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Global Warming Bill sets out 25% emissions reduction

The Japanese cabinet approved on March 12 the Basic Global Warming Bill for submission to the Diet at the current session. The bill sets a mid-term target of reducing greenhouse gas emissions from the 1990 level by 25% by 2020, as Prime Minister Hatoyama said in his statement last September; the target is premised on "the establishment of a fair and effective international framework in which all major economies participate and on the agreement on ambitious targets by all major economies." In the long run, it also aims at an 80% emissions reduction by 2050. The target to introduce renewable energy sources was revised from "around 20% of the total energy consumption by 2020" to "10%" by the same year considering the feasibility and related issues.

The bill sets out formulation of the Basic Plan to counter global warming including intermediate outlooks for 2030 and 2040. It also stipulates, as the fundamental measures, that;

1) A domestic emissions trading system should be created within a year,
2) Global Warming Tax should be considered for implementation in the fiscal year 2011,
3) A new scheme should be created for purchase of all electricity generated by renewable energy sources at a fixed price,
4) Nuclear energy should be promoted with due consideration to safety,
5) Energy efficiency and rational use of fossil fuels should be enhanced,
6) R&D of innovative technologies should be promoted, and so on.

With regard to emission cap setting that is prerequisite to creation of the emissions trading system, the energy intensity per unit production approach is added in addition to the total emission amount approach in response to the opposition by METI that the original capping plan may constrain private business activities seriously. The applicable system for cap calculation will be further discussed and finalized by implementing rules and regulations to be set out before enforcement of the law.

Nine Japanese business associations comprising energy intensive industries – petroleum, cement, electric power, electric IT, chemicals, city gas, automotive, pulp & paper, and steel industries – released a joint statement on the same day that they greatly regret that the

medium/long term targets and individual implementation policies are stipulated in the bill despite their strong opposition. It requests that the administration should;

1) Show a roadmap as to how and to what extent GHG emissions should be reduced, in which sectors and with what technologies, consistently with the economic development strategy,
2) Clarify its cost, impacts on economy, peoples' lives and employment, and its burden on people, and
3) Secure international equitability carefully verifying the levels of targets submitted to the United Nation by other countries.

The Japan Business Federation also claimed that, since the bill would pose a significant adverse impact on the economy, employment, and people's lives, sufficient public debate should be made with thorough information disclosure to judge needs of introducing the bill and appropriate systems to be instituted. Although many people complain that the bill was finalized behind closed doors, the bill once approved would mark an important step for Japan toward a low-carbon society.

Oil price will remain moderate but volatile in 2010

In February, the IEEJ hosted two joint conferences on international oil price trends. At the International Panel Discussion held on February 4, co-sponsored by Nippon Oil Corp. and the Committee for Energy Policy Promotion (CEPP), three prominent economists presented their views on short term oil price outlook.

Former US EIA Administrator Mr. Guy F. Caruso mentioned that it is quite reasonable to think that crude oil price, in terms of WTI, would remain within the $60 ~ $80 per barrel range in 2010, centering around $70. Since the 2008 financial crisis, the world oil market has lost demand by as much as 5 ~ 6 million barrels per day (bpd). Although the world economy is in the recovery process, it is very slow and may bring about a demand recovery of merely 1.0 ~ 1.5 million bpd in 2010. The surplus supply capacity was about 3 million bpd in early February, while inventories were in glut everywhere in OECD countries, suggesting that the downward pressures would continue to persist in the oil market.

Dr. Fereidun Fesharaki of FACTS Global Energy Inc. said that nobody is complaining about the prevailing price of $75 per barrel. If the OPEC had not existed, the world oil price would have plummeted to as low as $30 per barrel giving a fatal blow to the world upstream oil industries. Other stakeholders such as environmentalists or coal producers are also not complaining. Only consumers might complain, but they are not doing so because high tax rates on oil obscured the effect of the changes in original price. Since non-OPEC countries have lost the power to increase production, the OPEC is now back at the helm of controlling the market price. Oil price will remain within $65 ~ $75 per barrel this year. As world oil demand is stagnant, oil prices will not go up beyond $100 per barrel and stay there for another two to three years. If a pessimistic view on the world economy would develop, triggered by a downward revision of economic outlook by the IMF for example, oil prices may drop further

down to the $30 ~ $40 range. On the other hand, the OPEC would resort to every measure available to keep the present price level.

