea and ASEAN countries in particular) grew favorably. Even though demand for construction is expected to fall significantly in the second half of the fiscal year, crude steel production in FY2007 is expected to be as high as 118.3 million tons (up 0.5% over the previous fiscal year). Domestic demand will remain firm in FY2008, due to continued growth in demand from the manufacturing sector and to the recovery of demand for construction, which was depressed in the previous fiscal year. Since the U.S. economy is expected to recover in the second half of 2008, exports to the United States and to Asia will be buoyant. Overall, crude steel production in FY2008 is expected to be 119.4 million tons (up 0.9% over the previous fiscal year), only slightly lower than the historical record of 120.02 million tons in FY1973.

(2) Ethylene

Ethylene production in the first half of FY2007 was up by 2.8% from the same period in the previous fiscal year. Factories operated at maximum capacity in response to firm foreign demand and fewer factories stopped for periodic maintenance, compared with the previous fiscal year. Even though domestic demand may cool a little in the second half of the fiscal year, demand from China and other Asian countries will remain high. Ethylene production in FY2007 is expected to be 7.76 million tons (up 1.3% over the previous fiscal year), which is very close to the maximum production capacity and will exceed the historical record of 7.72 million tons in FY1999. Even though internal and external demand will remain firm in FY2008, manufacturers may sacrifice exports to respond to domestic demand because production capacities are limited. Moreover, more factories will stop for periodical maintenance in FY2008 than in FY2007. Overall, annual production is expected to be slightly less than in the previous fiscal year, at 7.73 million tons (down 0.4%).

(3) Paper and paperboard

In the first half of FY2007, the production of coated printing papers grew firmly, driven by demand for catalogues and leaflets for the sales of household electrical appliances and other commodities. However, paper demand for newspapers dropped from the previous year, which enjoyed increased coverage of newspaper space for the World Cup football matches. Overall, the level of paper production did not change much from the previous fiscal year. Paperboard production, on the other hand, grew due to increased distribution of beverages and similar products, driven by unseasonal summer heat. With these factors, paper and paperboard production in the first half of FY2007 was 0.1% higher than in the same period of the previous fiscal year. In the second half, major production facilities for coated printing papers will mushroom, in anticipation of foreign demand, particularly from Asia. Internal demand, on the other hand, is expected to remain substantially at the same level. Given these factors, paper and cardboard production in FY2007 is expected to be 0.5% higher than in the previous fiscal year. In FY2008, paper demand will be driven by the increased coverage of newspaper and magazine space for the Beijing Olympics. Demand from the printing of catalogues for household digital and similar products is also expected to grow firmly. Paperboard production will also grow because paperboard demand for freight traffic is expected to be firm. As a result, paper and paperboard production in FY2008 is expected to be 1.7% higher than in the previous fiscal year.

(4) Cement

Cement production in the first half of FY2007 was down 0.7% over the same period of the previous fiscal year because the amendment of the Building Standard Law in June depressed private demand for the construction of condominiums, which had been growing favorably. Even though efforts are being made to offset stagnant domestic demand by means of exports, the impact of a decrease in the number of new housing projects will remain for some time in the second half of the fiscal year. As a result, cement production in FY2007 is expected to be 3.7% lower than in the previous year, recording

a decrease for two consecutive fiscal years. In FY2008, the impact from the amendment of the Building Standard Law will wane. Private demand, rebounding from the depression, is expected to grow firmly. However, public demand will continue to fall due to the curbing of public investment and as a result, overall domestic demand will continue to be weak. Given these factors, cement production in FY2008 is expected to be 1.5% lower than in the previous fiscal year.

(5) Transport equipment

The transport equipment production index for the first half of FY2007 was 5.4% higher, compared with the same period of the previous fiscal year. In spite of lackluster domestic sales of automobiles, exports to Asia, Europe and Middle East grew favorably. Exports to the United States, however, remained depressed, due to the impact of the subprime lending issue. The trend in low domestic demand and high foreign demand is expected to persist in the second half of the fiscal year. The shipbuilding industry is also performing well, and already has orders for the next three years or so, thanks to the growth in international trade, and the industry is trying to meet higher demand by increasing production capacity. The transport equipment production index for FY2007 is expected to increase by 5.4% over the previous fiscal year. We expect, in FY2008, that domestic sales of automobiles will remain stagnant, while exports will remain buoyant. Growth, however, is expected to slow a little as the world economy cools. The shipbuilding industry is expected to grow significantly even though its contribution to the transport equipment production index will be relatively small. Considering all these factors, the transport equipment production index for FY2008 is expected to be 3.4% higher than that of the previous fiscal year.

(6) General and electrical machinery [See note.]

The production indices for consumer electronic products and for electronic components and devices grew significantly, due to favorable growth in demand for audio/visual appliances, such as new game machines and flat-panel TVs. Even though capital investment was less active than in the previous fiscal year, the production of industrial machinery and heavy electrical machinery grew firmly. As a result, the general and electrical machinery production index for the first half of FY2007 was 4.4% higher, compared with the same period of the previous fiscal year. In the second half, the demand for household electrical appliances, which often arises from the acquisition of houses, may fall due to a slump caused by the amendment of the Building Standard Law. Nevertheless, exports will be firm even though the growth may slow down, and manufacturers have completed their inventory adjustment for IT equipment. Given these factors, the general and electrical machinery production index for the whole of FY2007 is expected to be 4.3% higher than that of the previous fiscal year. The demand for audio/visual appliance in FY2008 will be boosted by the Beijing Olympics and the approaching shutdown of analog TV broadcasting in 2011. Even though the U.S. economy will cool, exports to Asia and Europe are expected to grow relatively well. As a result, the general and electrical machinery production index for FY2008 is expected to be 4.5% higher than that of the previous fiscal

year.

Note: The term "general and electrical machinery" includes general machinery; electrical machinery; IT equipment, electronic parts and devices; precision machinery; and metal products.

2. OUTLOOK ON ENERGY SUPPLY AND DEMAND IN FY2007 AND FY2008

2-1 Outlook on the Domestic Primary Energy Supply

For FY2007, the domestic primary energy supply is expected to be 0.7% higher than in the previous fiscal year, due to general buoyancy in production activity, the impact of ambient temperature, and increased demand for power generation fuels. By energy source, coal supply in this fiscal year is expected to be 2.2% higher than in the previous fiscal year, because of a small growth in supplies to the industrial sector and growth in supplies to the power generation sector, resulting from less availability of nuclear power. Oil supply in this fiscal year is expected to be 0.2% higher than in the previous fiscal year, despite a fall in supplies to the industrial and transportation sectors due to growth in supplies to the consumer and power generation sectors. Natural gas supply in this fiscal year is expected to be 11.5% higher than in the previous fiscal year, due to high demand from the power generation and town gas production sectors. Hydroelectricity supply is expected to fall by 8.3% from the previous fiscal year because water availability in the first half of the fiscal year was much lower than in the previous year, particularly in the western part of Japan (water availability in the second half of the fiscal year is assumed to be at the average-year level). We expect that the availability of nuclear power in this fiscal year will be down 12.1% from the previous fiscal year, due mainly to the emergency shutdown of nuclear power plants because of earthquakes. Emissions of carbon dioxide in this fiscal year are expected to be 2.4% higher than in the previous fiscal year.

For FY2008, the coal supply is expected to fall by 1.5% from the previous fiscal year, despite a slight growth in supply to the industrial sector, because supply to the power generation sector will fall due to a loss in generation share to nuclear power. Oil supply in FY2008 is expected to be 2.5% lower than in the previous fiscal year because supply to the power generation sector will fall significantly and supply to the industrial, consumer and transportation sectors will also fall. Natural gas supply in FY2008 is expected to grow only slightly, by 1.0% over the previous fiscal year, despite growing demand for town gas production, because supplies to the power generation sector will fall due to the loss in generation share to nuclear power. The availability of hydroelectricity in FY2008 is expected to increase significantly, by 11.2%, because of a reactionary growth after suffering from a drought in the first half of the previous year and due to the expansion in production capacity, even assuming the water flow rate remaining at the normal annual level. The availability of nuclear power generation in FY2008 is expected to increase significantly, by 9.6% over the previous fiscal year. When making this estimation, we calculated the capacity factor based on the utilities' plans for scheduled outages and assumed that plants under inspection will resume operation. Given all these factors, we expect that the domestic primary energy supply in FY2008 will be 0.1% higher than in the previous fiscal year, while carbon dioxide emissions will be 1.8% lower.

(We assume that the Kashiwazaki Kariwa Nuclear Power Station, shutdown since the Niigata-ken Chuetsu-oki Earthquake, will remain unavailable throughout the period covered by the present forecasts.)

