

**Fiscal 2005**  
**Annual Energy Report**  
**(Outline)**

**June 2006**

**Agency for Natural Resources and Energy**  
**Ministry of Economy, Trade and Industry**

# Outline

- Points of important events in fiscal 2005
  
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- Part 1: Describing challenges and responses to the following three policies : “securing a stable supply of energy,” “environmental compliance,” and “utilization of the market principle” with full consideration of the preceding two .
  
- Part 2: Describing domestic and international energy trends by the type of energy in detail, mainly in the form of data.
  
- Part 3: Describing the general situation of energy supply-demand measures taken during fiscal 2005 in accordance with the composition of the Basic Energy Plan.

## Points of important events in fiscal 2005

- ① Fiscal 2005 could be characterized by the growth of world-wide interest in energy security, as a result of rapidly increasing severity of global energy conditions such as the crude oil price setting a new record high.
- ② The international energy market faced structural tight energy-demand conditions where investment in oil development did not expanded smoothly, and supply margin lowered while world energy demand rapidly grew especially due to the rapid development of China and India. In addition, damage from U.S. hurricane Katrina, an inflow of speculative money, terrorists' activities and the nuclear development of Iran made the situation worse.
- ③ In response to those structural changes of the global energy market, many countries are reviewing their national energy strategies.
- ④ In Japan, in order to respond to those global changes, Japan's Government made efforts for the reconstruction of its energy policies, mainly focusing on energy security by steadily implementing various measures such as active resource diplomacy, reinforcement of energy conservation, and promotion of nuclear energy, including nuclear fuel cycles. They also studied for the establishment of a new energy strategy and started to review of the Basic Energy Plan.

# Important events in fiscal 2005

## [Structural changes of the international energy market]

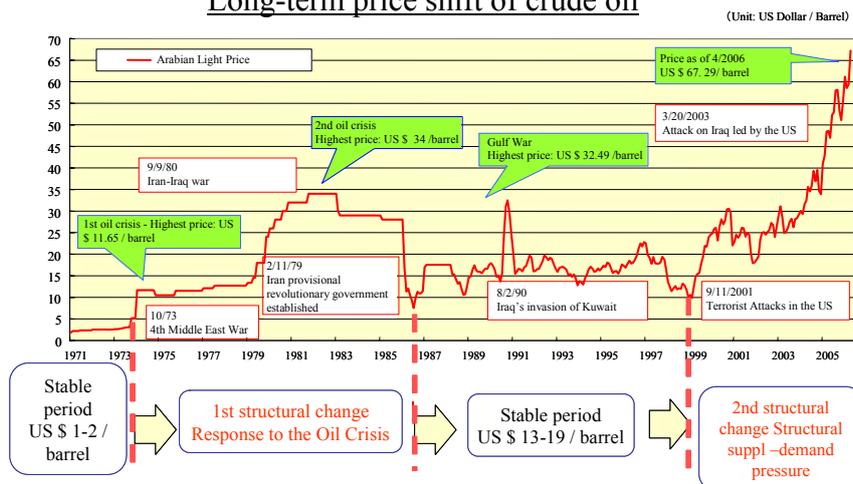
### ○ Soaring of crude oil price and tight conditions of global energy market

• In August 2005, the huge-sized hurricane Katrina hit the U.S. coastal regions facing the Gulf of Mexico where many oil facilities exist, and as a result, the price of WTI crude oil soared, temporarily exceeding 70 dollars/barrel. Although the price declined afterwards, down to the 50 dollars/barrel level, it started to rise again later due to the issue of nuclear development by Iran and the production turmoil in Nigeria which sparked concerns about a oil supply shortage. On April 16, 2006, the closing price exceeded 70 dollars/barrel for the first time.

• On the demand side, world-wide energy consumption is estimated to increase by about 60% during the period between 2002 and 2030, and the consumption in China is expected to double for the same period.

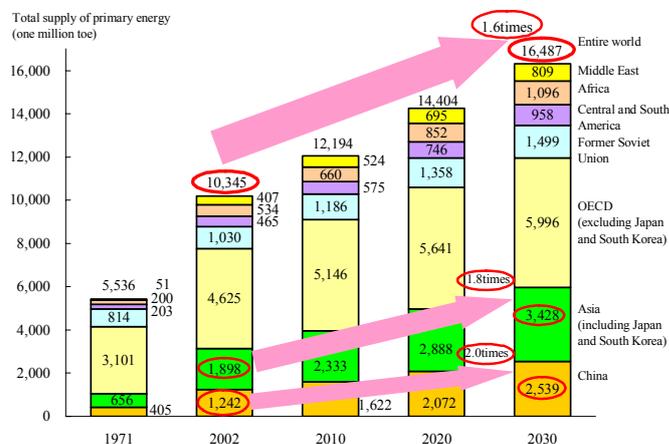
• On the supply side, the supply margin held by OPEC nations declined in the past three years to two million barrels/day which is equivalent to about 30% of the level before. As for the operation rate of oil refineries, it was about 80% for Japanese refineries, and exceeded 90% for U.S. refineries.

