Short-Term Energy Supply/Demand Outlook
- Forecast through FY2006 and Analysis on the Effects of Crude Oil Prices, Economic Growth,
and Temperatures –

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[Study Objectives]

The Japanese economy has departed from a transitional slump and is moving into a process of self-sustained recovery.   The "three excesses" (i.e. in employment, facilities, and debts) in the corporate sector have been cleared and the corporate earnings have marked the highest record in history, surpassing the levels reached during the "bubble economy" era.   Along with the growth in the corporate earnings, capital investments have been on a robust trend, and consumer spending is also on a steady rise reflecting an improved employment situation.   Overall, the driving factors for the Japanese economy are shifting from external demands to domestic consumption and from business expenditures to household accounts.   On the other hand, crude oil prices (on a CIF import basis) remain high at levels exceeding $50 per barrel and nearly at the $60 mark at present.   Since the Japanese economy is almost entirely dependent on imported oils as the crucial element for its economic activities, the soaring crude oil price is a matter of serious concerns.

This report presents the outcome of a study based on these circumstances to forecast Japan's energy supply and demand for Fiscal Year (FY) 2005 and FY2006.   Concerning the energy demand forecast for FY2006, a Base Case forecast has been provided first and then analyses are attempted on the effects of oil prices, economic growth, and temperatures on energy supply/demand pictures given in the Base Case.

[Key Conclusions]

1.   Macroeconomic outlook for FY2005-2006:

With regard to the Japanese economy in FY2005, domestic demand has been strong mainly in the areas of capital investments and consumer spending developing against the backdrop of completion of inventory adjustments for IT and communications equipment, growth in corporate earnings, as well as an improved employment situation.   Accordingly, the real GDP growth for the year is forecast at 2.5% over the previous year.   For the production activities, the overall levels that have been rather sluggish during the first half are back on an underlying trend of recovery around machinery production, allowing this study to project a 1.7% rise in the Indices of Industrial Production (IIP) for the year.

Concerning FY2006, although domestic demand may slow down somewhat due to abolition of the flat-rate income tax cut or a contraction of corporate earnings caused by the crude price increase, the real GDP growth is forecast at 2.1% to mark a 2%-plus level for the second consecutive year.   For the production activities, while the materials industries are forecast to go into a mild adjustment phase, brisk machinery production is expected to boost the IIP by 3.1% over the previous year.   The average CIF crude oil import price for FY2006 as a

precondition for this study is assumed at $51 per barrel* and somewhat lower than the average FY2005 level of $54 per barrel.

*Based on "Prospects for the World Oil Market and Crude Oil Prices for 2006", by Ken Koyama, IEEJ, December 16, 2005

2.   Energy supply/demand outlook for FY2005-2006
      <Primary energy supply/final energy consumption>
          Final energy consumption in FY2005 is projected to grow by a modest 0.4% over the previous year, reflecting a sluggish pace in the industrial production activities on the whole. Energy consumption is estimated to grow only by 0.2% in the industrial sector due to slower materials production activities, by 0.9% in the consumer (i.e. residential and commercial) sector on active services and warmer temperatures, and by 0.4% in the transportation sector.   The domestic primary energy supply including consumption in the transformation sector is projected to increase by 0.5% over the previous year.   In the meantime, CO_2 emissions for FY2005 are projected to increase by 0.6% over the previous year (or an increase of 15.4% over FY1990), due to increased use of coal in power generation.

          For FY2006, final energy consumption is forecast to grow by 0.5% as a result of an underlying recovery trend in machinery production as offset by a slight slowdown in materials production.   In terms of areas of consumption, the industrial sector is expected to increase by 0.3% while the transportation sector will remain flat due to a decrease in fuel consumption in cargo transport.   Consumption in the consumer sector is expected to increase by 1.4% due mainly to the effects of temperatures.   Domestic primary energy supply in FY2006 is projected to rise by 0.8% over the previous year on the back of strong electricity demand.   Even with the increased energy demand for FY2006, CO_2 emissions are expected to decline by 1.3% over a year earlier (to a level higher than 13.8% over FY1990) due to new additions of nuclear power plants and reduced coal demand.

      <Energy demand on a sales basis>
          Electricity sales in FY2005 are projected to increase by 1.2% over the previous year with a weaker growth rate reflecting the sluggish pace in production activities on the whole and a decline in the cooling demand as a reaction to high demand from a heat spell in the previous year.   For FY2006, electricity sales are forecast to grow by 1.8% as recovery is expected in production activities mainly in machinery.

          The volume of town gas sales in FY2005 is estimated to grow by 5.5% from the previous year because of a significant expansion in the industrial consumption occurring as a part of implementing environmental protection measures and despite a weaker growth in the consumer demand due to the effects of temperatures.   For FY2006, town gas sales are projected to grow by 5.7% as a result of continued increase in the industrial consumption.

          Fuel oil sales in FY2005 are likely to decline by 0.6% from a year earlier, as they are affected not so much by temperatures but largely by the switching away from petroleum occurring mainly in the industrial sector.   For FY2006, as the above shift continues and

expands into the power generation sector, even with a recovery foreseen in the industrial production activities, fuel oil sales are projected to decline by 1.2% to mark a negative annual growth for the fourth consecutive year.

3.   Analysis of factors affecting energy supply/demand for FY2006

The results of sensitivity analyses have indicated that, if the CIF crude oil price is $10 per barrel higher than in the Base Case, the real GDP growth may become 0.2% lower, and the primary energy supply may also become0.2% lower .   The study has shown that the effects of crude price hikes on the Japanese economy are not as significant as perceived.   In terms of sector-wise effects, shrinkage is relatively greater in the industrial as well as transportation sectors due to the effects of economic slowdown.   By energy source, crude oil prices are likely to have a greater impact on consumption of oil than that of electricity or town gas.

If the real GDP growth becomes 1.0% lower than in the Base Case, the primary energy supply may also become 0.5% lower.   The changes in energy demand are not occurring in proportion to those in economic growth rates.   Sector-wise, the effects on the industrial sector are greater, followed by those on the transportation sector.   By energy source, the impact of GDP growth on oil consumption is larger than others.

If the average temperature in the summer months (July-September) increases by 1˚C than in an average year, it will increase the domestic primary energy supply by 1.5%.   Sector-wise, the impact is relatively larger on the commercial sector and relatively smaller on the residential sector.   Demand in the transportation sector will also increase on account of reduced fuel economy caused by heavier use of air conditioners.   By energy source, the greatest impact is seen in electricity sales, with town gas being the least affected.

If the average temperature in the winter months (January-March) decreases by 1˚C than in an average year, it will increase domestic primary energy supply by 1.2%.   Sector-wise, effects on the residential sector have proved to be larger, in contrast to the results of the summer month exercise above.   By energy source, the greatest impact is seen in town gas sales.

■

[Summary Table]

	Base Case Results (in % changes, unless otherwise denoted)				Sensitivity Analysis [Deviation from FY2006 Base Case]			
					Crude Oil Prices*		Economic Growth	
	FY2003 (Actual)	FY2004 (Actual)	FY2005 (Forecast)	FY2006 (Forecast)	Higher 61$/bbl	Lower 41$/bbl	Lower GDP:1.1%	Higher GDP:3.1%
Real GDP Growth	2.3	1.7	2.5	2.1	▲0.2	+0.2	▲1.0	+1.0
Private demand [Contribution %]	[+1.7]	[+1.5]	[+2.2]	[+1.7]	[−0.2]	[+0.2]	[−0.9]	[+0.9]
Public demand [Contribution %]	[−0.1]	[−0.3]	[+0.2]	[+0.2]	[−0.0]	[+0.0]	[−0.1]	[+0.1]
Overseas demand [Contribution %]	[+0.8]	[+0.5]	[+0.1]	[+0.2]	[−0.0]	[+0.0]	[−0.0]	[+0.0]
Consumer Price Index	−0.2	0.0	0.0	0.0	+0.1	▲0.1	▲0.1	+0.1
Indices of Industrial Production	3.6	4.1	1.7	3.1	▲0.3	+0.3	▲1.3	+1.3
CIF Crude Oil Price $/bbl	30	39	54	* 51	+10	▲10	–	–
Primary Energy Supply	0.0	2.2	0.5	0.8	▲0.2	+0.3	▲0.5	+0.5
Final Energy Consumption	−0.6	0.6	0.4	0.5	▲0.3	+0.4	▲0.5	+0.5
Industrial Sector	−0.1	−0.5	0.2	0.3	▲0.4	+0.5	▲0.7	+0.7
Residential Sector	−1.7	2.3	0.9	1.4	▲0.1	+0.1	▲0.3	+0.3
Transportation Sector	−0.3	0.9	0.4	0.0	▲0.4	+0.4	▲0.4	+0.4
Electricity Sales	−0.5	3.9	1.2	1.8	▲0.0	+0.0	▲0.4	+0.4
Town Gas Sales	4.3	5.3	5.5	5.7	▲0.2	+0.2	▲0.4	+0.4
Fuel Oil Sales	−0.9	−1.4	−0.6	−1.2	▲0.4	+0.5	▲0.8	+0.8
CO2 Emissions, '90=[100]	[113.1]	[114.7]	[115.4]	[113.8]	[1.2]	[1.9]	[0.9]	[2.1]

*Based on "Prospects for the World Oil Market and Crude Oil Prices for 2006", by Ken Koyama, IEEJ, Dec. 16, 2005

(: Denotes negative figures)

[Effects of Temperatures]

	1°C Rise in Summer (July-September)		1°C Fall in Winter (January-March)	
	Changes in Demand	% Change	Changes in Demand	% Change
Domestic Primary Energy Supply (10^10kcal)	2,006	1.5	1,771	1.2
Final Energy Consumption, (10^10kcal)	884	1.0	1,126	1.1
Industrial Sector	85	0.2	172	0.4
Residential Sector	119	1.2	668	3.3
Commercial Sector	312	2.3	287	2.2
Transportation Sector	369	1.5	-	0.0
Electricity Sales, (Million kWh)	5,740	2.3	3,322	1.4
Town Gas Sales, (Million m³/10,000kcal)	47	0.6	309	3.0
Fuel Oil Sales (1,000kl)	902	1.6	639	1.0
LPG Sales (1,000t)	-40	-1.1	121	2.5

Introduction

The objective of this report is to present the outcome of a study to forecast Japan's energy supply and demand for Fiscal Year (FY) 2005 and FY2006. Since energy can be treated in the context of a "derived demand" out of economic activities (i.e. the original demand), it is important to thoroughly assess economic trends as a first step to achieve the objective. However, there are numerous uncertain factors existing both in and outside of the Japanese economy, with the soaring crude oil price being just one of them. For this reason, the present study first attempts to forecast a Base Case as the most likely picture of the projected future and then perform computations on alternative cases by individually varying each of crude oil prices and economic growth rates to evaluate the effects of these factors on energy supply/demand by comparing the results obtained with the Base Case. Furthermore, since energy supply/demand is susceptible to the climates as observed in the cold summer of 2003 and the heat spell of 2004, both of which significantly affected the energy supply/demand picture at that time, the study has also attempted to evaluate the effects of a 1°C change in temperature on the Base Case.

