

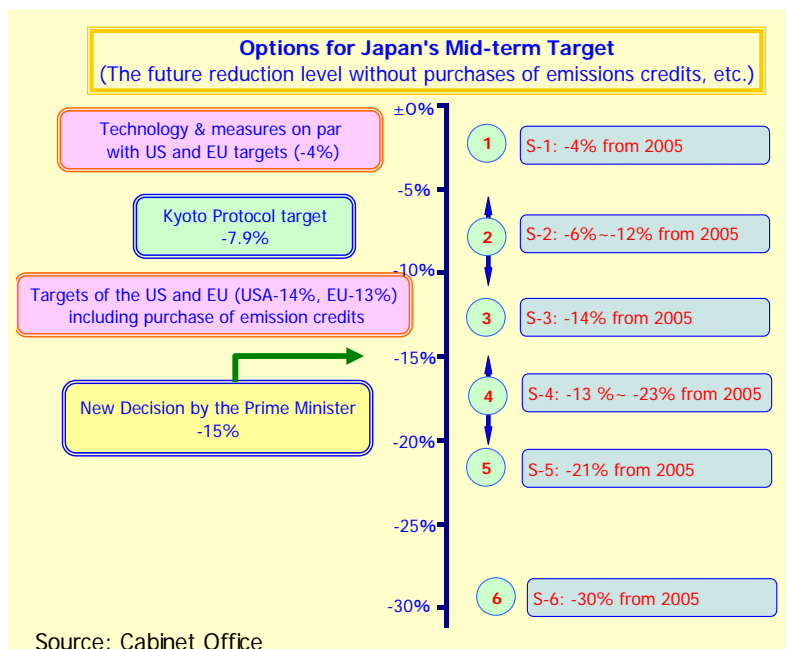
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## Japan sets a 15% reduction as the Mid-term Target

As a prelude to the COP-15 meeting scheduled for December this year in Copenhagen, Denmark, the G8 leaders met at L' Aquila, Italy on July 8-10 and agreed on a global long-term goal of reducing global emissions by at least 50% by 2050 and, as a part of this, on an 80% or more reduction goal for developed countries by 2050, recognizing the scientific view on the need to keep global temperature rise below 2 degrees Celsius above the pre-industrial levels. However, they only mentioned the need for significant mid-term targets without referring to the Post-Kyoto Protocol framework. Prior to the Summit meeting, Prime Minister Taro Aso announced on June 10th Japan's mid-term target of reducing GHG emissions by 15% from 2005 levels by 2020. This mid-term target will be a basic position that Japan will take at international negotiations to be held in the lead-up to the COP-15 meeting.

The 15% reduction is a net domestic reduction and equivalent to an 8% cut from 1990 levels. As discussed in the last edition of the JEB, the government had studied six options regarding the target, and was trying to establish a national consensus to adopt a 7% reduction from 1990 levels, or a 14% cut from 2005 levels, a position also taken by IEEJ. At the last stage, however, the Prime Minister decided to add an extra one percentage point, stating "this mid-term target is extremely ambitious; with any higher target, the burden placed on the public would become excessively heavy."



Although Japan's reduction target only slightly exceeds those of the EU and the United States (as announced in President Obama's Budget Message) in the ratio as against 2005 levels, Japan's plan is based purely on domestic reduction effort which excludes credits purchased from other countries and reduction from reforestation amounting to some 5.4% under the Kyoto Protocol.

### Mid-term Targets of Major Countries

	Compared with 2005	Purchase of emissions credit	Base Year
Japan	-15%	Not included	2005
EU27	-13%	Included	1990 (-20%)
USA	-14%	Included??	2005

Achieving the mid-term plan will entail implementation of drastic reduction measures including: 1) raising the level of renewable energies to 20%, the highest level in the world, 2) increasing solar power generation by 20-fold from the current levels, 3) ensuring that one out of every two new cars will be an Eco-car such as a hybrid vehicle, and 4) ensuring that 80% of new houses pass the next-generation energy saving standards.

