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Japan Energy Brief

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Basic Energy Plan drafted for 2010 revision

On April 19, the Ministry of Economy, Trade and Industry (METI) proposed a draft for triennial revisions to the Basic Energy Plan at the Basic Energy Planning Committee of the Advisory Committee for Natural Resources and Energy (ACNRE). The draft plan aims at reinforcing energy security and counter-global warming in harmony with economic growth. Its key perspectives and objectives comprise the following:

1) Energy security
Strengthen Japan's overall energy security through redoubled efforts to improve energy self-sufficiency, promote energy conservation, diversify energy supply sources, maintain and reinforce energy supply chains, and strengthen emergency response capabilities.

2) Counter global warming
For the drastic reduction of GHG emissions, take such measures as transforming energy supply/demand structure, reforming social systems and modifying lifestyle, and cooperate in the global efforts through international deployment of Japanese technologies.

3) Economic growth centered on energy/environment technology
Aim to enhance development of energy/environment technologies and related industries/sectors as the core driver for Japan's economic growth.

4) Safety and public understanding
Strive for securing understanding by the general public and industries on burdens associated with energy security and anti-global warming policies.

5) Efficient energy market
Reinforce the energy supply system with the focus on economic efficiency by developing efficient and transparent markets.

6) Reform of energy industry structure
Reform the Japanese energy industry to reinforce its competitive edge, while the Japanese energy market contracts and the global energy market comes into an era of mega-competition with new technologies and entrants.

In line with the international initiative to halve the global GHG emissions by 2050, which requires 80% cuts in developed countries, the following targets are set for 2030:

1) Energy supply

- Double the energy self-sufficiency (indigenous energy plus nuclear power; currently at 18%) and the fossil fuel acquisition from overseas equity projects (currently at 26%) to bring Japan's overall energy self-sufficiency up to 70%.
- Raise the proportion of zero-emissions power supply to 70% (currently at 34%) by promoting energy savings and shifts to low-carbon electric power sources.

2) Energy demand

- Halve the CO_2 emissions derived from energy consumption in everyday life, including energy consumed in homes and by automobiles.
- Maintain and reinforce the Japan's world-leading energy efficiency in the industrial sector.

3) International deployment of energy/environmental products and technologies

- Acquire and maintain world-leading shares in energy-related products and systems for Japanese companies

Toward the above objective, vigorous efforts should be exerted for expanding nuclear power as the key energy source as well as promoting renewable energies that are generally available in Japan. Yet, in the medium-long run, considerable portions of energy supply must depend on fossil fuels. Among them, a) oil is positioned as the key fuel for transport, and measures must be taken to secure its stable supply; b) a shift toward natural gas should be promoted being the lowest CO_2 emitter, and; c) despite its high environmental impact, use of coal, advantageous in terms of cost and supply stability, should be advanced in ways that are compatible with the global environment by introducing mitigation technologies such as CCS and IGCC.

Based on the above-mentioned general principles, the draft plan sets forth a number of new and specific measures as follows:

1) Comprehensive strategy toward securing of resources and reinforcement of stable supply;

Raise energy self-sufficiency to 50% or higher by enhancing overseas projects. Implement structural reform of oil refining/marketing industries to reinforce competitiveness as domestic oil demand is going to decline. On strategic rare metals, build up stockpile, establish recycling system, and promote development of alternative materials.

2) Realize a self-reliant and environmentally compatible energy supply structure;

- Promote nuclear power generation; Build nine new reactors by 2020 and a cumulative total of 14 or more by 2030, raise the overall utilization rate to 90% or higher, and establish a nuclear fuel cycle.
- Expand the renewable energy base; Take comprehensive measures such as Feed-in Tariff system, technology development, grid stabilization measures, and deregulation. Expand use of biofuels to around 3% of the gasoline consumption by 2020 and to higher levels thereafter. Also expand use of solar and biomass thermal systems.
- Promote advanced use of fossil fuels; Commercialize high-efficiency power generation technologies such as Integrated Gas Combined Cycle (IGCC), and Advanced Ultra-Super Critical (A-USC) generation system by the early 2020s. Regulate CO_2 emissions from newly built or refurbished coal-fired power plants to the level of IGCC via biomass-mix

and other measures and condition them as "CCS ready."