## Long-term price shift of crude oil



Source: Agency for Natural Resources and Energy

## Trends and Outlook for world's primary energy consumption by region



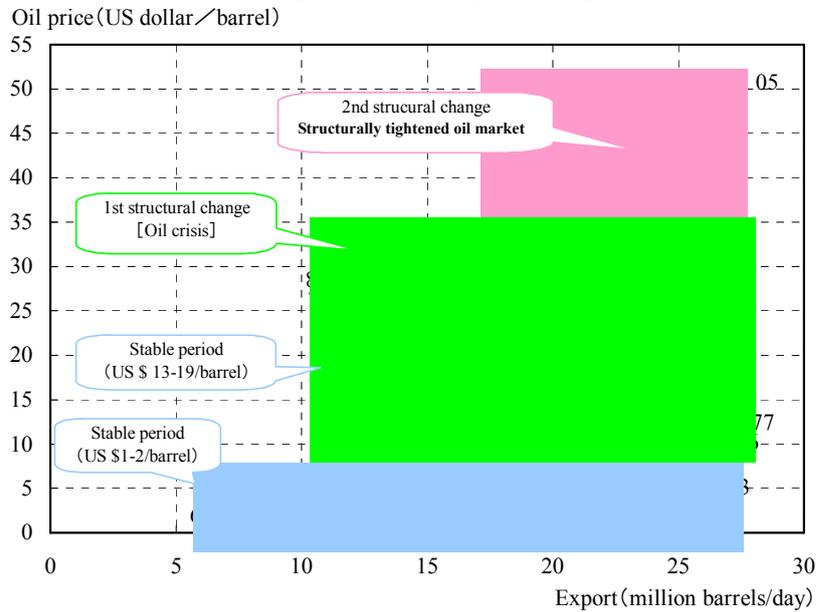
Demand increment in the entire world, Asia and China during the period from 2002 to 2030 is respectively equivalent to 1.8 times, 2.9 times and 2.5 times as large as the Japanese demand in 2002.

Source: IEA "World Energy Outlook 2004"

• Since 2000, crude oil prices have been soaring despite the fact that the export from OPEC nations has been increasing.

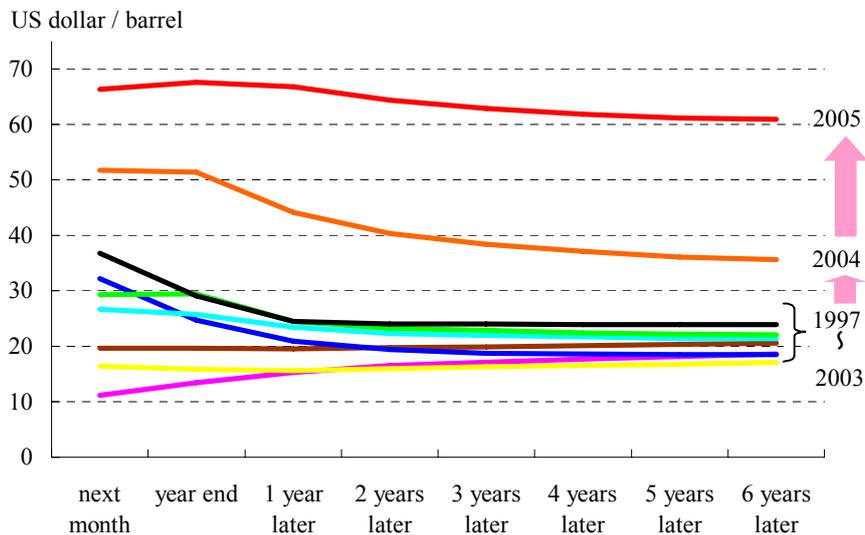
• In addition, the “forward curve” that shows the trend of long-term crude oil future prices is shifting upward as a whole. It is said that this trend suggests that high-level energy prices will continue on a medium- and long-term basis.

### OPEC's oil export and change in oil price



2005 figure is an estimate. Price is OPEC Basket Price.  
Source: OPEC 'Annual Statistical Bulletin'

### Change in forward curve of WTI futures



WTI (West Texas Intermediate) is a type of US crude oil traded at the New York Mercantile Exchange. It is used as an oil price indicator in the United States.

Source: Made by the Ministry of Economy, Trade and Industry based on NYMEX materials

## ○ Lesson from the U.S. hurricane damage

• In response to the U.S. hurricane damage, the International Energy Agency (IEA) determined on September 2, 2005 to carry out the coordinated emergency drawdown of strategic stockpiles of member countries. Oil producing countries also made efforts to stabilize the energy market, where the Organization of Petroleum Exporting Countries (OPEC) made available its spare capacity for three months from October in accordance with market demand.

• The recent tight supply-demand conditions in the oil market suggest:

① the significance of combined efforts between oil consuming countries and oil producing countries to stabilize the market, because regional shortage of oil products could make enormous impacts on the international oil market, and.

