ELECTRICITY REVIEW JAPAN

The Federation of
Electric Power Companies of
Japan

2011

History of Japan's Electric Power Industry

Electricity was first used in Japan on March 25, 1878 at the Institute of Technology in Toranomon, Tokyo when an arc lamp was switched on in commemoration of the opening of the Central Telegraph Office. Eight years later in 1886, Tokyo Electric Lighting commenced operations as the nation's first electric power company, and began supplying electricity to the public in the following year.

In the early days, electricity was used primarily for lighting and gradually found broader applications as a power source. By 1896, the number of electric utilities established throughout the nation reached a total of 33, and the number of electric lights with a power supply increased to 120,000.

The early 20th century marked the establishment of long-distance transmission technology. As larger power plants were introduced, generation costs fell and electric lights came into wider use throughout the country. Consequently, electricity became an indispensable power source for industry as well.

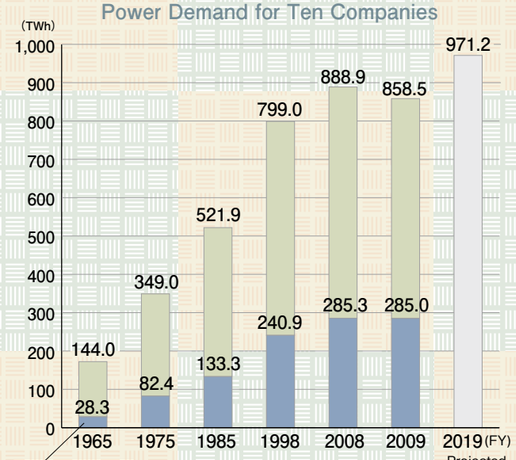
In the years that followed, the electric power industry grew in tandem with the modernization and development of Japan's industry. At the same time, the industry experienced a major restructuring that led to the dissolution of 700 electric utilities, which merged to create five major electric utilities after the First World War. During the Second World War, the electric power industry was completely state-controlled and utilities were integrated into Nihon Hatsusoden Co. (a nationwide power generating and transmitting company) and nine distribution companies.

By the end of the war in 1945, Japan's electric power facilities had been destroyed by bombing during the conflict or had deteriorated from overuse. While restructuring of the industry was being discussed, the Korean War broke out in 1950. The resulting war boom allowed utilities to recover rapidly, and as a result, nine regional private electric power companies (Hokkaido, Tohoku, Tokyo, Chubu, Hokuriku, Kansai, Chugoku, Shikoku and Kyushu) were established in 1951. This structure remains to this day, and with the return of Okinawa to Japan in 1972, Okinawa Electric Power Co. joined as a tenth member.

In March 2000, partial liberalization of power retail supply for extra-high voltage users started. The Electricity Industry Committee (an Advisory Committee for Natural Resources and Energy, a consultative body to the Minister of Economy, Trade and Industry) verified the current scheme and discussed how the electric power industry should operate in the future. In conclusion, the committee proposed the establishment of a Japanese model of liberalization, which is based on fair competition and transparency while maintaining a vertical integration of generation, transmission, and distribution in the light of a stable supply of electricity. As a result, the revised Electricity Utilities Industry Law was promulgated in June 2003 and the scope of liberalization was expanded twice, once in April 2004 and again in April 2005.

Today, the ten electric power companies that make up the membership of the Federation of Electric Power Companies (FEPC) provide reliable electricity supplies to the entire nation. As in the past, the industry continues to grow and change, with issues such as environmental preservation and market liberalization.

Power Demand for Ten Companies



Note: Data in 1965 is based on nine companies.
Sources: Handbook of Electric Power Industry and others

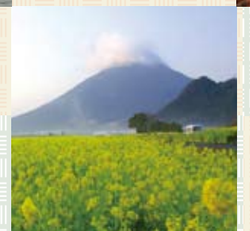










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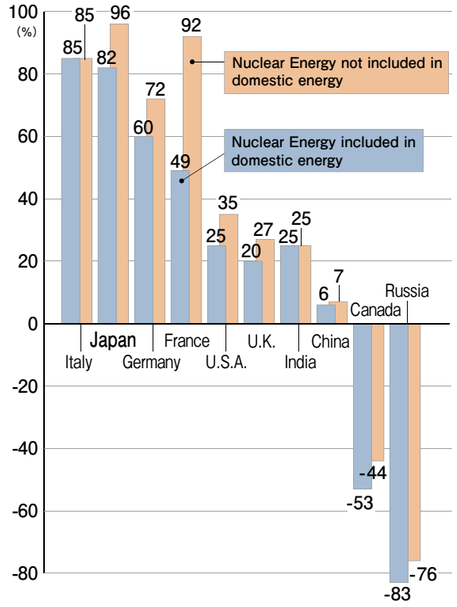
Note:
Nine Companies include Hokkaido, Tohoku, Tokyo, Chubu, Hokuriku, Kansai, Chugoku, Shikoku and Kyushu.
Ten Companies include the above Nine Companies plus Okinawa.

Japan's Vulnerable Energy Supply Situation

Resource-poor Japan is dependent on imports for 96% of its primary energy supply; even if nuclear energy is included in domestic energy, dependency is still at 82%. Thus, Japan's energy supply structure is extremely vulnerable. Following the two oil crises in the 1970s, Japan has diversified its energy sources through increased use of nuclear energy, natural gas and coal, as well as the promotion of energy efficiency and conservation. Despite these improvements, oil still accounts for about 50% of Japan's primary energy supply, and nearly 90% of imported oil comes from the politically unstable Middle East. Moreover, prospects for importing electricity from neighboring countries are very poor because Japan is an island nation. Finally, there are growing concerns about environmental problems due to energy use and the need to reduce carbon dioxide emissions to cope with global warming. Therefore, Japan's energy situation forces the country to focus on the two prime concerns of energy security and environmental preservation.

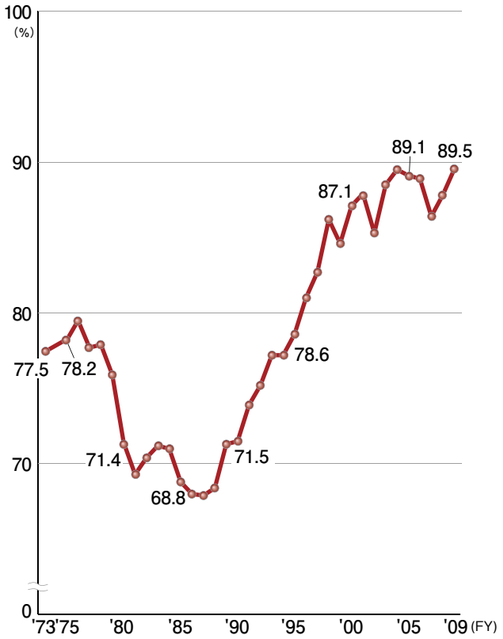
LNG Terminal

Dependence on Imported Energy Sources by Major Countries (2008)



Source: IEA "Energy Balances of OECD Countries 2010 Edition",
IEA "Energy Balances of Non-OECD Countries 2010 Edition"

Japan's Reliance on Middle East Crude Oil of Total Imports



Source: Petroleum Association of Japan

Japan's Energy Policy

On the basis of such energy-related circumstances, the Basic Act on Energy Policy was promulgated by the national government in June 2002. The Act lays down three basic policies with respect to measures on energy supply and demand:

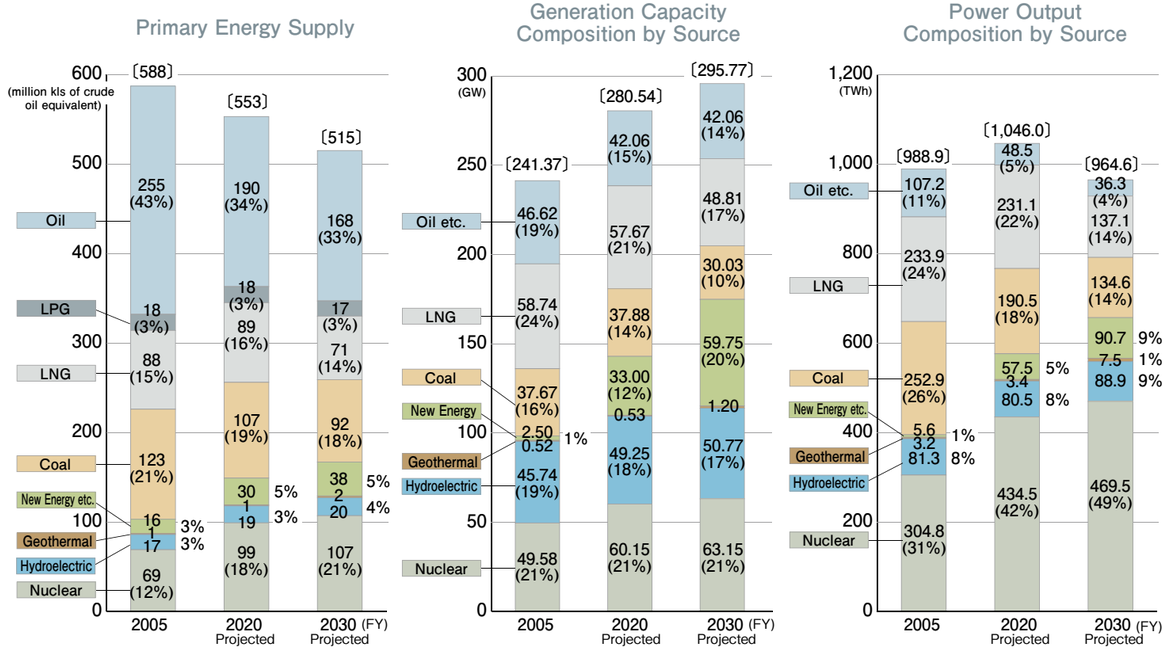
1) Securing stable supply,
2) Environmental suitability,
3) Utilization of market mechanisms, which should be coordinated with the first two basic policies.

As mandated by this Act, in October 2003 the Cabinet endorsed a national Basic Energy Plan, which outlines the fundamental direction of mid- and long-term energy supply and demand policies until 2030. The Plan was revised in 2007 in accordance with the law which stipulates that the government shall review the plan at least once every 3 years.

In May 2006, METI drafted the New National Energy Strategy, which presents Japan's long-term energy strategy centered on the reinforcement of energy security and stipulates numerical targets. Regarding nuclear energy, maintaining its share of power output at least 30% to 40% until 2030 and beyond is clarified as a target.

In August 2005, The Energy Supply and Demand Subcommittee of the Advisory Committee for Natural Resources and Energy to the Minister of Economy, Trade and Industry (METI) presented the updated Long-term Energy Supply and Demand Outlook. This announcement followed Prime Minister Aso's decision to set a new mid-term GHG emission reduction target (to reduce the emissions by 15% from the 2005 level by 2020). The Outlook considers concrete measures for GHG emissions reduction to achieve the government's target along with refiguring of the prospect of energy supply and demand structure. While the Outlook provides three separate model cases based on the extent of development and introduction of energy technologies, all of the cases assume that measures will be taken to ensure that nuclear power generation continues to play an important role into the future as an essential power source; premises include the construction of nine new nuclear power plants and improvement of the overall capacity factor by approx. 20% to approx. 80% on average up to 2020.