- Reinforce power/gas supply systems; Aim at construction of next-generation transmission/delivery networks capable of two-way communication by the early 2020s, promote storage battery technology, information security measures, and protocol standardization.

3) Build an energy demand structure to realize low-carbon economic growth;

- Industrial sector; Maintain and reinforce world-leading energy-saving and low-carbon technologies by introducing cutting-edge technologies, fuel shift with coordinated heat and power supplies, and more stringent enforcement of the Energy Saving Act.
- Residential and Commercial Sector; Realize net-zero energy buildings (ZEB) and houses (ZEH) by 2020, and deploy them as a norm for new construction by 2030. Set mandatory energy-saving codes for houses and buildings. Boost use of high-efficiency lighting such as LEDs to 100% in sales volume by 2020 and 100% in stock level by 2030.
- Transportation sector; Raise the share of next-generation automobiles in new car sales to 50% by 2020 and 70% by 2030. Promote modal shift of freight transport (the combined ratio for railway and coastal shipping transport, currently at 55%) to 70% by 2020, and to 80% by 2030.
- Cross-sectoral initiatives; Examine policy measures for optimizing use of energy at city or town block levels.

4) Build next-generation energy/social systems;
Reinforce policy measures toward construction of smart grids, smart communities, and a hydrogen-based society.

5) Efforts to develop and disseminate innovative energy technologies;

- Promote extensive R&D of technologies expected for breakthrough advances in the designated 21 areas and more in line with the technology roadmap up to 2050.
- Formulate an action plan aiming at a full-scale introduction of CCS by the late 2020s.
- Reinforce human resources development and promote global standardization.

6) Advance international development and cooperation;

Establish a system for supporting overseas businesses development through public and private cooperation on renewable energy, high-efficiency power generation, nuclear power, smart grids, photovoltaic and wind power generation, as well as fuel cells, energy-saving industrial equipment and processes, etc.

7) Reform the energy industry structure;
Provide a business environment appropriate in the era of energy mega-competition with a view to fostering solid and integrated suppliers of low-carbon energy or consolidated energy service providers linked with home electronics and electric vehicle companies having strong management and products/services lineup to win the global competition.

8) Public understanding and human resources development;

Strengthen dialogue and communication with the general public and local communities, further education on energy and promote strategic development of human resources.

The gist of the comments received from subcommittee members is as follows;

- Consistency, which is presently questionable, among the Basic Energy Plan, the Bill for Prevention of Global Warming and the roadmap developed by the Ministry of the Environment (MOE) must be secured to clarify the respective quantitative targets.
- While excessive goal-setting and ambiguous policy measures would disrupt markets and hinder efficient achievement of goals, a clear, well-balanced, and practicable policy framework should be presented. Multiple government agencies should cooperate in coherent control of architecture, urban development, traffic systems, etc. How they should work together must be clarified and aligned as a guideline for the government as a whole.
- While nuclear power and renewable energy must be promoted, advanced use of fossil fuels is also important, and its relationship with the Energy Supply Sophistication Act must be clearly described. We should avoid placing excessive expectations on technology development such as CCS and hydrogen-reduced steel production.
- While the target of 25% emissions reduction requires substantially high targets for the household sector such as zero-emission housing, high-efficiency water heaters, and next-generation automobiles. many consumers cannot easily afford such costs. Targets must be affordable for the general public to achieve.

A high official of METI promised to work with MOE to seek greater consistency. In addition, Mr. Kondo, a parliamentary secretary for METI, commented "With regard to consistency with the roadmap set by MOE, parliamentary secretaries of the two ministries are having regular discussions. The roadmap presented by MOE is an unofficial blueprint. Eventually, individual ministries will be coordinated to produce a definitive, integrated roadmap. As a result of the discussions that took place in this subcommittee meeting, a very ambitious plan and a historic turning point are beginning to take shape."

The Basic Energy Plan draft will be reviewed over the next two months, with the final plan scheduled to be decided upon at a cabinet meeting in June.