② the significance of implementing appropriate measures in each stage of supply chain from the production of crude oil, transportation, refining to retail, since any tight supply-demand condition of a certain specific product could cause supply disruption even when the supply volume of crude oil reaches the required level.

### How IEA implemented the coordinated emergency release of strategic stocks

August 23 to 31	• Hurricane Katrina hit the U.S. • Oil refineries and oil production facilities located in the coastal regions facing the Gulf of Mexico were severely damaged.
September 2	• IEA decided on the coordinated release of oil stocks of 60 million barrels (the quota for Japan was about 7.32 million barrels)
September 7	• Japan decided to reduce the amount of compulsory oil stocks term imposed on private businesses by about 10 million barrels from 70 days of net oil imports to 67 days (followed by three 30-day extensions of this measure)
October 8	• Japan cleared the quota, by accomplishing the 10 million-barrel reduction of stockpiles at private businesses
December 26	• IEA announced the completion of the coordinated release of oil stocks after determining that this measure successfully led to the stabilization of the international oil market.
January 4	• Japan completed the measure of reducing the compulsory oil stocks term imposed on private businesses

※   shows international efforts   shows Japanese efforts

(Source) Ministry of Economy, Trade and Industry

## ○ International movements to address climate change

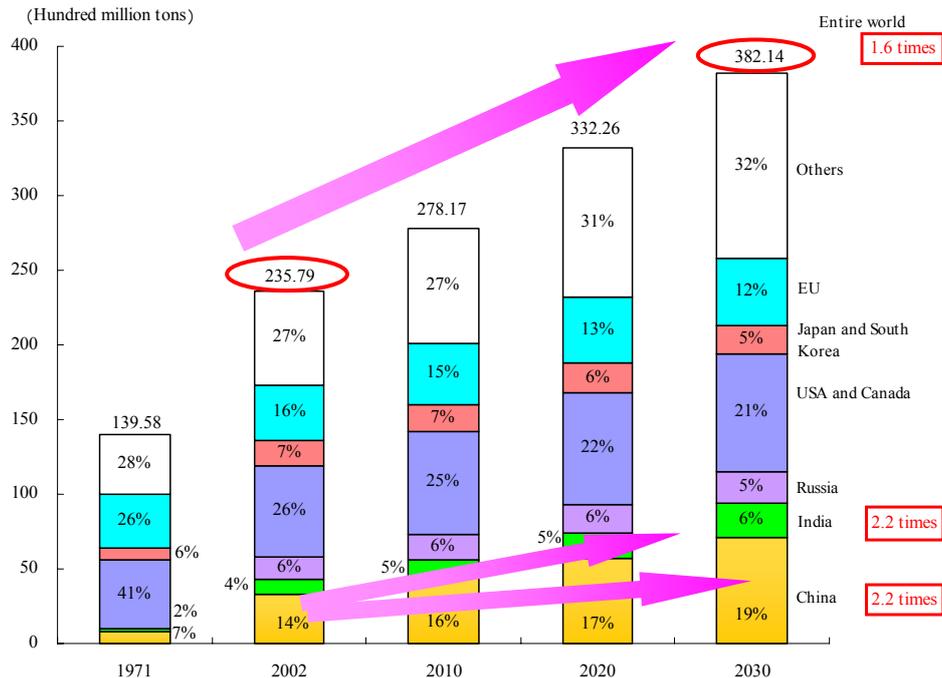
•As energy demand is growing, it is important to introduce world-wide efforts to address climate change which is attributed to the mass consumption of fossil fuels, etc.

•In order to prevent global warming, it is necessary to seek an effective international framework involving not only the U.S. ; one of major CO2 emitting countries, but also China and India, whose CO2 emission due to energy consumption is expected to double by 2030.

•Various measures to prevent global warming were implemented during fiscal 2005, including:

- (1) the G8 Summit (Gleneagles Summit) (in July 2005),
- (2) the 11th Conference of the Parties to the U.N. Framework Convention on Climate Change (COP11) and the first session of the Conference of the Parties to the Kyoto Protocol (COP/MOP1) (in November and December 2005)
- (3) the Ministerial conference of the Asia-Pacific Partnership for Clean Development and Climate (in January 2006) (Participating countries: U.S., Australia, China, India, ROK and Japan) (They agreed to prepare the joint action plan of the governmental and private sectors in the 8 cooperation fields including renewable energy)

### Outlook for the world's energy-derived CO2 emission by region



Source: IEA World Energy Outlook 2004

## [Energy strategies of countries]

### ○ The reconstruction of national energy strategies being promoted globally

- Facing various changes in the international energy market, countries all over the world are aware of the significance of energy security as an important national interest.
  - Energy-consuming countries have been strengthening energy saving, nuclear energy promotion, the introduction of new energy as well as activities to secure their rights to exploit foreign energy resources
  - Energy-supplying countries have been strengthening their state control over energy resources.
- Thus, countries have been making movements toward the reconstruction of their national energy strategy with focusing on energy security, taking into consideration their national interests and domestic circumstances.