The energy efficiency improvement resulting from these measures will come to 33%, exceeding the 30% boost achieved during the post-oil-crises years. Furthermore, the final addition of a 1% cut must be attained by taking such measures as raising the scale of solar power installations from the initial plan of 14 GW (10 times the current level) to 28 GW (20 times), calling for almost all buildings including schools and various public facilities to go green and requiring an additional cost of 10 trillion yen.

The Prime Minister pointed out that the following three points should be the basic principles in addressing the Post Kyoto Protocol Framework:

- 1) The GHG reduction obligation under the Kyoto Protocol covers only 30% of the global emissions. A new framework must involve the United States, China, and other major emitting countries. To ensure this, Japan must exert its leadership to drive the global initiative forward. At the same time, international equity among countries is equally important. A tough obligation imposed only on Japan would lead Japanese companies and factories to move to less regulated countries, which would not contribute to an overall reduction in global emissions.
- 2) It is imperative that the environment and economy go hand in hand. The mid-term plan should not end up as a mere declaration. It must be an achievable target backed by solid ground. Achieving economic growth while preserving the environment is a serious issue for developing countries which will participate in the new framework with shared responsibility, and Japan is willing to assist them.
- 3) Global emissions must be halved by 2050 in order to stabilize the earth's temperatures. To achieve this long-term goal, developed and developing countries should seek to peak their emissions by 2015 and 2025, respectively. Japan has laid out its long-term goal of reducing its emissions by 60 to 80% by 2050. The mid-term target at this time must go in line with the long-term goal.

Among public comments solicited prior to the decision of the mid-term plan out of the six options given, over 70% of the comments were in favor of a 4% reduction from 2005 levels. While expressing his serious respect on these views, the Prime Minister explained, "If we fall into inaction, Japan will lose its advantage in high energy efficiency and will have to pass down to the next generation a country without international economic competitiveness," and "in order to lead the world in pushing ahead with a low-carbon revolution, Japan must be determined to stay ahead of other countries and redouble its efforts. To this end, we have boldly set a challenging goal of a 15% cut from 2005 levels."

### Voices of the Public on the Six Optional Scenarios

Reduction from 2005	Public Comments	Opinion Survey
Scenario-1 : -4%	<b>74.4%</b>	15.3%
Scenario-3 : -14%	1.0%	<b>45.4%</b>
Scenario-5 : -21%	0.6%	13.5%
Scenario-6 : -30%	13.0%	4.9%

Source: Cabinet Office

## Energy experts proposed Energy Policy Imperatives

On June 10, a group of ten renowned energy experts from around the world proposed “Nine Energy Policy Imperatives” for the consideration of Silvio Berlusconi, the Italian Prime Minister, who chaired the 2009 G8 Summit Meeting. Ambassador William C. Ramsay, former Deputy Executive Director of the IEA, wrote on behalf of the group that the issues raised are critical to finding a sustainable path for the world to the future. The key messages are as follows.

- Markets must provide for competition and economic gain through optimum technology production and distributional practices, but markets must also be tempered by clear policies and regulations to promote larger public goods – in particular security of supply, environmental protection and equity.
- Energy independence is unachievable. The notion that a country can insulate itself from international energy markets leads to decisions that are contrary to economic growth, energy security or the protection of the environment.
- Targetry is an essential tool for policy makers. But long term targets need interim measurement points to ensure the accountability of target setters and to provide essential guidance to the investors whose actions are essential to meeting the targets.
- Energy poverty is seen as a welfare loss. But the frustration and discontent of poverty and proximity of corruption erode social structures and political fabric breeding extremism. Energy poverty is much more than an urgent welfare issue.
- Development assistance is insufficient to electrify the third world. To mobilize private capital, much more attention needs to be devoted to electricity market perfection – creating the conditions for self help and foreign direct investment.
- Energy/climate policy makers must draw on all carbon pricing policy tools. In a differentiated world, each national context requires its own solution. A global price for carbon, as with other tradable commodities will emerge from diverse markets.
- Carbon capture and storage (CCS) is intended to prolong the use of fossil fuels. If considerably greater effort is not deployed to demonstrate CCS, it will not be ready in time. Replacing CCS with other technologies will be very expensive – if it is feasible.
- The elements of an effective system of global energy governance are already in place. We need to make better use of what we have. Creating new institutions may satisfy political needs – but will only serve to dilute and distract already limited resources.
- Our own electricity and gas grids are an increasing source of energy insecurity due to a lack of regulatory clarity and public support. Efficiency opportunities abound in all of our countries. These are things we can fix at home at little expense – but we don’t.