Experimental projects start shortly on next-generation energy and social systems

Four cities are selected among 20 applicants as sites for experimental projects of the next generation energy and social systems. They are Yokohama City, Toyota City, Kansai Science City (Kyoto) and Kitakyushu City. With these experimental projects, the Japanese government aims to establish models for regional energy management system reforming transportation system, life style, etc. At first, master plans will be developed by regional committees through public-private co-work. Prominent local enterprises, energy companies, academies and NGOs will participate in the consortiums. The gist of the proposed plans is as follows:

Yokohama City

With a view to reducing emission and increasing wealth, the project is to concentrate wisdom and intelligence of the private sector in Yokohama, create a new social system and deploy it overseas. Yokohama City's plan aims to reduce CO_2 emissions by 40% by 2030 compared with 2004 levels, implementing the following projects in three main blocks:

- Large-scale deployment of renewable energy; mega-PV of 27,000 kW
- Introducing smart house/buildings technology; 4,000 households/establishments

- Coordinated control of regional energy (heat and power) complimentary to a large network
- Diffusion of next generation transportation system; 2,000 next-generation vehicles
- Peoples' life style innovation through visualization
- Enhanced promotional structure through business alliances

Toyota City

With a view to creating a low-carbon social system, in particular relating to household sector activities (life at home and with car), create a low-carbon transportation system with efficient use of and link among heat, power and other unused energy sources. The plan aims to reduce emissions by 20% for households and 40% in transport through main plans as follows:

- Efficient use of energy at home; more than 70 households
- Efficient use of energy as a community
- Creating a low-carbon transport system; more than 3,100 next-generation vehicles
- Verifying effects of support for consumers and/or incentives in reforming life styles
- Establishing global deployment strategies including international standards

Kansai Science City (A group of neighboring cities in Kyoto, Osaka and Nara Prefectures forming a regional science center)

Through visualization of energy flows at residences, offices and EVs in the city, establish an energy management and control system as a "nano-grid". They aim to reduce CO_2 emissions by 20% for households and 40% in transport compared with 2005 through the following projects:

- Installing PV systems for 1,000 houses
- Creating "Nano-grids" at homes and buildings via intellectual control of power generation (PV, fuel cell, etc.) and storage systems through computerized energy management
- Proactive introduction of electric vehicles (EVs) and power charging stations
- Proposing a regional energy/economy model utilizing the "Kyoto Eco-points" system
- Establishing local products for a local consumption system of energy integrating the above
- Demonstrate complementary relationships between regional nano-grids and the national grid

Kitakyushu City

Creating a smart-grid network as a regional energy management system based on platforms of new energy supplies such as PV or hydrogen and a community network, construct a society with 50% less CO_2 emission. Deploy the achievement to Asian cities through the city's close links with them. The plan aims to achieve the initial target of reducing CO_2 emissions in the residential/commercial and transportation sectors by 40% by 2030 and 70% by 2050, and will further try to reduce another 10% through the following projects:

- Constructing a "10% new energy town" including that supplied from industries
- Introducing a energy conservation system for an entire town with real time energy management for 70 enterprises and 200 households via smart meters
- Building a "city-block energy management" with a regional power saving station
- Creating regional communities and transport systems based on energy infrastructure

Through verification of various models as proposed above, this project aims at establishing a future energy and social system, with a smart-grid system as its core function that will offer a comfortable low-carbon society.

Energy Committee Highlights

Fourteen nuclear units to be built by 2030

In the draft for the revised Basic Energy Plan released on April 19, METI has indicated a plan to substantially expand the nuclear power capacity building nine nuclear reactors (equivalent of 12.9 million kW according to the plans by power companies) by 2020 and raise the average load factor of nuclear power plants to 85%, and 14 or more reactors including the above nine (equivalent of 19.3 million kW) by 2030 and raise the load factor to 90%. At a meeting of the Nuclear Energy Subcommittee of the Electricity Industry Committee held on the same day, discussions were made on specific measures to accomplish the Basic Energy Plan.

The utilization rate of nuclear power plants remained low at 61.5% in FY 2008 mainly due to shutdown of the Kashiwazaki-Kariwa plants caused by the Chuetsu Earthquake, which hit the region in 2007. The target is now set to raise it to the world's highest level of 90%. To achieve the goal, the above plan seeks to increase the operation cycle from the current 13 months at the maximum to 18 months or longer by 2030 while ensuring safe and stable operations. In addition, to accelerate the capacity expansion and replacement, METI plans to review the current program of the local subsidy relating to nuclear plants.