### Major national energy policies of foreign countries

Name of country	Major medium- or long-term plans	Focal points
U.S.	<p>“National Energy Policy”(2001)</p> <p>“Strategic Plan” (2003) &lt;Action plan covering the next 25 years&gt;</p>	<ul style="list-style-type: none"> <li>• The U.S. is greatly concerned about its increasing dependence on energy imports, and emphasizes supply security measures such as the improvement of the country’s energy supply capacity (petroleum, natural gas, nuclear energy, electricity, etc.) and the effort to strengthen relationships with energy-supplying countries. <u>On August 8, 2005, the “Energy Policy Act” came into effect.</u></li> <li>• In February 2006, the U.S. announced the “Global Nuclear Energy Partnership (GNEP),” making the shift to active commitment to nuclear fuel cycle activities and the development of fast breeder reactors.</li> </ul>
E.U. nations	<p>“Green Paper” (2000) &lt;Strategy for the coming 20 to 30 years&gt;</p>	<ul style="list-style-type: none"> <li>• Demand reduction through energy saving is the first priority in the EU, based on various constraint such as increasing energy demand due to expanding EU territories, etc., increasing import dependency, the Kyoto Protocol and the anticipated slow development of nuclear energy. <u>The “Green Paper on Energy Efficiency,” issued in 2005, set the target of reducing the energy consumption by 20% by 2020, and energy saving measures have been strengthened accordingly.</u></li> <li>• In 2006, amid active argument on energy security, the EU announced the Green Paper on “A European Strategy for Sustainable, Competitive and Secure Energy,” which <u>reviews the current composition of primary energy supplies including the reevaluation of nuclear energy.</u></li> <li>• France proposes to increase energy investments and develop advanced nuclear reactors, etc.</li> <li>• UK has launched the redesigning of its national energy policy.</li> </ul>
China	<p>10th five-year plan (2001~2005)</p> <p>11th five-year plan (2006~2010)</p>	<ul style="list-style-type: none"> <li>• In an effort to cope with increasing energy demand, China emphasizes the significance of securing supplies (through the developing natural resources inside and outside the country, building the infrastructure for electricity and gas, etc.). Demand-side measures are also being gradually introduced, including the construction of a national stockpiling base and the establishment of the medium/long-term energy-saving plan. <u>China’s 11th five-year plan set a specific energy-saving target (20% improvement of energy efficiency during the period between 2006 and 2010).</u> The medium-to-long-term energy-saving plan has been established for the purpose of addressing increasing domestic energy demand.</li> </ul>
Russia	<p>“Energy strategy up to 2020”</p>	<ul style="list-style-type: none"> <li>• Russia focuses on the enhancement of its supply capacity, aiming to become the world’s leading exporting country of petroleum and natural gas. State control of natural resources has been strengthened in recent years. For example, state-operated oil and gas companies have been increasing their dominance, and a bill to amend the Underground Resources Act was sent to the State Duma (lower house).</li> </ul>

(This table has been compiled from various sources by the Ministry of Economy, Trade and Industry )

## [Energy policy of Japan]

### ○ Japan actively promotes its resource diplomacy

- Rapid increase of energy demand in Asian countries is one of the elements that creates global tightness of energy, and also significantly affects the Japanese market as well as the entire world energy market. Utilizing know-how and expertise accumulated since the oil crises in the promotion of energy saving measures and establishment of an oil stockpiling system, Japan makes efforts to stabilize energy supply-demand conditions in Asia by actively promoting energy cooperation with other countries.
- Japan's import dependency is high, and needs to secure a stable supply of energy. That is why Japan makes continuous efforts to strengthen relationships with energy-supplying countries, etc.