Long-term Energy Supply and Demand Outlook (August 2009) -Maximum Introduction Case- (*)

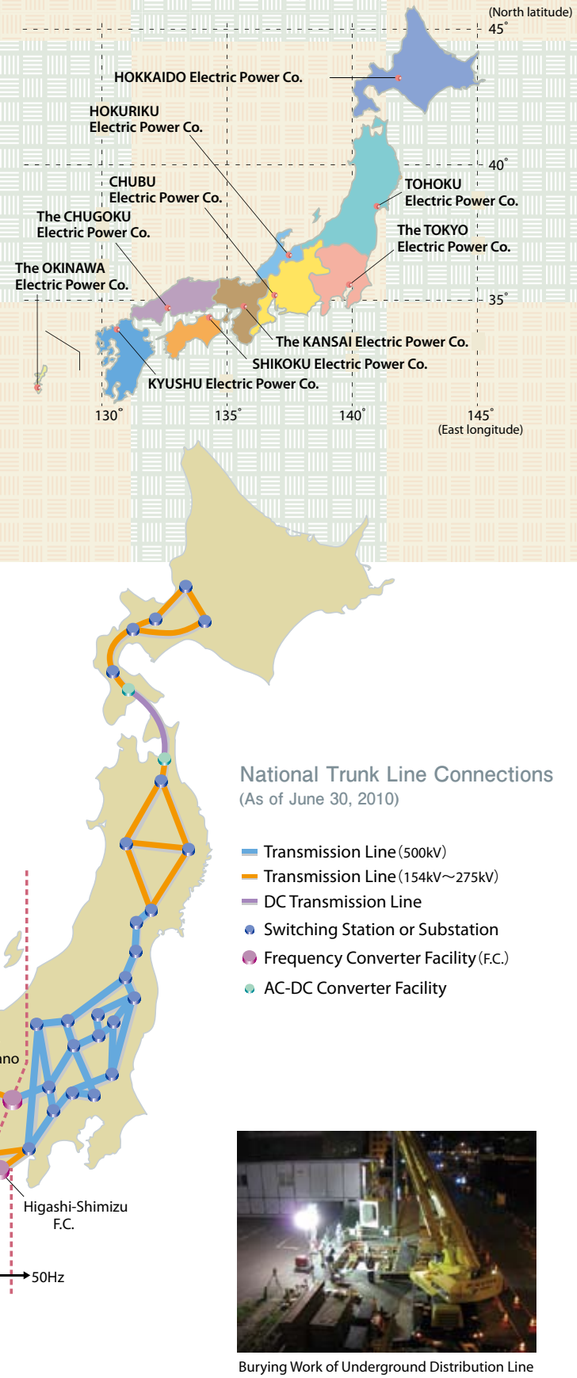


Note: (1) (*)This case assumes utmost dissemination of equipment, of which energy efficiency performance will significantly improve with cutting-edge technologies that are already at the deployment stage, without imposing obligatory measures on the people.
(2)Figures may not add up to the totals due to rounding.
Source: The Energy Supply and Demand Subcommittee of the Adcisory Committee for Natural Resources and Energy

Ten Electric Power Company Structure

The ten privately-owned regional electric power companies in Japan are responsible for providing local operations from power generation to distribution and supplying electricity to their respective service areas. In addition, the ten electric power companies cooperate with each other to ensure a stable supply to customers nationwide. For example, the electric power companies work together to exchange or provide electricity in order to cope with emergency situations resulting from accidents, breakdowns, or summer peak demand. To ensure the smooth operation of power exchange, extra-high voltage transmission lines link the entire country from Hokkaido in the north to Kyushu in the south.

The Ten Electric Power Companies by Service Area




Frequency Converter Facility

National Trunk Line Connections
(As of June 30, 2010)

- Transmission Line (500kV)
- Transmission Line (154kV~275kV)
- DC Transmission Line
- Switching Station or Substation
- Frequency Converter Facility (F.C.)
- AC-DC Converter Facility

Burying Work of Underground Distribution Line

Fair Competition and Transparency

The electric power market in Japan is gradually being liberalized, while the existing regional ten electric power companies, as "responsible entities," continue to handle their overall operations of generation, transmission, and distribution to ensure the stable supply of electricity.

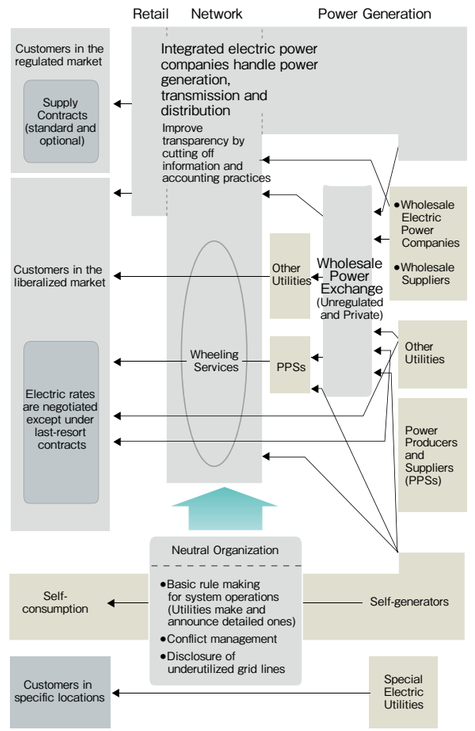
Japan has chosen to liberalize the electric power market in stages. In March 2000, the retail market was partially liberalized to allow power producers and suppliers (PPSs) to sell electricity to extra-high voltage users whose demand is approximately over 2MW. From April 2005, the scope of liberalization was expanded to all high-voltage users whose demand exceeds approximately 50kW. All customers in the regulated market continue to receive electricity supplied by each regional electric power company that is responsible for supplying electricity within its designated service area.

From April 2007, the pros and cons of total electric power liberalization were studied by the Electricity Industry Committee (an Advisory Committee for Natural Resources and Energy, a consultative body of the Ministry of Economy, Trade and Industry). In March 2008, the Committee concluded that total liberalization was unlikely to benefit customers under the present situation, and so the idea of expanding the scope of liberalization was abandoned at the time and would be subjected to future reviews after a certain period (approximately five years).

To ensure fair and transparent operations of electric power transmission and distribution, the Electric Power System Council of Japan (ESCJ) was established as a rule-maker and supervisor and started full-scale operation on April 1, 2005. In addition, Japan Electric Power Exchange (JEPX), which is formed by electric power companies, PPSs and self-generators, was established in November 2003 and started business on April 1, 2005.

* In Okinawa, the scope of market liberalization is different.

The New Electricity Supply System (from April 2005)



Column

Establishment of Electric Power System Council of Japan

In February 2004, the Electric Power System Council of Japan (ESCJ) was established in order to ensure fairness and transparency in transmission and distribution segments in which electric utilities own and operate the systems. The Council started to support power transmission and distribution from April 2005, aiming to formulate basic rules on power systems as well as to implement market oversight and dispute settlement functions.

Establishment of Japan Electric Power Exchange

In November 2003, a private non-profit organization, Japan Electric Power Exchange (JEPX), was established through investments by the participants including electric power companies, new entrants (power providers and suppliers) and non-utility generators, to provide electric power in both spot and forward trading. JEPX started operation on April 1, 2005, and aims to promote competition and revitalize the distribution of electricity nationwide.

Electric Power Development Plan

Electric power companies are steadily promoting the diversification of power sources for long-term stable supply, taking into consideration the high dependence on imported energy sources, the outlook for supply and demand, as well as environmental issues.

Electricity demand will be increasing annually by 0.8% on average up to fiscal 2019 with peak demand increasing every August by 0.4%.

By fiscal 2019, electric power companies will develop power generation facilities with a total capacity of 29.74GW, 44% (12.94GW) of which will be accounted for by nuclear power.

Demand Outlook

	FY2008 (Results)	FY2009 (Results)	FY2010 (Plan)	FY2014 (Plan)	FY2019 (Plan)	Annual Growth(%) 2008-2019
Electricity Demand (TWh)	(888.5) 888.9	(857.8) 858.7	875.6	921.0	971.2	(0.8) 0.8
Peak Demand (GW)	(174.7) 175.2	(166.0) 155.1	169.7	176.0	182.6	(0.4) 0.4
Annual Load Factor (%)	(61.2) 61.1	(62.2) 66.7	62.2	63.0	64.1	

Note: Figures in parentheses are adjusted temperature and leap-year variations.

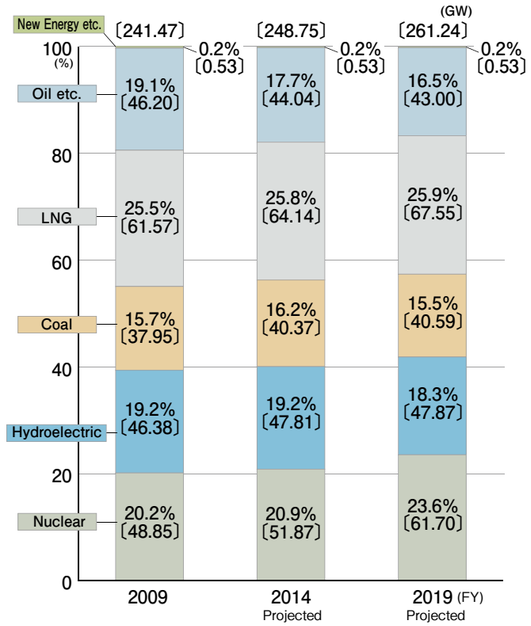
Electric Power Development Capacity

	FY2010-FY2019		Breakdown	
	GW	%	FY2010-FY2014	FY2015-FY2019
Nuclear	12.94	44	2.76	10.18
Hydro	1.56	5	1.50	0.06
Conventional	0.29	1	0.23	0.06
Pumped-storage	1.27	4	1.27	0.00
Thermal	15.14	51	10.35	4.78
Coal	2.90	10	2.50	0.40
LNG	11.79	40	7.49	4.30
Oil etc.	0.45	2	0.37	0.08
New Energy etc.	0.10	0	0.10	0.00
Total	**29.74**	**100**	**14.71**	**15.03**

Note: Figures may not add up to totals due to rounding.
Source: Long-Term Electric Power Facilities Development Plan and others

Generation Capacity Composition by Energy Source

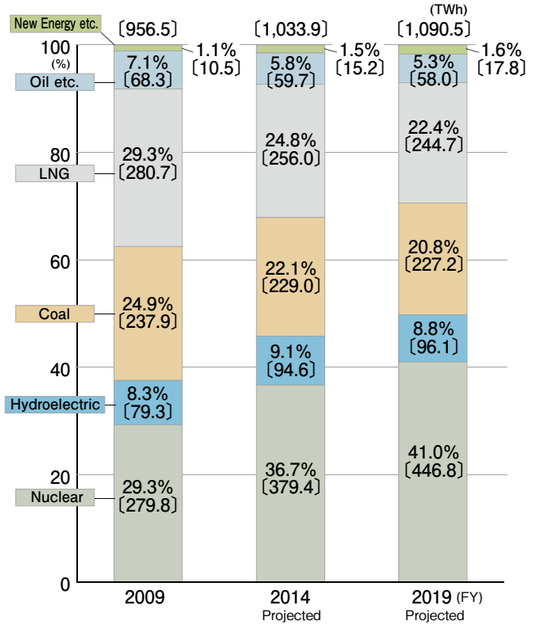
(For Ten Companies, Wholesale Electric Power Companies, Wholesale Suppliers and Others)



Note: Figures may not add up to totals due to rounding.
Sources: Long-Term Electric Power Facilities Development Plan and others

Power Output Composition by Energy Source

(For Ten Companies, Wholesale Electric Power Companies, Wholesale Suppliers and Others)



Note: Figures may not add up to totals due to rounding.
Sources: Long-Term Electric Power Facilities Development Plan and others

Optimal Combination of Power Sources

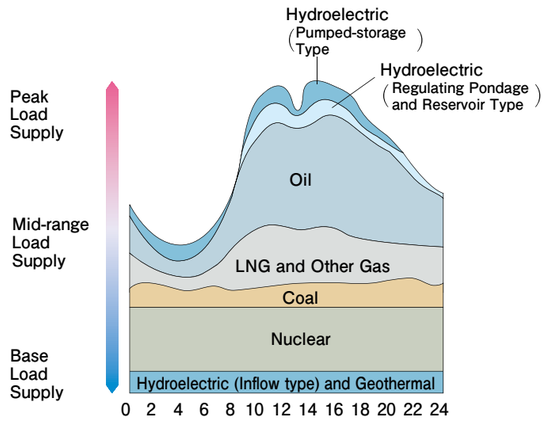
Due to the nature of supplying electric power — a commodity that is nearly impossible to store — electric power companies generate electricity by combining various power sources based on optimal operational and economic performances to ensure that the fluctuating demand can always be met.

Nuclear power generation is the key base-load power source and will continue to play an important role in contributing to stable supply and help to deal with global environmental issues. Hydroelectric and geothermal power generation, which have excellent environmental characteristics, will be developed considering environmental impacts as well as reduction in development costs.