Mr. Takayuki Nogami, Senior Economist of JOGMEC, said that the oil price range for 2010 would be $45 ~ $75. While it may stay within $75 ~ $85 a barrel during the early part of the year, it could possibly slip to $45 ~ $75 as early as July this year as price adjustment may occur reflecting the market glut. He pays attention to two indices, i.e. stock price movements resulting from the economic recovery and depreciation of the U.S. dollar resulting from anticipated inflation. It is possible that, once triggered, both factors may together push up the oil prices. However, under the unstable financial circumstance currently prevailing worldwide, investors may rather move to other commodities.

On February 25, the IEA and the IEEJ held a joint Oil Price Formation Workshop in Tokyo inviting over 80 experts from the oil industry, research institutes and governmental organizations. The closed-door workshop intensively discussed a number of key issues to make oil markets work better, particularly on excessive volatility in oil prices. The workshop produced a joint statement by the IEA and IEEJ emphasizing the needs for various policy efforts to stabilize the market, which is posted separately on the IEEJ website.

The next day, at the IEA/IEEJ Forum on Global Oil Market Challenges, Mr. Masayuki Naoshima, Minister of Economy, Trade and Industry (METI), expressed appreciation for the efforts by experts at the workshop extensively discussing the improvements on oil price instability. He told the audience that the 2008 price spike was caused by anticipation of supply shortage in the future; in order to avoid this problem occurring again, proactive development investment should be made from a long-term viewpoint to accommodate the future demand increases, especially in emerging economies. He appreciated the efforts by the International Organization for Securities Commission (IOSCO) and regulatory authorities to enhance transparency of and to reinforce monitoring on commodity futures market. At the same time, he added, the regulatory authorities should be prepared to act promptly when the market is excessively reacting to a tilted state of the supply/demand balance.

Mr. Scott. D. O'Malia, Commissioner, U.S. Commodity Futures Trading Commission (CFTC), stated that the U.S. is considering a range of policy options to create a more transparent and stable financial system, enacting legislative reforms and establishing position limits. A legislative reform package is expected to pass the Congress this year, which will expand the CFTC's authority to oversee the $300 trillion U.S. Over-the Counter (OTC) derivatives markets. Regarding the position limits, CFTC has proposed imposing them on four energy exchange-traded contracts including crude oil, natural gas, heating oil and gasoline, which will prevent any single trader from becoming too concentrated in a single market or contract, but are not intended to control prices.

The global oil market paradigm has shifted over the past decade where oil is now a financial asset and its price movements are correlated to economic growth, and the oil demand growth is led by emerging countries. The present level of spare capacity will disappear by 2015, and we may return to the tight market conditions that occurred in 2008. To avoid future price spikes, oil markets should have accurate and timely data regarding the tightening markets, particularly on developing markets, oil in-transit and storage. In order to make the markets transparent, as set forth in the G20 Pittsburgh Communiqué, efforts should be made on collecting and reporting all oil market data, as the G20 nations now represent the largest oil users as well as the top producing nations. Oil market transparency will also create an environment where alternative energy investors will have more predictable and transparent markets. The presenter expressed a wish to create a right environment where markets will serve the roles for

which they were created: price discovery and commercial hedging.

Mr. Nobuo Tanaka of the IEA reported that volatility borne of uncertainty about the market can be damaging for both the broader economy and for much needed investment in future supplies. Uncertainty can be lessened with clearer, internationally-agreed policies that ensure plentiful supplies of economical, sustainable and secure energy. Open access to energy reserves and the encouragement of investment would help remove concerns about future supplies. A commitment to set clear environmental and efficiency goals would help producers plan for the future. Producers and consumers alike share an interest in the greater stability that such policies could bring about. Another important element to reducing volatility is the role of a well functioning financial market. He concluded that, for stabilizing the market, reducing uncertainty about fundamentals and making markets function better is essential.

India's mid-tem goal remains conservative

Just before the UNFCCC COP-15 Conference held last December, the Chinese government announced an emissions reduction target whereby China will aim at reducing its CO_2 intensity per GDP by 40 – 45% by 2020 from that of 2005 level. Following China, India also announced a target of 20 – 25% reduction by 2020. At a glance, these targets looked very ambitious because of the magnitude of the reduction; announcements made in timely manner greatly encouraged participants of the COP-15. However, when examined more closely, these commitments are nothing like going beyond business-as-usual (BAU) projections, where it is assumed that no additional policy actions would be taken to counter global warming. Despite such situations, the Copenhagen Accord failed to obtain clear unanimous concurrence of the participants, let alone numerical reduction targets.

Emissions reduction potential of these two countries appears to be far larger than those set forth in the announced targets. Ryoichi Komiyama, Senior Analyst, EDMC, IEEJ, analyzes India's reduction potential as follows.