### Major efforts of Japan

Countries to cooperate with	Outline
China	<ul style="list-style-type: none"> <li>○ The "China-Japan General Forum for Energy Saving and the Environment" is to be held, where specialists from government, academia and private organizations in each country will be <u>giving lectures on energy saving and environmental protection</u>. (May 2006)</li> <li>○ Since October 2004, several director-general level conferences have been held to discuss <u>the issue of resources development in the East China Sea</u>. <u>China and Japan agreed to make efforts to seek a fast solution to this issue through dialogues, hoping to make the East China Sea the "sea of cooperation."</u></li> </ul>
India	<ul style="list-style-type: none"> <li>○ Japan signed <u>the joint declaration on comprehensive energy cooperation</u> covering the fields of oil and natural gas and energy saving. (September 29, 2005)</li> <li>○ A <u>conference was held</u> to discuss how to promote energy cooperation <u>in accordance with the said joint declaration</u>. (March 2, 2006)</li> <li>○ In accordance with the joint declaration, Japan Oil, Gas and Metals National Corporation (JOGMEC) and ONGC Vidish (OVL) <u>signed the memorandum for the joint promotion of prospecting and developing activities of oil and natural gas</u>. (April 21, 2006)</li> </ul>
ASEAN+3	<ul style="list-style-type: none"> <li>○ The second ASEAN+3 Ministers on Energy Meeting was held, where <u>an agreement was reached on cooperation for energy security and sustainability</u>. (on July 13, 2005 in Siemreap)</li> </ul>
Brazil	<ul style="list-style-type: none"> <li>○ Leaders of the two countries agreed on the establishment of the working group on the <u>import of ethanol, etc.</u> (on May 27, 2005 in Tokyo)</li> <li>○ Brazil's Minister of Development, Industry and Commerce, Luiz Fernando Furlan, and the Japanese Minister of Economy, Trade and Industry, Toshihiro Nikai, organized the minister-level working group on the <u>introduction of bioethanol</u>. (on April 10, 2006 in Tokyo)</li> </ul>
Russia	<ul style="list-style-type: none"> <li>○ The Japanese Minister of Economy, Trade and Industry, Toshihiro Nikai, Minister of Foreign Affairs, Taro Aso, and the Russian Minister of Industry and Energy, Victor Khristenko, <u>signed two documents that would facilitate future energy cooperation between Russia and Japan</u>, including the Pacific Ocean pipelines project and the Sakhalin project. (on November 21, 2005 in Tokyo)</li> <li>○ The Japanese Agency for Natural Resources and Energy and Russian company GASPROM concluded <u>the agreement on comprehensive cooperation</u> that includes expansion of the cooperative relationship between GASPROM and Japanese companies. (on November 21, 2005 in Tokyo)</li> </ul>
Iraq	<ul style="list-style-type: none"> <li>○ The Japanese Minister of Economy, Trade and Industry, Toshihiro Nikai, and Iraq's Oil Minister, Ibrahīm Bahr al-Uloum (then), signed the <u>joint declaration on assistance for restoration of the oil and natural gas sectors and support for activities of Japanese companies</u>. (on December 6, 2005 in Japan)</li> </ul>

Saudi Arabia	<ul style="list-style-type: none"> <li>○ Japan implemented the <u>joint research project</u> with the King Fahd University of Petroleum &amp; Minerals on the <u>development of state-of-the-art oil refining technology</u>. (fiscal years 1996 to 2005)</li> <li>○ Sumitomo Chemical Co., Ltd. established a joint enterprise with a Saudi Arabian company for the purpose of improving the operation performance of existing refineries as well as constructing a large-scale petrochemical plant. (on September 19, 2005)</li> <li>○ The Japanese Minister of Economy, Trade and Industry, Toshihiro Nikai, and Saudi Arabia's Minister of Petroleum &amp; Mineral Resources, Ali Ibrahim al-Naimi, agreed that <u>the conference on energy cooperation</u> would be held between the Director General of the Japanese Agency for Natural Resources and Energy and Saudi Arabia's Vice Minister of Petroleum &amp; Mineral Resources. (April 2006)</li> </ul>
Round table of energy producing and consuming countries	<ul style="list-style-type: none"> <li>○ Ministers in charge of energy policy from about 60 energy producing and consuming countries in the world assembled at the 10th International Energy Forum (IEF), where <u>global energy security</u> was discussed. (April 22 to 24, 2006 in Qatar)</li> </ul>
Kazakhstan	<ul style="list-style-type: none"> <li>○ A high-level conference was held where the two countries shared the understanding of the significance of establishing <u>strategic bilateral cooperation for the development of uranium mines</u> as well as of implementing specific cooperative projects. (on November 21, 2005 in Kazakhstan)</li> </ul>
G8 meeting of ministers in charge of energy policy	<ul style="list-style-type: none"> <li>○ G8 ministers in charge of energy policy had a conference and agreed on the significance of ① promoting energy saving, ② creating the environment to facilitate investments in energy projects, and ③ improving efficiency in the energy market. (on March 16, 2006 in Moscow)</li> </ul>



cooperation with Asian countries



Efforts to strengthen relationships with energy supplying countries, etc.

○ Strengthening measures for promoting energy efficiency and conservation mainly in the commercial/residential sector and the transport sector