Coal-fired power generation excels in stable base-load supply and economic performance, and so electric power companies will develop it while improving thermal efficiency and considering environmental impacts. Liquefied natural gas (LNG) fired power generation excels in high thermal efficiency and environmental characteristics, and its use will also continue to expand.

Finally, photovoltaic and wind power generation are clean, indigenous sources of energy, and electric power companies will cooperate with the national government to attain the goal for new energy utilization.

(Example) Combination of Power Sources



Hydroelectric and nuclear power provides base load supply, while coal and LNG are major power sources for mid-range load supply. Oil-fired and pumped-storage hydroelectric power respond to peak demand fluctuation and contribute to consistent stable supply of electricity.

Recovery Operations from Heavy Snow Damage

Laying Operation of Submarine Cable

Profile of Japan's Major Power Generation Sources

Hydroelectric Power

Hydroelectric power is one of the few self-sufficient energy resources in resource-poor Japan. Hydroelectric power is an excellent source in terms of stable supply and generation cost over the long term. Hydroelectric power saw a rebirth in development following the oil crises of the 1970s. Although steady development of hydroelectric power plants is desired, Japan has used nearly all available sites for the construction of large-scale hydroelectric facilities, and so recent developments have been on a smaller scale.

As the gap in demand between daytime and nighttime continues to grow, electric power companies are also developing pumped-storage power generation plants to meet peak demand. The share of pumped-storage generation facilities of the total hydroelectric power capacity in Japan is growing year by year.

Thermal Power

Initially, coal was the dominant fuel for thermal power generation in Japan, but it later lost that place to oil. Today, a diverse range of fuels including coal, oil, and LNG are used for the important generating role that thermal power plants play. In particular, in response to global environmental concerns, electric power companies are promoting the introduction of LNG fired plants, as they emit less CO_2 and other pollutants.

To enhance thermal efficiency further, combined-cycle generating plants with both gas and steam turbines have been installed. As a result, gross thermal efficiency (maximum designed value) has exceeded 50%. In the future, we will continue to research and develop new technologies in order to increase thermal efficiency as well as the use of integrated coal gasification combined cycle (IGCC) power generation.

Nuclear Power

Japan's first commercial nuclear power plant started operation in Ibaraki Prefecture in 1966. As of the end of December 2009, Japan has fifty-four reactors operating around the country, usually accounting for around one-third of the country's total electric power output. By fiscal 2018, the nuclear output share is expected to reach 40 percent. Currently, there are three plants under construction, as well as another ten that are in the advanced planning stages.

While placing the highest priority on nuclear safety and public trust, Japanese electric power companies will continue to develop nuclear power generation as a base-load power source that plays an important role in Japan's electric power supply in order to secure a steady supply of electricity and address global environmental issues.

Nuclear power makes a great contribution to energy security for resource-poor Japan by reducing the energy-equivalent of approximately 440 million barrels of oil per year, which corresponds to about 20 percent of total annual crude imports. In addition, nuclear power generation does not emit carbon dioxide (CO_2), thus mitigating growing concerns about global warming. In FY2009, nuclear power generation had the net effect of reducing Japan's total CO_2 emissions by about 15%. For these reasons, nuclear power is expected to play a major role as a central power source in the years to come.

Okumino Hydroelectric Power Plant (Pumped-storage)

Noshiro Thermal Power Plant (Coal-fired)

Arimine Daiichi Hydroelectric Power Plant

Nanko Thermal Power Plant (LNG-fired)

Genkai Nuclear Power Plant (PWR)

Shimane Nuclear Power Plant (Unit No.3, ABWR, Under Construction)

Column

Advancement of MOX Fuel Use in Thermal Reactors

In May 2009, three electric utility companies—Kyushu Electric Power Company (EPCo.); Shikoku EPCo.; and Chubu EPCo.—safely completed transport of MOX fuel from France. Of these three companies, Kyushu EPCo. completed the loading of MOX fuel into its Unit 3 reactor at the Genkai Power Station in October 2009 during a planned off-line inspection. As the Genkai-3 resumed commercial operation in December 2009, it marked the commencement of commercial use of MOX fuel in thermal reactors in Japan.

In March 2010, Shikoku EPCo's Ikata-3 reactor also began incorporating MOX fuel for commercial operation, thus becoming the second precedent for other power companies to follow.

World's First Full-MOX Nuclear Power Plant

On April 23, 2008, METI permitted Electric Power Development Co. Ltd. (EPDC) to construct the Ohma Nuclear Power Plant (ABWR, 1,383MW) in the town of Ohma in Aomori Prefecture. This marks the first construction of a nuclear power plant at a new site in Japan in a decade. Ohma Nuclear Power Plant is the world's first full-MOX nuclear power plant; it is designed to use MOX fuel in the entire core, thus playing a pivotal role in enhancing the flexibility of Japan's MOX fuel utilization program. EPDC plans to start operations in November 2014.

Ohma Nuclear Power Plant (Under Construction)

Japan's Nuclear Fuel Cycle

Japan has adopted a closed nuclear fuel cycle policy. Because Japan lacks sufficient natural resources, it has decided to recycle spent nuclear fuel domestically in order to establish nuclear power as a homegrown energy source. The benefits of a closed nuclear fuel cycle for Japan are clear: it adds to long-term energy security by reducing dependence on imported fuels; it conserves uranium resources; and it reduces the amount of high-level radioactive waste that must be disposed of.

Reprocessing is a chemical process that recovers plutonium and reusable uranium from spent fuel and separates radioactive wastes into more manageable forms. Once recovered, the plutonium is ready to be re-introduced into the nuclear power plants in the form known as uranium-plutonium mixed oxide (MOX) fuel. Japan's electric power companies remain committed to a plan to utilize recovered plutonium – in the form of MOX fuel – in 16 to 18 nuclear reactors by fiscal 2015 at the latest.

In the past, Japan has relied on countries such as the U.K. and France to reprocess most of the spent fuel it produced. However, to place Japan's domestic nuclear fuel cycle on a firmer footing, Japan Nuclear Fuel Limited (JNFL) is preparing to start the commercial operation of a reprocessing plant in 2012 at a site in Rokkasho-mura in the northern prefecture of Aomori. In addition, JNFL engages in uranium enrichment, temporary storage of vitrified waste, and disposal of low-level radioactive waste. JNFL also has plans to construct a MOX fuel fabrication plant.

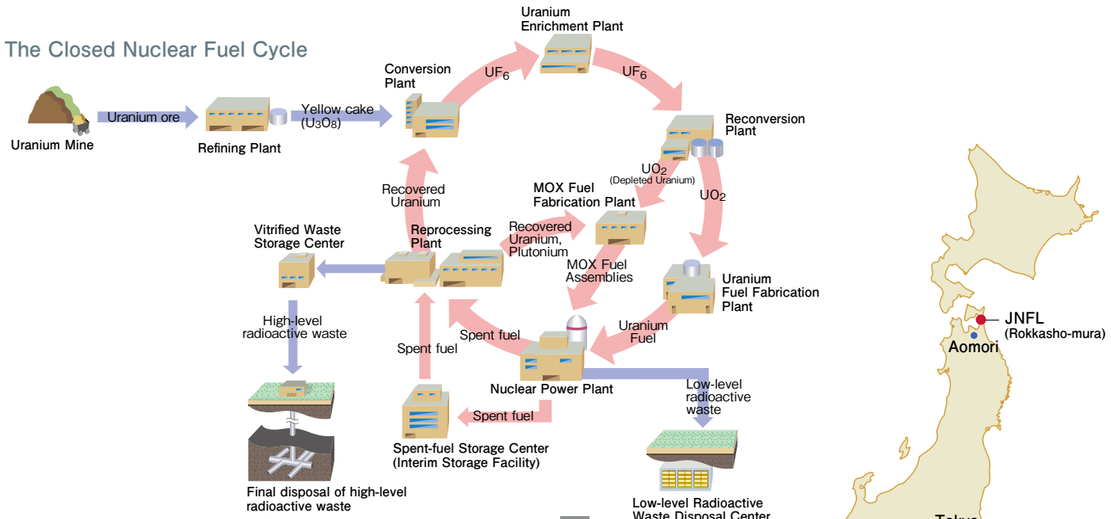
Outline of JNFL's Nuclear Fuel Cycle Facilities (as of October 31, 2010)

Facility	Reprocessing Plant	MOX fuel fabrication plant	Vitrified waste storage center	Uranium enrichment plant	Low-level radioactive waste disposal center
Site	Iyasakatai, Rokkasho-mura, Kamikita-gun, Aomori Prefecture			Oishitai, Rokkasho-mura, Kamikita-gun, Aomori Prefecture	
Capacity	Maximum capacity: 800 ton-U/year Storage capacity for spent fuel: 3,000 ton-U	Maximum capacity: 130 ton-HM/year (*)	Storage capacity for wastes returned from overseas plants: 1,440 canisters of vitrified waste Planned to be expanded to 2,880 canisters	1,050 ton-SWU/year (*) Planned to be expanded to a maximum capacity of 1,500 ton-SWU/year	Authorized capacity: 200,000m³ (equivalent to 1 million 200 litter drums) Planned to be expanded to 600,000m³ (equivalent to 3 million 200 liter drums)
Current Status	Under construction	Applying for a business license	Cumulative number of stored canisters: 1,310	Present capacity: 150 ton-SWU/year	Cumulative number of stored drums: 204,699
Construction Cost	about 2,193 billion yen	about 190 billion yen	about 80 billion yen(**)	about 250 billion yen	about 160 billion yen(***)
Schedule	Start of construction: 1993 Start of operation: 2012(planned)	Start of operation: 2015(planned)	Start of construction: 1992 Start of storage: 1995	Start of construction: 1988 Start of operation: 1992	Start of construction: 1990 Start of operation: 1992

(*) "ton-HM" stands for "tons of heavy metal" which indicates the weight of plutonium and uranium metallic content in MOX. "SWU" stands for "Separative Work Unit" which is a measure of the work expended during an enrichment process of uranium
(**) Construction expense regarding 1,440 canisters of vitrified waste.
(***)Construction expense regarding 200,000 m³ low-level radioactive waste (equivalent to 1 million of 200 liter drums)

Sources: JNFL's website and others

The Closed Nuclear Fuel Cycle



The Peaceful Use of Nuclear Energy

Japan's electric power companies are fully committed to implementing the closed nuclear fuel cycle and plutonium utilization program consistent with all domestic laws and international nonproliferation standards. Since 1955, the domestic laws of Japan require that all nuclear activities, including commercial activities, be conducted only for peaceful purposes. Also, since 1968, Japan has embraced the "Three Non-Nuclear Principles," which state that Japan will not possess, produce, or permit the entry of nuclear weapons into its territory.

In addition, in 1976, the Government of Japan ratified the Nuclear Non-Proliferation Treaty (NPT) and thereby obligated itself to a national policy not to produce or acquire nuclear weapons. In order to ensure the application of more extensive safeguards, Japan signed the IAEA Additional Protocol in 1998, which allows the IAEA to carry out a range of additional inspection measures. In accordance with national laws, Japan's electric power companies submit reports on material accounting and safeguards activities to the Minister of Education, Culture, Sports, Science and Technology, and accept joint inspections by the IAEA and Japanese regulatory authorities to check the reports.

The results of each of these Japanese initiatives were reflected in the IAEA's conclusion in June 2004, which stated that all the nuclear materials in Japan are protected under IAEA safeguards and are not being diverted to the manufacture of nuclear weapons. As a result, more effective and efficient IAEA safeguards known as integrated safeguards commenced in Japan in September 2004.