This report comprises the following three chapters: Chapter 1 will give an outlook through FY2006 concerning Japan's economy and industrial production as preconditions for the energy supply/demand forecast. In Chapter 2, an energy supply/demand picture is forecast based on the economic and industrial production trends and parameters given in the previous chapter to arrive at the Base Case for the forecast of this study. The Base Case is further elaborated with regard to energy demand by sources (based on relevant industry statistics), domestic primary energy supply, and final energy consumption (based on energy balance tables). Finally in Chapter 3, results of sensitivity analyses on the three variables (crude oil prices, economic growth rates, and temperatures) are presented.

1.   Outlook on key economic indicators for FY2005-2006

1.1.   Framework for the short-term forecast[Note]

In the forecasting exercise of this study, two econometric models, i.e. a macroeconomic model and an energy supply/demand model, have been used concurrently with a qualitative survey on factors defining the energy supply/demand picture.

In summary, this study takes the following views on key factors as the preconditions for the forecast: For crude oil prices (on a CIF import basis), although they continue to hover at levels exceeding $50 per barrel throughout FY2005 and nearly at the $60 mark at present, this study has assumed that they are likely to trend along a slightly lower average price of $51 per barrel for FY2006 (for details, see "Prospects for the World Oil Market and Crude Oil Prices for 2006", by Ken Koyama, IEEJ, December 16, 2005). For exchange rates, it is assumed that they would move along the rate of around 115 yen to the dollar. Further, concerning temperatures that affect particularly the consumer sector energy demand, while a warmer-than-usual winter is factored into the second half of the FY2005 forecast, average weather conditions of the last ten years are applied for FY2006.

(Note) The forecasts in this study are based on information available up to December 13, 2005.

1.2.   Macroeconomic outlook

The Japanese economy in FY2005 appears to have departed from a transitional slump and is moving into a process of self-sustained recovery, resulting in real GDP growth for the year forecast at 2.5% over the previous year.   Crude oil prices (WTI futures) reached the highest level of $69.81 per barrel on August 30, 2005, and while on a gradual declining trend since then, remain at high levels of about $60 per barrel as of early December.   However, no serious impact has been observed so far in the Japanese as well as world economies from this situation.

The world economy has been on a healthy track.   Supported by strong individual consumption and capital spending, the U.S. economy is maintaining a growth level slightly higher than its potential rate of growth, even though there are a number of factors to be concerned about including potential inflation caused by the crude price run-ups, the succession of recent interest rate increases, the overheated housing market, and so on.   The European economy is also on a course of recovery albeit moderate, where Germany has strong exports on the back of the weaker Euro, and the UK as well as France having brisk domestic demands.   As for the Chinese economy, while investments were temporarily curtailed by a strengthened belt-tightening policy, economic activity is becoming buoyant again.   Additionally, while the People's Bank of China undertook an upvaluation of the yuan currency by 2.1% in July 2005, its impact has been minor as widely predicted and exports have remained strong ever since.   On the ASEAN nations' front, although the soaring crude oil price is taking its effect, the Asian economies on the whole are progressing on a healthy course.

The Japanese economy entered a "transitional slump" state during the spring through the summer of 2004 as a result of significant slowdowns in exports and industrial production caused by factors such as global inventory adjustments in IT/communications equipment or the impact of the belt-tightening policy in China.   On the other hand, the so-called "three excesses" (i.e. in employment, facilities, and debts) in the corporate sector have been cleared and the corporate earnings have marked the highest record in history, surpassing the levels reached during the "bubble economy" era.   Along with the growth in corporate profits, capital investments have become active, and consumer spending is also on a steady rise since early FY2005, reflecting an improved employment situation.   Overall, the driving factors for the Japanese economy are shifting from external demands to domestic consumption and from business expenditures to household accounts, and it is believed now that the economy has moved into a process of self-sustained recovery.

Against the backdrop of ample cash flow brought in by the economic status as exemplified by the corporate earnings that registered a historic high, motivation to invest is strong for such needs as maintaining competitiveness, implementing environmental protection measures, or bringing overseas production back to domestic facilities in some cases.   Accordingly, capital spending in the private sector is projected to substantially increase by 7.5% over the previous year.   Likewise, the private final consumption expenditure is expected to grow by a modest but firm 2.1% as the benefits of improved corporate earnings are filtered down to household accounts in the form of an improved employment situation such as increased employment opportunities or a recovery in pay levels. Meanwhile, housing project investments are forecast to decline by 0.3% from a year earlier reflecting a continued slowdown in privately owned housing and detached housing mainly in rural

areas, even with a strong trend in condominiums and rental apartments mainly in urban areas. On balance, the contribution of the overall domestic private demand to the GDP growth in FY2005 is estimated at 2.2%. As for the public capital formation (i.e. public investment), while the post-disaster restoration work authorized in the supplementary spending budgets progressed during the first half of FY2005, since the overall policy platform continues to be one of fiscal restructuring, public spending is forecast to decline by 2.1% on an annualized basis. The government final consumption expenditure is forecast to grow by 1.8% over the previous year due to increased social benefit payments, thereby bringing the contribution of the public demand to the GDP growth to a positive figure of 0.2% for the first time in three years. While exports showed a sharp decline in items directed to China since the beginning of the year, they were back on an upward trend after August 2005. Since exports are likely to stay on a robust track, a growth of 6.1% is forecast for FY2005, although this rate is far below the one for the previous year. Meanwhile, imports are projected to grow by an estimated 6.6% over the previous year, as the expanded domestic demand will push up requirements for household electric appliances or intermediary commodities such as semiconductor devices and electronic components imported from the Asian region. Combining these elements, this study takes the view that the contribution of the external demand to the GDP growth will be lower than that of the previous year and at 0.1% in FY2005.

Corporate goods prices will rise by 1.5% for the second consecutive year due to escalating materials and fuels costs such as crude oil prices. On the other hand, since these cost elements are absorbed by the corporate sector with its excellent financial performance and the shift of these cost burdens onto consumer prices has been minimal with the exception of certain petroleum products such as gasoline, the consumer price is believed to remain flat at 0.0%, following the same trend in the previous fiscal year. A clear end of deflationary trends has not been confirmed as yet, and it is believed that the economy will continue to evolve while looking for ways to break away from the deflation.

For FY2006, the economy is likely to continue its growth led mainly by domestic demand. Concerning the overseas situation as the precondition for this forecast, crude oil price on a CIF Japan import basis is projected to turn to a modest downtrend, averaging out at $51.0 per barrel for FY2006, down 4.9% from the previous year. The U.S. economy is predicted to remain firm and expand by a rate of 3.3% (for calendar year 2006, forecast by IMF) which is roughly at the potential rate of growth, while the Euro-economy is also believed to continue its moderate recovery phase with a growth rate of 1.8%, according to the same IMF forecast. With regard to the Asian economies, they are predicted to grow by 6.6% (for calendar year 2006, forecast by ADB) on increased exports of IT/digital-related equipment to the U.S. and Europe. The foregoing overseas conditions suggest that exports will continue a basic trend of growth mainly on those directed to China, and grow by an estimated rate of 5.6% over the previous year. Likewise, imports will also remain strong and grow by 5.2%, resulting in the contribution of the overall external demand to the GDP growth in FY2006 of 0.2%.

Concerning the private final consumption expenditure, while its rate of growth is expected to slow down somewhat due to abolition of the flat-rate income tax cut and other factors, the

underlying trend will remain firm on account of the improved employment situation to yield a growth of 1.5% over the previous year. Growth in private capital investment is also predicted to slow down due to a contraction of corporate earnings in relation to the escalated cost of oil and other materials. Nevertheless, motivation to invest will remain firm for needs such as securing competitiveness, leading to a projected growth of 5.6% over the previous year in this area. With regard to housing project investments, although the downtrend on detached housing continues, the drive in condominiums and rental apartments as assisted by real estate investment trusts (REIT) will turn the trend upward to post a 1.5% growth over the previous year. Overall, the contribution of the domestic private demand to the GDP growth in FY2006 is estimated at 1.7% which is slightly lower than that of the previous year. Public investment is projected to decline by 4.7% from the previous year since the overall policy platform will continue to focus on fiscal restructuring and also as a reaction to the significant post-disaster restoration budgets in the previous year. The government final consumption expenditure is forecast to grow by 2.3% over the previous year due to increased social benefit payments that will more than offset the effect of cost cutting measures such as reduction in government workers' payroll. Accordingly, the contribution of the public demand to the GDP growth in FY2006 is estimated to post a positive figure of 0.2% for the second consecutive year. As a result of the aforementioned factors combined, the real GDP for FY2006 is forecast to grow by 2.1% over the previous year. Corporate goods prices are expected to rise by 0.7% although the rate of increase is abated by crude oil prices that will turn to a moderate downtrend. While the shift of cost increase in materials and fuels onto product prices may progress moderately, because of downward pressures from factors such as an electricity rate decrease, consumer prices are forecast to remain roughly flat at 0.0% over the previous year.

1.3.   Outlook on various production activities

During the first half of FY2005, while materials production industries kept their operations almost at full capacity, machinery industries saw sluggish exports or inventory build-ups and the growth in industrial production activities on the whole was slow. However, as inventory adjustments in IT/communications equipment completed a full round toward the summer and exports for China are expected to take a positive turn in the second half, items such as electronic components or electrical equipment will pick up again for FY2005 to post a 1.7% increase in the Indices of Industrial Production (IIP) over the previous year.

For FY2006, materials production industries are expected to maintain their high operating level while heading into a phase of production adjustment, and machinery industries are likely to enjoy strong trends in both domestic as well as export demands. Accordingly, the IIP is forecast to rise by 3.1% from the previous year. In the following sections, trends in production activities are reviewed for major industries.