2-2 Outlook on Final Energy Consumption

For FY2007, final energy consumption is expected to be 0.2% higher, compared with the previous fiscal year. Energy saving efforts in the industrial sector are gradually producing results, helped by programs such as Nippon Keidanren's voluntary action plan. The final energy consumption by industrial sector in this fiscal year is expected to be 0.1% lower than in the previous year, despite general buoyancy in production activity, due to progress in energy saving and also to the impact of the amendment of the Building Standard Law on raw material production in the second half of the fiscal year. In the residential sector, energy consumption per household has almost leveled out because household appliances have almost saturated the market and the energy efficiency of appliances is improving. In the beginning of this fiscal year, space and water heating demand was low because the climate in early spring was warmer than in the previous year. In the second half of the fiscal year, however, space and water heating demand is expected to show a reactionary growth from the historically warm winter in the previous year. As a result, final energy consumption by residential sector in the whole of FY2007 is expected to be 2.9% higher than in the previous year. In the commercial sector, the power and lighting demand by offices constitutes a major part of the demand, and therefore, energy consumption by the commercial sector is less affected by the ambient temperature than energy consumption by the residential sector. Nevertheless, a reactionary growth from the warm winter in the last year is expected in the second half of the fiscal year, and energy demand will be pushed by firm growth in the service industry. As a result, final energy consumption by the commercial sector FY2007 is expected to be 0.8% higher than in the previous fiscal year. The final energy consumption by the transportation sector has already started decreasing due to decreased consumption of automobile fuel, which constitutes nearly 90% of total consumption by the transportation sector, due to the saturation of vehicle ownership and to an improvement in fuel efficiency. With the continuation of this trend, the final energy consumption by the transportation sector in FY2007 is expected to be 1.1% lower than in the previous fiscal year.

For FY2008, final energy consumption by the industrial sector is expected to be only 0.4% higher than in the previous year, despite the continuation of active production in both the raw material and machinery sectors, due mainly to advances in energy saving. Because we assume a temperature pattern based on the average over the last 10 years (slightly cooler in summer and slightly warmer in winter, compared with FY2007), final energy consumption by the consumer sector is not expected to change much from the previous fiscal year, as far as space cooling and heating demand is concerned. The final energy consumption by the residential sector in FY2008 is expected to fall by 0.3% from the previous fiscal year because of improved equipment efficiency, while consumption by the commercial sector is expected to grow by 0.4%, due to firm growth in the service industry. The final energy consumption by the transportation sector is expected to be 1.4% lower than in the previous fiscal year due to

decreasing demand for automobile fuel. Given all these factors, we expect that <u>the final energy consumption in FY2008 will be 0.2% lower than in the previous fiscal year</u>.

2-3 Outlook on Energy Demand (Energy Sales)

(1) Electricity

For <u>FY2007</u>, electricity sales (by electric power utilities) are expected to be <u>3.0% higher,</u> compared with the previous year, due to the growth in demand for space cooling and heating, general buoyancy of production activity, and the increased instances of switching from private generation to grid power in response to the increasing price of fuel oils.

The demand from the household sector is driven by the increase in all-electric households, the number of which had reached 2.4 million by the end of the first half of the fiscal year. Despite such expansion of base-load demand and the boosting of space cooling demand by exceptional heat in August and September, the demand from lighting-use contracts in the first half of this fiscal year was only 0.4% higher than in the same period of the previous fiscal year because of a drop in space heating demand in April, which was warmer than in the previous year, and the limited growth of space cooling demand in July due to a delay in the passing of the rainy season. In the second half of the year, the sales figure in October grew significantly because ambient temperatures in September were higher than in the previous year. The space heating demand this winter, which is expected to be normal, will show a reactionary growth from the historically warm winter of the previous fiscal year. Given all these factors, electricity sales from lighting-use contracts in the whole of FY2007 are expected to be 3.2% higher than in the previous fiscal year.

The electricity demand from the industrial sector grew firmly thanks to buoyant production. The electricity demand from the commercial sector has generally grown firmly, even though space cooling demand failed to grow as expected in July. Moreover, there were increased instances of switching from private generation to grid power in response to the increasing price of fuel oils. As a result, the non-lighting use electricity demand (including specified scale demand), that is to say, the demand dominated by industrial and commercial users, in the first half of this fiscal year was 2.7% higher than in the same period of the previous fiscal year. Electricity demand for large-industrial use (included in the above) in the first half of the fiscal year was 4.4% higher than in the same period of the previous fiscal year, due to a significant growth in demand from many industrial sectors, such as the non-ferrous metals sector and the machinery manufacturing sector. The contribution to growth by different sectors was as follows: 1.4% by the machinery manufacturing sector, 0.5% each by the chemical industries sector, the non-ferrous metals sector, and the iron and steel industries sector. We assume that production will generally be active in the second half of the fiscal year, even though the growth rate will dip slightly. Given these factors, the non-lighting use electricity demand (including specified scale demand) in the whole of FY2007 is expected to be 2.9% higher than in the previous fiscal year, with the demand for large-industrial use being 3.9% higher.

For <u>FY2008</u>, the electricity demand from lighting use contracts is expected to grow with the

increasing share of electricity for households. Because we assume a temperature pattern based on the average over the last 10 years (slightly cooler in summer and slightly warmer in winter, compared with FY2007), the space cooling and heating demand is not expected to change much from the previous fiscal year, but a reactionary dip from the leap in fiscal year 2007 is anticipated. Overall, we expect that the lighting use electricity demand in FY2008 will be 0.6% higher than in the previous fiscal year. The non-lighting use electricity demand (including specified scale demand) in FY2008 is expected to be 2.0% higher than in the previous fiscal year, due to general firmness in production and service activities, and also to the reduced private generation due to the high price of fuel oils. The electricity demand for large industrial users in FY2008 is expected to be 2.7% higher than in the previous fiscal year because the demand from all industrial sectors will grow: the demand from the iron and steel industries sector, continuing intense production activity, will still grow at a slower rate of 0.8%, the demand from the chemical industries sector will grow by 3.8%, and the demand from the machinery manufacturing sector will grow by 3.5%. Given these factors, the total electricity sales in FY2008 are expected to be 1.6% higher than in the previous fiscal year.

(2) Town gas:

For FY2007, town gas sales (by gas utilities) are expected to be 5.9% higher, compared with the previous fiscal year, due to favorable growth in demand from the industrial sector and reactionary growth in water heating demand from the consumer sector from the warm winter in the previous fiscal year.

In the household sector, the number of contracted households has been growing at an annual rate of about 1%, but consumption per household has been decreasing due to a decrease in the number of persons per household and the increased use of electricity in households. Moreover, in this fiscal year, the ambient temperatures from early spring to summer were higher than in the previous year, decreasing the space and water heating demand. As a result, town gas sales in the first half of the fiscal year were 4.0% lower than in the same period of the previous fiscal year. In the second half of this fiscal year, when the demand will increase as usual, space and water heating demand is expected to be much higher than in the previous fiscal year because of a reactionary growth from the historically warm winter in the previous year. Town gas sales in the whole of FY2007 are expected to be 1.7% higher than in the previous year.

Demand from the commercial sector and demand in the "other" category (hospitals, public facilities, etc.) are supported by the penetration of gas air-cooling, which has grown by approximately 30% in the last five years. It is now usual in summer that the increase in cooling demand exceeds the decrease in water heating demand. Summer temperatures in 2007 were slightly lower than usual in July but higher than usual in August and September, producing an increase in space cooling demand. In the first half of the fiscal year, the demand from the commercial sector was 1.3% higher and the demand in the "other" category was 1.4% higher, compared with the same period of the previous fiscal year. For the second half of the fiscal year, we expect a colder winter than in the previous fiscal year and a

growth in demand from the growing number of new major contracts and from existing contracts. In the whole of FY2007, demand from the commercial sector is expected to be 2.9% higher, and the demand in the "other" category 5.3% higher, compared with the previous fiscal year.

Demand from the industrial sector is driven by increased instances of switching from oil and other fuels to town gas for environmental reasons and the high crude oil price. Due to additional demand from new customers and higher demand from existing customers, driven by a high level of production activity, demand from the industrial sector in the first half of this fiscal year grew significantly, by 11.3%, from the same period of the previous fiscal year. For the second half of the fiscal year, we expect that switching from other fuels to town gas will continue and that production will stay strong. Town gas sales in the whole of FY2007 are expected to be 9.4% higher than in the previous fiscal year.

For FY2008, in the household sector, we expect a firm increase in the number of contracts, but consumption per household will continue to fall due to the increasing use of electricity in households. Expecting little impact from ambient temperatures and anticipating a reactionary dip from the leap in fiscal year 2007, we predict that demand from the household sector in FY2008 will be similar to that in FY2007 (zero growth). Commercial and institutional demand will be supported by a firm increase in the use of gas cooling and gas cogeneration. Demand from the commercial sector is expected to be 2.1% higher, and demand in the "other" category 3.8% higher, compared with the previous fiscal year. As for demand from the industrial sector, we expect less additional demand from large-industrial use customers because most of these customers should already have switched from oil and other fuels to gas. Nevertheless, thanks to additional demand from small-industrial customers and buoyant production, demand from the industrial sector in FY2008 is expected to be 5.9% higher than in the previous fiscal year. Given these factors, we expect that town gas sales as a whole in FY2008 will be 3.6% higher than in the previous fiscal year.

(3) Oil

For FY2007, we expect that fuel oil sales will be 0.9% lower, compared with the previous fiscal year, despite major growth in the demand for fuel oil-C for power generation, due to substitution by other fuels in the industrial and commercial sectors, and a decrease in demand for gasoline and gas oil as automobile fuels.

