

Short-Term Energy Demand/Supply Outlook

- Forecast through FY 2005 and Analysis of the Impact of Oil Prices, Economic Growth and Temperatures -

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[Objective of Research]

The Japanese economy has seen production and capital investment firming on robust exports. As a recent export slowdown has affected part of production, however, the future course of the economy has grown more uncertain. On the other hand, a sharp oil price hike, since last year, is expected to affect the economy, and energy demand and supply in Japan. Based on such circumstances, this report attempts to **forecast Japan's energy demand and supply in Fiscal Year 2004 and Fiscal Year 2005**. As for FY 2005, this report gives a **standard case** for energy demand and supply and analyzes the impact of changes in **oil prices, economic growth and temperatures** on energy demand and supply.

[Key Conclusions]

1. Key Economic Indicators Forecast for FY 2004-2005

Japan's real economic growth in FY 2004 is projected at **2.2%** over the previous year, as production and capital investment have been vigorous, mainly in export-oriented industries due to robust exports, including those to China.

Growth in **FY 2005** is forecast at **1.3%** as production and capital investment are likely to peak out on slower export growth amid a worldwide economic slowdown. Consumer prices are predicted to fall for the seventh consecutive year, indicating the continuation of deflation. The crude oil import price on a C.I.F. basis*, as a precondition for the forecast, is assumed to fall from an average \$39 per barrel for FY 2004 to **\$34 per barrel** for **FY 2005**.

*Source: Ken Koyama, *International Oil Situation and Oil Price Outlook for 2005*, December 16, 2004

2. Energy Demand/Supply Outlook for FY 2004-2005

<Primary Energy Supply and Final Consumption>

Japan's final energy consumption in **FY 2004** is expected to **increase by 1.2%** from the previous year on smooth economic expansion. Consumption is likely to rise by 1.0% in the industrial sector on robust production, by 1.7% in the household sector on firm services and higher temperatures and by 0.9% in the transportation sector. Japan's primary energy supply, including

consumption in the conversion sector, is projected to **increase by 1.4%**.

Final energy consumption in FY 2005 is projected to post a slower year-on-year **increase of 0.4%** on a production slowdown. The industrial sector is expected to increase consumption by 0.3%. But the transportation sector is projected to see consumption turn down, with a 0.9% drop on a decline in cargo traffic. The household sector is likely to score an increase of 1.7% in consumption in reaction to the impact of temperatures in the previous year. Domestic primary energy supply is expected to **rise by 0.7%**.

Carbon dioxide emissions in Japan are predicted to **decline slightly** in FY 2004 and 2005, due to a rise in the capacity utilization rate for nuclear power plants and the introduction of new ones, even as energy demand increases moderately.

<Energy Demand on a Sales Basis>

Electricity: Electricity sales in volume in FY 2004 are projected to increase by 3.6% over the previous year due to robust production and higher temperatures. This would be the first increase in two years.

In FY 2005, electricity sales are expected to post a slower rise of 0.9%, because of a reaction to higher temperatures in the previous year and a production slowdown.

Town gas: Town gas sales in volume in FY 2004 are estimated to increase by 4.2% from the previous year due to sharp growth in industrial consumption. The impact of summer heat waves might have been offset among demand factors in the household sector.

In FY 2005, town gas sales are projected to increase by 3.7%. Household demand is expected to increase in reaction to higher temperatures in the previous year, while business (commercial and other) demand for cooling is projected to post a reactionary drop.

Fuel oils: Fuel oil sales in volume in FY 2004 are likely to fall by 0.5% from the previous year. While demand for some fuels is increasing on higher temperatures and robust economic activities, demand for fuel oil C for power generation is plunging.

In FY 2005, fuel oil sales are likely to decline by 1.1% on a continued drop in demand for fuel oil C for power generation, as well as a slowdown in production and other economic activities.

3. Analysis of Factors Affecting Energy Demand/Supply – FY 2005

If the C.I.F. crude oil price is at \$43 per barrel, \$9 higher than in the standard case, **real economic growth may be 0.4 percentage point lower and final energy consumption growth 0.8 percentage point lower**. If the C.I.F. crude oil price is at \$28 per barrel, \$6 lower than in the standard case, **real economic growth may be 0.3 percentage point higher and final energy consumption growth 0.6 percentage point higher**. By energy source, crude oil price fluctuations may have a larger impact on oil consumption than on electricity or town gas

consumption.

If real economic growth is at 0.3%, 1.0 percentage point lower than in the standard case, **final energy consumption growth may be 0.6 percentage point lower**. If real economic growth is at 2.3%, 1.0 percentage point higher than in the standard case, **final energy consumption growth may be 0.6 percentage point higher**. Energy demand growth changes more slowly than economic growth. Economic growth changes may affect oil, town gas and electricity consumption in that order.

[Summary Table]

| | Standard Case | | | | Sensitivity Analysis (Gap with Standard Case) for FY 2005 | | | |
|-------------------------------------|---------------------|---------------------|------------------------|------------------------|---|-------------------------|-----------------------|------------------------|
| | FY 2002 (actual) | FY 2003 (actual) | FY 2004 (Estimated) | FY 2005 (Estimated) | Crude oil price* | | Economic growth | |
| | | | | | Higher price \$43/bbl | Lower price \$28/bbl | Lower growth 0.30% | Higher growth 2.30% |
| Real GDP growth (%) | 0.8 | 1.9 | 2.2 | 1.3 | -0.4 | 0.3 | -1 | 1 |
| C.I.F. crude price \$/bbl | 27 | 30 | 39 | *34 | 9 | -6 | - | - |
| Domestic primary energy growth (%) | 0.5 | -0.1 | 1.4 | 0.7 | -0.7 | 0.5 | -0.5 | 0.6 |
| Final energy consumption growth (%) | 1.7 | -0.7 | 1.2 | 0.4 | -0.8 | 0.6 | -0.6 | 0.6 |
| Electricity sales growth (%) | 2.2 | -0.5 | 3.6 | 0.9 | -0.2 | 0.1 | -0.3 | 0.3 |
| Town gas sales growth (%) | 8.0 | 4.3 | 4.2 | 3.7 | -0.3 | 0.2 | -0.5 | 0.5 |
| Fuel oil sales growth (%) | 2.7 | -0.8 | -0.5 | -1.1 | -1.1 | 0.9 | -0.8 | 0.8 |

*Source: Ken Koyama, *International Oil Situation and Oil Price Outlook for 2005*, December 16, 2004, IEEJ

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