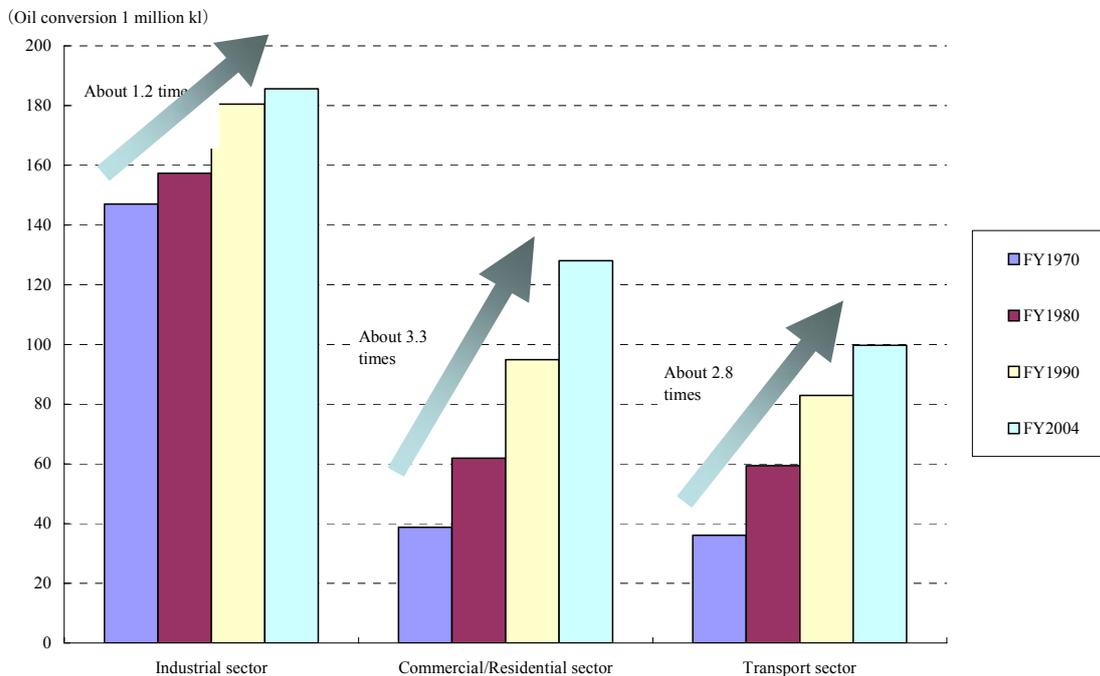
• Energy demand in Japan is on a gradual upward trend as a whole. The commercial/residential sector and the transport sector representing especially show a large increase in energy demand recently. In those sectors, energy demand today is about 3.3 times (commercial/residential sector) and 2.8 times (transport sector) as much as the demand of thirty years ago.

• In order to strengthen measures for promoting efficiency and conservation especially in the commercial/residential sector and the transport sector, the Act on the Rational Use of Energy has been revised.

Specifically, under the revised Act:

- (1) Plants and workshops are required to control the combined consumption of heat and power.
- (2) Measures for promoting energy efficiency and conservation for the transport sector have been introduced.
- (3) Measures for promoting energy efficiency and conservation for housing and building sectors have been strengthened.
- (4) Companies are required to make efforts to provide appropriate information to consumers in order to facilitate energy saving efforts of consumers.

Change in final energy consumption by sector



## ○ Promoting steady nuclear energy including nuclear fuel cycles

- There is a worldwide tendency to reevaluate nuclear power generation from the viewpoint of securing energy supply and addressing climate change.
- In October 2005, the Atomic Energy Commission of Japan established the “Framework for Nuclear Energy Policy” which shows basic principles of the nuclear energy policy of Japan (① to maintain or increase the current share of nuclear power generation, which is 30 to 40% of the total electricity generation, even after 2030, ② to steadily promote nuclear fuel cycles, ③ to introduce fast breeder reactors on a commercial basis, etc.). The Japanese government determined through the Cabinet meeting to respect the Framework.
- As a result of the efforts and cooperation of relevant parties and organizations, specific progress has been seen in various projects. (location and construction of fuel reprocessing plants, MOX fuel fabrication plants and interim storage facilities, promotion of pluthermal projects, building of reformed “Monju” (prototype fast breeder reactor) to resume operation, etc.)
- Also, in an effort to promote specific programs in accordance with the above basic principles of the Framework, the Nuclear Energy Subcommittee of the Electricity Industry Committee, Advisory Committee for Natural Resources and Energy under the Minister of Economy, Trade and Industry has started discussions on various issues including the promotion of construction of nuclear power plants under the circumstances of promoted liberalization of the power market, the maintenance of sufficient human resources and technologies to support nuclear energy, the scenario toward the practical use of fast breeder reactors, the simultaneous pursuit of nuclear nonproliferation and peaceful use of nuclear energy, etc., and the Subcommittee is going to make a report on addressing these issues by the end of the summer of 2006.

### Nuclear energy-related movements in foreign countries

United States	After twenty years of no construction, the United States has launched a joint project by the government and a private company to construct a new nuclear power plant to be completed by 2010. The establishment of the Energy Policy Act (in August 2005), which introduced assistance measures for businesses, makes nuclear promotion movements more active. In February 2006, the country announced the Global Nuclear Energy Partnership (GNEP) which aims at seeking the development of nuclear power generation while promoting nuclear nonproliferation.
France	In October 2004, the country decided on the construction of its first advanced nuclear reactor. This year, President Chirac declared that France would start operation of a prototype next-generation reactor by 2020.
Germany	In 2002, the country determined to phase out nuclear power plant operation. The “grand coalition” administration, which was formed at the federal election in September 2005, continues to support the policy to stay away from nuclear energy, but there are opponents of this policy in Germany. Therefore, it is not certain at this moment whether Germany will continue to maintain the current attitude.
Finland	The country has started to construct its fifth reactor, after the complete changeover from the previous policy against the new construction.
China	The country has a plan to raise the current nuclear power capacity of about 9 million kW (including the capacity of the two reactors under construction) to about 36 to 40 million kW by 2020.