JNFL's Reprocessing Plant

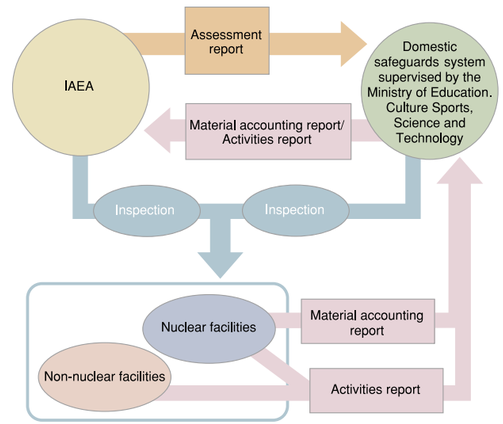
Central Control Room of Reprocessing Plant

Column

Start of the "Active Test" and the Recovery of MOX Powder at Rokkasho Reprocessing Plant

On March 31, 2006, JNFL started the final-stage testing, called the "Active Test", at Rokkasho Reprocessing Plant. The Active Test processes real spent fuel and validates the plant's safety features and the performance of equipment and facilities before the start of commercial operations. On November 16, 2006, JNFL successfully recovered MOX powder through the testing. The most remarkable feature of the manufacturing technology at the Rokkasho plant is called co-denitration. The process, developed in Japan, does not yield pure plutonium, but produces MOX powder, which deters proliferation and will be fabricated into MOX fuel for reactors.

The Safeguards Program



Measures by the Electric Power Industry to Suppress CO_2 Emissions

The compatibility between stable electric power supply and environmental preservation is one of the most important challenges for the electric power industry. In particular, emissions of carbon dioxide (CO_2), a major cause of global warming, are closely related to energy utilization in economic activities and daily life, and so the reduction of CO_2 emissions is a major challenge for the electric power industry. Recognizing that comprehensive measures against global warming are required, electric power companies are making corresponding efforts at both the supply and demand sides of electricity, and are pursuing various projects for R&D and international cooperation.

The electric power industry is striving to achieve the target of decreasing the CO_2 emissions intensity (emissions per unit of user end electricity), averaged over the five fiscal years of 2008 through 2012, by approximately 20% from the level recorded in FY1990.

In May 2008, FEPC has drawn up "Efforts of the Electric Power Companies of Japan to Create a Low Carbon Society" which outlines plans to achieve the goals set forth in the Kyoto Protocol and to create a low carbon society in the post-Kyoto period. The electric power companies of Japan seek to increase the share of non-fossil energy (including hydro and renewables) from the present level of about 40% to 50% by fiscal 2020 based mainly on nuclear power.

The Japanese power industry will strive to achieve its emission intensity target of 0.33kg-CO_2/kWh by fiscal 2020 in efforts to create a low carbon society while securing a stable and economical supply of electricity.

Decarbonization of energy at supply-side (Lowering of CO_2 emissions intensity)

Expanding use of non-fossil energy sources
- Promotion of nuclear power generation based on the premise safety assurance
- Development and expansion of use of renewable energy sources
  Hydroelectric, geothermal, solar, wind, and biomass power generation

Improving efficiency of electric power equipment
- Further improvement of thermal efficiency of thermal power plants
  Introduction of LNG combined-cycle power plant, Improvement of thermal efficiency of coal thermal power plants
- Reduction of transmission and distribution loss
  High-voltage transmission, low-loss transformers

International efforts
- Active utilization of the Kyoto Mechanisms
  Active utilization of the Clean Development Mechanisms & investment in Carbon Funds
- Sectral approaches
  Participation in the Asia-Pacific Partnership [APP] (Peer Review Activities, etc)

Improvement of the energy usage efficiency at demand-side

Energy conservation
- Electrification promotion, energy conservation and expansion of high efficiency electric equipment
  Heat pumps, heat storage air conditioning, electric vehicles, and others
  Participation in energy saving and CO_2 reduction activities by utilizing the domestic credit system
- Utilization of untapped energy sources
  Heat recovery from river water, waste incineration facilities and substations
- PR-activities and provision of information aimed at energy conservation and CO_2 reduction
  Household eco-account book, exhibitions on energy-saving appliances and seminars on energy-saving
- Load leveling promotion such as with heat pump & thermal storage systems
  Heat pump & thermal storage type air conditioning/hot-water supply

Efforts by electric utility industry as users
- Efforts in office-use energy conservation and the use of company-owned vehicles
  Reduction of amount of power
  Introduction of electric vehicles and fuel-efficient vehicles

Research and Development

Research and Development

Supply-side
- Clean coal technology, next-generation electric power transmission and distribution technology(Smart Grid), CO_2 capture and storage technologies

Demand-side
- CO_2 refrigerant heat pump hot water heater, electric vehicles, and others

Expanding the Share of Nuclear Power and LNG-fired Thermal Power

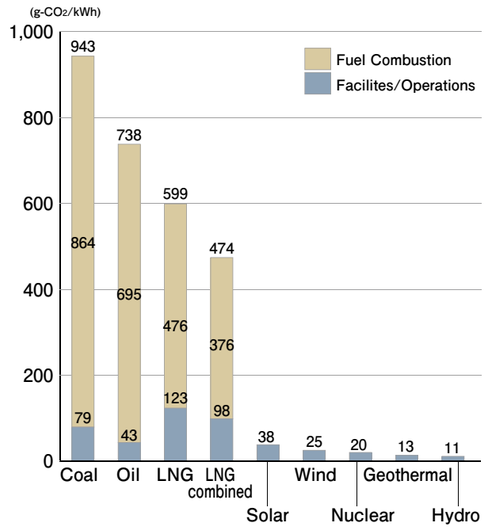
Electric power companies have been promoting nuclear power that emits no carbon dioxide (CO_2) in the process of power generation. Considering CO_2 emissions intensity over the entire life cycle of all available energy sources, CO_2 emissions from nuclear power are lower than those from thermal power, and are even lower than those from solar or wind power. Thus, nuclear power is an outstanding power source to prevent global warming.

The electric power companies of Japan are also striving to improve the capacity factor of nuclear power plants. A 1% improvement in the capacity factor at existing nuclear power plants in Japan is equivalent to a reduction of 3 million tons of CO_2.

In addition, the industry has been striving to increase the share of LNG-fired thermal power which has the advantage of relatively low CO_2 emissions, and improve the efficiency of thermal power plants.

As a result, since the oil crises of the 1970s, electricity demand in Japan has become 3.4 times greater, yet the CO_2 emission intensity level (end use electricity) in fiscal 2009 was 0.412 kg-CO_2 per kWh, meaning that emissions per kWh used have fallen by around 41% since 1970.

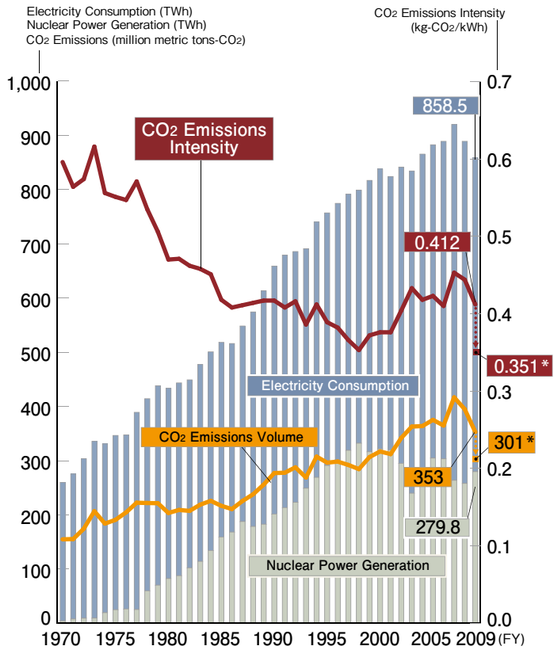
CO_2 Emissions Intensity over the Entire Lifecycle by Source



Note: (1) Based on total CO_2 emissions from all energy consumed in energy extraction, transportation, refining, plant operation and maintenance, etc. in addition to burning of the fuel.
(2) Data for nuclear power: 1) includes spent fuel reprocessing in Japan (under development), MOX fuel use in thermal reactors (assuming recycling once) and disposal of high level radioactive waste, and 2) is based on the capacity-weighted average of CO_2 emissions intensities of existing BWR and PWR plants in Japan, which are 19g-CO_2/kWh and 21g-CO_2/kWh respectively.

Source: Report of the Central Research Institute of Electric Power Industry etc.

Historical Trends in CO_2 Emissions from Power Generation (excluding self-generators)



Note: The numerical value of "0.351*" and "301*" reflected Kyoto Mechanism credit.
Source: FEPC

Renewable Energy Sources

Recently, increasing numbers of photovoltaic and wind power plants have been installed across the country as clean energy sources that emit no CO_2.

In order to promote widespread dissemination of photovoltaic and wind power generation, Japanese electric power companies have been purchasing electricity generated from solar and wind energy as well as installing their own photovoltaic and wind power plants.

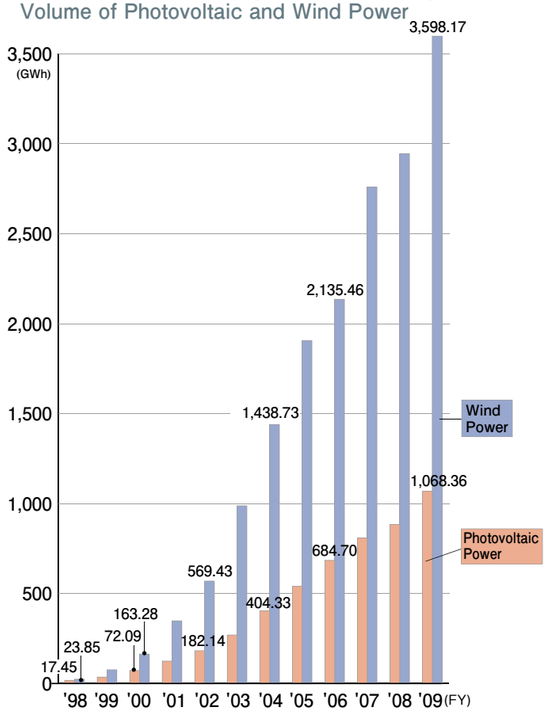
On November 1st, 2009, a new system for purchasing surplus power generated by solar power generation systems came into effect in accordance with the "Law on the Promotion of the Use of Nonfossil Energy Sources and Effective Use of Fossil Energy Materials by Energy Suppliers". Under this new system, electric power companies are required to purchase excess electricity produced by photovoltaic generation systems installed on ordinary houses at about twice the previous purchase price for the first decade and at gradually decreasing rates thereafter, while the expenses for these purchases are borne by ratepayers in the form of a surcharge.

Moreover, electric power companies of Japan are moving toward the construction of large-scale solar power plants to expand solar power in the future. In September 2008, the 10 power companies released a joint plan to build Mega Solar Power Plants with a total capacity of about 140 MW at around 30 sites throughout the country by 2020.

The Japanese power companies are also focusing aggressively on research and development to solve the problems associated with renewable energy sources, such as low generation efficiency, high generation cost, and technical difficulties in power system interconnection.

Through such measures, the electric power companies of Japan exhibit their continued commitment to efforts toward expanding and promoting renewable energy sources.

Ten Electric Power Companies' Purchasing Volume of Photovoltaic and Wind Power



Source: FEPC

Mega Solar Power Generation Plant (Conceptual Drawing)

Wind Power

Sharing Japan's Top-level Environmental Technologies with the World

As a result of taking various environmental measures at thermal power plants, Japan has achieved the world's top-level energy efficiency. Based on this achievement, the electric power industry in Japan has been making efforts to establish a mechanism for sharing such advanced technologies with electric power industries in other countries (see the column).

Through the cooperation between advanced and developing countries, and with the "sectoral approaches" for sector-by-sector improvement of energy efficiency, it will be possible to achieve compatibility between economic growth and global environmental preservation. The electric power industry of Japan has been proposing the sectoral approaches to the world as a new focus for the post-Kyoto period.

FEPC estimates that the sectoral approaches to the coal-fired power plants all over the world such as the introduction of best available technologies and the improvement of operation and maintenance would create the potential of reducing CO_2 emissions by about 1.87 billion tons-CO_2 per year in 2030, which is much greater than the total annual CO_2 emissions in Japan today (1.3 billion tons-CO_2).

Column

Participation in Asia-Pacific Partnership (APP) on Clean Development and Climate

APP is a framework for inter-regional partnership for responding to the challenges of growing energy demand, energy security, climate change, and so on. Under this framework, the seven participating countries (United States, Australia, China, India, South Korea, Japan and Canada) are pursuing the development, transfer and spread of clean and energy-efficient technologies.