(1) Crude steel:

Crude steel production maintained a high level of operations with a help of brisk domestic demand and was almost at full capacity during the first half of FY2005. However, as steel

production expanded in China where investment activities started to pick up again, there was a massive influx of general purpose steel products into Japan for uses such as construction. This caused an inventory build-up and, toward the second half, led to a general trend of production cutback on general purpose steel products in the entire industry and especially among electric steel producers. Domestic demand is expected to remain strong mainly in high-grade steel plates for car manufacturing and other uses. Affected by thus reduced exports and increased imports, crude steel production for the year is forecast to slightly decline to 112.07 million tons (down 0.7% from the previous year), although this still is a high level. For FY2006, the over-production in China will continue and large quantities of China-made steel are expected to flood the Asian markets. As a result of this, not only will exports from Japan decrease, but imports of products made in countries such as Korea may also increase as they are pushed out by the Chinese products. Meanwhile, although the domestic steel demand for construction use may fall, demand for manufacturing industries will remain robust. From these factors, crude steel production in FY2006 is forecast at a slightly reduced level of 110.88 million tons (down 1.1% from the previous year).

(2) Ethylene:

In FY2005, new ethylene plants in China were successively brought online adding a total new capacity of 2.3 million tons. Given China's ethylene production of 6.3 million tons in 2004, the impact of this new capacity can be significant. It is therefore likely that exports to China will decrease and product imports will increase. On the other hand, the domestic demand is still strong and production at full capacity continues. From these factors, ethylene production in FY2005 is forecast to remain nearly flat at 7.56 million tons (up 0.1% over the previous year). As for FY2006, while domestic demand may maintain a firm trend, exports to China will decline further. As product inventory is also on the rise to suggest a possible production adjustment cycle, ethylene production for FY2006 is forecast to slightly decline to 7.45 million tons (down 1.5% from the previous year), although this still is a high level.

(3) Paper/paperboard:

For FY2005, along with the economic recovery that is becoming more prominent, demand for paper and paperboard is also expected to grow. While paper production for the first half declined as a reaction to the high demand related to the Summer Olympics in the previous fiscal year, it will increase again with the upcoming Winter Olympics. As for paperboard, production is expected to shift to an upward trend for the first time in three years on account of a recovery in cargo transportation needs. The combined paper/paperboard production volume for the year is forecast to grow by 0.7% over the previous year. Concerning paper production in FY2006, anticipated demand factors include an increase in news pages associated with the World Cup soccer games, demand in printing various brochures for flat panel TV sets and a host of other new audio-visual appliances, and the computer-related books and publications related to the release of new versions of operating systems and applications. Likewise, paperboard production is projected to grow for the second consecutive year due to the continuing firm trend in cargo transportation needs. From these

factors, the combined paper/paperboard production volume for FY2006 is forecast to grow by 1.0% over the previous year.

(4) Cement:

Cement production in the first half of FY2005 registered a year-on-year increase of 5.5% reflecting the requirement from restoration work for the damages incurred by earthquakes and typhoons in the previous fiscal year.   Although the special procurement demand above will end the round in the second half, supported by the strong private sector demand for apartment construction in urban areas or other private capital investments, the total cement production in FY2005 is forecast to grow by 2.3% from the previous year to mark a positive figure for the first time in nine years. Concerning FY2006, however, cement production is projected to decline again and post a negative growth of 4.4% on account of reduced public investments and reaction to the temporary restoration-related demand, despite the firm private sector demand.

(5) Transport equipment:

Although passenger car manufacturing proceeded with a strong pace during the first half of FY2005, the growth in export sales is gradually slowing down as local production at overseas sites increases.   Given the downward correction taking place in reaction to extraordinary performance in the previous year, the number of cars manufactured in the second half is expected to decline on a year-on-year basis.   Further, shipbuilding that once enjoyed a rush of new orders has plunged considerably to hold back the index of transport equipment production for FY2005 to a weak increase of 1.3% over the previous year.   For FY2006, car manufacturing is expected to trend upward on strong domestic sales although growth in exports may be modest.   Other types of transport equipment are forecast to register a reactionary drop although their weight in the overall index is minor.   On balance, the index of transport equipment production for FY2006 is projected to rise by 1.5% over the previous year.

(6) General machinery, electrical machinery, and other goods[(Note)]:

Production of electrical machinery, electronic parts, and other goods has been stagnant since the second half of FY2004 due to a cycle of global inventory adjustments for IT-related equipment and the steep decline in exports to China.   As the above inventory adjustments completed the round, production is trending upward again since the early FY2005.   Concerning the second half onward, there are signs that exports to China are rising again and the domestic demand is on a robust track mainly in the automotive field.   Furthermore, demands for flat panel TV sets and other audio-visual appliances are expected to rise in the face of the Winter Olympics.   For FY2005 the IIP is projected to rise at a considerably slower rate of 2.8% over the previous year.   For FY2006, there will be a full-fledged recovery in exports to China and the brisk domestic demand is likely to continue particularly for audio-visual appliances.   In this connection, since an envisaged area expansion will make the terrestrial digital broadcasting accessible to almost 80% of entire households and also in the face of the upcoming World Cup Soccer, the consumer electronics industry is expected to launch

into a series of promotional campaigns. From above-mentioned factors, the IIP for FY2006 is projected to rise by 5.4% over the previous year.

(Note) General machinery, Electrical machinery, Information and communication electronics equipment, Electronic parts and devices, Precision instruments, Fabricated metals (per METI classification system)

2. Outlook on energy supply/demand for FY2005-2006

2.1. Domestic primary energy supply

Domestic primary energy supply in FY2005 is projected to increase at a modest rate of 0.5% over the previous year on account of sluggish industrial production on the whole. By energy sources, coal supply is expected to grow by 1.1% due to increased demand for power generation use over stagnant industrial use. Oil supply is forecast to decline by 0.7% from a combined effect of increases in the consumer and transportation requirements and decreases in the industrial and power generation requirements. Natural gas is expected to grow by 2.4% over the previous year on the strength of town gas demand while the power generation use would remain roughly at the same level as a year before. Hydroelectricity is projected to fall by 10.1% because of a lower water flow rate than the previous year. For nuclear energy, an increase of 4.7% over the previous year is forecast reflecting the commissioning of two additional power plants. In the meantime, CO_2 emissions attributable to energy use are projected to rise by 0.6% over the previous year (an increase of 15.4% over FY1990).

For FY2006, coal supply is forecast to fall by 2.2% over the previous year reflecting the shift to nuclear energy in power generation as well as reduction in the industrial use. Oil supply is forecast to decline by 1.3% as an increase in the consumer requirements will be far outweighed by a significant plunge in the power generation use on top of the continuing decline in the industrial use. As the water flow rate is projected at an average year level for the year, hydroelectricity is expected to rebound and grow by 6.7% from the previous year which suffered a dry spell. Nuclear power supply, which is forecast based on the operating factor established according to the periodical inspection and maintenance plans, is projected to substantially expand and post an increase of 13.2% over the previous year, due to a combined effect of the newly commissioned plants during FY2005 and also resumption of operations of plants that had been shut down for a long period. With the above-mentioned projections, domestic primary energy supply in FY2006 is forecast to increase by 0.8% over the previous year. Meanwhile, CO_2 emissions are projected to decrease by 1.3% from FY2005 (an increase of 13.8% over FY1990).

2.2. Final energy consumption

Final energy consumption in FY2005 is projected to grow by 0.4% over the previous year. Energy consumption in the industrial sector is estimated to grow by a modest 0.2% due to slower activities in general and materials production in particular. Consumption in the residential sector is expected to grow by 1.1% due to increased demand for heating and hot water supplying, even though the summer cooling demand fell as a reaction to an unusually warm season the year before.

Concerning the commercial sector, in which the summer cooling demand also fell, energy consumption is projected to grow by a weaker rate of 0.6% since the impact of demand for hot water supplying is smaller than that in the residential sector.   Consumption in the transportation sector is estimated to grow by 0.4% over the previous year, in which fuel consumption in passenger cars will remain strong but somewhat stagnant in cargo transport.

For FY2006, energy consumption in the industrial sector is expected to increase by 0.3% reflecting recovery in machinery production as offset by a slight slowdown in materials production due to inventory adjustments.   For the consumer sector, since average-year temperatures (i.e. a cooler summer and a warmer winter vis-à-vis FY2005) are assumed, a fall in the cooling demand and an increase in the heating demand are expected to occur in reaction to the deviations mentioned. Combining the prospect of robust consumer spending and service activities, energy consumption is projected to grow by 1.0% in the residential sector and by 1.9% in the commercial sector. Meanwhile, consumption in the transportation sector is projected to remain flat at 0.0% as an increase in the passenger car demand is cancelled out by a continuing decrease in fuel consumption by trucks.   From the factors mentioned above, final energy consumption in FY2006 is forecast to grow by 0.5% over the previous year.

2.3.   Outlook on energy sales
(1)   Electricity

Electricity sales (by power utilities) in FY2005 are projected to increase by 1.2% with a weaker growth rate than the year before reflecting a sluggish pace in industrial production activities on the whole and a decline in the cooling demand as a reaction to the high demand from a heat spell in the previous year.   The first half FY2005 results of sales for lighting use mainly comprising residential outlets remained low with a growth of just 0.7% over the previous year, reflecting a slump in the cooling demand during July-August as a reaction to a hot summer in the previous year, although the heating demand was somewhat strong in the cooler-than-usual spring.   For the second half, since this study assumes a warm winter comparable to the previous year, an increase in the heating demand cannot be expected and a growth of 0.8% over the previous year is projected on an annualized basis.   For the non-lighting demand mainly comprising industrial and commercial uses, including the specific demand type designated for the government liberalization program, the first half results ended up with a growth of just 0.4% over the previous year on account of a decline in the cooling demand in the commercial sector and stagnant industrial production activities on the whole. Of the above-mentioned category, electricity for large industrial use in the first half rose by 0.6% over the previous year due to growth in machinery and equipment manufacturing such as automobiles.   In terms of contribution to the growth in the electricity sales by industry type, machinery and equipment manufacturing was 0.4%, non-ferrous metals 0.2%, and iron and steel was a negative 0.2%.   For the second half, electricity sales are expected to move along a firm trend on the back of recovery in electrical equipment manufacturing, and the non-lighting electricity demand (on the same basis mentioned above) is projected to grow by 1.3% over the previous year. Meanwhile, electricity sales for large industrial accounts are forecast to increase by 1.3%.