With regard to GHG emission reduction, the group insists that carbon must have a price but there is no single way to put a price on carbon, and that policy makers must choose those that will work in their national context to achieve the economic, security, environmental and distributional objectives of balanced energy policy. They also emphasize that energy efficiency gives us the lowest cost, most secure barrels of energy available without emitting carbon. The full text of the proposal is available at the website <http://eneken.ieej.or.jp/data/2710.pdf>

Other renowned experts that participated in formulation of the message are Guy Caruso, former Administrator of EIA/DOE, USA, Zhou Dadi, former Director General of ERI/NDRC, China, Adrian Lajous, former CEO of Pemex, Mexico, Masahisa Naitoh, Chairman and CEO of

IEEJ, Japan, Claude Mandil, former Executive Director of the IEA, Francesco Olivieri, former Ambassador and G8 Sherpa, Italy, Anil Razdan, former State Secretary – Power, India, Adnan Shihab-Eldin, former Acting Secretary General of OPEC and Anatoly Torkunov, Rector, Moscow State Institute of International Relations, Russia.

## Energy Policy Committee Highlights

In order to prepare policies and institutional frameworks to push Japan toward a low-carbon society, extensive committee meetings have been held as given below. They are mainly aimed to set out principles and ruling to raise the share of renewable energies and nuclear energy to 20% and increase PV power 20-fold by 2020 as stated by the Prime Minister in June.

## Nuclear Energy SC discusses on fuel cycle and pluthermal

The Nuclear Energy Subcommittee of the Advisory Committee for Natural Resources and Energy (ACNRE) held its 20th meeting on May 25 and discussed the nuclear fuel cycle. The secretariat presented issues and measures on four points, i.e. reprocessing of spent nuclear fuel, development of spent nuclear fuel storage facilities, the Pluthermal (MOX fuel) program and high-level radioactive wastes. Participants exchanged views also on how the exchange of information with citizens should be promoted for harmonious coexistence of the facilities with local communities.

The Subcommittee then convened its 21st meeting on June 18 to receive reports on subjects including the mid-term GHG reduction target as announced by Prime Minister Taro Aso on June 10, creation of the International Nuclear Energy Cooperation Council, a revision of the Pluthermal fuel program, etc. It also discussed and approved measures to promote the expansion of nuclear power generation as proposed by the secretariat. In the promotion measures, the secretariat stressed the need to raise nuclear energy's share of electricity generation to around 40% for achieving the mid-term GHG target and set forth specific and comprehensive measures to attain the goal. Subcommittee members unanimously recognized the importance of achieving the nuclear capacity utilization rate of 81% and constructing nine new nuclear reactors by 2020, as proposed by the Committee for Consideration of the Mid-term Target, and striving for them with clear, long-term action strategies as well as strong government support and initiative.

IEEJ Chairman and CEO Dr. Masahisa Naitoh offered the following points:

- While the nuclear promotion measures proposed are very comprehensive, specific action plans and priorities should be drawn as the next step.
- Considerations should be given to a time axis. While various factors including policies toward 2020 have been discussed in detail, we have yet to delve into policies and other measures aimed for 2030 or 2050. We should deepen our investigation on policy options along the time axis, including economic efficiency analyses of power demand curbing and load-following plant operations.
- In terms of a global strategy, Japan needs to improve its capability to ensure nuclear fuel supply to the plants. Japan will at least have to secure uranium resources and enriched uranium. To this end, Japan should make special efforts for creating an international scheme to secure not only nuclear fuel stockpiles but also uranium provision guarantees. This

obviously calls for Japan to roll out powerful nuclear diplomacy by fully mobilizing its diplomatic capacity carried out by trained players who can truly represent Japan.