CO_2 emissions from the seven participating countries account for more than half of global CO_2 emissions, and so these seven countries' efforts for reducing CO_2 emissions will have a global impact. Electric power companies in Japan are actively involved in these efforts.

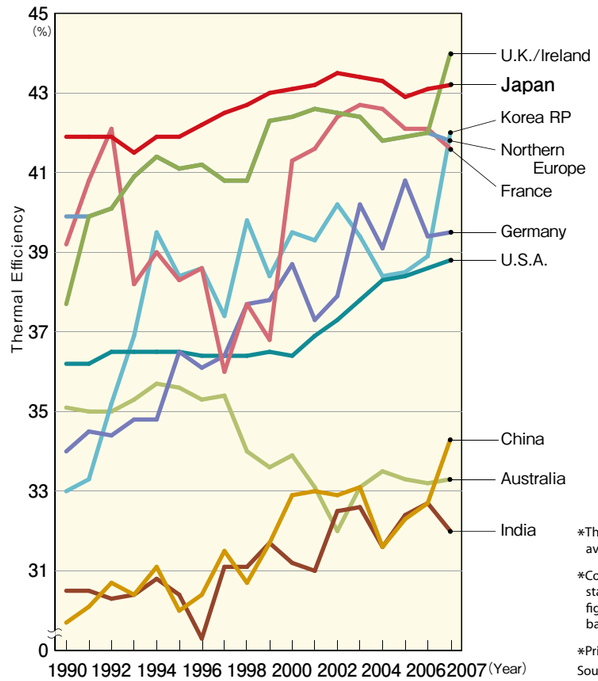
APP 2nd Peer Review Activity in India

International Electricity Partnership (IEP)

In October 2008, the FEPC of Japan, Edison Electric Institute of the United States, and EURELECTRIC of Europe jointly announced the establishment of the International Electricity Partnership (IEP) to realize a global low-carbon future through advanced electric power technologies.

On December 15, 2009, the members of IEP presented their technology roadmap entitled "Roadmap for a Low-Carbon Power Sector by 2050" on site at COP15 in Copenhagen, Denmark. In addition to providing analysis of the electric power technology and policies needed to realize a low-carbon society, this Roadmap may also be used as a guideline for transferring advanced electric power technologies to developing countries as a tool of sectoral approaches for reducing greenhouse gas emissions.

Comparison of Thermal Power Plant Efficiency in Japan and Other Countries



*Thermal efficiency is the gross generating efficiency based on the weighted averages of efficiencies for coal, petroleum and gas (low heat value standard).

*Comparisons are made after converting Japanese data (higher heating value standard) to lower heating value standard, which is generally used overseas. The figures based on lower heating value are around 5-10% higher than the figures based on higher heating value.

*Private power generation facilities, etc. not covered.

Source: International Comparison of Fossil Power Efficiency and CO_2 Intensity(ECOFYS)

Demand-side Efforts for CO_2 Reduction

In Japan, the energy demand for water heating constitutes about 30% of the total energy demand in the household sector, and so energy-saving and CO_2 reduction measures in this area are very effective. Electric power companies have been working hard to develop and promote electric appliances and systems to reduce CO_2 emissions. One example is EcoCute, a water heating system with a heat pump that uses CO_2 as refrigerant.

EcoCute heats water by transferring the thermal energy in air, which is freely available, to water by means of refrigerant. With a *single unit* of electric energy for heat pump operation and *two units or more* of thermal energy from air, it produces *three units or more* of thermal energy.

Thanks to this principle, CO_2 emissions are cut by about 50% compared with conventional combustion type water heaters. Because of this advantage, the government and industry are jointly promoting the use of heat pump systems as a key means of preventing global warming in the consumer sector (household and commercial sectors). When heat pump systems fully penetrate the consumer and industrial sectors, the resulting CO_2 emissions reduction will amount to about 12% of the present annual CO_2 emissions in Japan, which is about 1.2 billion tons-CO_2.

Column

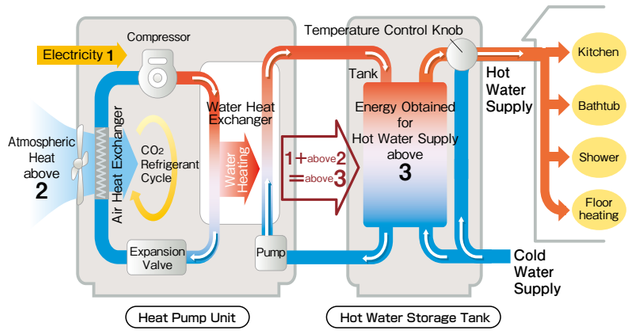
Electric Vehicle Deployment Plan

The electric power companies of Japan have been working hard to achieve full-scale commercialization of environmentally-efficient electric vehicles, such as conducting driving tests and developing new fast battery chargers jointly with automobile manufacturers. To expand the use of electric vehicles, the electric power companies jointly decided to introduce about 10,000 electric vehicles (including plug-in hybrid vehicles) in total for commercial use by FY2020.

Electric Vehicle
(Mitsubishi Motors Corporation, i MiEV)

Fast Battery Charger

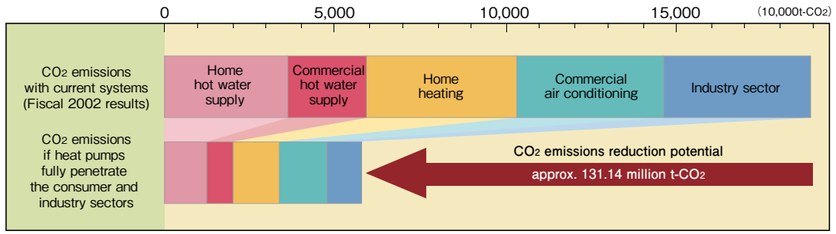
EcoCute Hot Water Supply Structure: CO_2 Retrigerant Heat Pump Hot Water Heater



1 Electricity Energy + above2 Atmospheric Heat = above 3 Energy Obtained for Hot Water Supply

EcoCute Heat Pump Unit (left) and Hot Water Storage Tank

CO_2 Reduction Effect of Heat Pump



Source: Calculations by The Heat Pump & Thermal Storage Technology Center of Japan

Strengthening International Communication and Cooperation

Japan's electric power companies remain active on a worldwide basis. In order to cope with global warming and to ensure the safety of nuclear power generation, international cooperation is indispensable. Each of the electric power companies in Japan has individual agreements with overseas utilities in order to facilitate exchanges on a wide range of information such as power generation, customer relations, distribution and quality control. The industry's top executives actively participate in international meetings such as the International Electricity Summit and the World Association of Nuclear Operators (WANO) to exchange views, while we also accept trainees from overseas. We import most of our fuel such as oil and coal from overseas countries and also keep our doors open to foreign companies on the purchase of equipment such as generators.

Overseas Offices

Please feel free to contact your nearest office.

WASHINGTON, D.C.

The Federation of Electric Power Companies of Japan, Washington Office

The Federation's Washington Office was established in January 1994. Its principal objectives are to study U.S. energy policies and to exchange information with U.S. energy opinion leaders in order to promote a greater understanding of the Japanese electric power industry.

1901 L Street, N.W., Suite 600, Washington, D.C. 20036, U.S.A.
Tel: (202) 466-6781 Fax: (202) 466-6758
http://www.japannuclear.com/
Established in 1994

Tokyo Electric Power Co., Inc., Washington Office
1901 L Street, N.W., Suite 720, Washington, D.C. 20036, U.S.A.
Tel: (202) 457-0790 Fax: (202) 457-0810
Established in 1978

Chubu Electric Power Co., Inc., Washington Office
900 17th Street, N.W., Suite 1220, Washington, D.C. 20006, U.S.A.
Tel: (202) 775-1960 Fax: (202) 331-9256
Established in 1982

LONDON

Tokyo Electric Power Co., Inc., London Office
Berkeley Square House, Berkeley Square, London W1J 6BR, U.K.
Tel: (020) 7629-5271 Fax: (020) 7629-5282
Established in 1982

Chubu Electric Power Co., Inc., London Office
Nightingale House, 65 Curzon Street, London W1J8PE, U.K.
Tel: (020) 7409-0142 Fax: (020) 7408-0801
Established in 1985

PARIS

Kansai Electric Power Co., Inc., Paris Office
3, rue Scribe 75009, Paris, FRANCE
Tel: 01 43 12 81 40 Fax: 01 43 12 81 44
Established in 2008

BANGKOK

Chubu Elecric Power Co., Inc., Bangkok Office
Unit 4, 18th Floor, M. Thai Tower, All Seasons Place,
87 Wireless Road, Phatumwan, Bangkok 10330, THAILAND
Tel: (02) 654-0688 Fax: (02) 654-0689
Established in 2006

DOHA

Chubu Elecric Power Co., Inc., Doha Office
4th Floor, Al Salam Tower, Al Corniche P.O.Box 22470,
Doha, QATAR
Tel: (974) 4836-830 Fax: (974) 4834-841
Established in 2007

Major Power Plants

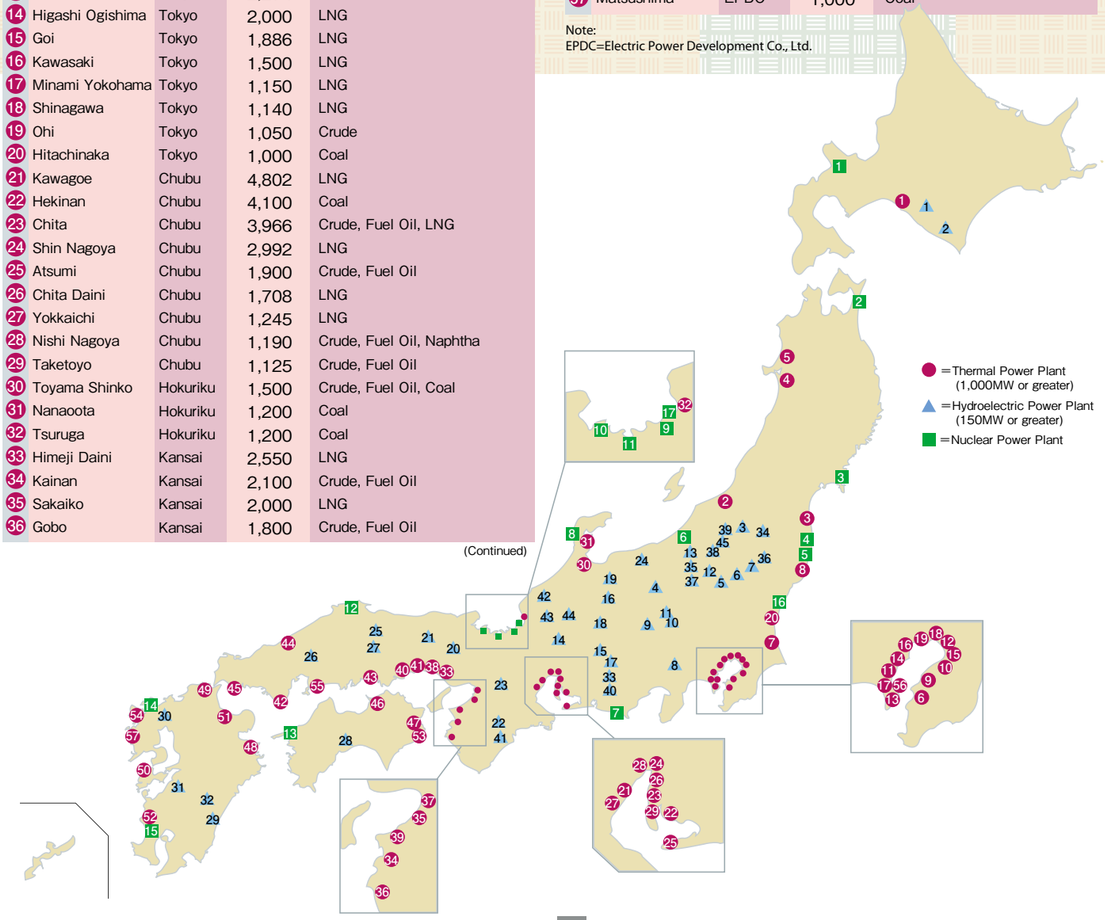
Japan's electric power industry operates some 1,800 hydroelectric, thermal, nuclear, and other power plants to meet the required demand. Here is a list and map of the country's major power plants:

Principal Thermal Power Plants (1,000MW or greater)

As of December 31, 2010

	Name of Plant	Company	Installed Capacity (MW)	Fuel
1	Tomato-atsuma	Hokkaido	1,650	Coal
2	Higashi Niigata	Tohoku	4,600	LNG, other Gas
3	Haramachi	Tohoku	2,000	Coal
4	Akita	Tohoku	1,300	Crude, Fuel Oil
5	Noshiro	Tohoku	1,200	Coal
6	Futtsu	Tokyo	5,040	LNG
7	Kashima	Tokyo	4,400	Crude, Fuel Oil
8	Hirono	Tokyo	3,800	Crude, Fuel Oil, Coal
9	Sodegaura	Tokyo	3,600	LNG
10	Anegasaki	Tokyo	3,600	Crude, Fuel Oil, LNG, LPG, NGL
11	Yokohama	Tokyo	3,325	Crude, Fuel Oil, LNG, NGL
12	Chiba	Tokyo	2,880	LNG
13	Yokosuka	Tokyo	2,274	Crude, Fuel Oil, other Gas, Diesel Oil
14	Higashi Ogishima	Tokyo	2,000	LNG
15	Goi	Tokyo	1,886	LNG
16	Kawasaki	Tokyo	1,500	LNG
17	Minami Yokohama	Tokyo	1,150	LNG
18	Shinagawa	Tokyo	1,140	LNG
19	Ohi	Tokyo	1,050	Crude
20	Hitachinaka	Tokyo	1,000	Coal
21	Kawagoe	Chubu	4,802	LNG
22	Hekinan	Chubu	4,100	Coal
23	Chita	Chubu	3,966	Crude, Fuel Oil, LNG
24	Shin Nagoya	Chubu	2,992	LNG
25	Atsumi	Chubu	1,900	Crude, Fuel Oil
26	Chita Daini	Chubu	1,708	LNG
27	Yokkaichi	Chubu	1,245	LNG
28	Nishi Nagoya	Chubu	1,190	Crude, Fuel Oil, Naphtha
29	Taketoyo	Chubu	1,125	Crude, Fuel Oil
30	Toyama Shinko	Hokuriku	1,500	Crude, Fuel Oil, Coal
31	Nanaoota	Hokuriku	1,200	Coal
32	Tsuruga	Hokuriku	1,200	Coal
33	Himeji Daini	Kansai	2,550	LNG
34	Kainan	Kansai	2,100	Crude, Fuel Oil
35	Sakaiko	Kansai	2,000	LNG
36	Gobo	Kansai	1,800	Crude, Fuel Oil
37	Nanko	Kansai	1,800	LNG
38	Himeji Daiichi	Kansai	1,442	LNG
39	Tanagawa Daini	Kansai	1,200	Crude, Fuel Oil
40	Ako	Kansai	1,200	Crude, Fuel Oil
41	Aioi	Kansai	1,125	Crude, Fuel Oil
42	Yanai	Chugoku	1,400	LNG
43	Tamashima	Chugoku	1,200	Crude, Fuel Oil
44	Misumi	Chugoku	1,000	Coal
45	Shin Onoda	Chugoku	1,000	Coal
46	Sakaide	Shikoku	1,446	Crude, Fuel Oil, other Gas
47	Anan	Shikoku	1,245	Crude, Fuel Oil
48	Shin Oita	Kyushu	2,295	LNG
49	Shin Kokura	Kyushu	1,800	LNG
50	Reihoku	Kyushu	1,400	Coal
51	Buzen	Kyushu	1,000	Crude, Fuel Oil
52	Sendai	Kyushu	1,000	Crude, Fuel Oil
53	Tachibanawan	EPDC	2,100	Coal
54	Matsuura	EPDC	2,000	Coal
55	Takehara	EPDC	1,300	Coal
56	Isogo Shin	EPDC	1,200	Coal
57	Matsushima	EPDC	1,000	Coal

Note:
EPDC=Electric Power Development Co., Ltd.



(Continued)

Nuclear Power Plants

●In Operation

As of December 31, 2010

	Name of Plant	Unit Number	Company	Installed Capacity (MW)	Type of Reactor	Start
1	Tomari	1	Hokkaido	579	PWR	1989.6
		2		579	PWR	1991.4
		3		912	PWR	2009.12
2	Higashi-Dori	1	Tohoku	1,100	BWR	2005.12
3	Onagawa	1	Tohoku	524	BWR	1984.6
		2		825	BWR	1995.7
		3		825	BWR	2002.1
4	Fukushima Daiichi	1	Tokyo	460	BWR	1971.3
		2		784	BWR	1974.7
		3		784	BWR	1976.3
		4		784	BWR	1978.10
		5		784	BWR	1978.4
		6		1,100	BWR	1979.10
5	Fukushima Daini	1	Tokyo	1,100	BWR	1982.4
		2		1,100	BWR	1984.2
		3		1,100	BWR	1985.6
		4		1,100	BWR	1987.8
6	Kashiwazaki Kariwa	1	Tokyo	1,100	BWR	1985.9
		2		1,100	BWR	1990.9
		3		1,100	BWR	1993.8
		4		1,100	BWR	1994.8
		5		1,100	BWR	1990.4
		6		1,356	ABWR	1996.11
		7		1,356	ABWR	1997.7
7	Hamaoka	3	Chubu	1,100	BWR	1987.8
		4		1,137	BWR	1993.9
		5		1,267	ABWR	2005.1
8	Shika	1	Hokuriku	540	BWR	1993.7
		2		1,206	ABWR	2006.3
9	Mihama	1	Kansai	340	PWR	1970.11
		2		500	PWR	1972.7
		3		826	PWR	1976.12
10	Takahama	1	Kansai	826	PWR	1974.11
		2		826	PWR	1975.11
		3		870	PWR	1985.1
		4		870	PWR	1985.6
11	Ohi	1	Kansai	1,175	PWR	1979.3
		2		1,175	PWR	1979.12
		3		1,180	PWR	1991.12
		4		1,180	PWR	1993.2
12	Shimane	1	Chugoku	460	BWR	1974.3
		2		820	BWR	1989.2
13	Ikata	1	Shikoku	566	PWR	1977.9
		2		566	PWR	1982.3
		3		890	PWR	1994.12
14	Genkai	1	Kyushu	559	PWR	1975.10
		2		559	PWR	1981.3
		3		1,180	PWR	1994.3
		4		1,180	PWR	1997.7
15	Sendai	1	Kyushu	890	PWR	1984.7
		2		890	PWR	1985.11
16	Tokai Daini		Japan Atomic Power Co.	1,100	BWR	1978.11
17	Tsuruga	1	Japan Atomic Power Co.	357	BWR	1970.3
		2		1,160	PWR	1987.2
Total		54 Units		48,847MW		

●Under Construction

(Estimated start)

Shimane	3	Chugoku	1,373	ABWR	2011.12
Ohma		EPDC	1,383	ABWR	2014.11
Total	2 Units		2,756MW		

●End of Operation

Hamaoka	1	Chubu	540	BWR	2009.1
	2		840	BWR	2009.1
Tokai		Japan Atomic Power Co.	166	GCR	1998.3
Total	3 Units		1,546MW		

●Others

Fugen	Japan Atomic Energy Agency	165	ATR(Prototype)
Monju	Japan Atomic Energy Agency	280	FBR(Prototype)

Principal Hydroelectric Power Plants (150MW or greater)

As of December 31, 2010

	Name of Plant	Company	Installed Capacity (MW)	Type
1	Niikappu	Hokkaido	200	Pumped Storage
2	Takami	Hokkaido	200	Pumped Storage
3	Daini Numazawa	Tohoku	460	Pumped Storage
4	Shin Takasegawa	Tokyo	1,280	Pumped Storage
5	Tamahara	Tokyo	1,200	Pumped Storage
6	Imaichi	Tokyo	1,050	Pumped Storage
7	Shiobara	Tokyo	900	Pumped Storage
8	Kazunogawa	Tokyo	800	Pumped Storage
9	Azumi	Tokyo	623	Pumped Storage
10	Kannagawa	Tokyo	470	Pumped Storage
11	Midono	Tokyo	245	Pumped Storage
12	Yagisawa	Tokyo	240	Pumped Storage
13	Shinanogawa	Tokyo	177	
14	Okumino	Chubu	1,500	Pumped Storage
15	Okuyahagi Daini	Chubu	780	Pumped Storage
16	Takane Daiichi	Chubu	340	Pumped Storage
17	Okuyahagi Daiichi	Chubu	315	Pumped Storage
18	Mazegawa Daiichi	Chubu	288	Pumped Storage
19	Arimine Daiichi	Hokuriku	265	
20	Okutataragi	Kansai	1,932	Pumped Storage
21	Okawachi	Kansai	1,280	Pumped Storage
22	Okuyoshino	Kansai	1,206	Pumped Storage
23	Kisenyama	Kansai	466	Pumped Storage
24	Kurobegawa Daiyon	Kansai	335	
25	Matanogawa	Chugoku	1,200	Pumped Storage
26	Nabara	Chugoku	620	Pumped Storage
27	Shin Nariwagawa	Chugoku	303	Pumped Storage
28	Hongawa	Shikoku	615	Pumped Storage
29	Omarugawa	Kyushu	900	Pumped Storage
30	Tenzan	Kyushu	600	Pumped Storage
31	Ohira	Kyushu	500	Pumped Storage
32	Hitotsuse	Kyushu	180	
33	Shin Toyone	EPDC	1,125	Pumped Storage
34	Shimogo	EPDC	1,000	Pumped Storage
35	Okukiyotsu	EPDC	1,000	Pumped Storage
36	Numappara	EPDC	675	Pumped Storage
37	Okukiyotsu Daini	EPDC	600	Pumped Storage
38	Okutadami	EPDC	560	
39	Tagokura	EPDC	390	
40	Sakuma	EPDC	350	
41	Ikehara	EPDC	350	Pumped Storage
42	Tedorigawa Daiichi	EPDC	250	
43	Nagano	EPDC	220	Pumped Storage
44	Miboro	EPDC	215	
45	Otori	EPDC	182	

●Preparing for Construction

(Estimated start)

Namie-Odaka		Tohoku	825	BWR	FY2020
Higashi-Dori	2	Tohoku	1,385	ABWR	FY2020~
Fukushima Daiichi	7	Tokyo	1,380	ABWR	2015.10
	8		1,380	ABWR	2016.10
Higashi-Dori	1	Tokyo	1,385	ABWR	2017.3
	2		1,385	ABWR	FY2019~
Hamaoka	6	Chubu	1,400	ABWR	FY2019~
Kaminoseki	1	Chugoku	1,373	ABWR	FY2015
	2		1,373	ABWR	FY2020
Sendai	3	Kyushu	1,590	APWR	FY2019
Tsuruga	3	Japan Atomic Power Co.	1,538	APWR	2016.3
	4		1,538	APWR	2017.3
Total	12 Units		16,552MW		

Note: PWR=Pressurized Water Reactor, BWR=Boiling Water Reactor, APWR=Advanced Pressurized Water Reactor, ABWR=Advanced Boiling Water Reactor, GCR=Gas Cooled Reactor, ATR=Advanced Thermal Reactor, FBR=Fast Breeder Reactor

The Federation of Electric Power Companies

Electricity supply in Japan is carried out by privately-owned independent regional electric power companies and close cooperation among these companies is essential for efficient operations. In 1952, the nine electric power companies established the Federation of Electric Power Companies (FEPC) to promote smooth operations within the industry. Since then, FEPC has played an important role as a base for close communication between the electric power companies and as a forum for exchanging views to create the electric power industry of the future. Moreover, FEPC undertakes various activities to ensure stable operations of the electric power industry, with an awareness of its role in the energy industry of Japan.

With the return of Okinawa to Japan in 1972, the Okinawa Electric Power Company rejoined Japan's electric power industry, becoming an FEPC member in March 2000.