The sales of gasoline, which is used mostly as automobile fuel, peaked in FY2004 and then decreased, despite the increasing number of gasoline-powered vehicles, owing to better fuel efficiency and shorter travel distances. Even though gasoline sales in September were much higher than in the previous fiscal year because of the unusual intensity of the lingering summer heat, sales in other months continued to be lower than in the previous fiscal year. As a result, gasoline sales in the first half of FY2007 were 0.7% lower than in the same period of the previous fiscal year. Gas oil sales in the first half of this fiscal year were 1.6% lower than in the same period of the previous fiscal year, despite the recovery of freight traffic, due to a decrease in the number of diesel vehicles (both

passenger cars and trucks). The demand for automobile fuel is unlikely to grow in the second half of the fiscal year, considering that the average fuel efficiency will improve with the increasing proportion of mini-sized vehicles, that the number of diesel vehicles will decrease, and that the gasoline price (as monitored by the Oil Information Center) has recorded an historical high. For the whole of FY2007, gasoline sales are expected to be 0.9% lower, and gas oil sales 1.6% lower, compared with the previous fiscal year.

The sales of naphtha, a raw material for petrochemical products, in the first half of this fiscal year were only 0.3% higher than in the same period of the previous year, despite buoyancy in ethylene production, due to a diversification in raw material (substitution by LPG, for example). In the second half of the fiscal year, we anticipate a slight drop in ethylene production. Naphtha sales in the whole of FY2007 are expected to be 0.1% higher than in the previous fiscal year. Kerosene demand fell significantly in the first half of this fiscal year, down 11.9% from the same period of the previous fiscal year, because of the early spring climate being warmer than the previous fiscal year, and due also to substitution by electricity, town gas and other fuels, in both the consumer and industrial sectors. For the second half of the fiscal year, in which about 70% of annual demand is usually expected, we can anticipate reactionary growth in space heating demand, from the historically warm winter of the previous fiscal year. However, kerosene demand throughout the year is expected to drop by 0.2% from the previous fiscal year, as customers reduce consumption in view of the price rise and as more space heating demand shifts to electricity.

The demand for heavy oil-A from the industrial and consumer sectors has been significantly affected by the conversion to town gas and the switch from private generation to grid power, in response to high fuel oil prices. Moreover, demand from the agricultural and fishery sectors decreased, and demand from the marine vessel sector also decreased as ships became larger (replacement by heavy oil-C). As a result, the sales of heavy oil-A in the first half of this fiscal year fell significantly, by 15.2% from the same period of the previous year. The downward trend is expected to persist in the second half of the fiscal year, even though we anticipate reactionary growth in space heating demand from the previous fiscal year. Sales of heavy oil-A in the whole of FY2007 are expected to be 10.8% lower than in the previous fiscal year. The demand for heavy oil-C as power generation fuel in the first half of this fiscal year grew significantly, by 29.5% from the same period of the previous fiscal year, due to the heavy use of oil-fired generation, caused by factors such as the emergency shutdown of nuclear power plants because of earthquakes, less availability of hydroelectricity due to drought, and exceptional heat in August and September. However, like the demand for heavy oil-A, the demand for heavy oil-C from the industrial sector decreased due to substitution by other fuels and a tendency to rely less on private generation. The total sales of heavy oil-C in the first half of this fiscal year grew only by 0.1% over the same period of the previous fiscal year. In the second half of the year, the decrease in demand from the industrial sector will persist, but demand from the power generation sector will grow significantly, due to a drop in the nuclear power plant availability. Sales of heavy oil-C in the whole of FY2007 are expected to be 6.2% higher than in the previous fiscal year. LPG

sales in the first half of this fiscal year were 1.2% higher, compared with the same period of the previous fiscal year, due to major growth in demand from the chemicals industry for use as a raw material, even though sales in the household, commercial and industrial sectors fell from the previous fiscal year. In the second half of the year, demand for raw material used in the chemicals industry will remain high and water heating demand will grow in the household and commercial sectors. LPG sales in the whole of FY2007 are expected to be 1.7% higher than in the previous fiscal year.

For FY2008, we expect that gasoline sales will fall by 1.7% from the previous year, recording a decrease for four consecutive years. Even though there will be a slight increase (about 1%) in the number of gasoline-powered vehicles, the shift to mini-sized vehicles, improvements in fuel efficiency, and lower traveling distances will continue. Gas oil sales are expected to fall by 1.4% from the previous fiscal year, as the number of diesel vehicles will continue to shrink and demand from the construction and industrial sectors will decrease. Naphtha sales are expected to remain at the same level (zero growth from the previous fiscal year) even though we expect a slight fall in ethylene production. Assuming a winter temperature as cold as that in this fiscal year, kerosene sales in FY2008 are expected to fall by 3.1% from this fiscal year, as kerosene will continue to lose share to electricity for space heating in households and due to decreasing demand from the agricultural sector. Demand for heavy oil-A is expected to fall by 5.4% from the previous fiscal year, despite strong industrial activity due to further substitution by town gas and electricity in the industrial and consumer sectors. Demand for heavy oil-C from the power generation sector is expected to fall significantly as the nuclear power plant capacity factor will rise again. Demand from the industrial sector and elsewhere will also continue to decrease. The total sales of heavy oil-C in FY2008 are expected to be 9.3% lower than in the previous fiscal year. Given these factors, the total fuel oil sales in FY2008 are expected to be 2.5% lower than in the previous fiscal year. LPG sales in FY2008 are expected to be 0.1% higher than in the previous fiscal year, due to the growth in demand from the chemicals sector (raw material use), the household sector and the commercial sector, even though demand from the industrial sector and town gas production sector will continue to fall.

3. THE EVALUATION OF POSSIBLE IMPACTS ON ENERGY SUPPLY AND DEMAND IN FY2008

To evaluate the possible impacts from factors that may affect energy supply and demand, we performed sensitivity analyses on our forecasts for FY2008. In a sensitivity analysis, we analyze variations on the base case in terms of differences in the outputs (forecasts) resulting from a change in only one of the assumptions (exogenous variables). This allows quantitative evaluation of the degree of impact caused by that change. In this case, we performed sensitivity analyses for the crude oil price and the real GDP, which appear to be very uncertain in the short term, in order to identify how variations in these factors may impact on our forecasts of economic activities and energy supply and demand in FY2008. In addition, we quantitatively evaluated possible impacts from a higher or lower ambient temperature, which tends to affect energy demand. Furthermore, considering that a number of

nuclear power plants have been shut down for inspection, we evaluated possible impacts on energy supply and demand, together with the changing availability of the plants.

3-1 Possible Impacts from a Higher or Lower Crude Oil Price

The crude oil price remains high, and so could affect the Japanese economy and energy supply and demand. The crude oil price (CIF-based import price) that we assumed for the base case was based on "Prospects for the International Market and Crude Oil Price in 2008" by Ken Koyama. We assumed that the mean crude oil price in FY2008 will be $76/barrel, which is quite high although lower than the price at the end of 2007. Borrowing insights from the paper mentioned above, we have evaluated the possible impacts of a higher or lower crude oil price, based on analyses of the higher and lower crude oil price cases. The higher-price case assumes a crude oil price $12.5/barrel higher than those assumed in the base case, yielding an annual mean of $88/barrel for FY2008. The lower-price case assumes a crude oil price $17.5/barrel lower than those assumed in the base case, yielding an annual mean of $58/barrel for FY2008.

(1) Higher crude oil price scenario

In comparison to the base case, a crude oil price of $12.5 higher will decrease the FY2008 real GDP growth by 0.1 percentage point, resulting in 2.0% growth over the previous fiscal year. Again, in comparison with the base case, the higher crude oil price will increase the consumer price index by 0.1 percentage point. In terms of the impact on growth in energy consumption, the growth in domestic primary energy supply will decrease by 0.2 percentage points from the base case, resulting in a 0.1% fall from the previous fiscal year. Final energy consumption will decrease by 0.3 percentage points from the base case, resulting in a 0.5% fall from the previous fiscal year.

Looking at final energy consumption by sector, the higher crude oil price will slow down economic growth and thus suppress final energy consumption in the industrial sector and the transportation sector by 0.4 and 0.3 percentage points respectively, compared with the base case. The impact will be less on the final energy consumption in the consumer sector, which will decrease by 0.1 percentage point from the base case. In terms of energy sales, the higher crude oil price will directly affect fuel oil sales, leading to a decrease by 0.5 percentage points from the base case, resulting in 3.0% fall from the previous fiscal year. With town gas and electricity sales, the impact by slower economic growth will be offset by additional demand from the substitution of oil. Town gas sales will fall only slightly from the base case, by 0.2 percentage points. Electricity sales will not change at all.

(2) Lower crude oil price scenario

In comparison to the base case, a crude oil price of $17.5 lower will increase the FY2008 real GDP growth by 0.2 percentage points, resulting in 2.2% growth over the previous fiscal year. In terms of the impact on energy consumption, the growth in domestic primary energy supply will increase by 0.4 percentage points from the base case, resulting in a 0.5% growth from the previous fiscal year. Final

energy consumption will increase by 0.5 percentage points from the base case, resulting in a 0.3% increase from the previous fiscal year.