## **Urban Heat Energy SC discusses strategies toward low-carbon society**

The Urban Heat Energy Subcommittee held its 11th meeting on June 12 to deliberate on the interim report of the “Panel on the Role of the Gas Industry in a Low-Carbon Society” and approved it to be compiled as a proposal by the subcommittee. The Panel was launched this year in April, amid ongoing debate over the treatment of natural gas in energy policy where it is being redefined as a “fossil fuel” instead of a clean “new energy”. Its aim is to facilitate the evolution of the gas industry in the context of global warming. The report raised the following three issues as core themes for gas utilities’ endeavor toward a low-carbon society:

- 1) A best mix of power and heat achieved through deployment of distributed energy systems;
- 2) Contributions towards a hydrogen energy-based society; and
- 3) Promotion of energy conservation and CO<sub>2</sub> reductions through the intensive use of natural gas in the industrial sector.

More specifically, the report seeks to establish a “Smart Energy Network,” a distributed energy system centered on cogeneration. Information technologies including smart meters that provide real-time information on demand-side energy consumption and sensor networks that control energy consuming equipment will be employed to achieve an optimal combination of power and heat. For this purpose, demonstration tests will be conducted in households, housing complexes, and local communities as well as municipalities so that relevant know-how can be accumulated. The report will also emphasize that CO<sub>2</sub> emissions can be substantially reduced by installing high efficiency combustion equipment.

The interim report incorporating comments and opinions was approved at the 12<sup>th</sup> Subcommittee meeting held on June 30. In the revised report, “introduction of renewable energies” was added as the fourth pillar of the role of the city gas industry in addition to the three as explained above. Biogas and thermal solar power are discussed under the new category. Mr. Tadaaki Maeda, Senior Vice-President of Tokyo Gas, made a report on the CHP promotion policies in the US and Europe, and requested that Japan should study a comprehensive policy for promotion of CHP.

## **Joint Committee discusses on PV power buy-back system**

METI held a joint meeting of the New and Renewable Energy Committee and the Electricity Industry Committee on July 9, and discussed a “new photovoltaic (PV) power buy-back system.” The two committees representing sellers and buyers of PV power had been discussing the buy-back system separately. Among the main agenda items at the joint meeting were handling of *double generation* when PV and other renewable generation are adopted simultaneously, the applicable range of the buy-back and the definition of “surplus power”, and the buy-back price under the system being discussed. The gist of the draft proposed to the joint committee was as follows.

- 1) The range of the buy-back should be the surplus power exceeding home use.
- 2) The applicable prices should be set separately for purchase from residential and

non-residential sources.

- 3) The initial buy-back price for the residential source power shall be ¥48/kWh and the buy-back period shall be 10 years, which is roughly equal to the investment pay-back period. From the second year of the system, the buy-back price shall be lowered reflecting the declining PV installation cost. The price level for the non-residential source power shall be lower than the foregoing.
- 4) On the handling of double generation, the surplus power *pushed-up* by in-house cogeneration, fuel cell generation, or others shall be evaluated separately from the case where only PV generation is provided.
- 5) Price for the pushed-up surplus power shall be set lower than ¥48/kWh. As it is difficult to measure the push-up effect case by case, the government will decide an applicable ratio to the double generation.

Prior to the joint meeting, the RPS Subcommittee of the New and Renewable Energy Committee held on June 29 discussed adjustment with the double crediting system to be applied to PV power under the RSP system. In order to adjust the disadvantageous position of PV power due to its generation cost compared with others such as wind power, the double crediting of the PV power volume will start from 2011.<sup>1</sup> The Subcommittee discussed that the double crediting should not be applied to the PV power under the above buy-back system, while it should be applied to the PV power operated by PPS (Power Producer and Supplier) such as mega-solar since PPS players are excluded from the buy-back system.

The joint committee will move to the next stage on the designing of the rules and institutional frameworks on how to implement accurate measurement of and secure equity among different recoverable energies. The discussion will be complex, as heat pump and co-generation are considered to be classified as a “recoverable” energy for the above purpose.