Board of Directors

Chairman
Masataka Shimizu

Vice Chairman
Takashi Yamashita

Vice Chairman
Toshio Manabe

Vice Chairman
Shigeru Kimura

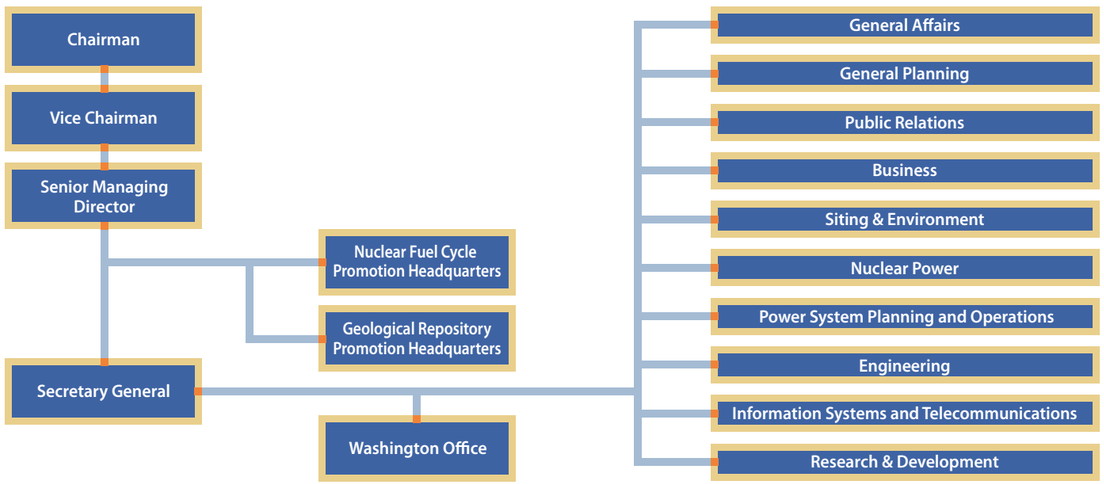
Senior Managing Director
Yuji Kume

Director
Secretary General
Yuzuru Hiroe

Director
Deputy Secretary General
Yasuhiro Tejima

Director
Nuclear Fuel Cycle
Promotion Headquarters
Susumu Tanuma

Organization of FEPC



Data

contents

Company Data (Fiscal year ending March 31, 2010)

Company	Capital Stock (Million yen)	Total Assets (Million yen)	Generating Capacity (MW)	Electricity Supplied (GWh)	Electricity Sales (GWh)	Revenues from Electricity Sales (Million yen)	Number of Customers (Thousands)	Number of Employees
Hokkaido	114,291	1,536,430	7,418	35,448	31,451	526,422	3,957	5,631
Tohoku	251,441	3,589,252	16,550	86,894	78,992	1,497,103	7,688	12,639
Tokyo	676,434	12,643,034	64,487	304,456	280,167	4,733,288	28,599	38,117
Chubu	430,777	4,969,455	32,632	133,779	122,849	2,050,366	10,455	16,600
Hokuriku	117,641	1,382,606	7,963	30,175	27,175	458,624	2,084	4,716
Kansai	489,320	6,275,570	34,321	154,642	141,605	2,293,577	13,432	22,143
Chugoku	185,527	2,587,479	11,986	63,595	57,911	950,600	5,197	9,871
Shikoku	145,551	1,320,236	6,665	30,778	27,496	487,607	2,833	6,003
Kyushu	237,304	3,776,569	20,025	91,530	83,392	1,312,103	8,437	12,543
Okinawa	7,586	349,308	1,924	8,476	7,478	151,617	834	1,554
Total	**2,655,872**	**38,429,939**	**203,970**	**939,774**	**858,516**	**14,461,307**	**83,514**	**129,817**

Source: Handbook of Electric Power Industry

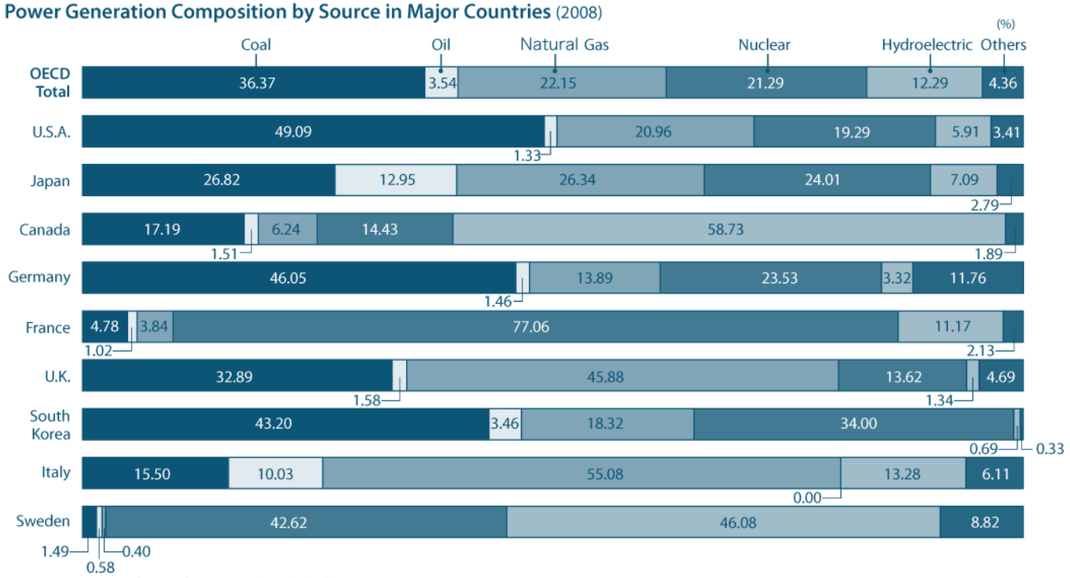
Changes in Electric Power Generation

(TWh)

Fiscal Year		1985	1990	1995	2000	2005	2007	2008	2009
Ten Companies	Hydro	61.0	65.4	62.3	66.5	60.0	57.2	56.5	57.7
	Thermal	295.2	392.0	401.1	426.4	459.3	538.3	506.1	456.6
	Geothermal	1.2	1.4	2.8	3.0	2.9	2.7	2.5	2.6
	Nuclear	148.0	181.1	271.4	302.5	287.0	249.5	247.1	266.1
Subtotal		505.5	639.9	737.6	798.4	809.2	847.7	812.2	783.0
Industry-Owned and Others		166.4	217.4	252.3	293.1	348.7	345.0	334.1	329.6
Total		**672.0**	**857.3**	**989.9**	**1,091.5**	**1,157.9**	**1,192.8**	**1,146.3**	**1,112.6**

Source: Handbook of Electric Power Industry

Power Generation Composition by Source in Major Countries (2008)



Source: IEA "Energy Balances of OECD Countries 2010 Edition"

Changes in Electricity Sales for Ten Companies (Nine Companies)

(TWh)

Fiscal Year	1990	1995	2000	2005	2007	2008	2009
Residential (Lighting)	177.4	224.6	254.6	281.3	289.7	285.3	285.0
Commercial and Industrial	481.5	532.4	583.3	601.3	629.8	603.7	573.5
Commercial	116.3	152.8	157.9	—	—	—	—
Small Industrial	100.1	108.0	115.8	—	—	—	—
Large Industrial	248.1	254.7	74.8	—	—	—	—
Others	17.0	16.9	15.0	13.4	12.7	12.1	12.0
Eligible Customers' Use	—	—	219.8	548.4	580.1	556.9	528.4
Total	**658.9**	**757.0**	**837.9**	**882.6**	**919.5**	**888.9**	**858.5**

Source: Handbook of Electric Power Industry

Changes in Electricity Sales for Ten Companies (Nine Companies)

(to large industrial and commercial customers)

(TWh)

Fiscal Year		1990	1995	2000	2005	2007	2008	2009
Mining and Industry	Mining	1.5	1.4	1.3	1.0	0.9	0.9	0.8
	Foodstuffs	11.3	13.2	15.3	15.4	17.2	17.3	17.2
	Textiles	6.8	5.1	3.9	3.1	3.2	2.8	4.0
	Pulp and Paper	11.9	9.5	10.5	10.3	11.0	10.6	9.4
	Chemicals	27.4	25.4	25.9	27.7	31.3	29.4	26.1
	Oil and Coal Products	2.4	2.6	1.5	1.5	1.7	1.9	1.8
	Rubber	3.5	3.4	3.5	3.4	3.3	3.1	2.8
	Clay and Stone	15.0	14.4	11.9	11.0	12.1	11.4	10.3
	Iron and Steel	41.3	38.3	36.5	36.2	39.6	35.4	29.7
	Non-ferrous Metals	12.3	13.1	14.2	14.1	16.8	15.7	14.7
	Machinery	57.3	62.9	69.8	74.0	82.6	75.7	69.0
	Others	22.1	24.4	27.0	27.6	30.5	28.7	27.4
Subtotal		212.7	213.8	221.2	225.2	250.3	232.9	213.1
Railways		16.4	17.9	18.1	19.0	18.7	18.7	18.1
Others		19.0	23.0	27.7	29.6	30.3	30.0	29.6
Total		**248.1**	**254.7**	**267.0**	**273.8**	**299.3**	**281.6**	**260.9**

Source: Handbook of Electric Power Industry

Changes in Electricity Sales* / Consumption** for Major Countries

(TWh)

		2002	2003	2004	2005	2006	2007	2008
U.S.A. (*)All electric utilities	Residential	1,265.2	1,275.8	1,292.0	1,359.2	1,351.5	1,392.2	1,379.3
	Commercial and Industrial	2,094.7	2,211.1	2,248.3	2,294.2	2,311.0	2,364.1	2,334.6
	Others	105.6	6.8	7.2	7.5	7.4	8.2	7.7
	Total	**3,465.5**	**3,493.7**	**3,547.5**	**3,661.0**	**3,669.9**	**3,764.6**	**3,721.6**
U.K. (*)All electric utilities	Residential	114.5	115.8	115.5	116.8	116.4	115.1	117.8
	Commercial and Industrial***	192.1	195.0	194.6	198.4	198.1	198.1	195.9
	Others	13.1	13.6	13.5	13.7	13.8	13.6	14.3
	Total	**319.8**	**324.3**	**323.6**	**328.9**	**328.3**	**327.0**	**327.9**
Germany (**)Electricity consumption	Residential	136.5	139.1	140.4	141.3	141.5	140.2	139.5
	Commercial and Industrial	313.5	317.7	322.5	323.8	328.6	330.6	331.5
	Others	66.2	68.2	69.0	69.1	69.5	70.4	71.2
	Total	**516.2**	**525.0**	**531.9**	**534.2**	**539.6**	**541.2**	**542.2**
Canada (*)All electric utilities	Residential	142.6	147.6	151.0	151.0	148.6	158.6	161.2
	Commercial and Industrial	181.1	183.7	179.8	188.5	183.3	180.5	174.6
	Others	141.9	145.2	147.6	148.2	145.6	158.0	165.5
	Total	**465.6**	**476.5**	**478.4**	**487.7**	**477.5**	**497.0**	**501.3**
France (**)Electricity consumption	High voltage	255.4	261.9	266.4	265.8	258.1	261.3	263.0
	Low voltage	165.0	175.1	182.3	185.7	188.9	187.0	198.0
	Total	**420.4**	**437.0**	**448.7**	**451.5**	**447.0**	**448.3**	**461.0**
Italy (*)All electric utilities	Residential	63.0	65.0	66.6	66.9	67.6	67.2	68.4
	Commercial and Industrial	195.3	202.8	205.7	210.1	217.9	219.5	218.3
	Others	10.6	10.9	11.1	11.5	11.9	11.6	11.9
	Total	**268.8**	**278.7**	**283.4**	**288.5**	**297.4**	**298.3**	**298.7**
Japan (*)Ten companies	Residential	263.4	259.7	272.5	281.3	278.3	289.7	285.3
	Commercial and Industrial	578.0	574.7	592.9	601.3	611.1	629.8	603.7
	Others	—	—	—	—	—	—	—
	Total	**841.5**	**834.3**	**865.4**	**882.6**	**889.4**	**919.5**	**888.9**