For FY2006, since average-year temperatures (i.e. a cooler summer and a colder winter vis-à-vis FY2005) are assumed, a fall in the cooling demand and an increase in the heating demand are expected to raise the lighting demand by 1.1% over the previous year. For the non-lighting electricity demand (on the same basis mentioned above), a growth of 2.2% over the previous year is projected assuming a generally strong industrial demand mainly from machinery manufacturing. Concerning electricity sales for large industrial use, while iron and steel manufacturing will register a negative growth of 0.9%, machinery and equipment manufacturing is robust with a 3.9% growth to boost up the overall sales by 1.9% over the previous year. As a result of the aforementioned factors, the overall electricity sales in FY2006 are forecast to grow by 1.8% over the previous year.

(2) Town gas

Town gas sales in FY2005 are estimated to grow by 5.5% from the previous year reflecting a significant increase in industrial consumption and despite a weaker growth in consumer demand where an increase in the hot water supplying demand will be offset somewhat by a decrease in the cooling demand.

Concerning the household use of town gas, the first half results registered a growth of 4.1% year-on-year due to a rebound in the hot water supplying demand caused by generally lower temperatures compared with a year before, and also to an increase of about 1% in the number of service contracts. For the second half, while temperatures have been lower than the previous year during the October-December period, this study assumes higher temperatures for the January-March period and a warm winter comparable to the previous year throughout this half. As a result, significant increases in the heating or hot water supplying demand cannot be expected and a growth of 1.6% over the previous year is projected on an annualized basis.

Concerning the town gas demand for institutional uses, which is a sum of consumption by commercial establishments and other outlets such as hospitals or public facilities, as the introduction of gas-powered air-conditioning equipment becomes widespread, a tendency is now in place where a growth in the cooling demand outpaces a decline in the hot water supplying demand in summer months. For the first half, temperatures were lower than the previous year in April and July to generate a higher demand for hot water supplying, whereas the cooling demand rose during August through September that were warmer than a year before. Thus, the first half results registered growth rates of 1.4% for commercial use and 2.5% for other outlets. While a warmer-than-usual winter is assumed for the second half, this will be more than offset by demand increases in new large-scale facilities as well as existing ones to boost the total FY2005 demands by 1.9% for commercial use and 2.6% for other outlets over the previous year.

In the industrial sector use, switching from oil or other fuels to town gas has been in progress as a part of implementing environmental protection measures. While industrial production has been somewhat stagnant during the first half of FY2005, demand increases by new outlets as well as by existing users have resulted in a high growth rate of 9.6% for this half on a year-on-year basis. As the trend of switching away from oil will continue while industrial production will head toward a recovery during the second half, the town gas sales for industrial use is projected to grow by 10.1%

over the previous year.

For FY2006, since average summer temperatures (i.e. cooler than in FY2005) and hence an increase in the demand for hot water supplying, as well as average winter temperatures (i.e. colder than in FY2005) with higher heating and hot water supplying demands are assumed, town gas demand for household use is forecast to grow by 2.3% over FY2005.   For institutional consumption, although the summer cooling demand will decline, the overall demand is projected to increase by 2.5% for the commercial use and 3.3% for other outlets over the previous year due to increases in the heating and hot water supplying demands in the winter months and additional demand from new large-scale facilities.   For the industrial sector use, a growth of 9.5% over the previous year is projected reflecting strong demands by new users and other factors.   From the aforementioned projections, the total town gas sales for FY2006 are projected to grow by 5.7% over the previous year.

(3)   Oil

Fuel oil sales in FY2005 are likely to decline for the third consecutive year at a rate of 0.6% from a year earlier, as they are affected not so much by temperatures but largely by the switching away from petroleum occurring in the industrial sector and the continuing decline in gas oil sales for trucks.

The first half FY2005 sales of gasoline, with its main use being an automotive fuel, posted a minor growth of 0.4% reflecting a decline in the per vehicle consumption caused by improvements in fuel economy and other factors, despite an increased number of registered gasoline vehicles.   For gas oil, even as cargo traffic is on a recovery course, the first half result fell by 2.5% from a year earlier due to a decline in the number of registered diesel vehicles.   Concerning the second half, gasoline price is expected to go down to mitigate the frugal purchasing behaviors of some.   Further, while the downtrend in the number of registered diesel vehicles may continue, cargo traffic is expected to move along a strong trend.   With these projections, the total FY2005 sales are forecast to grow by 0.7% in gasoline and decline by 1.5% in gas oil over the previous year.

The first half FY2005 sales of naphtha as a petrochemical raw material grew by 2.2% over the previous year.   However, this is brought by a jump in September results recorded against the previous year performance where scheduled plant shutdowns took place, whereas the remaining months of April through August registered a negative growth of 0.3% reflecting a situation where ethylene production has been continuing at near full capacity.   The total FY2005 sales of naphtha are forecast to grow by 0.7% as a slight reduction in ethylene production is expected in the second half.   Sales of kerosene in the first half FY2005 mainly comprising use as a consumer fuel rose due to an increase in the heating demand on slightly lower temperatures in the early spring and posted a year-on-year growth of 3.8%.   For the second half, wherein approximately 70% of the annual demand concentrates, while temperatures have been lower than the previous year during the October-December period, this study assumes higher temperatures for the January-March period and a warm winter comparable to the previous year throughout this half.   As a result, significant increases in the heating demand cannot be expected and a growth of 1.1% over the previous year is

projected on an annualized basis.

Concerning Fuel Oil-A, while sales for marine use increased, those for industrial use continued to decline due to a shift to town gas or switching from private power generation to purchased electricity arising from the increase in fuel cost.   The soaring prices also affected the agricultural as well as fishery demands to bring down the first half sales by 2.2% from the previous year.   Since it is forecast that the marine use will turn to a downtrend on slow movements of bulk cargoes on top of a declining trend in industrial use for the second half, the total Fuel Oil-A sales for FY2005 are projected to decline by 2.4% from the previous year.   With regard to Fuel Oil-C for power generation use, the first half results showed a substantial increase of 5.0% over the previous year because of reduced production by nuclear power or hydroelectricity during April through June. However, the total Fuel Oil-C sales in the industrial sector in the first half registered a negative growth of 1.6% over the previous year on account of the shift to town gas and the switching from private power generation to purchased electricity which together accelerated the trend of doing away with Fuel Oil-C.   For the second half, since the sales for power generation use will decline as more nuclear power plants are brought on line and the sales for industrial use are also expected to continue the declining trend, the total Fuel Oil-C sales for FY2005 are projected to decline by 2.4% from the previous year.

For FY2006, gasoline sales are forecast to grow by 0.9% over the previous year along with a steady increase in the number of registered passenger cars.   Gas oil sales are projected to decrease by 1.6% over the previous year due to the continuing downtrend in the number of registered diesel vehicles.   The FY2006 sales of naphtha are forecast to decline by 1.1% over the previous year as a slight reduction in ethylene production is expected.   For kerosene, although average winter temperatures (i.e. colder than in FY2005) are assumed for this study, factoring in the switching away from kerosene in the institutional consumption, sales in FY2006 are forecast to fall by 0.4% from the previous year.   Concerning Fuel Oil-A, although industrial production may recover, sales for industrial use will decline due to continued switching from oil on top of reduced agricultural as well as fishery demands caused by the persistent high prices, to post a negative growth of 1.8% over the previous year.   Sales of Fuel Oil-C for power generation use will fall considerably due to increased nuclear power generation and, together with a continuing downtrend in the industrial consumption as well as in other outlets, will bring down the total Fuel Oil-C sales by 6.6% from the previous year. On balance, the total FY2006 sales of fuel oils are forecast to decline by 1.2% to mark a negative growth for the fourth consecutive year.

3.   Analysis of factors affecting energy supply/demand for FY2006

To assess the impact of factors affecting energy supply/demand, sensitivity analyses have been performed on the FY2006 forecast model.   A sensitivity analysis is an attempt to quantitatively determine the impact of a variation in a model, observing how the forecast results can change by comparing the outcomes of an alternative case with the forecasts in a "Base Case", when only one exogenous variable (a precondition) is varied while all other preconditions are fixed at the "Base Case" status.   For the present study, crude oil prices and the real GDP growth rates are selected as

variables since they are considered to present relatively high short-term uncertainties, and the effects of their changes on economic activities and energy supply/demand picture are analyzed for the FY2006 case.   The study has also attempted to quantitatively evaluate the effects of temperatures that are prone to affect the energy supply/demand.

3.1.   Effects of crude oil price changes

The soaring crude oil prices are hovering at considerably higher levels than in the previous fiscal year, generating concerns that they may adversely affect Japan's economic activities and energy supply/demand.   For the FY2006 Base Case, an average CIF import price of $51 per barrel has been assumed on a prospect of persistent high prices to fall somewhat from those in FY2005, based on a study in "Prospects for the World Oil Market and Crude Oil Prices for 2006", by Ken Koyama, IEEJ, December 16, 2005.   For this analysis, a High-price Case with a higher CIF import price by $10 per barrel than in the Base Case (i.e. $61 per barrel for average FY2006) and a Low-price Case with a lower price by $10 per barrel (i.e. $41 per barrel) have been evaluated for their impact with the findings as follows:

(1)   High-price Case:

With a CIF crude oil price higher by $10 per barrel than in the Base Case, the real GDP growth slowed down by 0.2 percentage point to 1.9% over the previous year, and consumer prices went up by 0.1 percentage point.   Regarding the effects on the energy consumption pictures, the rate of growth in domestic primary energy supply slowed to 0.6% which is lower by 0.2 percentage point than in the Base Case.   Likewise, the growth in final energy consumption in this case shrunk to 0.2%, a figure 0.3 percentage point lower than the Base Case.

In terms of sector-wise effects on final energy consumption, the industrial and transportation sectors showed a decline of 0.4 percentage point compared with the Base Case from the effect of economic slowdown.   The consumer sector, however, showed a relatively smaller decline of 0.1 percentage point from the Base Case.   In terms of energy sales, fuel oils, being directly affected by escalated crude oil prices, showed shrinkage of 0.4 percentage point compared with the Base Case and registered a negative growth of 1.6% over the previous year.   Meanwhile, the effects on electricity and town gas sales appeared relatively smaller, showing growth rates 0.0 and 0.2 percentage points lower than the Base Case, respectively.

(2)   Low-price Case:

A $10 per barrel reduction in crude oil prices would boost up the real GDP growth rate by 0.2 percentage point to 2.3% over the previous year.   With regard to effects on the energy consumption patterns, the rate of growth in domestic primary energy supply rose to 1.1% which is 0.3 percentage point higher than the Base Case, and the year-on-year growth in final energy consumption accelerated to 0.9% which is 0.4 percentage point higher than in the Base Case.