In addition, the program sets forth other important agenda such as development and introduction of the next-generation light-water reactors, reinforcement of stable uranium supply, early establishment of nuclear fuel cycle including penetration of the so-called "Pluthermal" operation and commercialization of fast breeder reactors. It also recommends that the nuclear power business should be deployed internationally to enhance the world energy supply stability and that measures to counter global warming while promoting peaceful use of nuclear power, and that a business support program should be developed in due course.

The controversial fast breeder reactor "Monju" (280,000 kW), whose operation has been suspended due to a series of technical problems, resumed its experimental operation on May 6 after a 14 year lapse. The reactor was put to critical on May 8 and its operation will gradually be raised to full capacity in two years. Experiments will be carried out for ten years with two major missions: to demonstrate reliability as a power plant and to establish technology to handle sodium. The targeted timeline is to complete the conceptual design of a demonstration reactor by around 2015 based on the operational data to be obtained through the experimental operation of "Monju", to build a demonstration reactor by 2025, and to achieve commercialization of FBR by 2050.

Fast Breeder Reactor "Monju"

Hurdles are high for biofuel development

On March 5 METI published an interim report on possible courses of action toward "Biofuel Sustainability Standards" that METI had examined in collaboration with the Ministry of Agriculture, Forestry and Fisheries (MAFF) and the Ministry of the Environment (MOE). The report is summarized as follows:

1) CO_2 Emissions

Available energy sources that can reduce CO_2 emissions by 50% or more against gasoline based on Life Cycle Assessment (LCA) (standards adopted by the EU and the U.K.) are

limited to: a) sugarcane grown on existing farmlands in Brazil, and b) a small proportion of domestic materials including sugar beet and architectural salvages. Even Brazilian sugarcane will produce three times as much CO_2 as gasoline if forests are cut to produce the crop.

2) Stability of Supply
The potential for expanding exports from existing farmland in Brazil is limited to about 200,000 kl crude oil equivalent (COE) annually. Japan's domestic supply of biofuels could be increased by about 400,000 kl COE by 2020, according to MAFF's estimate. In any case, a substantial supply of biofuels cannot be expected. It is advisable, on the other hand, that at least 50% of biofuels should be either produced domestically in Japan or imported from Asian countries through some development-and-import scheme from the viewpoint of energy security.

3) Competition between Biofuels and Food
Relevant ministries must collaborate and study ways to alleviate the food-fuel trade-offs. It is important to develop second-generation biofuel technologies that utilize cellulosic materials such as stems, grasses, or woods.

The report comprehensively reviews technological issues concerning the supply of raw materials and production of biofuels, GHG emissions based on LCA, food-fuel trade-offs, and issues of biodiversity following biofuel assessment procedures used in Europe and the U.S. However, the ambitious report is yet to analyze the Asian situation, while it designates the develop-for-import scheme in Asia as a future course of action.

Despite the Cebu Declaration issued at the East Asia Summit 2007 which called for pressing ahead with biofuels, Asian countries are still struggling to successfully produce biofuels. Reasons for this lack of success include difficult challenges in each of the upstream (production of raw materials), midstream (collection of raw materials and production of biofuels), as well as downstream (distribution and marketing structures) sectors of the industry. A clear path toward an integrated biofuel supply system has yet to be drawn.

In the upstream sector, in particular, it is not easy to use land collectively for large-scale production of raw materials, due to complex human relations and legal systems inherent from the long history of agrarian societies. Also, all Asian countries are facing outflow of the younger generation to urban cities, resulting in a shortage of successors. It is of course important to improve breeds for raw materials. For the midstream and downstream sectors, challenges include implementing effective production systems, ensuring fuel qualities, and building distribution networks as well as integrating them into viable business models. Comprehensive systems covering all areas of upstream, midstream, and downstream sectors are required for substantial introduction of biofuels.