(***) Including public facilities
Source: Overseas Electric Power Industry Statistics(2009)

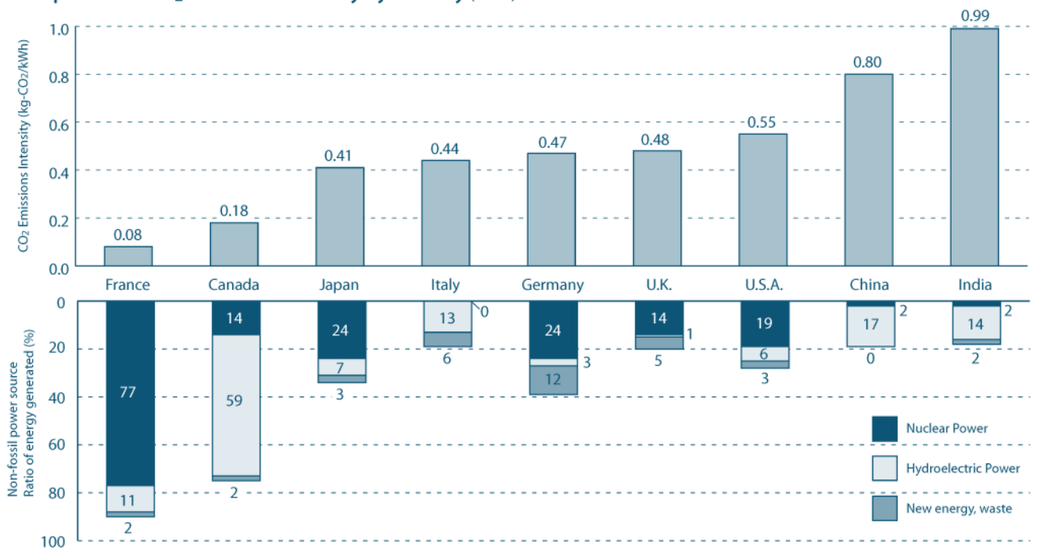
Country Comparison of Thermal Efficiency, Transmission and Distribution Loss, and Annual Load Factor

(%)

		1985	1990	1995	2000	2005	2006	2007
U.S.A.	Thermal Efficiency	32.7	32.9	33.4	33.3	34.0	34.5	34.1
	Transmission and Distribution Loss	6.1	5.7	7.0	6.9	6.8	6.8	7.4
	Annual Load Factor	62.0	60.4	59.8	61.2	58.7	56.6	56.6
U.K.	Thermal Efficiency	32.9	33.9	36.2	36.2	35.6	36.3	35.7
	Transmission and Distribution Loss	8.7	8.1	8.6	9.0	8.7	8.6	7.8
	Annual Load Factor	57.8	62.2	65.4	67.4	66.4	69.2	65.6
Germany (Former W. Germany)	Thermal Efficiency	(39.3)	(39.8)	38.2	39.8	40.8	39.3	38.0
	Transmission and Distribution Loss	(4.8)	(4.3)	5.0	4.6	5.7	5.4	5.8
	Annual Load Factor	(63.2)	(68.6)	(71.9)	79.3	83.8	76.9	74.0
Canada	Thermal Efficiency	32.0	34.5	32.6	32.9	33.4	32.4	32.6
	Transmission and Distribution Loss	9.2	7.7	6.8	8.0	5.9	7.1	6.1
	Annual Load Factor	65.1	65.7	66.0	68.5	69.2	65.5	67.4
France	Thermal Efficiency	33.1	35.8	34.5	42.0	N/A	N/A	N/A
	Transmission and Distribution Loss	7.7	7.5	7.4	6.8	6.6	6.6	6.7
	Annual Load Factor	57.6	62.9	67.9	69.5	64.1	63.3	61.6
Italy	Thermal Efficiency	37.1	37.7	38.6	39.0	42.7	43.4	43.9
	Transmission and Distribution Loss	9.0	7.0	6.7	6.4	6.2	5.9	6.2
	Annual Load Factor	53.7	52.4	50.3	59.0	58.4	60.0	59.0
Japan Ten Companies (Nine Companies)	Thermal Efficiency	(38.2)	38.8	38.9	40.6	40.9	41.1	41.0
	Transmission and Distribution Loss	(5.8)	5.7	5.5	5.2	5.1	5.0	4.9
	Annual Load Factor	(60.4)	56.8	55.3	59.5	62.4	62.9	62.8

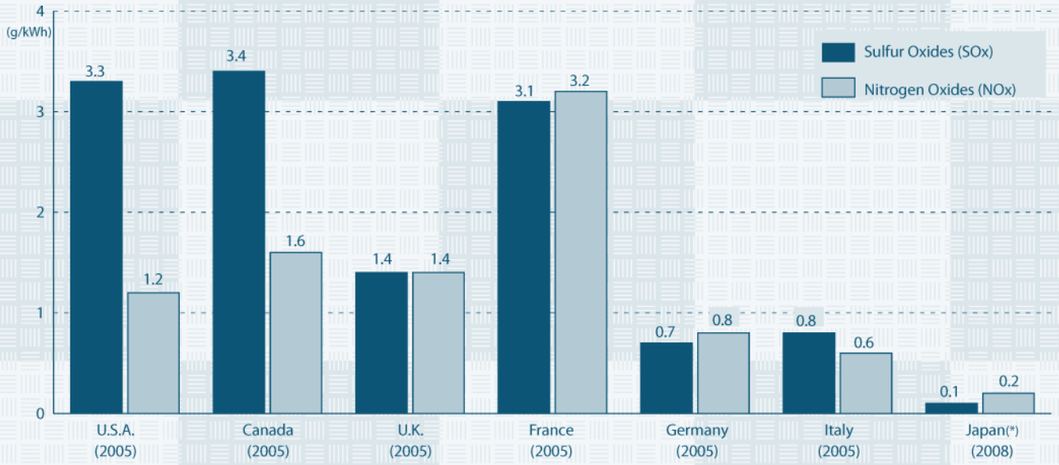
Source: Overseas Electric Power Industry Statistics(2009)

Comparison of CO_2 Emissions Intensity by Country (2008)



Sources: FEPC estimate based on IEA "Energy Balances of OECD Countries 2009 Edition"/ "Energy Balances of Non-OECD Countries 2008 Edition"

SOx and NOx Emissions per Unit of Electricity Generated by Thermal Power in Each Country



Note: (*) = 10 Electric Power Companies + Electric Power Development Company
Sources: Estimate based on "OECD Environmental Data Compendium 2006/2007" and IEA "Energy Balances of OECD Countries 2008 Edition"
FEPC (for Japan)

Annual Balance Sheet for Ten Companies

(Billion yen)

Fiscal Year		2002	2003	2004	2005	2006	2007	2008	2009
Assets	Fixed Assets	40,149	39,075	37,836	37,742	36,967	36,703	36,326	36,316
	(Operating Fixed Assets)	(30,514)	(29,529)	(28,719)	(28,317)	(27,139)	(26,169)	(25,337)	(24,773)
	(Investments, etc.)	(3,315)	(3,508)	(3,669)	(4,949)	(5,281)	(5,656)	(5,715)	(6,062)
	Current Assets	1,534	1,493	1,616	1,827	2,053	2,362	2,821	2,313
	Deferred Assets	0	0	0	0	—	—	—	—
	Total Assets	**41,684**	**40,570**	**39,453**	**39,570**	**39,020**	**39,065**	**39,148**	**38,429**
Liabilities and Net Assets	Fixed Liabilities	26,930	26,177	24,789	23,890	23,096	23,613	24,460	23,726
	(Long-term Debt)	(7,953)	(7,197)	(6,298)	(5,944)	(5,608)	(5,511)	(5,610)	(5,044)
	Current Liabilities	6,951	6,116	5,934	6,245	6,095	6,181	6,114	6,070
	Reserves	29	61	95	65	81	70	65	66
	Total Liabilities	**33,911**	**35,355**	**30,819**	**30,201**	**29,273**	**29,865**	**30,640**	**29,864**
	Capital	2,599	2,599	2,599	2,655	—	—	—	—
	Paid-up Advances on New Stocks	—	—	—	—	—	—	—	—
	Capital Surplus	270	271	271	331	—	—	—	—
	Retained Earnings	4,868	5,211	5,643	6,102	—	—	—	—
	Unrealized Gain on Securities	84	222	227	409	—	—	—	—
	Treasury Stock	-50	-90	-108	-130	—	—	—	—
	Total Shareholder's Equity	**7,772**	**8,214**	**8,633**	**9,368**	**—**	**—**	**—**	**—**
	Shareholder's Equity	—	—	—	—	9,292	8,981	8,443	8,489
	(Common Stock)	—	—	—	—	(2,655)	(2,655)	(2,655)	(2,655)
	(Capital Surplus)	—	—	—	—	(332)	(328)	(328)	(328)
	(Retained Earnings)	—	—	—	—	(6,452)	(6,174)	(5,636)	(5,696)
	(Treasury Stock)	—	—	—	—	(-147)	(-177)	(-177)	(-191)
	Valuation and Translation Adjustments, etc	—	—	—	—	454	218	63	75
	Total Net Assets	**—**	**—**	**—**	**—**	**9,747**	**9,200**	**8,507**	**8,565**
	Total Liabilities and Net Assets	**41,684**	**40,570**	**39,453**	**39,570**	**39,020**	**39,065**	**39,148**	**38,429**

Note: Figures rounded down to nearest digit
Source: Handbook of Electric Power Industry

Revenues and Expenditures for Ten Companies

(Billion yen)

Fiscal Year		2002	2003	2004	2005	2006	2007	2008	2009
Revenues	Residential	5,751	5,582	5,783	5,848	5,768	6,021	6,244	5,853
	Commercial and Industrial	8,318	8,088	8,154	8,124	8,321	8,600	9,184	7,896
	Subtotal	**14,070**	**13,670**	**13,938**	**13,972**	**14,090**	**14,622**	**15,428**	**13,750**
	Intercompany Power Sales	528	477	448	485	503	506	537	424
	Power Sales to Other Utilities	22	34	48	72	88	104	101	56
	Other Revenues	305	296	360	479	584	570	642	597
	Total	**14,927**	**14,478**	**14,796**	**15,010**	**15,266**	**15,802**	**16,709**	**14,828**
Expenditures	Personnel	1,883	1,796	1,665	1,502	1,389	1,266	1,489	1,613
	Fuel	2,021	2,044	2,178	2,755	3,117	4,470	5,138	3,054
	Maintenance	1,392	1,362	1,422	1,410	1,509	1,512	1,557	1,567
	Interest	737	616	574	474	442	406	413	367
	Depreciation	2,617	2,477	2,376	2,302	2,136	2,154	2,118	2,129
	Taxes and Public Charges	1,041	1,017	1,020	1,003	998	985	974	939
	Intercompany Power Purchases	528	477	448	484	514	492	537	423
	Power Purchases	1,297	1,277	1,360	1,420	1,444	1,576	1,904	1,570
	Drought Reserves	-3	32	33	-29	10	-29	-17	-8
	Reserves for Depreciation of NPP	—	—	—	—	5	18	12	9
	Corporate Taxes	339	348	416	436	426	63	-66	253
	Other Expenditures	2,477	2,398	2,575	2,494	2,608	2,826	2,859	2,488
	Total	**14,332**	**13,849**	**14,074**	**14,256**	**14,603**	**15,743**	**16,922**	**14,409**
	Net Income	595	628	722	754	663	58	-212	419

Note: Figures rounded down to nearest digit
Source: Handbook of Electric Power Industry

Investment by Type of Power Facility for Ten Companies

(Billion yen)

Fiscal Year	2002	2003	2004	2005	2006	2007	2008	2009
Generation	746	695	516	449	499	654	816	771
Distribution,others	1,329	1,074	996	1,048	1,029	1,199	1,308	1,262
Total	**2,075**	**1,770**	**1,512**	**1,497**	**1,529**	**1,854**	**2,124**	**2,034**

Note: Figures rounded down to nearest digit
Source: Handbook of Electric Power Industry

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Printed in Japan 2011.01