3.2.   Effects of changes in economic growth rate

The Japanese economy is on a healthy track after departing from a transitional slump and moving

into a process of self-sustained recovery. However, causes of concern such as effects of escalated crude oil prices or slowdowns in global economies including USA or China may become potential risks in the future. For this exercise, a Low-growth Case with a real GDP growth lowered by 1.0 percentage point from the Base Case and a High-growth Case with its growth rate raised by 1.0 percentage point have been evaluated for their impact with the findings as follows:

(1) Low-growth Case:

With a decelerated real GDP growth rate at 1 percentage point below the Base Case assumption, the rate of growth in domestic primary energy supply slowed to 0.3% over the previous year, which is lower by 0.5 percentage point than in the Base Case. The growth in final energy consumption shrunk to 0.0% over the previous year, a figure 0.5 percentage point lower than the Base Case. In terms of sector-wise effects on final energy consumption, the industrial sector indicated a relatively greater effect of a 0.7 percentage point drop in the growth rate from the Base Case. Concerning energy sales pictures, fuel oils demonstrated a relatively greater effect of a 0.8 percentage point drop in the growth rate from the Base Case, whereas the effects on electricity and town gas sales turned out relatively smaller. As observed, the decreases in the energy demand are not proportionate to the degree of economic deceleration (i.e. minus 1.0 percentage point).

(2) High-growth Case:

With a real GDP growth rate set at 1 percentage point higher than the Base Case assumption, domestic primary energy supply grew by 1.4% over the previous year, which is 0.5 percentage point higher than the Base Case result. The growth rate in final energy consumption expanded to 1.0% over the previous year, a figure 0.5 percentage point higher than the Base Case. Again, the expansions in the energy demand are not proportionate to the degree of economic acceleration (i.e. plus 1.0 percentage point).

3.3. Effects of temperature changes

Energy demand is susceptible to temperatures and particularly so in the case of cooling and heating demands in the consumer sector. As temperature fluctuations are becoming increasingly violent in recent years, resulting in such extreme weathers as an unusually cold summer or a heat spell, needs for evaluating their effects on energy demand have become more notable. While the FY2006 Base Case assumes average temperatures in the last ten years, the exercise in this section has attempted to evaluate the effects of a 1°C change in temperatures on the Base Case pictures.

(1) The case with a 1°C rise in summer months (July-September):

With a 1°C rise in the average temperature in summer months, domestic primary energy supply increased by 1.5% and final energy consumption expanded by 1.0% from the average weather conditions assumed for the Base Case. For the residential sector consumption, an increase in the cooling demand due to higher ambient temperatures was offset by a drop in the hot water supplying demand with higher water temperatures, resulting in an increase of 1.2% over the Base Case. For the commercial sector consumption, since the demand for hot water supplying is relatively smaller

than in the residential sector, the temperature effect proved to be larger and showed an increase of 2.3% over the Base Case.   Concerning the transportation sector, energy consumption also increased by 1.5% on higher cooling demand as a result of a worsened fuel economy due to heavier use of on-board air conditioners.   In terms of energy sales, the increased cooling demand pushed up the electricity sales by 2.3% over the Base Case, while town gas sales went up by 0.6% as a result of a combined effect of the increased cooling demand for commercial use being cancelled out by a drop in the hot water supplying demand in the residential as well as commercial sectors.   As for fuel oil sales, in addition to an increase in gasoline sales, Fuel Oil-C sales increased to keep up with a higher electricity demand and register an overall expansion of 1.6% over the Base Case.

(2)   The case with a 1˚C fall in winter months (January-March):

With a 1˚C fall in the average temperature in winter months, domestic primary energy supply increased by 1.2% and final energy consumption expanded by 1.1% from the average weather conditions assumed for the Base Case.   For the consumer sector consumption, heating and hot water supplying demands increased due to the lower ambient and water temperatures, resulting in increases of 3.3% in the residential sector and 2.2% in the commercial sector, respectively over the Base Case results.   In terms of energy sales, the increased heating demand pushed up electricity sales by 1.4% and fuel oil sales by 1.0% over the Base Case, with town gas sales demonstrating a greater impact of temperatures and an increase of 3.0% over the Base Case due to increases in both heating and hot water supplying demands.

Table 1: Overview (Base Case)

		FY2003 Actual	FY2004（Actual） 1H	2H	Total	FY2005(Forecast) 1H	2H	Total	FY2006 Forecast
Key Economic Indicators	GDP (Chained to 2000, in Billion yen)	**517,435** (2.3)	**260,097** (2.6)	**266,281** (0.9)	**526,378** (1.7)	**267,239** (2.7)	**272,405** (2.3)	**539,645** (2.5)	**550,862** (2.1)
	Private demand [Contribution to GDP]	**385,868** [1.7]	**195,703** [1.9]	**198,092** [1.2]	**393,795** [1.5]	**202,080** [2.5]	**203,375** [2.0]	**405,456** [2.2]	**414,482** [1.7]
	Public demand [Contribution to GDP]	**120,363** [-0.1]	**57,189** [-0.2]	**61,475** [-0.4]	**118,664** [-0.3]	**57,904** [0.3]	**61,952** [0.2]	**119,856** [0.2]	**120,837** [0.2]
	External demand [Contribution to GDP]	**11,144** [0.8]	**7,125** [0.9]	**6,657** [0.1]	**13,782** [0.5]	**7,353** [0.1]	**7,022** [0.1]	**14,375** [0.1]	**15,451** [0.2]
	Corporate Goods Price Index (2000=100)	**95.0** (-0.5)	**96.2** (1.4)	**96.7** (1.7)	**96.4** (1.6)	**97.8** (1.6)	**98.1** (1.5)	**97.9** (1.5)	**98.6** (0.7)
	Consumer Price Index (2000=100)	**98.1** (-0.2)	**98.1** (-0.2)	**98.1** (0.2)	**98.1** (-0.0)	**97.9** (-0.2)	**98.2** (0.2)	**98.0** (-0.0)	**98.1** (0.0)
	Indices of Industrial Production (2000=100)	**96.6** (3.6)	**99.7** (6.8)	**101.5** (1.6)	**100.6** (4.1)	**99.9** (0.2)	**104.8** (3.3)	**102.3** (1.7)	**105.5** (3.1)
	Crude Steel Production (in '000t)	**110,998** (1.1)	**56,383** (1.7)	**56,514** (1.7)	**112,897** (1.7)	**56,799** (0.7)	**55,268** (-2.2)	**112,066** (-0.7)	**110,878** (-1.1)
	Ethylene Production (in '000t)	**7,419** (1.9)	**3,653** (4.3)	**3,903** (-0.3)	**7,555** (1.8)	**3,674** (0.6)	**3,889** (-0.3)	**7,563** (0.1)	**7,449** (-1.5)
	Exchange Rate (Yen/US$)	**113.0** (-7.3)	**109.8** (-6.9)	**105.2** (-2.7)	**107.5** (-4.9)	**109.4** (-0.4)	**115.0** (9.4)	**112.2** (4.4)	**115.0** (2.5)
	Crude Oil CIF Price (US$/Bbl)	**29.5** (8.0)	**36.5** (27.9)	**40.7** (33.6)	**38.6** (30.8)	**52.7** (44.3)	**54.5** (33.8)	**53.6** (38.8)	**51.0** (-4.9)
	Heating Degree-days	**925** (-15.0)	**40** (-5.3)	**926** (4.8)	**965** (4.4)	**49** (23.0)	**917** (-1.0)	**965** (-0.0)	**993** (2.9)
	Cooling Degree-days	**302** -	**491** (63.2)	**-** (-100.0)	**491** (62.8)	**444** (-9.7)	**5** -	**449** (-8.7)	**410** (-8.7)
Key Energy Indicators	Primary Energy Supply (10^10kcal = KTOE)	**531,740** (0.0)	**264,809** (2.9)	**278,843** (1.6)	**543,652** (2.2)	**266,319** (0.6)	**279,798** (0.3)	**546,117** (0.5)	**550,743** (0.8)
	Final Energy Consumption (10^10kcal = KTOE)	**369,553** (-0.6)	**175,465** (1.5)	**196,328** (-0.2)	**371,793** (0.6)	**176,788** (0.8)	**196,540** (0.1)	**373,327** (0.4)	**375,267** (0.5)
	Industrial Sector	**178,759** (-0.1)	**84,472** (0.1)	**93,358** (-1.1)	**177,830** (-0.5)	**85,069** (0.7)	**93,067** (-0.3)	**178,136** (0.2)	**178,592** (0.3)
	Consumer Sector	**99,871** (-1.7)	**44,937** (3.8)	**57,251** (1.2)	**102,188** (2.3)	**45,443** (1.1)	**57,618** (0.6)	**103,061** (0.9)	**104,510** (1.4)
	Transportation Sector	**90,923** (-0.3)	**46,056** (1.8)	**45,719** (0.0)	**91,775** (0.9)	**46,276** (0.5)	**45,854** (0.3)	**92,130** (0.4)	**92,165** (0.0)
	Electricity Sales (Billion kWh)	**858.2** (-0.5)	**451.4** (5.7)	**440.7** (2.2)	**892.1** (3.9)	**453.7** (0.5)	**448.9** (1.9)	**902.6** (1.2)	**919.1** (1.8)
	Town Gas Sales (Million m³/10,000kcal)	**28,615** (4.3)	**13,859** (5.6)	**16,279** (5.1)	**30,138** (5.3)	**14,697** (6.0)	**17,090** (5.0)	**31,787** (5.5)	**33,597** (5.7)
	Fuel Oil Sales (1,000kl)	**240,689** (-0.9)	**109,843** (-0.7)	**127,362** (-2.1)	**237,205** (-1.4)	**109,904** (0.1)	**125,897** (-1.2)	**235,801** (-0.6)	**233,058** (-1.2)
	CO_2 Emissions (Million t-C) [FY1990=100]	**325** [113.1]			**329** [114.7]			**331** [115.4]	**327** [113.8]

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

Notes:　1. Bracketed figures indicate % changes year-on-year, except GDP contributions & CO2.