3-2 Possible Impacts from Higher or Lower Economic Growth

Even though the Japanese economy continues to expand slowly, its future is uncertain due to the subprime lending issue in the United States, the after-effects of the amendment of the Building Standard Law, and the suppression of private consumption by the stagnant growth in wages. The following describes our evaluation of how energy supply and demand can be affected by lower or higher economic growth based on analyses of low and high economic growth scenarios. The low-growth case assumes GDP growth 1.0 percentage point lower than the base case, while the high-growth case assumes GDP growth 1.0 percentage point higher than the base case.

(1) Low economic growth scenario

In comparison with the base case, GDP growth of 1 percentage point lower will decrease the domestic primary energy supply by 0.5 percentage points, resulting in a 0.4% fall from the previous fiscal year. Final energy consumption will decrease by 0.5 percentage points from the base case, resulting in a 0.6% fall from the previous fiscal year. Looking at final energy consumption by sector, the impact will be relatively large on final energy consumption by the industrial sector, which will decrease by 0.7 percentage points from the base case. In terms of energy sales, the impact will be relatively high on fuel oil sales, which will decrease by 0.7 percentage points from the base case. The impact on electricity sales will be relatively small. The proportion by which energy consumption decreases will be smaller than the proportion by which economic growth decreases (a 1.0 percentage point decrease, in this case).

(2) High economic growth scenario

In comparison with the base case, GDP growth of 1 percentage point higher will increase the domestic primary energy supply by 0.5 percentage points, resulting in 0.6% growth from the previous fiscal year. Final energy consumption will increase by 0.5 percentage points from the base case, resulting in a 0.3% increase from the previous fiscal year. As with the low-growth case, the proportion by which energy consumption increases will be smaller than the proportion by which economic growth increases (a 1.0 percentage point increase, in this case).

3-3 Possible Impacts of a Higher or Lower Ambient Temperature

The ambient temperature tends to affect energy demand, particularly demand for space cooling/heating and for water heating from the consumer sector. Because the ambient temperature has been quite irregular in recent years (e.g. an exceptionally hot summer and warm winter), there is a growing need to evaluate how the ambient temperature affects energy demand. Although the reference case is based on the average temperature over the past ten years, we focused on summer (July to

September) and winter (January to March), in which an irregularity in the ambient temperature may produce a significant impact, and evaluated the possible impacts on the energy supply and demand from an ambient temperature of 1°C higher in summer or 1°C lower in winter.

(1) Ambient temperature of 1°C higher in summer (July to September)

If the mean ambient temperature is 1°C higher than in the average year, this will increase domestic primary energy supply and final energy consumption by 1.4% and 0.7%, respectively. In the residential sector, the higher ambient temperature will increase space cooling demand but decrease water heating demand, the combination of which will result in a 1.0% increase in final energy consumption. The impact will be greater on the commercial sector than on the household sector, because of a larger proportion of space cooling demand and a smaller proportion of water heating demand. The higher ambient temperature will increase final energy consumption by 3.0% in the commercial sector. The higher ambient temperature will increase final energy consumption by 0.5% in the transportation sector, because fuel consumed by automobiles will increase due to heavier use of automotive air conditioning. In terms of energy sales, the higher ambient temperature will increase electricity sales by 2.5% by increasing space cooling demand. With regard to town gas, the higher ambient temperature will increase space cooling demand, particularly from the commercial sector, but decrease water heating demand from the household and commercial sectors, the combination of which will result in a 0.4% increase. The higher ambient temperature will increase fuel oil sales by 1.0% because it will increase not only the consumption of gasoline by automobiles, but also demand for heavy oil-C for power generation, which will intensify due to increased consumption of electric power.

(2) Ambient temperature 1°C lower in winter (January to March)

If the mean ambient temperature is 1°C lower than in the average year, this will increase domestic primary energy supply and final energy consumption by 1.2% and 1.0%, respectively. In the consumer sector, a lower ambient temperature and a lower water temperature will increase space heating demand and water heating demand, respectively. Final energy consumption will increase by 3.0% in the household sector and by 2.1% in the commercial sector, compared with the reference case. In terms of energy sales, the lower ambient temperature, by increasing space heating demand, will increase electricity sales by 1.3% and fuel oil sales by 1.0%. The lower ambient temperature will increase town gas sales by 2.6%. This increase is larger than that for other energy sources because town gas demand will be driven by both space heating demand and water heating demand.

3-4 Possible Impacts from a Change in the Number of Operating Nuclear Power Plants

A considerable number of nuclear power plants have been stopped for inspection due to earthquakes and for other reasons. With some of these plants, it is uncertain when they will resume operation. We evaluated how the operation of a single nuclear power plant (1.10 million kW class) for a single year

will affect energy supply and demand.

A full year's operation of a 1.10 million kW class nuclear power plant produces about 9.6 billion kWh of energy, which amounts to about 1% of the total energy produced by electric power utilities. If this energy substitutes the operation of fossil-fired power plants, it will save 0.5% of the fossil fuels that contribute to the primary energy supply. Carbon dioxide emissions will also be reduced by 0.5%. Sales of heavy oil-C will decrease by 2.5% from the base case.

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Table 1: Overview (Base Case)

		FY2005	FY2006 (Actual)			FY2007 (Forecast)			FY2008
		Actual	1H	2H	Total	1H	2H	Total	Forecast
Key economic indicators	GDP (Chained to year 2000, in billion yen)	540,770 (2.4)	271,824 (2.1)	281,616 (2.5)	553,440 (2.3)	276,462 (1.7)	285,477 (1.4)	561,939 (1.5)	573,706 (2.1)
	Private demand	406,076 [2.1]	206,468 [1.8]	210,464 [2.2]	416,932 [2.0]	208,376 [0.7]	212,700 [0.8]	421,076 [0.7]	429,944 [1.6]
	Public demand	118,025 [-0.1]	55,788 [-0.5]	60,128 [-0.3]	115,916 [-0.4]	55,901 [0.0]	59,902 [-0.1]	115,803 [-0.0]	115,932 [0.0]
	External demand	17,062 [0.6]	9,972 [0.9]	11,520 [0.8]	21,491 [0.8]	12,714 [1.0]	13,342 [0.6]	26,056 [0.8]	28,795 [0.5]
	Corporate goods price index (Year 2005=100)	100.5 (1.8)	102.5 (2.4)	102.6 (1.6)	102.6 (2.0)	104.2 (1.6)	104.8 (2.1)	104.5 (1.9)	105.3 (0.8)
	Consumer price index (Year 2005=100)	100.0 (-0.3)	100.4 (0.4)	100.0 (0.1)	100.2 (0.3)	100.3 (-0.1)	100.3 (0.2)	100.3 (0.1)	100.6 (0.3)
	Indices of industrial production (Year 2000=100)	102.1 (1.5)	104.9 (5.1)	109.1 (4.5)	107.0 (4.8)	107.6 (2.6)	112.0 (2.6)	109.8 (2.6)	112.8 (2.7)
	Crude steel production (in '000t)	112,718 (-0.2)	58,052 (2.2)	59,693 (6.7)	117,745 (4.5)	59,799 (3.0)	58,550 (-1.9)	118,349 (0.5)	119,359 (0.9)
	Ethylene production (in '000t)	7,549 (-0.1)	3,642 (-0.9)	4,020 (3.7)	7,661 (1.5)	3,745 (2.8)	4,013 (-0.2)	7,758 (1.3)	7,728 (-0.4)
	Exchange rate (Yen/US$)	113.3 (5.4)	115.3 (5.3)	118.6 (1.3)	116.9 (3.3)	119.3 (3.4)	110.0 (-7.3)	114.6 (-2.0)	110.0 (-4.0)
	Crude oil CIF price (US$/Bbl)	55.4 (43.5)	67.9 (28.9)	59.1 (1.5)	63.5 (14.5)	67.9 (0.1)	80.8 (36.7)	74.3 (17.1)	75.8 (1.9)
	Heating degree-days	1,116 (15.6)	64 (32.5)	800 (-25.0)	865 (-22.5)	56 (-12.7)	940 (17.5)	997 (15.3)	980 (-1.6)
	Cooling degree-days	449 (-8.7)	377 (-15.1)	- (-100.0)	377 (-16.1)	434 (15.3)	3 -	437 (16.0)	422 (-3.3)
Key energy indicators	Primary energy supply (10^10kcal = KTOE)	538,743 (-0.4)	260,473 (-0.5)	272,349 (-1.7)	532,822 (-1.1)	260,249 (-0.1)	276,434 (1.5)	536,683 (0.7)	537,272 (0.1)
	Final energy consumption (10^10kcal = KTOE)	372,213 (0.0)	174,921 (-0.8)	192,305 (-1.8)	367,226 (-1.3)	173,809 (-0.6)	194,086 (0.9)	367,895 (0.2)	367,282 (-0.2)
	Industrial sector	176,636 (-1.0)	84,731 (0.6)	92,316 (1.0)	177,047 (0.2)	84,713 (-0.0)	92,103 (-0.2)	176,816 (-0.1)	177,467 (0.4)
	Consumer sector	104,787 (2.7)	45,246 (0.1)	55,447 (-6.9)	100,693 (-3.9)	44,576 (-1.5)	58,020 (4.6)	102,597 (1.9)	102,599 (0.0)
	Transportation sector	90,790 (-1.0)	44,944 (-1.9)	44,542 (-0.9)	89,486 (-1.4)	44,520 (-0.9)	43,963 (-1.3)	88,483 (-1.1)	87,216 (-1.4)
	Electricity sales (billion kWh)	913.3 (2.4)	463.6 (2.2)	458.8 (-0.2)	922.4 (1.0)	473.0 (2.0)	477.3 (4.0)	950.2 (3.0)	965.1 (1.6)
	Town gas sales (million m³/10,000kcal)	32,459 (7.7)	15,743 (7.1)	18,021 (1.5)	33,762 (4.0)	16,526 (5.0)	19,241 (6.8)	35,767 (5.9)	37,049 (3.6)
	Fuel oil sales (1,000kl)	236,109 (-0.5)	104,476 (-4.9)	119,367 (-5.5)	223,843 (-5.2)	101,832 (-2.5)	120,032 (0.6)	221,864 (-0.9)	216,243 (-2.5)
	CO_2 emissions (million t-C)	328 (7.5)			323 (-1.6)			331 (2.4)	324 (-1.8)