## Energy News in Japan & Asia

### Japan prepares legislation for promotion of non-fossil energy

On July 1, the National Diet of Japan passed two bills that will prepare legislation to promote the use of non-fossil energy in Japan. One is the amendment of the Alternative Energy Act (Act on the Promotion of the Development and Introduction of Alternative Energy) and the other is a new law on the use of non-fossil energy by energy suppliers (Act on the Promotion of the Use of Nonfossil Energy Sources and Effective Use of Fossil Energy Materials by Energy Suppliers).

The term “alternative energy” that was used to mean any oil-alternative energy in the former act was replaced by “nonfossil energy” that refers to renewable energy and nuclear energy, and the name of the act was also changed. Under the renamed Nonfossil Energy Act, coal and natural gas are deemed as energy to be phased out. This law shall be the basis for policy measures to promote the use of non-fossil energy. In addition, another new law was created to set out legislation for energy suppliers (businesses to supply electricity, heat, and fossil-origin coal, oil and gas) to use non-fossil energy, possibly dubbed the Nonfossil Energy Supply Act.

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<sup>1</sup> According to METI, the double counting was introduced considering the generation cost difference. The generation cost of PV power was around ¥46/kWh in 2005, and technology development is being enhanced to halve this to ¥23/kWh by 2010. Even then, it is still two times the wind power generation cost estimated at ¥11 ~ 14/kWh.

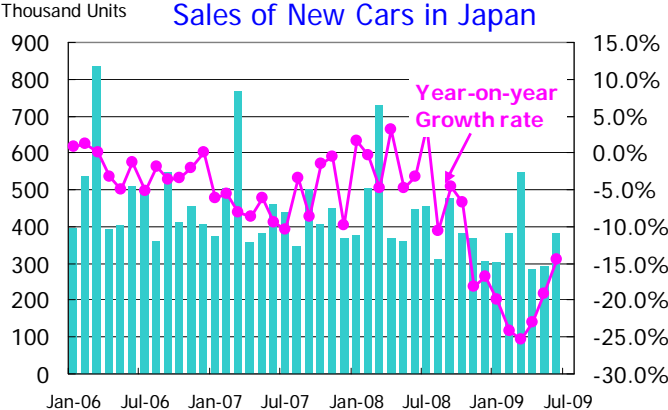
Under the new law, the METI Minister shall set out the Basic Plan for use of nonfossil energy sources as well as effective use of fossil energy sources such as crude oil or natural gas. It covers issues such as use of solar power, nuclear power and other nonfossil sources of power, use of biofuel and biogas, and also the applicable price for the electricity generated from solar power.

At present, there are no numbers or plans being discussed for formulation of the Basic Plan. METI will rush to prepare policies and institutional frameworks to promote solar power based on these acts, as the target of introducing the PV power under the Mid-term Target for 2020 was increased two-fold from 14 GW to 28 GW by Prime Minister Taro Aso in his June announcement. In addition, there arises some turmoil concerning the role of the city gas industry as natural gas has suddenly been downgraded from a preferred energy source to a non-preferred one. While the power industry and the oil industry have been studying development of nonfossil fuel for quite some time, biogas is a relatively new idea for large-scale use by the city gas industry.

**Hybrid Vehicles leads new car sales in Japan**

In June, Toyota Prius jumped up for the first time to the most selling car among new car sales in Japan including regular and mini vehicles. In May, it was number one among regular-sized cars but was number three when K-cars<sup>2</sup> were included. Toyota sold about 22,000 units of Prius in June, which was more than twice the 10,915 units sold in May. Honda also sold about 8,800 units of “Insight” in June substantially exceeding the initial target of 5,000 units a month. Sales of these hybrid cars have jumped to 14% of regular-sized passenger cars from 8.4% in May.

New car sales seem to have bottomed out after hitting a 41-year low in April, recording a consecutive nine month decline on a year-on-year basis and -14.5% in June. For the purchase of Eco-cars, a tax reduction system started in April and a purchase support system started in June.<sup>3</sup> Backed by intensive public campaigns on the ecological life style, hybrid cars are now most popular in Japan among people who are considering purchase of new cars. However, they have to cue more than nine months due to a high backlog.