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

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

Table 2: Macroeconomic Outlook (Base Case)

	FY2003	FY2004（Actual）			FY2005(Forecast)			FY2006
	Actual	1H	2H	Total	1H	2H	Total	Forecast
Real GDP (Chained to 2000, in Billion yen)	517,435 (2.3)	260,097 (2.6)	266,281 (0.9)	526,378 (1.7)	267,239 (2.7)	272,405 (2.3)	539,645 (2.5)	550,862 (2.1)
Private Demand	385,868 (2.2)	195,703 (2.5)	198,092 (1.6)	393,795 (2.1)	202,080 (3.3)	203,375 (2.7)	405,456 (3.0)	414,482 (2.2)
Private final consumption expenditure	292,881 (0.8)	147,837 (2.5)	150,052 (1.0)	297,889 (1.7)	150,817 (2.0)	153,328 (2.2)	304,145 (2.1)	308,794 (1.5)
Private residential investments	18,381 (-0.0)	9,490 (1.6)	9,198 (1.7)	18,687 (1.7)	9,305 (-1.9)	9,325 (1.4)	18,630 (-0.3)	18,917 (1.5)
Private capital investments	74,133 (7.0)	37,163 (6.5)	40,966 (4.4)	78,129 (5.4)	40,038 (7.7)	43,946 (7.3)	83,984 (7.5)	88,689 (5.6)
Public Demand	120,363 (-0.6)	57,189 (-1.0)	61,475 (-1.8)	118,664 (-1.4)	57,904 (1.3)	61,952 (0.8)	119,856 (1.0)	120,837 (0.8)
Government final consumption expenditure	92,174 (2.5)	46,427 (1.9)	47,390 (1.6)	93,817 (1.8)	47,227 (1.7)	48,313 (1.9)	95,540 (1.8)	97,691 (2.3)
Public fixed capital formation	28,057 (-9.5)	10,647 (-11.9)	13,920 (-12.9)	24,567 (-12.4)	10,525 (-1.1)	13,523 (-2.9)	24,048 (-2.1)	22,914 (-4.7)
Net export of goods & services	11,144 (54.7)	7,125 (47.4)	6,657 (5.5)	13,782 (23.7)	7,353 (3.2)	7,022 (5.5)	14,375 (4.3)	15,451 (7.5)
Goods & services export	62,497 (9.7)	34,340 (15.7)	35,278 (7.5)	69,619 (11.4)	36,463 (6.2)	37,427 (6.1)	73,890 (6.1)	78,049 (5.6)
Goods & services import	51,353 (3.2)	27,215 (9.5)	28,622 (8.0)	55,837 (8.7)	29,110 (7.0)	30,405 (6.2)	59,515 (6.6)	62,598 (5.2)
Nominal GDP, (Billion yen)	493,553 (1.0)	245,091 (1.0)	251,106 (0.0)	496,197 (0.5)	248,640 (1.4)	253,591 (1.0)	502,231 (1.2)	511,797 (1.9)
Indices of Industrial Production (2000=100)	96.6 (3.6)	99.7 (6.8)	101.5 (1.6)	100.6 (4.1)	99.9 (0.2)	104.8 (3.3)	102.3 (1.7)	105.5 (3.1)
Tertiary Industry Activity Index (2000=100)	102.5 (1.3)	103.7 (2.5)	106.0 (2.1)	104.8 (2.3)	105.8 (2.0)	109.2 (3.0)	107.5 (2.5)	109.6 (2.0)
Domestic Corporate Goods Price Index (2000=100)	95.0 (-0.5)	96.2 (1.4)	96.7 (1.7)	96.4 (1.6)	97.8 (1.6)	98.1 (1.5)	97.9 (1.5)	98.6 (0.7)
Consumer Price Index (2000=100)	98.1 (-0.2)	98.1 (-0.2)	98.1 (0.2)	98.1 (-0.0)	97.9 (-0.2)	98.2 (0.2)	98.0 (-0.0)	98.1 (0.0)
Exchange Rate, (yen/US$)	113.0 (-7.3)	109.8 (-6.9)	105.2 (-2.7)	107.5 (-4.9)	109.4 (-0.4)	115.0 (9.4)	112.2 (4.4)	115.0 (2.5)
Crude Oil CIF, (US$/Bbl)	29.5 (8.0)	36.5 (27.9)	40.7 (33.6)	38.6 (30.8)	52.7 (44.3)	54.5 (33.8)	53.6 (38.8)	51.0 (-4.9)

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

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

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

Table 3: Outlook on Industrial Activities (Base Case)

		FY2003 Actual	FY2004（Actual）			FY2005(Forecast)			FY2006 Forecast
			1H	2H	Total	1H	2H	Total	
Production (1,000t)	Crude Steel	110,998 (1.1)	56,383 (1.7)	56,514 (1.7)	112,897 (1.7)	56,799 (0.7)	55,268 (-2.2)	112,066 (-0.7)	110,878 (-1.1)
	Ethylene	7,419 (1.9)	3,653 (4.3)	3,903 (-0.3)	7,555 (1.8)	3,674 (0.6)	3,889 (-0.3)	7,563 (0.1)	7,449 (-1.5)
	Cement	68,245 (-3.6)	32,012 (-2.0)	35,036 (-1.6)	67,048 (-1.8)	33,777 (5.5)	34,782 (-0.7)	68,559 (2.3)	65,566 (-4.4)
	Paper/Paperboard	30,604 (-0.6)	15,400 (1.5)	15,474 (0.2)	30,874 (0.9)	15,458 (0.4)	15,636 (1.0)	31,094 (0.7)	31,413 (1.0)
Indices of Industrial Production, 2000=100	Foods	97.2 (-0.5)	97.6 (-0.9)	94.4 (-1.6)	96.0 (-1.3)	97.3 (-0.3)	94.2 (-0.3)	95.7 (-0.3)	95.6 (-0.1)
	Textiles (excl. Chemical fiber)	72.9 (-7.8)	69.2 (-6.0)	67.5 (-6.4)	68.4 (-6.2)	64.3 (-7.2)	64.7 (-4.2)	64.5 (-5.7)	61.6 (-4.5)
	Iron & steel	104.6 (3.3)	107.4 (4.3)	109.0 (2.7)	108.2 (3.5)	108.0 (0.5)	107.6 (-1.3)	107.8 (-0.4)	107.8 (0.0)
	Chemicals (incl. Chemical fiber)	100.6 (0.3)	100.6 (1.6)	104.3 (2.1)	102.4 (1.8)	100.0 (-0.5)	105.4 (1.1)	102.7 (0.3)	104.2 (1.4)
	Ceramics, stone, and clay	85.3 (-3.1)	81.4 (-2.4)	85.2 (-2.5)	83.3 (-2.4)	80.2 (-1.5)	85.8 (0.8)	83.0 (-0.3)	82.0 (-1.1)
	Pulp, paper and paper products	96.9 (-0.3)	97.4 (1.4)	98.3 (0.6)	97.9 (1.0)	98.2 (0.8)	99.2 (0.9)	98.7 (0.8)	99.5 (0.9)
	Non-ferrous metals	97.4 (-1.1)	96.1 (0.8)	99.2 (-0.3)	97.6 (0.2)	98.2 (2.2)	100.6 (1.4)	99.4 (1.8)	101.1 (1.7)
	Transport equipment	108.9 (1.7)	112.6 (9.3)	124.8 (8.6)	118.7 (8.9)	116.4 (3.4)	124.0 (-0.6)	120.2 (1.3)	122.0 (1.5)
	Electrical machinery and others (Note2)	94.9 (9.3)	101.7 (13.3)	100.7 (0.8)	101.2 (6.7)	101.5 (-0.2)	106.7 (5.9)	104.1 (2.8)	109.7 (5.4)
	Total Mining & Manufacturing	96.6 (3.6)	99.7 (6.8)	101.5 (1.6)	100.6 (4.1)	99.9 (0.2)	104.8 (3.3)	102.3 (1.7)	105.5 (3.1)

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

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

2. General machinery, Electrical machinery, Information and communication electronics equipment,

Electronic parts and devices, Precision instruments, Fabricated metals

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

		FY2003	FY2004（Actual）			FY2005(Forecast)			FY2006
		Actual	1H	2H	Total	1H	2H	Total	Forecast
Electricity Demand, (Billion kWh)	Lighting use	**259.7** (-1.4)	**131.5** (7.1)	**141.1** (3.0)	**272.6** (5.0)	**132.4** (0.7)	**142.3** (0.9)	**274.8** (0.8)	**277.7** (1.1)
	Non-lighting use (incl. specified scale demand)	**598.6** (-0.2)	**319.9** (5.1)	**299.6** (1.9)	**619.6** (3.5)	**321.3** (0.4)	**306.5** (2.3)	**627.9** (1.3)	**641.4** (2.2)
	Total (incl. specified scale demand)	**858.2** (-0.5)	**451.4** (5.7)	**440.7** (2.2)	**892.1** (3.9)	**453.7** (0.5)	**448.9** (1.9)	**902.6** (1.2)	**919.1** (1.8)
	(Regrouped) Large-industrial use	**281.7** (0.2)	**147.3** (3.6)	**141.3** (1.3)	**288.6** (2.4)	**148.2** (0.6)	**144.2** (2.1)	**292.4** (1.3)	**298.0** (1.9)
	Chemical industries	**27.6** (1.3)	**14.5** (4.2)	**14.1** (3.0)	**28.6** (3.6)	**14.7** (1.5)	**14.5** (3.3)	**29.2** (2.4)	**29.6** (1.3)
	Iron & steel industries	**52.7** (0.7)	**27.0** (2.5)	**26.6** (0.8)	**53.6** (1.6)	**26.7** (-0.8)	**26.4** (-1.0)	**53.1** (-0.9)	**52.6** (-0.9)
	Machinery manufacturing	**68.5** (1.7)	**37.0** (7.0)	**35.0** (3.1)	**72.0** (5.1)	**37.6** (1.8)	**36.3** (3.9)	**74.0** (2.8)	**76.9** (3.9)
	Mining & manufacturing	**234.0** (0.3)	**122.5** (3.7)	**117.6** (1.4)	**240.1** (2.6)	**123.5** (0.8)	**120.1** (2.2)	**243.7** (1.5)	**248.0** (1.8)

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. The data does not include self-consumption by Tobata Joint Thermal Power Generation Company