Sources: Actual results data prepared from various publications; forecasts by IEEJ

Notes:

1. Bracketed figures indicate % changes year-on-year, except GDP contributions.

2. GDP contributions may not add up to the total due to minor data deviations.

3. The industrial sector consumption includes non-energy uses.

Table 2: Macroeconomic Outlook (Base Case)

	FY2005 Actual	FY2006 (Actual)			FY2007 (Forecast)			FY2008 Forecast
		1H	2H	Total	1H	2H	Total	
Real GDP	540,770	271,824	281,616	553,440	276,462	285,477	561,939	573,706
(Chained to year 2000, in billion yen)	(2.4)	(2.1)	(2.5)	(2.3)	(1.7)	(1.4)	(1.5)	(2.1)
Private demand	406,076	206,468	210,464	416,932	208,376	212,700	421,076	429,944
	(2.8)	(2.4)	(2.9)	(2.7)	(0.9)	(1.1)	(1.0)	(2.1)
Private final consumption expenditure	302,483	152,165	155,529	307,694	154,772	157,313	312,085	316,307
	(1.9)	(1.8)	(1.7)	(1.7)	(1.7)	(1.1)	(1.4)	(1.4)
Private residential investments	18,430	9,266	9,206	18,472	8,606	7,735	16,342	17,481
	(-1.2)	(0.5)	(-0.1)	(0.2)	(-7.1)	(-16.0)	(-11.5)	(7.0)
Private capital investments	83,568	42,103	46,159	88,262	42,306	47,973	90,278	93,820
	(6.7)	(4.1)	(7.0)	(5.6)	(0.5)	(3.9)	(2.3)	(3.9)
Public demand	118,025	55,788	60,128	115,916	55,901	59,902	115,803	115,932
	(-0.6)	(-2.3)	(-1.3)	(-1.8)	(0.2)	(-0.4)	(-0.1)	(0.1)
Government final consumption expenditure	94,601	47,146	47,517	94,663	47,359	48,094	95,453	96,328
	(0.8)	(-0.3)	(0.4)	(0.1)	(0.5)	(1.2)	(0.8)	(0.9)
Public fixed capital formation	23,158	8,525	12,509	21,033	8,424	11,704	20,128	19,388
	(-5.6)	(-11.8)	(-7.3)	(-9.2)	(-1.2)	(-6.4)	(-4.3)	(-3.7)
Net export of goods & services	17,062	9,972	11,520	21,491	12,714	13,342	26,056	28,759
	(21.2)	(30.5)	(22.3)	(26.0)	(27.5)	(15.8)	(21.2)	(10.5)
Goods & services export	75,810	39,998	42,010	82,009	43,114	44,744	87,858	93,145
	(9.0)	(9.6)	(6.8)	(8.2)	(7.8)	(6.5)	(7.1)	(6.0)
Goods & services import	58,748	30,027	30,491	60,517	30,400	31,402	61,802	64,350
	(5.8)	(4.1)	(2.0)	(3.0)	(1.2)	(3.0)	(2.1)	(4.1)
Nominal GDP	503,845	250,966	260,911	511,877	254,213	263,487	517,700	529,364
(billion yen)	(1.1)	(1.2)	(2.0)	(1.6)	(1.3)	(1.0)	(1.1)	(2.3)
Indices of industrial production	102.1	104.9	109.1	107.0	107.6	112.0	109.8	112.8
(Year 2000=100)	(1.5)	(5.1)	(4.5)	(4.8)	(2.6)	(2.6)	(2.6)	(2.7)
Tertiary industry activity index	107.1	108.0	110.0	109.0	109.4	112.3	110.9	113.0
(Year 2000=100)	(2.2)	(2.1)	(1.4)	(1.7)	(1.3)	(2.1)	(1.7)	(2.0)
Domestic corporate goods price index	100.5	102.5	102.6	102.6	104.2	104.8	104.5	105.3
(Year 2005=100)	(1.8)	(2.4)	(1.6)	(2.0)	(1.6)	(2.1)	(1.9)	(0.8)
Consumer price index	100.0	100.4	100.0	100.2	100.3	100.3	100.3	100.6
(Year 2005=100)	(-0.3)	(0.4)	(0.1)	(0.3)	(-0.1)	(0.2)	(0.1)	(0.3)
Exchange rate	113.3	115.3	118.6	116.9	119.3	110.0	114.6	110.0
(Yen/US$)	(5.4)	(5.3)	(1.3)	(3.3)	(3.4)	(-7.3)	(-2.0)	(-4.0)
Crude oil CIF price	55.4	67.9	59.1	63.5	67.9	80.8	74.4	75.8
(US$/Bbl)	(43.5)	(28.9)	(1.5)	(14.5)	(0.1)	(36.7)	(17.1)	(1.9)

Sources: Actual results data prepared from various publications; forecasts by IEEJ

Notes:

1. Bracketed figures indicate % changes year-on-year.

2. The GDP contributions may not add up to the total, due to inventory fluctuations and minor data deviations.

Table 3: Outlook on Industrial Activities (Base Case)

		FY2005 Actual	FY2006 (Actual)			FY2007(Forecast)			FY2008 Forecast
			1H	2H	Total	1H	2H	Total	
Production (1,000t)	Crude steel	112,718	58,052	59,693	117,745	59,799	58,550	118,349	119,359
		(-0.2)	(2.2)	(6.7)	(4.5)	(3.0)	(-1.9)	(0.5)	(0.9)
	Ethylene	7,549	3,642	4,020	7,661	3,745	4,013	7,758	7,728
		(-0.1)	(-0.9)	(3.7)	(1.5)	(2.8)	(-0.2)	(1.3)	(-0.4)
	Cement	73,931	35,167	38,004	73,170	34,907	35,554	70,461	69,403
		(3.1)	(-1.3)	(-0.8)	(-1.0)	(-0.7)	(-6.4)	(-3.7)	(-1.5)
	Paper/Paperboard	31,070	15,509	15,569	31,078	15,522	15,719	31,241	31,782
		(0.6)	(0.3)	(-0.3)	(0.0)	(0.1)	(1.0)	(0.5)	(1.7)
Indices of industrial production (Year 2000＝100)	Foods	94.2	94.1	91.7	92.9	95.1	91.0	93.1	92.4
		(-1.7)	(-1.7)	(-0.9)	(-1.3)	(1.0)	(-0.7)	(0.2)	(-0.7)
	Textiles (excl. chemical fiber)	63.8	62.1	61.0	61.5	59.1	59.6	59.3	58.6
		(-6.8)	(-3.4)	(-3.6)	(-3.5)	(-4.9)	(-2.2)	(-3.5)	(-1.2)
	Iron & steel	107.2	109.3	113.7	111.5	112.8	113.8	113.3	115.1
		(-0.9)	(1.2)	(6.8)	(4.0)	(3.2)	(0.1)	(1.6)	(1.6)
	Chemicals (incl. chemical fiber)	99.5	99.9	100.7	100.3	96.8	101.7	99.2	100.0
		(-2.7)	(0.7)	(0.8)	(0.8)	(-3.1)	(1.0)	(-1.1)	(0.8)
	Ceramics, stone, and clay	80.9	78.1	81.6	79.8	76.7	77.6	77.1	76.1
		(-2.8)	(-2.4)	(-0.3)	(-1.3)	(-1.7)	(-4.9)	(-3.4)	(-1.3)
	Pulp, paper and paper products	98.8	98.6	99.1	98.9	98.4	99.9	99.1	100.7
		(1.0)	(0.5)	(-0.3)	(0.1)	(-0.3)	(0.8)	(0.3)	(1.6)
	Non-ferrous metals	101.5	102.8	105.6	104.2	103.8	106.0	104.9	107.2
		(3.9)	(4.5)	(0.9)	(2.6)	(0.9)	(0.4)	(0.7)	(2.2)
	Transport equipment	120.3	122.1	135.9	129.0	128.7	143.2	135.9	140.5
		(1.6)	(5.3)	(9.0)	(7.2)	(5.4)	(5.4)	(5.4)	(3.4)
	Electrical machinery and others	105.9	112.3	116.8	114.6	117.2	121.7	119.5	124.8
		(4.6)	(10.3)	(6.2)	(8.1)	(4.4)	(4.2)	(4.3)	(4.5)
	Total	102.1	104.9	109.1	107.0	107.6	112.0	109.8	112.8
		(1.5)	(5.1)	(4.5)	(4.8)	(2.6)	(2.6)	(2.6)	(2.7)

Sources: Actual results data prepared from various publications; forecasts by IEEJ

Notes:

1. Bracketed figures indicate % changes year-on-year.

2. "Electrical machinery and others" includes: general machinery; electrical machinery; information and communication electronics equipment; electronic parts and devices; precision instruments; and fabricated metals.