Energy News in Japan & Asia

Japanese oil demand will decrease faster

METI released the "2010 Petroleum Products Demand Outlook" approved by the Petroleum Committee of the Advisory Committee for Natural Resources and Energy (ACNRE), which covers the five years up to 2014. It predicts that the demand for petroleum products in Japan, following the sharp declines in FY2008 and FY2009, may further drop to 161 million kl for FY2014, at an average annual rate of -3.5% or an aggregate rate of -16.2%.

Petroleum Demand outlook of Japan (by METI)

	Actual	Trend	Forecast					2009 to	Composition	
Fiscal Year	2008	2009	2010	2011	2012	2013	2014	2014	2009	2014
	Tousand kl	*Tousand kl*	*Tousand kl*	*Tousand kl*	*Tousand kl*	*Tousand kl*	*Tousand kl*			
Gasoline	57,473	57,347	55,643	54,116	52,241	50,524	48,855	85.2%	29.9%	30.4%
	-2.7%	*-0.2%*	*-3.0%*	*-2.7%*	*-3.5%*	*-3.3%*	*-3.3%*	*-3.2%*		
Naphtha	42,873	46,331	45,830	45,557	45,134	44,701	44,219	95.4%	24.1%	27.5%
	-11.7%	*8.1%*	*-1.1%*	*-0.6%*	*-0.9%*	*-1.0%*	*-1.1%*	*-0.9%*		
Jet Fuel	5,676	5,087	5,025	5,060	4,990	4,943	4,916	96.6%	2.7%	3.1%
	-4.1%	*-10.4%*	*-1.2%*	*0.7%*	*-1.4%*	*-0.9%*	*-0.5%*	*-0.7%*		
Kerosene	20,250	19,730	18,692	17,651	16,697	15,783	14,936	75.7%	10.3%	9.3%
	-10.7%	*-2.6%*	*-5.3%*	*-5.6%*	*-5.4%*	*-5.5%*	*-5.4%*	*-5.4%*		
Gas Oil	33,722	32,308	31,324	30,525	29,576	28,780	28,120	87.0%	16.8%	17.5%
	-5.2%	*-4.2%*	*-3.0%*	*-2.6%*	*-3.1%*	*-2.7%*	*-2.3%*	*-2.7%*		
Fuel Oil A	17,891	15,571	14,396	13,320	12,355	11,510	10,732	68.9%	8.1%	6.7%
	-16.3%	*-12.9%*	*-7.6%*	*-7.5%*	*-7.2%*	*-6.8%*	*-6.8%*	*-7.2%*		
Fuel Oil B&C	23,158	15,511	12,837	11,861	11,692	9,524	9,017	58.1%	8.1%	5.6%
	-8.7%	*-33.0%*	*-17.2%*	*-7.6%*	*-1.4%*	*-18.5%*	*-5.3%*	*-10.3%*		
EP	12,791	7,107	5,203	4,911	5,319	3,645	3,565	50.2%	3.7%	2.2%
	-10.3%	*-44.4%*	*-26.8%*	*-5.6%*	*8.3%*	*-31.5%*	*-2.2%*	*-12.9%*		
General	10,367	8,405	7,634	6,950	6,373	5,879	5,452	64.9%	4.4%	3.4%
	-6.5%	*-18.9%*	*-9.2%*	*-9.0%*	*-8.3%*	*-7.8%*	*-7.3%*	*-8.3%*		
Fuel Oil total	41,048	31,088	27,233	25,181	24,047	21,034	19,749	63.5%	16.2%	12.3%
	-12.1%	*-24.3%*	*-12.4%*	*-7.5%*	*-4.5%*	*-12.5%*	*-6.1%*	*-8.7%*		
Fuel Type Total	201,042	191,890	183,747	178,090	172,685	165,765	160,795	83.8%	100.0%	100.0%
	-8.0%	*-4.6%*	*-4.2%*	*-3.1%*	*-3.0%*	*-4.0%*	*-3.0%*	*-3.5%*		
	Tousand ton	*Tousand ton*	*Tousand ton*	*Tousand ton*	*Tousand ton*	*Tousand ton*	*Tousand ton*			
LPG	17,120	16,643	16,774	17,304	17,535	17,728	17,833	107.2%		
	-5.9%	*-2.8%*	*0.8%*	*3.2%*	*1.3%*	*1.1%*	*0.6%*	*1.4%*		