## Recent movements in relation to nuclear fuel cycles

Rokkasho reprocessing plant	In January 2006, a test using uranium was completed at a reprocessing plant in Rokkasho Village in Aomori Prefecture. The final test (called “active test”) was started in March, using actual spent fuels. The plant will start operation in 2007.
MOX fuel plant	In April 2005, the governments of Aomori Prefecture and Rokkasho Village concluded an agreement with Japan Nuclear Fuel Limited on fundamental matters about the location of the MOX plant. Currently, the construction plan is under the procedure of safety examination for official permit of operation. The construction work will be started in 2007 and the plant will start operation in 2012.
Pluthermal	Steady movements are seen toward the realization of pluthermal operation, including the permit given by the government and agreement of local residents on the change of the reactor installation of Genkai No.3 Plant of Kyushu Electric Power Company, the official permit given on the change of the reactor installation of Ikata-3 of Shikoku Electric Power Company, and permission request for the change of the reactor installation of Hamaoka Unit 4 of Chubu Electric Power Company.
Interim storage facilities	Recyclable-Fuel Storage Company, which has been established jointly by the Tokyo Electric Power Company and the Japan Atomic Power Company, is planning to construct an interim storage facility in Mutsu City, Aomori Prefecture. In October 2005, the governments of Aomori Prefecture and Mutsu City officially accepted the construction plan. The facility will start operation by 2010.
Monju (prototype fast breeder reactor)	In February 2005, the governments of Fukui Prefecture and Tsuruga City accepted to start construction of the remodeled Monju. In May, the Supreme Court upheld the state’s permit to build the Monju reactor. After the remodeling construction, the plant will start test operation and resume actual operation by 2008.

## ○ Institutional improvements for the comprehensive and strategic promotion of energy policy

•In response to the increasing tightness of global energy market, Japan needs to establish a new energy strategy, focusing on energy security.

•Since February 2006, the Coordination Subcommittee of the Advisory Committee for Natural Resources and Energy has started discussions on a national energy strategy that would cope with various changes in the internal and external conditions surrounding energy, and also commenced review of the Basic Energy Plan which prescribes basic principles of national energy policy.

•In December 2005, the Minister of Economy, Trade and Industry announced the reform on the Energy Special Account for the purpose of securing a sufficient budget for the comprehensive and strategic promotion of energy policy while taking worse fiscal conditions into consideration.

### Outline of the reform of the Energy Special Account

- ① Currently, the revenue of the electric power development enhancement tax goes directly to the special account for electric power development enhancement. Reform intends to allow the transfer of the revenue to the general account. This makes it possible for the revenue to temporarily contribute to the general account until the time that capital demand in electric power development enhancement grows through progress of nuclear power plant projects etc.
- ② At the same time, respecting the original purpose of the electric power development enhancement tax, which should be used to facilitate the promotion of nuclear power plant construction plans, etc., and considering the responsibility to pursue energy policy including electric power development, the reform intends to secure funds necessary for electric power development by ensuring that the tax would be ultimately used for the original purposes where the transferred amount to the general account would be returned to the special account when actually needed.
- ③ From the viewpoint of promoting energy policy comprehensively, the special account for petroleum and sophisticated structure of oil energy supply and demand and the special account for electric power development enhancement will be integrated into one account.