Table 4: Outlook on Electricity Demand (Base Case)
(Electric power utilities, by use)

		FY2005 Actual	FY2006 (Actual)			FY2007 (Forecast)			FY2008 Forecast
			1H	2H	Total	1H	2H	Total	
Electricity demand (billion kWh)	Lighting use	281.3 (3.2)	134.7 (1.8)	143.6 (-3.6)	278.3 (-1.1)	135.2 (0.4)	151.9 (5.8)	287.2 (3.2)	288.8 (0.6)
	Non-lighting use (incl. specified scale demand)	632.0 (2.0)	328.9 (2.4)	315.2 (1.4)	644.1 (1.9)	337.7 (2.7)	325.3 (3.2)	663.0 (2.9)	676.2 (2.0)
	Total (incl. specified scale demand)	913.3 (2.4)	463.6 (2.2)	458.8 (-0.2)	922.4 (1.0)	473.0 (2.0)	477.3 (4.0)	950.2 (3.0)	965.1 (1.6)
	(Regrouped) Large-industrial use	294.4 (2.0)	154.4 (4.1)	153.3 (5.0)	307.7 (4.5)	161.2 (4.4)	158.6 (3.5)	319.9 (3.9)	328.5 (2.7)
	Chemical industries	29.6 (3.7)	15.6 (5.9)	15.7 (4.9)	31.2 (5.4)	16.4 (5.2)	16.5 (5.3)	32.9 (5.2)	34.1 (3.8)
	Iron & steel industries	53.3 (-0.5)	27.7 (3.5)	27.9 (5.1)	55.6 (4.3)	28.4 (2.6)	28.0 (0.2)	56.4 (1.4)	56.9 (0.8)
	Machinery manufacturing	74.5 (3.5)	39.7 (5.5)	39.4 (6.9)	79.2 (6.2)	41.9 (5.4)	41.2 (4.5)	83.1 (4.9)	86.0 (3.5)
	Total	245.6 (2.3)	129.5 (4.9)	129.5 (6.0)	259.1 (5.5)	136.0 (5.0)	134.4 (3.8)	270.4 (4.4)	278.9 (3.1)

Sources: Actual results data prepared from METI, "Monthly Electricity Survey & Statistics"; forecasts by IEEJ

Notes:

1. Bracketed figures indicate % changes year-on-year.

2. The data includes specified supplies by electricity enterprises.

3. Excludes self-consumption by all the electric power companies, other than the Tobata Co-operative Thermal Power Company, Inc.

Table 5: Outlook on Town Gas Sales (Base Case)

		FY2005 Actual	FY2006 (Actual)			FY2007 (Forecast)			FY2008 Forecast
			1H	2H	Total	1H	2H	Total	
Town gas sales (million m³)	Household	9,928 (4.9)	3,964 (5.0)	5,801 (-5.7)	9,764 (-1.6)	3,805 (-4.0)	6,128 (5.6)	9,933 (1.7)	9,931 (-0.0)
	Commercial	4,892 (3.8)	2,506 (0.3)	2,280 (-4.7)	4,785 (-2.2)	2,540 (1.3)	2,384 (4.6)	4,923 (2.9)	5,029 (2.1)
	Industrial	14,781 (11.3)	7,899 (11.7)	8,553 (10.9)	16,452 (11.3)	8,790 (11.3)	9,215 (7.7)	18,005 (9.4)	19,074 (5.9)
	Others	2,859 (6.7)	1,373 (1.4)	1,387 (-7.8)	2,760 (-3.5)	1,392 (1.4)	1,514 (9.1)	2,905 (5.3)	3,015 (3.8)
	Total	32,459 (7.7)	15,743 (7.1)	18,021 (1.5)	33,762 (4.0)	16,526 (5.0)	19,241 (6.8)	35,767 (5.9)	37,049 (3.6)

Sources: Actual results data prepared from METI, "Monthly Gas Industry Statistics"; forecasts by IEEJ

Notes:

1. Bracketed figures indicate % changes year-on-year.

2. Converted at 1m³＝41.8605MJ (10,000kcal).

Table 6: Outlook on Fuel Oils Sales (Base Case)

		FY2005 Actual	FY2006 (Actual)			FY2007 (Forecast)			FY2008 Forecast
			1H	2H	Total	1H	2H	Total	
Fuel oils sales (1,000kl)	Gasoline	**61,421**	**30,742**	**29,809**	**60,552**	**30,533**	**29,461**	**59,994**	**58,978**
		(-0.1)	(-1.9)	(-0.9)	(-1.4)	(-0.7)	(-1.2)	(-0.9)	(-1.7)
	Naphtha	**49,388**	**23,458**	**26,619**	**50,078**	**23,519**	**26,597**	**50,115**	**50,123**
		(0.7)	(-2.4)	(5.0)	(1.4)	(0.3)	(-0.1)	(0.1)	(0.0)
	Jet fuel	**5,129**	**2,450**	**3,003**	**5,453**	**2,785**	**3,005**	**5,790**	**5,829**
		(4.5)	(-3.7)	(16.2)	(6.3)	(13.7)	(0.1)	(6.2)	(0.7)
	Kerosene	**28,265**	**6,991**	**17,508**	**24,498**	**6,160**	**18,289**	**24,449**	**23,690**
		(1.0)	(-9.1)	(-14.9)	(-13.3)	(-11.9)	(4.5)	(-0.2)	(-3.1)
	Gas oil	**37,116**	**18,002**	**18,603**	**36,606**	**17,706**	**18,317**	**36,023**	**35,527**
		(-2.8)	(-2.3)	(-0.5)	(-1.4)	(-1.6)	(-1.5)	(-1.6)	(-1.4)
	Fuel oil-A	**27,780**	**11,250**	**12,712**	**23,961**	**9,537**	**11,842**	**21,379**	**20,235**
		(-4.5)	(-12.0)	(-15.2)	(-13.7)	(-15.2)	(-6.8)	(-10.8)	(-5.4)
	Fuel oil-B, C	**27,009**	**11,583**	**11,113**	**22,696**	**11,593**	**12,521**	**24,114**	**21,863**
		(1.7)	(-11.3)	(-20.4)	(-16.0)	(0.1)	(12.7)	(6.2)	(-9.3)
	For power generation	**11,788**	**4,681**	**4,669**	**9,350**	**6,063**	**6,713**	**12,776**	**11,275**
		(19.6)	(-11.1)	(-28.4)	(-20.7)	(29.5)	(43.8)	(36.6)	(-11.7)
	For other uses	**15,222**	**6,902**	**6,444**	**13,346**	**5,529**	**5,809**	**11,338**	**10,588**
		(-8.9)	(-11.4)	(-13.3)	(-12.3)	(-19.9)	(-9.9)	(-15.0)	(-6.6)
	Total	**236,109**	**104,476**	**119,367**	**223,843**	**101,832**	**120,032**	**221,864**	**216,243**
		(-0.5)	(-4.9)	(-5.5)	(-5.2)	(-2.5)	(0.6)	(-0.9)	(-2.5)
LPG sales (1,000t)		**18,707**	**8,730**	**9,966**	**18,696**	**8,837**	**10,171**	**19,008**	**19,018**
		(1.6)	(3.1)	(-2.7)	(-0.1)	(1.2)	(2.1)	(1.7)	(0.1)

Sources: Actual results data prepared from METI, "Monthly Resources & Energy Statistics", Petroleum Association of Japan, "Monthly Oil Statistics",
Japan LP Gas Association, "LP Gas Receipt and Delivery Monthly Reports"; forecasts by IEEJ

Note:

1. Bracketed figures indicate % changes year-on-year.

Table 7: Outlook on Domestic Primary Energy Supply (Base Case)