Japanese petroleum demand for FY2009 recorded a decline in every petroleum product except for petrochemical naphtha. Among others, the demand of heavy fuel oil for electric power generation recorded a sharp drop of -44% reflecting recovery of two nuclear power plants shut down since 2007 and commissioning of new LNG and coal thermal powers. It is projected to further decrease to account for merely 2.2% of the total petroleum products demand in FY 2014. From the point of availability of relevant infrastructure and transportation means, oil could no longer be effective as a stand-by power source with this small share. Demand for other products will also continue to decline, in particular for industry and heating use, and the total demand will reach 161 million kl, which compares to the level of 1969.

LPG demand forecast released on the same day projects that Japan's LPG demand will increase slightly from 16.6 million tonnes in FY2009 to 17.8 million tonnes in FY2014, reversing the present declining trend in every sector and in particular as industrial fuel and petrochemical feedstock. However, considering that the intense price competition with LNG may continue, this projection appears speculative.

Japan's electricity demand will increase 10% in ten years

On March 31, METI announced the Fiscal 2010 Electricity Supply Plan for twelve electric power companies (10 general power companies and two wholesale power companies). The plan forecasts that the annual demand to be met by the ten general power companies will increase by an average of 0.9 percent (0.8% after temperature adjustment) annually in the next ten years through 2019.

Residential demand (classified as lighting) is projected to increase by an annual rate of 1.1 percent as a result of the widespread introduction of all-electric houses, whereas demand for low-voltage power from small businesses and factories is forecast to decrease by 1.2 percent annually. Among high-voltage large users, growth of information technology (IT) and service industries will lead demand increases in the commercial sector for buildings, offices and

shopping centers. However, industrial demand will grow only by 0.6 percent per annum reflecting efforts for higher energy efficiency and savings. Increases in the peak demand (kW) are forecast to be limited to 0.4 percent as a result of energy efficiency improvements and increasing heat storage systems as well as the impact of competition with newcomers (other than the present general suppliers) to the market.

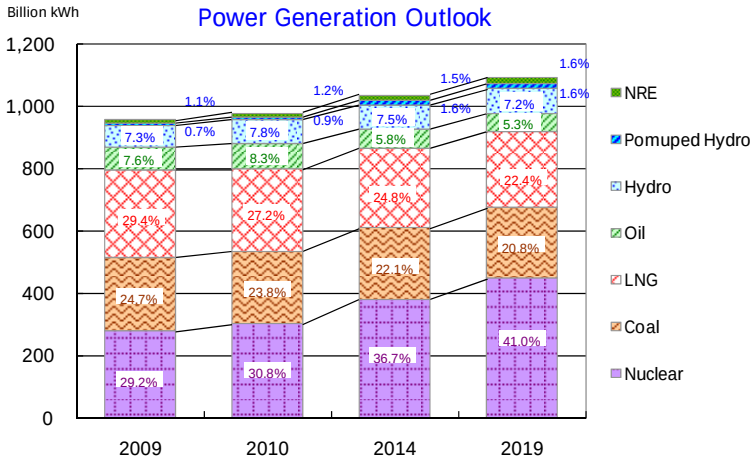
Power Demand Outlook

billion kWh

	2008	2014	2019	08 --> 19
				%
Demand (Sales amount)	903.3	941.2	993.0	0.9
Lighting	285.3	306.5	323.5	1.1
Low-voltage Power	46.8	42.2	40.8	-1.2
High-voltage Power	571.2	592.5	628.7	0.9
Business/Commercial	216.2	230.4	249.0	1.3
Industry/Others	355.0	362.0	379.9	0.6
Ex-power station	952.9	993.1	1,047.8	0.9

The annual load factor will increase to 64.1 percent from 61.2 percent in 2008, reflecting effects of load-leveling by penetration of all-electric houses and peak load curbing by improved energy efficiencies of air conditioners. While the reserve margin reached as high as 26 percent in 2009 due to the economic downturn, it will drop to 14.4 percent in 2010 as the economy recovers. Overall, the power supply is expected to remain adequately stable with the reserve margin at 10.8 percent in 2014 and 11.0 percent in 2019.