Source: Japan Automobile Dealers Association  
Japan Mini Vehicles Association

**Pilot projects on Smart Grid will start on isolated islands**

METI plans to start pilot projects of the next generation electricity grid (Smart-grid) technology to accommodate renewable energies such as solar and wind power, the output of which are unstable and subject to weather changes. Kyushu EPC and Okinawa EPC will conduct the pilot projects on ten isolated islands with governmental supports.

<sup>2</sup> K-cars (Kei-jidosha) or light (mini) vehicles are those cars with an engine of displacement lesser than 660cc. They are popular in Japan as secondary cars for daily commuting or shopping.

<sup>3</sup> For those Eco-cars qualifying under the standards for emission quality and fuel efficiency, taxes at acquisition of a car will be reduced 50 to 75%, and 100% for a hybrid car, and annual car tax 25 to 50%. In addition, the government provides a maximum 250,000 yen grant for purchase of an Eco-car.

The power companies will install photovoltaic panels and batteries in these islands and aim to establish grid management technology to minimize effects of parasite power sources. Since the power grids on these islands are isolated and independent from other sources, it is easier to identify effects of these energies. Introduction of renewable energy is attractive for these isolated islands as transportation costs for generating fuel, mostly diesel and fuel oils, are quite high. Okinawa EPC plans to install PV power of 4MW and batteries to smooth out the changes in the output caused by weather on Miyako Island, which is about 8% of the local electricity demand. There are already five of wind turbines installed. Combined effects of power generation by renewables on the frequency and voltage will be observed and considered for better grid operation. Kyushu EPC will start similar projects on six islands from July. METI will provide two-thirds of the nine billion yen budget earmarked for the projects.

### **Oil companies recorded a historic loss in FY2008**

The Petroleum Association of Japan (PAJ) reported on July 1 that ten Japanese oil companies recorded a current loss of 403 billion yen in the previous fiscal year ended March 2009. Six out of ten companies recorded a financial loss. Sales of petroleum products declined by 5.7% and the sales amount by 2.1%. Operating income recorded a historic loss of 737.5 billion yen mainly due to the reassessment of inventory value caused by a sharp decline in the crude oil prices.

Despite expectation of oil companies on several measures such as reduced highway tolls and automobile taxes, petroleum products demand continues to be slow in the second quarter, reflecting the stagnant economic activities and demand shift to other energy sources. According to the weekly statistics released by PAJ, the refinery operation rate was 75.5% during the fourth week of June (June 21-27), the lowest record in recent years. Industry sources anticipate further decline in the refinery operation rate in July because of actions to cope with the stagnant market including total shut down of some refineries.

2008 Financial Result of Oil Companies

	Sales		Operating		Ordinary	
	Amount	Net Sales	Income	Income	Income	Income
	Million Kl. ton	Billion Yen	Billion Yen	Billion Yen	Billion Yen	Billion Yen
Idemitsu Kosan	33.90	3,478.5	27.8	25.0		
Kashima Oil	0.04	41.6	1.5	1.1		
Taiyo Oil	7.63	609.2	-17.9	-19.3		
Fuji Oil	8.47	624.0	-41.9	-44.3		
Cosmo Oil	41.18	3,158.9	-169.3	-127.5		
Mitsui Oil	5.66	472.7	1.6	1.3		
Nippon Oil	84.45	6,658.1	-441.1	-147.0		
Nippon Petroleum Refining		309.6	18.9	19.9		
Japan Energy	36.46	2,900.9	-116.8	-110.0		
Seibu Oil	6.18	470.2	-0.3	-1.9		
Total	223.97	18,723.6	-737.5	-402.7		
Showa Shell Sekiyu (CY)	NA	3,272.8	-12.3	10.1		

Note: Nippon Petroleum Refining Company is a 100% subsidiary of Nippon Oil.  
Showa Shell is not included in the PAJ report as its fiscal term is different.  
Source: Petroleum Association of Japan and Showa Shell Sekiyu.

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