		FY2005 Actual	FY2006 (Actual)			FY2007 (Forecast)			FY2008 Forecast
			1H	2H	Total	1H	2H	Total	
Domestic primary energy supply (10^10kcal)	Coal	115,039 (-2.0)	56,127 (-3.9)	56,392 (-0.4)	112,519 (-2.2)	58,060 (3.4)	56,947 (1.0)	115,006 (2.2)	113,279 (-1.5)
	Oil	256,465 (0.0)	113,984 (-4.3)	129,689 (-5.6)	243,673 (-5.0)	112,640 (-1.2)	131,610 (1.5)	244,251 (0.2)	238,126 (-2.5)
	Natural gas	78,804 (0.5)	41,764 (7.7)	44,294 (10.7)	86,058 (9.2)	46,101 (10.4)	49,818 (12.5)	95,919 (11.5)	96,925 (1.0)
	Hydroelectricity	17,031 (-18.8)	12,188 (16.2)	7,238 (10.7)	19,426 (14.1)	10,193 (-16.4)	7,622 (5.3)	17,815 (-8.3)	19,806 (11.2)
	Nuclear	64,139 (5.6)	32,818 (4.8)	31,041 (-5.4)	63,859 (-0.4)	29,496 (-10.1)	26,619 (-14.2)	56,114 (-12.1)	61,496 (9.6)
	Others	7,265 (-0.5)	3,592 (-0.3)	3,695 (0.9)	7,287 (0.3)	3,760 (4.7)	3,818 (3.3)	7,578 (4.0)	7,642 (0.8)
	Total	538,743 (-0.4)	260,473 (-0.5)	272,349 (-1.7)	532,822 (-1.1)	260,249 (-0.1)	276,434 (1.5)	536,683 (0.7)	537,272 (0.1)
Real GDP (Chained to year 2000, in billion yen)		540,770 (2.4)	271,824 (2.1)	281,616 (2.5)	553,440 (2.3)	276,462 (1.7)	285,477 (1.4)	561,939 (1.5)	573,706 (2.1)
GDP intensity (Energy supply/GDP) (Year 2000=100)		94.2 (-2.8)			91.0 (-3.4)			90.3 (-0.8)	88.5 (-1.9)
CO_2 emissions (million t-C)		328 (7.5)			323 (-1.6)			331 (2.4)	324 (-1.8)

Sources: Actual results data prepared from IEEJ database and Cabinet Office, "Preliminary National Income Statistics"; Forecasts by IEEJ

Notes:

1. Bracketed figures indicate % changes year-on-year.

2. "Others" include geothermal, new energies, etc.

Table 8: Outlook on Final Energy Consumption (Base Case)

		FY2005 Actual	FY2006 (Actual) 1H	FY2006 (Actual) 2H	FY2006 (Actual) Total	FY2007 (Forecast) 1H	FY2007 (Forecast) 2H	FY2007 (Forecast) Total	FY2008 Forecast
By sector (10^10kcal)	Industry	176,636 (-1.0)	84,731 (-0.6)	92,316 (1.0)	177,047 (0.2)	84,713 (-0.0)	92,103 (-0.2)	176,816 (-0.1)	177,467 (0.4)
	Consumer	104,787 (2.7)	45,246 (0.1)	55,447 (-6.9)	100,693 (-3.9)	44,576 (-1.5)	58,020 (4.6)	102,597 (1.9)	102,599 (0.0)
	Residential	55,763 (4.5)	21,852 (2.0)	31,724 (-7.6)	53,576 (-3.9)	21,459 (-1.8)	33,646 (6.1)	55,104 (2.9)	54,927 (-0.3)
	Commercial	49,024 (0.7)	23,394 (-1.6)	23,723 (-6.0)	47,117 (-3.9)	23,118 (-1.2)	24,375 (2.7)	47,492 (0.8)	47,672 (0.4)
	Transportation	90,790 (-1.0)	44,944 (-1.9)	44,542 (-0.9)	89,486 (-1.4)	44,520 (-0.9)	43,963 (-1.3)	88,483 (-1.1)	87,216 (-1.4)
By energy source (10^10kcal)	Coal, etc.	37,772 (-2.2)	18,992 (0.7)	19,444 (2.8)	38,436 (1.8)	19,255 (1.4)	19,251 (-1.0)	38,506 (0.2)	38,603 (0.3)
	Oil	212,879 (-1.3)	94,759 (-3.8)	109,514 (-4.3)	204,273 (-4.0)	91,619 (-3.3)	108,673 (-0.8)	200,292 (-1.9)	196,925 (-1.7)
	Town gas	28,510 (8.0)	14,029 (10.6)	16,589 (4.8)	30,618 (7.4)	15,048 (7.3)	17,920 (8.0)	32,968 (7.7)	34,443 (4.5)
	Electricity	88,496 (1.6)	44,890 (1.8)	44,367 (-0.1)	89,257 (0.9)	45,624 (1.6)	45,827 (3.3)	91,451 (2.5)	92,625 (1.3)
	Others	4,556 (1.5)	2,251 (1.2)	2,391 (2.6)	4,642 (1.9)	2,264 (0.6)	2,414 (1.0)	4,678 (0.8)	4,686 (0.2)
	Total	372,213 (0.0)	174,921 (-0.8)	192,305 (-1.8)	367,226 (-1.3)	173,809 (-0.6)	194,086 (0.9)	367,895 (0.2)	367,282 (-0.2)
Real GDP (Chained to year 2000, in billion yen)		540,770 (2.4)	271,824 (2.1)	281,616 (2.5)	553,440 (2.3)	276,462 (1.7)	285,477 (1.4)	561,939 (1.5)	573,706 (2.1)
Indices of industrial production (Year 2000=100)		102.1 (1.5)	104.9 (5.1)	109.1 (4.5)	107.0 (4.8)	107.6 (2.6)	112.0 (2.6)	109.8 (2.6)	112.8 (2.7)
Heating degree-days		1,116 (15.6)	64 (32.5)	800 (-25.0)	865 (-22.5)	56 (-12.7)	940 (17.5)	997 (15.3)	980 (-1.6)
Cooling degree-days		449 (-8.7)	377 (-15.1)	- (-100.0)	377 (-16.1)	434 (15.3)	3 -	437 (16.0)	422 (-3.3)

Sources: Actual results data prepared from IEEJ database and others; forecasts by IEEJ

Notes:

1. Bracketed figures indicate % changes year-on-year.

2. The industrial sector consumption includes non-energy uses.

Table 9: Outlook on Power Generation Mix (Base Case)
(Electric power utilities)

		FY2005 Actual	FY2006 (Actual)			FY2007 (Forecast)			FY2008 Forecast
			1H	2H	Total	1H	2H	Total	
Input (10^10kcal)	Thermal power	122,670	57,921	63,364	121,285	64,731	71,023	135,754	131,258
		(1.8)	(-2.9)	(0.5)	(-1.1)	(11.8)	(12.1)	(11.9)	(-3.3)
	Coal	51,490	23,841	25,706	49,547	25,040	26,189	51,229	49,412
		(4.2)	(-4.2)	(-3.4)	(-3.8)	(5.0)	(1.9)	(3.4)	(-3.5)
	Oil, etc.	24,059	9,046	10,848	19,894	11,468	14,006	25,474	23,489
		(15.9)	(-10.9)	(-22.0)	(-17.3)	(26.8)	(29.1)	(28.1)	(-7.8)
	Crude oil (as part of oil)	7,371	2,273	3,503	5,776	3,525	4,755	8,280	7,370
		(29.2)	(-9.5)	(-27.9)	(-21.6)	(55.1)	(35.7)	(43.4)	(-11.0)
	Fuel oil-C (as part of oil)	11,675	4,122	4,893	9,015	5,106	6,796	11,903	10,786
		(16.9)	(-18.4)	(-26.1)	(-22.8)	(23.9)	(38.9)	(32.0)	(-9.4)
	Natural gas	47,121	25,034	26,810	51,844	28,222	30,828	59,050	58,357
		(-6.4)	(1.8)	(19.0)	(10.0)	(12.7)	(15.0)	(13.9)	(-1.2)
	Hydro-power	15,648	11,158	6,513	17,671	9,237	6,931	16,168	18,158
		(-19.0)	(14.6)	(10.1)	(12.9)	(-17.2)	(6.4)	(-8.5)	(12.3)
	Nuclear	64,139	32,818	31,041	63,859	29,496	26,619	56,114	61,496
		(5.6)	(4.8)	(-5.4)	(-0.4)	(-10.1)	(-14.2)	(-12.1)	(9.6)
	Others	1,240	606	601	1,207	741	735	1,475	1,600
		(-1.9)	(-1.0)	(-4.3)	(-2.7)	(22.2)	(22.2)	(22.2)	(8.5)
	Total	203,697	102,503	101,519	204,022	104,204	105,307	209,511	212,511
		(0.9)	(1.2)	(-0.9)	(0.2)	(1.7)	(3.7)	(2.7)	(1.4)
Power output (10^10kcal)		82,363	41,387	41,371	82,758	42,167	42,945	85,112	86,456
		(2.0)	(1.3)	(-0.4)	(0.5)	(1.9)	(3.8)	(2.8)	(1.6)

Sources: Actual results data and forecasts prepared from IEEJ database

Note: Bracketed figures indicate % changes year-on-year.