## ■ Energy-related challenges and responses (Part 1)

### Energy security risks and responses

	Challenges (risks)	Policies to respond
Securing the stable supply of energy	<ul style="list-style-type: none"> <li>○ Situation in the Middle East</li> <li>○ Terrorism, natural disasters and accidents (scandals) <ul style="list-style-type: none"> <li>· Oil/gas facilities, security issues in related waters, domestic energy infrastructure, etc.</li> </ul> </li> <li>○ Decreasing investments in energy-supplying countries <ul style="list-style-type: none"> <li>· Government intervention in the market (state control, restrictions on foreign capitals, etc.) leads to decreasing investments and a lowering supply margin.</li> </ul> </li> <li>○ Movements of energy-consuming countries (China, India, etc.) <ul style="list-style-type: none"> <li>· Actions of energy-consuming countries could lead to market confusion or instability, possibly expanding any adverse influence.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>○ Cooperation with Asian countries <ul style="list-style-type: none"> <li>· Policy dialogue</li> <li>· Cooperation for energy saving and environmental protection</li> <li>· Cooperation for stockpiles</li> </ul> </li> <li>○ Contribution to and cooperation with energy-supplying countries <ul style="list-style-type: none"> <li>· Cooperation in the field of human resources development and state development</li> <li>· Global dialogues between energy-supplying and energy-consuming countries</li> </ul> </li> </ul> <ul style="list-style-type: none"> <li>○ Promoting energy saving <ul style="list-style-type: none"> <li>· Strengthening measures in the commercial/residential sector and the transport sector</li> <li>· Raising people's understanding of the significance of energy saving</li> </ul> </li> <li>○ Promoting nuclear power generation <ul style="list-style-type: none"> <li>· Maintaining or expanding medium- or long-term nuclear power generation</li> <li>· Early establishment of nuclear fuel cycle (pluthermal, Monju, etc.)</li> <li>· Promoting waste treatment measures</li> </ul> </li> <li>○ Reducing dependence on oil <ul style="list-style-type: none"> <li>· Promoting the utilization of gaseous energy</li> <li>· Alternative fuels for transportation</li> <li>· Promoting recyclable energy</li> <li>· Promoting clean coal cycle</li> </ul> </li> <li>○ Securing energy resources <ul style="list-style-type: none"> <li>· Promoting self-development projects and diversification of supply sources</li> <li>· Securing rights and interests</li> <li>· Strengthening relationship with oil/gas-producing countries</li> <li>· Developing domestic resources</li> </ul> </li> </ul> <ul style="list-style-type: none"> <li>○ Strengthening emergency measures <ul style="list-style-type: none"> <li>· Emergency measures through international cooperation with IEA participating states</li> <li>· Strengthening the stockpiling capability</li> </ul> </li> </ul>
Environmental compliance	<ul style="list-style-type: none"> <li>○ Global warming and environmental protection <ul style="list-style-type: none"> <li>· Increase of CO<sub>2</sub> emission attributed to energy consumption</li> <li>· Refusal of the U.S. to participate in the Kyoto Protocol, and the existence of those developing countries who are not required to reduce their CO<sub>2</sub> emission in spite of their high emission level</li> <li>· Release of nitrogen oxides (NO<sub>x</sub>) and SPM (suspended particulate matter) by automobiles</li> <li>· Cross-border pollution originating from China</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>○ Controlling CO<sub>2</sub> emission <ul style="list-style-type: none"> <li>· Energy saving, low-CO<sub>2</sub> energy (nuclear power, new energy and gas) and waste reduction (fuel cell, cogeneration)</li> <li>· Discussion of future frameworks, such as G8, APP, COP11, COP/MOP1, involving the United States and China</li> </ul> </li> <li>○ Promoting clean cycle of fossil fuels <ul style="list-style-type: none"> <li>· Countermeasures against mobile emission sources (low-sulfur or sulfur-free gasoline or gas oil)</li> <li>· Promoting clean coal cycle</li> <li>· Transfer of the clean coal technology to China, etc.</li> </ul> </li> </ul>
Utilization of the market principle	<ul style="list-style-type: none"> <li>○ Problems in the energy industry <ul style="list-style-type: none"> <li>· Problems in the energy industry, including financial difficulties of businesses, stagnant infrastructure improvement and investments in development projects, lowering supply margin and reliability, etc.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>○ Market liberalization fully taking into consideration "security of stable energy supply" and "environmental protection"</li> </ul>

## ■ Energy trend (Part 2)

- Energy and people's daily and economic activities
- Domestic energy trend
- International energy trend

## Specific efforts

- Diplomatic efforts for securing energy resources
  - Significance of diplomatic efforts
  - Strengthening relationships with Asian countries
  - Strengthening relationships with energy-supplying countries
  - International cooperation with energy-consuming countries and dialogues between energy-producing and energy-consuming countries
- Promoting energy saving
  - Promotion of energy saving measures
  - Changes of energy saving policy in the past
  - Energy saving measures being implemented by respective sectors
- Promoting nuclear energy
  - Positioning of nuclear energy within energy policy
  - Changes of nuclear energy policy in the past
  - Recent efforts
- Reducing dependence on oil among energy sources
  - Trend of diversification of energy sources after the oil crises
  - New energy
  - Gaseous energy
- Securing energy resources
  - Multi-polarization of supply sources of oil and promotion of self-development projects
  - Major projects
- Emergency measures
  - Stockpiling systems in Japan
  - Improving and expanding oil stockpiles and utilization systems
  - Stockpiling of liquefied petroleum gas
- Safety assurance in energy utilization
  - Ensuring safety of nuclear energy and people's trust of safety
  - Ensuring safety of other energies and people's trust of safety
- Energy industry
  - Oil industry
  - Electricity industry
  - Gas industry
- Promoting the development of energy technologies
  - Significance of developing energy technologies
  - Efforts for the development of energy technologies
- Collection of people's opinions and requests concerning energy, publicity and education
  - Efforts for collecting people's opinions and requests concerning energy, and publicity efforts
  - Efforts for energy education

## ■ General situation of energy supply-demand measures taken during fiscal 2005 (Part 3)

- Measures implemented during fiscal 2005
- Promotion of energy demand measures
- Development, introduction and utilization of diverse energies
- Efforts to secure the stable supply of oil
- Discussion on desirable electricity industry system and appropriate operation of gas industry system
- Efforts to optimize energy supply-demand structure based on a long-term vision
- Measures concerning energy technologies
- Promotion of information disclosure and efforts of spreading knowledge
- Promotion of international cooperation