On the supply side, total power generation for the twelve companies is projected to be 1.905 trillion kWh, marking a 14.5 percent rise from the forecast for 2009 at 952.8 billion kWh. In terms of power source, nuclear power and renewable energies are forecast to increase by 60.4 percent and 67.9 percent, respectively. Nine nuclear power plants, for a total capacity of 12.94 GW, are scheduled to be newly constructed before 2019, raising the share of nuclear power above 40 percent of the total generation. While renewable energy use will increase significantly it will only contribute to a share of 1.6 percent. Meanwhile, the fossil fuels ratio will shrink to 48.6 percent in 2019 compared to 61.8 percent in 2009. In particular, petroleum consumption will be limited to mainly that for diesel generation on remote islands and will account for merely 5.3 percent of the total power generation.



Nippon Oil consolidates LPG sector with Mitsui-Marubeni

Nippon Oil Corporation announced consolidation of its LPG sector with Mitsui-Marubeni Liquefied Gas Co., Ltd.; a fundamental agreement will be signed in May and consolidation will be completed within 2010. Nippon Oil was the second largest LPG marketer in 2008 with a market share of 14.2% after Astomos Energy Corporation (a jointly owned subsidiary of Idemitsu and Mitsubishi Corporation) with a market share of 20.9%. The new company will take up a 25% share in the Japanese LPG market.

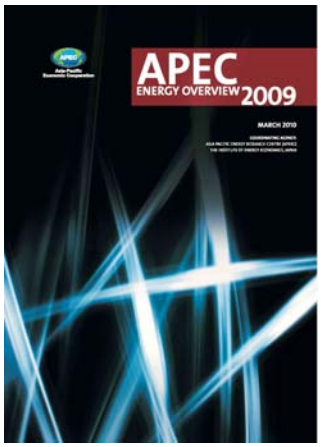
Since Nippon Oil has merged with Japan Energy creating JX Holdings, Inc effective April 2010, consolidation with Japan Gas Energy (an LPG subsidiary of Japan Energy, Itochu and Sojitz with a market share of 11.0%) will sooner or later take place pending approval of the Fair Trade Commission. Then, the new company will have a market share of 36% with a sales volume of 6.26 million tons of LPG according to the 2008 record. Japanese LPG wholesalers

have been suffering from a steep demand decrease in the face of severe competition with LNG-based city gas as well as home electrification campaigns by power companies. As this trend would not be reversed easily, the intense merger game in the Japanese LPG market may continue further.

APERC News

2009 APEC Energy Overview Now Available

APERC released the 2009 edition of the *APEC Energy Overview* in late March. It summarizes the energy policies of each of the 21 APEC economies, including energy market frameworks, upstream development, energy efficiency, low carbon energy, and environmental protection. It also provides a brief summary of each economy's energy resources, infrastructure, and energy demand and supply situation.



The desire to maintain economic growth and prosperity while addressing the mounting challenges of supply security and environmental concerns has prompted a number of economies to review their energy strategies. These plans consider how to reduce energy use (mainly through energy efficiency measures) and increase the uptake of lower carbon energy options. The *Overview* describes these plans and their objectives.

The report should be a valuable reference for anyone seeking an understanding of the energy situation in the APEC economies. The complete report is available on APERC's website at http://www.ieej.or.jp/aperc/2009pdf/Overview2009.pdf.

APERC Releases Compendium of Energy Efficiency Policies of APEC Economies

APERC released *The Compendium of Energy Efficiency Policies of APEC Economies* in mid-April. Drawing on the knowledge of members of the APEC Energy Working Group, the APEC Expert Group on Energy Efficiency and Conservation, and other government energy efficiency experts, APERC's team of researchers have developed a comprehensive report on recent goals, action plans, policies and measures for energy efficiency improvement in twenty APEC economies. A summary table allows easy comparison of the policies of each economy.

The *Compendium* is intended to promote information sharing in the field of energy efficiency and energy conservation across the APEC economies under a common format. The summary report and separate chapters for the individual APEC economies (compiled as of March 2010) are currently available in PDF format on APERC's website at http://www.ieej.or.jp/aperc/CEEP.html.

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