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

		FY2003	FY2004（Actual）			FY2005(Forecast)			FY2006
		Actual	1H	2H	Total	1H	2H	Total	Forecast
Town Gas Sales, (Million m³)	Household	**9,706** (0.3)	**3,626** (-7.2)	**5,837** (0.6)	**9,463** (-2.5)	**3,774** (4.1)	**5,840** (0.0)	**9,614** (1.6)	**9,833** (2.3)
	Commercial	**4,429** (1.9)	**2,464** (8.5)	**2,248** (4.2)	**4,712** (6.4)	**2,499** (1.4)	**2,300** (2.3)	**4,799** (1.9)	**4,918** (2.5)
	Industrial	**12,030** (9.1)	**6,448** (11.4)	**6,837** (9.5)	**13,285** (10.4)	**7,069** (9.6)	**7,555** (10.5)	**14,625** (10.1)	**16,007** (9.5)
	Others	**2,449** (2.4)	**1,322** (13.7)	**1,357** (5.4)	**2,678** (9.3)	**1,354** (2.5)	**1,394** (2.7)	**2,748** (2.6)	**2,840** (3.3)
	Total	**28,615** (4.3)	**13,859** (5.6)	**16,279** (5.1)	**30,138** (5.3)	**14,697** (6.0)	**17,090** (5.0)	**31,787** (5.5)	**33,597** (5.7)

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)

		FY2003 Actual	FY2004（Actual） 1H	2H	Total	FY2005(Forecast) 1H	2H	Total	FY2006 Forecast
Fuel Oils Sales （1,000kl）	Gasoline	**60,561** (1.2)	**31,218** (2.4)	**30,251** (0.6)	**61,469** (1.5)	**31,348** (0.4)	**30,559** (1.0)	**61,907** (0.7)	**62,471** (0.9)
	Naphtha	**48,442** (-0.3)	**23,554** (1.4)	**25,438** (0.9)	**48,992** (1.1)	**24,066** (2.2)	**25,277** (-0.6)	**49,343** (0.7)	**48,806** (-1.1)
	Jet Fuel	**4,501** (-2.2)	**2,436** (12.4)	**2,471** (5.8)	**4,906** (9.0)	**2,544** (4.4)	**2,490** (0.8)	**5,034** (2.6)	**5,127** (1.9)
	Kerosene	**29,110** (-4.9)	**7,413** (-4.2)	**20,564** (-3.8)	**27,977** (-3.9)	**7,691** (3.8)	**20,596** (0.2)	**28,287** (1.1)	**28,185** (-0.4)
	Gas Oil	**38,130** (-3.4)	**18,877** (0.4)	**19,327** (-0.0)	**38,203** (0.2)	**18,414** (-2.5)	**19,199** (-0.7)	**37,613** (-1.5)	**37,020** (-1.6)
	Fuel Oil-A	**29,751** (-1.3)	**13,060** (-0.7)	**16,041** (-3.4)	**29,101** (-2.2)	**12,773** (-2.2)	**15,639** (-2.5)	**28,412** (-2.4)	**27,906** (-1.8)
	Fuel Oil-B,C	**30,194** (2.3)	**13,287** (-11.6)	**13,270** (-12.5)	**26,557** (-12.0)	**13,068** (-1.6)	**12,135** (-8.6)	**25,204** (-5.1)	**23,543** (-6.6)
	for power generation	**12,521** (15.5)	**5,043** (-20.2)	**4,791** (-22.8)	**9,834** (-21.5)	**5,296** (5.0)	**4,379** (-8.6)	**9,675** (-1.6)	**8,683** (-10.3)
	for other uses	**17,673** (-5.4)	**8,244** (-5.4)	**8,479** (-5.3)	**16,723** (-5.4)	**7,772** (-5.7)	**7,756** (-8.5)	**15,528** (-7.1)	**14,860** (-4.3)
	Total	**240,689** (-0.9)	**109,843** (-0.7)	**127,362** (-2.1)	**237,205** (-1.4)	**109,904** (0.1)	**125,897** (-1.2)	**235,801** (-0.6)	**233,058** (-1.2)
LPG Sales （1,000t）		**16,975** (-6.1)	**7,334** (-6.5)	**8,880** (-2.8)	**16,213** (-4.5)	**7,587** (3.5)	**8,826** (-0.6)	**16,413** (1.2)	**16,549** (0.8)

Sources: Actual results data prepared from METI, "Monthly Resources & Energy Statistics", Petroleum Association of Japan,
"Monthly Oil Statistics"; forecasts by IEEJ.

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

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

		FY2003	FY2004（Actual)			FY2005(Forecast)			FY2006
		Actual	1H	2H	Total	1H	2H	Total	Forecast
Domestic Primary Energy Supply, (10^10kcal)	Coal	**111,750**	**60,034**	**59,891**	**119,925**	**61,395**	**59,832**	**121,227**	**118,614**
		(3.9)	(6.3)	(8.3)	(7.3)	(2.3)	(-0.1)	(1.1)	(-2.2)
	Oil	**260,741**	**119,465**	**136,872**	**256,337**	**119,675**	**134,983**	**254,658**	**251,424**
		(-0.0)	(-1.2)	(-2.1)	(-1.7)	(0.2)	(-1.4)	(-0.7)	(-1.3)
	Natural Gas	**78,961**	**37,625**	**40,799**	**78,424**	**38,492**	**41,780**	**80,272**	**81,015**
		(6.3)	(-5.9)	(4.7)	(-0.7)	(2.3)	(2.4)	(2.4)	(0.9)
	Hydroelectricity	**21,249**	**12,153**	**8,811**	**20,964**	**11,021**	**7,817**	**18,839**	**20,101**
		(15.7)	(-7.5)	(8.7)	(-1.3)	(-9.3)	(-11.3)	(-10.1)	(6.7)
	Nuclear	**51,602**	**31,918**	**28,806**	**60,724**	**31,985**	**31,611**	**63,595**	**71,977**
		(-18.7)	(37.3)	(1.6)	(17.7)	(0.2)	(9.7)	(4.7)	(13.2)
	Others (Note 2)	**7,437**	**3,614**	**3,664**	**7,278**	**3,751**	**3,775**	**7,526**	**7,612**
		(2.4)	(1.8)	(-5.7)	(-2.1)	(3.8)	(3.0)	(3.4)	(1.1)
	Total	**531,740**	**264,809**	**278,843**	**543,652**	**266,319**	**279,798**	**546,117**	**550,743**
		(0.0)	(2.9)	(1.6)	(2.2)	(0.6)	(0.3)	(0.5)	(0.8)
Real GDP (Chained to 2000, in Billion yen)		**517,435**	**260,097**	**266,281**	**526,378**	**267,239**	**272,405**	**539,645**	**550,862**
		(2.3)	(2.6)	(0.9)	(1.7)	(2.7)	(2.3)	(2.5)	(2.1)
GDP Intensity (Energy supply/GDP) (2000=100)		**98.9**			**99.4**			**97.4**	**96.2**
		(-2.2)			(0.5)			(-2.0)	(-1.2)
CO_2 Emissions (Million t-C) (FY1990＝100)		**325**			**329**			**331**	**327**
		113.1			**114.7**			**115.4**	**113.8**
		(2.1)			(1.4)			(0.6)	(-1.3)

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)

		FY2003 Actual	FY2004（Actual） 1H	2H	Total	FY2005(Forecast) 1H	2H	Total	FY2006 Forecast
By Sector (10^10kcal)	Industry	178,759 (-0.1)	84,472 (0.1)	93,358 (-1.1)	177,830 (-0.5)	85,069 (0.7)	93,067 (-0.3)	178,136 (0.2)	178,592 (0.3)
	Consumer	99,871 (-1.7)	44,937 (3.8)	57,251 (1.2)	102,188 (2.3)	45,443 (1.1)	57,618 (0.6)	103,061 (0.9)	104,510 (1.4)
	Residential	52,609 (-2.9)	21,242 (3.0)	32,719 (2.3)	53,961 (2.6)	21,742 (2.4)	32,814 (0.3)	54,556 (1.1)	55,097 (1.0)
	Commercial	47,262 (-0.3)	23,695 (4.6)	24,532 (-0.3)	48,227 (2.0)	23,701 (0.0)	24,805 (1.1)	48,506 (0.6)	49,413 (1.9)
	Transportation	90,923 (-0.3)	46,056 (1.8)	45,719 (0.0)	91,775 (0.9)	46,276 (0.5)	45,854 (0.3)	92,130 (0.4)	92,165 (0.0)
By Energy Source (10^10kcal)	Coal, etc.	39,317 (0.5)	19,335 (-0.5)	19,875 (-0.0)	39,210 (-0.3)	19,253 (-0.4)	19,544 (-1.7)	38,797 (-1.1)	38,346 (-1.2)
	Oil	217,135 (-1.2)	98,478 (0.1)	117,146 (-1.4)	215,624 (-0.7)	99,039 (0.6)	116,373 (-0.7)	215,412 (-0.1)	214,747 (-0.3)
	Town Gas	25,019 (2.4)	11,669 (2.4)	14,170 (4.0)	25,839 (3.3)	12,327 (5.6)	14,756 (4.1)	27,083 (4.8)	28,608 (5.6)
	Electricity	83,832 (-0.4)	43,944 (5.4)	43,020 (2.1)	86,964 (3.7)	44,096 (0.3)	43,715 (1.6)	87,811 (1.0)	89,369 (1.8)
	Others	4,250 (-1.3)	2,039 (2.4)	2,117 (-6.3)	4,156 (-2.2)	2,073 (1.7)	2,152 (1.7)	4,225 (1.7)	4,198 (-0.6)
	Total	369,553 (-0.6)	175,465 (1.5)	196,328 (-0.2)	371,793 (0.6)	176,788 (0.8)	196,540 (0.1)	373,327 (0.4)	375,267 (0.5)
Real GDP (Chained to 2000, in Billion yen)		517,435 (2.3)	260,097 (2.6)	266,281 (0.9)	526,378 (1.7)	267,239 (2.7)	272,405 (2.3)	539,645 (2.5)	550,862 (2.1)
Indices of Industrial Production (2000=100)		96.6 (3.6)	99.7 (6.8)	101.5 (1.6)	100.6 (4.1)	99.9 (0.2)	104.8 (3.3)	102.3 (1.7)	105.5 (3.1)
Heating Degree-days		925 (-15.0)	40 (-5.3)	926 (4.8)	965 (4.4)	49 (23.0)	917 (-1.0)	965 (-0.0)	993 (2.9)
Cooling Degree-days		302 (-29.9)	491 (63.2)	- (-100.0)	491 (62.8)	444 (-9.7)	5 -	449 (-8.7)	410 (-8.7)

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)