Table 10: Effects of Crude Oil Price Changes

		FY2007	FY2008				
				Crude price variations			
		Base case	Base case	High-price case		Low-price case	
				+12.5$/bbl	Change from base case	▲17.5$/bbl	Change from base case
Key economic indicators	Real GDP	**561,939**	**573,706**	**573,097**	**-609**	**574,569**	**863**
	(Chained to year 2000, in billion yen)	(1.5)	(2.1)	(2.0)	《-0.1》	(2.2)	《0.2》
	Private demand	**421,076**	**429,944**	**429,384**	**-560**	**430,737**	**792**
		[0.7]	[1.6]	[1.5]	[-0.1]	[1.7]	[0.1]
	Public demand	**115,803**	**115,932**	**115,864**	**-68**	**116,028**	**96**
		[-0.0]	[0.0]	[0.0]	[0.0]	[0.0]	[0.0]
	External demand	**26,056**	**28,795**	**28,814**	**19**	**28,769**	**-27**
		[0.8]	[0.5]	[0.5]	[0.0]	[0.5]	[0.0]
	Indices of industrial production	**109.8**	**112.8**	**112.6**	**-0.2**	**113.0**	**0.3**
	(Year 2000=100)	(2.6)	(2.7)	(2.6)	《-0.2》	(3.0)	《0.3》
	Corporate goods price index	**104.5**	**105.3**	**105.6**	**0.3**	**104.9**	**-0.4**
	(Year 2005=100)	(1.9)	(0.8)	(1.1)	《0.3》	(0.4)	《-0.4》
	Consumer price index	**100.3**	**100.6**	**100.7**	**0.1**	**100.5**	**-0.1**
	(Year 2005=100)	(0.1)	(0.3)	(0.4)	《0.1》	(0.2)	《-0.1》
	Crude oil CIF price	**74.3**	**75.8**	**88.3**	**12.5**	**58.3**	**-17.5**
	(US$/Bbl)	(17.1)	(1.9)	(18.7)	《16.8》	(-21.6)	《-23.5》
Key energy indicators	Primary energy supply	**536,683**	**537,272**	**536,049**	**-1,223**	**539,315**	**2,044**
	(10^10kcal = KTOE)	(0.7)	(0.1)	(-0.1)	《-0.2》	(0.5)	《0.4》
	Final energy consumption	**367,895**	**367,282**	**366,188**	**-1,094**	**369,117**	**1,835**
	(10^10kcal = KTOE)	(0.2)	(-0.2)	(-0.5)	《-0.3》	(0.3)	《0.5》
	Industrial sector	**176,816**	**177,467**	**176,815**	**-651**	**178,562**	**1,096**
		(-0.1)	(0.4)	(-0.0)	《-0.4》	(1.0)	《0.6》
	Consumer sector	**102,597**	**102,599**	**102,453**	**-147**	**102,855**	**256**
		(1.9)	(0.0)	(-0.1)	《-0.1》	(0.3)	《0.2》
	Transportation sector	**88,483**	**87,216**	**86,921**	**-296**	**87,700**	**484**
		(-1.1)	(-1.4)	(-1.8)	《-0.3》	(-0.9)	《0.5》
	Electricity sales	**950.2**	**965.1**	**965.0**	**-0.0**	**965.1**	**0.0**
	(billion kWh)	(3.0)	(1.6)	(1.6)	《-0.0》	(1.6)	《-0.0》
	Town gas sales	**35,767**	**37,049**	**36,983**	**-66**	**37,166**	**117**
	(million m³/10,000kcal)	(5.9)	(3.6)	(3.4)	《-0.2》	(3.9)	《0.3》
	Fuel oil sales	**221,864**	**216,243**	**215,232**	**-1,012**	**217,932**	**1,689**
	(1,000kl)	(-0.9)	(-2.5)	(-3.0)	《-0.5》	(-1.8)	《0.8》
	LPG sales	**19,008**	**19,018**	**19,007**	**-11**	**19,038**	**20**
	(1,000t)	(1.7)	(0.1)	(-0.0)	《-0.1》	(0.2)	《0.1》

Notes:

1. Single-bracketed figures indicate % changes year-on-year. Double-bracketed figures indicate percentage point differences
   from the base case. Square-bracketed figures in the GDP section indicate GDP contributions.

2. GDP contributions may not add up to the total due to minor data deviations.

3. The industrial sector consumption includes non-energy uses.

Table 11: Effects of Economic Growth Changes

		FY2007	FY2008				
				GDP growth variations			
		Base case	Base case	Low-growth case		High-growth case	
				GDP 1 point lower	Change from base case	GDP 1 point higher	Change from base case
Key economic indicators	Real GDP	561,939	573,706	568,057	-5,650	579,367	5,661
	(Chained to year 2000, in billion yen)	(1.5)	(2.1)	(1.1)	《-1.0》	(3.1)	《1.0》
	Private demand	421,076	429,944	424,988	-4,956	434,899	4,955
		[0.7]	[1.6]	[0.7]	[-0.9]	[2.5]	[0.9]
	Public demand	115,803	115,932	115,567	-365	116,301	369
		[-0.0]	[0.0]	[-0.0]	[-0.1]	[0.1]	[0.1]
	External demand	26,056	28,795	28,466	-329	29,131	336
		[0.8]	[0.5]	[0.4]	[-0.1]	[0.5]	[0.1]
	Indices of industrial production	109.8	112.8	111.5	-1.2	114.0	1.2
	(Year 2000=100)	(2.6)	(2.7)	(1.6)	《-1.1》	(3.9)	《1.1》
	Corporate goods price index	104.5	105.3	104.8	-0.5	105.9	0.5
	(Year 2005=100)	(1.9)	(0.8)	(0.3)	《-0.5》	(1.3)	《0.5》
	Consumer price index	100.3	100.6	100.5	-0.2	100.8	0.2
	(Year 2005=100)	(0.1)	(0.3)	(0.2)	《-0.2》	(0.5)	《0.2》
	Crude oil CIF price	74.3	75.8	75.8	-	75.8	-
	(US$/Bbl)	(17.1)	(1.9)	(1.9)	《-0.2》	(1.9)	《0.0》
Key energy indicators	Primary energy supply	536,683	537,272	534,452	-2,820	540,079	2,807
	(10^10kcal = KTOE)	(0.7)	(0.1)	(-0.4)	《-0.5》	(0.6)	《0.5》
	Final energy consumption	367,895	367,282	365,505	-1,778	369,053	1,771
	(10^10kcal = KTOE)	(0.2)	(-0.2)	(-0.6)	《-0.5》	(0.3)	《0.5》
	Industrial sector	176,816	177,467	176,309	-1,158	178,621	1,154
		(-0.1)	(0.4)	(-0.3)	《-0.7》	(1.0)	《0.7》
	Consumer sector	102,597	102,599	102,262	-337	102,933	334
		(1.9)	(0.0)	(-0.3)	《-0.3》	(0.3)	《0.3》
	Transportation sector	88,483	87,216	86,933	-283	87,499	283
		(-1.1)	(-1.4)	(-1.8)	《-0.3》	(-1.1)	《0.3》
	Electricity sales	950.2	965.1	960.6	-4.5	969.5	4.4
	(billion kWh)	(3.0)	(1.6)	(1.1)	《-0.5》	(2.0)	《0.5》
	Town gas sales	35,767	37,049	36,823	-227	37,275	225
	(million m³/10,000kcal)	(5.9)	(3.6)	(3.0)	《-0.6》	(4.2)	《0.6》
	Fuel oil sales	221,864	216,243	214,621	-1,623	217,850	1,606
	(1,000kl)	(-0.9)	(-2.5)	(-3.3)	《-0.7》	(-1.8)	《0.7》
	LPG sales	19,008	19,018	18,892	-126	19,144	126
	(1,000t)	(1.7)	(0.1)	(-0.6)	《-0.7》	(0.7)	《0.7》

Notes:

1. Bracketed figures indicate % changes year-on-year, except GDP contributions.

2. GDP contributions may not add up to the total due to minor data deviations.

3. The industrial sector consumption includes non-energy uses.

Table 12: Effects of Temperature Changes

	1°C rise in summer (July-September)		1°C fall in winter (January-March)	
	Change in demand	% change	Change in demand	% change
Domestic primary energy supply (10^10kcal)	**1,809**	(1.4)	**1,682**	(1.2)
Final energy consumption (10^10kcal)	**624**	(0.7)	**1,035**	(1.0)
Industrial sector	**41**	(0.1)	**178**	(0.4)
Residential sector	**93**	(1.0)	**598**	(3.0)
Commercial sector	**384**	(3.0)	**259**	(2.1)
Transportation sector	**106**	(0.5)	**-**	(0.0)
Electricity sales (million kWh)	**6,334**	(2.5)	**3,268**	(1.3)
Town gas sales (million m^3/10,000kcal)	**33**	(0.4)	**291**	(2.6)
Fuel oil sales (1,000kl)	**525**	(1.0)	**612**	(1.0)
LPG sales (1,000t)	**-64**	(-1.5)	**123**	(2.3)

Note: The industrial sector consumption includes non-energy uses.

Table 13 Effects of the Full-Year Availability of a Single Nuclear Power Plant

Assumptions for sensitivity analyses:

- Effects from the operation of a single nuclear power plant for a single year

- The generated power amounts to 9,636 million kWh (1.0% of the power generated by electric power utilities).

- The fuel mix of the substituted thermal power is as follows: 25% coal, 25% LNG, and 50% oil. (*)

	Decrease	(% change from the base case)
Decrease in the consumption of fossil fuels (10^{10}kcal)	**2,102**	(-0.5)
Coal (1,000t)	**844**	(-0.5)
LNG (1,000t)	**378**	(-0.5)
Oil (1,000kL)	**1,142**	(-0.5)
Fuel oil-C sales (1,000kL)	**545**	(-2.5)
Decrease in CO$_2$ emissions (million carbon-equivalent ton)	**1.7**	(-0.5)

* In reality, the fuel mix of the substituted thermal power differs among electric power companies.