		FY2003	FY2004（Actual）			FY2005(Forecast)			FY2006
		Actual	1H	2H	Total	1H	2H	Total	Forecast
Input (10^10kcal)	Thermal power	122,682	58,861	61,424	120,285	59,761	61,104	120,865	114,437
		(5.6)	(-4.5)	(0.6)	(-2.0)	(1.5)	(-0.5)	(0.5)	(-5.3)
	Coal	46,546	23,940	25,423	49,363	24,904	25,484	50,388	47,532
		(9.8)	(6.2)	(6.0)	(6.1)	(4.0)	(0.2)	(2.1)	(-5.7)
	Oil, etc.	23,419	10,384	10,219	20,603	10,352	9,646	19,998	17,474
		(2.2)	(-14.2)	(-9.7)	(-12.0)	(-0.3)	(-5.6)	(-2.9)	(-12.6)
	Crude oil (as part of oil)	5,505	2,784	2,923	5,707	2,601	2,734	5,336	4,331
		(-11.8)	(-1.1)	(8.6)	(3.7)	(-6.6)	(-6.5)	(-6.5)	(-18.8)
	Fuel Oil-C (as part of oil)	12,403	5,033	4,956	9,989	5,195	4,632	9,827	8,842
		(13.4)	(-20.4)	(-18.5)	(-19.5)	(3.2)	(-6.5)	(-1.6)	(-10.0)
	Natural Gas	52,717	24,537	25,782	50,319	24,505	25,974	50,479	49,431
		(3.7)	(-9.0)	(0.2)	(-4.5)	(-0.1)	(0.7)	(0.3)	(-2.1)
	Hydro-power	19,423	11,171	8,151	19,322	10,039	7,157	17,197	18,459
		(16.3)	(-7.5)	(11.0)	(-0.5)	(-10.1)	(-12.2)	(-11.0)	(7.3)
	Nuclear	51,602	31,918	28,806	60,724	31,985	31,611	63,595	71,977
		(-18.4)	(37.3)	(1.6)	(17.7)	(0.2)	(9.7)	(4.7)	(13.2)
	Others	1,305	636	644	1,280	694	693	1,387	1,469
		(7.4)	(-2.6)	(-1.2)	(-1.9)	(9.1)	(7.6)	(8.4)	(5.9)
	Total	195,012	102,586	99,025	201,611	102,479	100,565	203,044	206,343
		(-1.2)	(5.1)	(1.7)	(3.4)	(-0.1)	(1.6)	(0.7)	(1.6)
Power Output (10^10kcal)		78,098	40,704	39,698	80,402	40,848	40,410	81,258	82,731
		(-1.6)	(4.5)	(1.4)	(3.0)	(0.4)	(1.8)	(1.1)	(1.8)

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

		FY2005	FY2006				
				Crude price variations			
		Base Case	Base Case	High-price Case		Low-price Case	
					Change from Base Case		Change from Base Case
Key Economic Indicators	Real GDP (Chained to 2000, in Billion yen)	**539,645** (2.5)	**550,862** (2.1)	**549,862** (1.9)	**-1,000** (-0.2)	**551,791** (2.3)	**930** (0.2)
	Private demand [Contribution to GDP]	**405,456** [2.2]	**414,482** [1.7]	**413,600** [1.5]	**-882** [-0.2]	**415,299** [1.8]	**817** [0.2]
	Public demand [Contribution to GDP]	**119,856** [0.2]	**120,837** [0.2]	**120,767** [0.2]	**-70** [-0.0]	**120,899** [0.2]	**61** [0.0]
	External demand [Contribution to GDP]	**14,375** [0.1]	**15,451** [0.2]	**15,403** [0.2]	**-48** [-0.0]	**15,502** [0.2]	**51** [0.0]
	Indices of Industrial Production (2000=100)	**102.3** (1.7)	**105.5** (3.1)	**105.2** (2.8)	**-0.3** (-0.3)	**105.7** (3.4)	**0.3** (0.3)
	Corporate Goods Price Index (2000=100)	**97.9** (1.5)	**98.6** (0.7)	**99.3** (1.4)	**0.7** (0.7)	**97.8** (-0.1)	**-0.8** (-0.8)
	Consumer Price Index (2000=100)	**98.0** (-0.0)	**98.1** (0.0)	**98.2** (0.2)	**0.1** (0.1)	**97.9** (-0.1)	**-0.1** (-0.1)
	Crude Oil CIF Price (US$/Bbl)	**53.6** (38.8)	**51.0** (-4.9)	**61.0** (13.8)	**10.0** (18.7)	**41.0** (-23.5)	**-10.0** (-18.7)
Key Energy Indicators	Primary Energy Supply (10^10kcal = KTOE)	**546,117** (0.5)	**550,743** (0.8)	**549,409** (0.6)	**-1,335** (-0.2)	**552,217** (1.1)	**1,474** (0.3)
	Final Energy Consumption (10^10kcal = KTOE)	**373,327** (0.4)	**375,267** (0.5)	**374,054** (0.2)	**-1,212** (-0.3)	**376,632** (0.9)	**1,365** (0.4)
	Industrial Sector	**178,136** (0.2)	**178,592** (0.3)	**177,824** (-0.2)	**-768** (-0.4)	**179,466** (0.7)	**874** (0.5)
	Consumer Sector	**103,061** (0.9)	**104,510** (1.4)	**104,395** (1.3)	**-115** (-0.1)	**104,638** (1.5)	**128** (0.1)
	Transportation Sector	**92,130** (0.4)	**92,165** (0.0)	**91,835** (-0.3)	**-330** (-0.4)	**92,528** (0.4)	**363** (0.4)
	Electricity Sales (Billion kWh)	**902.6** (1.2)	**919.1** (1.8)	**918.9** (1.8)	**-0.3** (-0.0)	**919.3** (1.9)	**0.2** (0.0)
	Town Gas Sales (Million m³/10,000kcal)	**31,787** (5.5)	**33,597** (5.7)	**33,545** (5.5)	**-52** (-0.2)	**33,651** (5.9)	**54** (0.2)
	Fuel Oil Sales (1,000kl)	**235,801** (-0.6)	**233,058** (-1.2)	**232,062** (-1.6)	**-996** (-0.4)	**234,167** (-0.7)	**1,109** (0.5)

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

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

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

Table 11: Effects of Economic Growth Changes

		FY2005	FY2006					
					GDP growth variations			
		Base Case	Base Case	High-growth Case		Low-growth Case		
					Change from Base Case		Change from Base Case	
Key Economic Indicators	Real GDP (Chained to 2000, in Billion yen)	**539,645** (2.5)	**550,862** (2.1)	**545,556** (1.1)	**-5,306** (-1.0)	**556,003** (3.0)	**5,141** (1.0)	
	Private demand [Contribution to GDP]	**405,456** [2.2]	**414,482** [1.7]	**409,669** [0.8]	**-4,814** [-0.9]	**419,272** [2.6]	**4,790** [0.9]	
	Public demand [Contribution to GDP]	**119,856** [0.2]	**120,837** [0.2]	**120,459** [0.1]	**-379** [-0.1]	**121,218** [0.3]	**380** [0.1]	
	External demand [Contribution to GDP]	**14,375** [0.1]	**15,451** [0.2]	**15,338** [0.2]	**-114** [-0.0]	**15,572** [0.2]	**121** [0.0]	
	Indices of Industrial Production (2000=100)	**102.3** (1.7)	**105.5** (3.1)	**104.1** (1.7)	**-1.4** (-1.3)	**106.8** (4.4)	**1.4** (1.3)	
	Corporate Goods Price Index (2000=100)	**97.9** (1.5)	**98.6** (0.7)	**98.2** (0.3)	**-0.4** (-0.4)	**99.0** (1.1)	**0.4** (0.4)	
	Consumer Price Index (2000=100)	**98.0** (-0.0)	**98.1** (0.0)	**98.0** (-0.0)	**-0.1** (-0.1)	**98.2** (0.1)	**0.1** (0.1)	
	Crude Oil CIF Price (US$/Bbl)	**53.6** (38.8)	**51.0** (-4.9)	**51.0** (-4.9)	**-** (0.0)	**51.0** (-4.9)	**-** (0.0)	
Key Energy Indicators	Primary Energy Supply (10^10kcal = KTOE)	**546,117** (0.5)	**550,743** (0.8)	**547,892** (0.3)	**-2,851** (-0.5)	**553,567** (1.4)	**2,824** (0.5)	
	Final Energy Consumption (10^10kcal = KTOE)	**373,327** (0.4)	**375,267** (0.5)	**373,285** (-0.0)	**-1,981** (-0.5)	**377,231** (1.0)	**1,964** (0.5)	
	Industrial Sector	**178,136** (0.2)	**178,592** (0.3)	**177,287** (-0.5)	**-1,305** (-0.7)	**179,886** (1.0)	**1,294** (0.7)	
	Consumer Sector	**103,061** (0.9)	**104,510** (1.4)	**104,226** (1.1)	**-284** (-0.3)	**104,792** (1.7)	**281** (0.3)	
	Transportation Sector	**92,130** (0.4)	**92,165** (0.0)	**91,772** (-0.4)	**-392** (-0.4)	**92,553** (0.5)	**388** (0.4)	
	Electricity Sales (Billion kWh)	**902.6** (1.2)	**919.1** (1.8)	**915.4** (1.4)	**-3.8** (-0.4)	**922.9** (2.2)	**3.7** (0.4)	
	Town Gas Sales (Million m³/10,000kcal)	**31,787** (5.5)	**33,597** (5.7)	**33,465** (5.3)	**-132** (-0.4)	**33,728** (6.1)	**130** (0.4)	
	Fuel Oil Sales (1,000kl)	**235,801** (-0.6)	**233,058** (-1.2)	**231,131** (-2.0)	**-1,927** (-0.8)	**234,959** (-0.4)	**1,901** (0.8)	

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

2. GDP contributions may not add up to 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)	
	Changes in Demand	% Change	Changes in Demand	% Change
Domestic Primary Energy Supply (10^10kcal)	2,006	1.5	1,771	1.2
Final Energy Consumption, (10^10kcal)	884	1.0	1,126	1.1
Industrial Sector	85	0.2	172	0.4
Residential Sector	119	1.2	668	3.3
Commercial Sector	312	2.3	287	2.2
Transportation Sector	369	1.5	-	0.0
Electricity Sales, (Million kWh)	5,740	2.3	3,322	1.4
Town Gas Sales, (Million m³/10,000kcal)	47	0.6	309	3.0
Fuel Oil Sales (1,000kl)	902	1.6	639	1.0
LPG Sales (1,000t)	-40	-1.1	121	2.5

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

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