India's energy supply and demand outlook

India has pushed forward aggressive policies to reform its economic systems promoting deregulation and liberalization, and inviting foreign investments. After the turn of the century, with a tail wind of globalization, Indian economy was put on to a stable growth pathway with emergence of software and service industries. In recent years, India has continuously registered high economic growth supported by robust personal consumption and private investments; GDP recorded growth rates of 9.2% for 2005, 9.8% for 2006, 9.4% for 2007 and 7.3% for 2008. Despite the international economic downturn, India may have recorded growth above 5 % in 2009. India, with its mega-population of over 1.1 billion, is expected to continue the steady growth although various risk factors are anticipated such as inadequate social infrastructure and shortage of development funds. India's energy demand is expected to increase substantially in coming decades for construction of industry and social infrastructure as well as improving people's daily life and business circumstances.

In terms of primary energy consumption, India is the third largest energy consumer in Asia after China and Japan; India consumed 430 million tons oil equivalent (toe) of energy in 2008 while China consumed 2 billion toe and Japan 510 million toe. In India's primary energy supply, coal accounts for 53%, while oil and natural gas take up 31% and 9%, respectively, showing India's significant dependence on coal for its energy supply. While India's oil consumption is rising along with the rapid economic growth, its domestic oil production

peaked out many years ago. Thus the country depends on imports for 73% of its oil demand. In addition, partly due to quality deficiency of the domestic coal such as high ash content, coal imports have been growing rapidly in recent years pushing up the country's dependence on foreign coal to 16% as of 2008. Since the domestic natural gas supply has not developed much yet, India's reliance on imported gas has also gone up to 26% as of 2008.

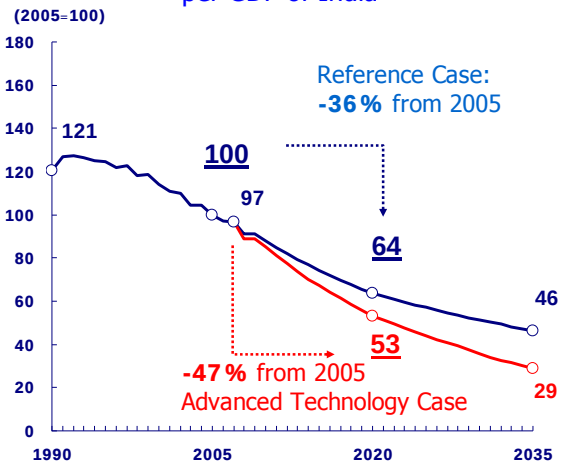
As described above, with the rising imports of fossil fuels at the core of its energy supply, India's energy self-sufficiency has been declining gradually, standing at 67% in 2007. In the final energy consumption, the industrial sector (including non-energy use) accounts for 54%, while the consumer/agriculture and transportation sectors take up 29% and 18%, respectively, indicating that the industrial sector takes a central position in India's energy consumption. Furthermore, of the total increase in energy consumption between 1990 and 2007, the industrial sector takes up 58% while the consumer and agriculture and transportation sectors account for 30% and 12%, respectively, proving that the major increase in India's energy consumption is occurring in the industrial sector.

Outlook of India's CO_2 intensity per GDP

According to the forecast made by IEEJ in its "Asia/World Energy Outlook 2009" released in October 2009, India's CO_2 intensity per GDP will decline by 39% in 2020 from the 2005 level under the Reference Case scenario. Under the Advanced Technology scenario where proactive measures are taken to introduce advanced technologies aggressively, the energy intensity is projected to decrease by 49%. These projections show that there is a good possibility of an energy intensity improvement far exceeding what the Indian government recently announced.[1]

India's CO_2 emissions trend may be analyzed from three factors, namely de-carbonization, improvement in energy efficiency and conservation, and economic growth. During the past 15 years, as shown in Table-1, India has improved energy efficiency by 1.0% a year and implemented de-carbonization (through shifting to cleaner energy) by 0.2% a year. This has resulted in an annual 4.6% increase in CO_2 emissions for the 15 years between 1990 and 2005, while the economy recorded an annual 6.0% growth in the same period.

Figure-1 Outlook of CO_2 Emmissions per GDP of India



Source of all data in this article is "IEEJ Asia/world Energy Outlook 2009"

Table-1Composition of CO2 Emissions

		1990-2005	2005-2020	
			Reference Case	Adv-tech Case
CO2 Emissions	ΔC	4.6	3.4	2.1
De-carbonization	Δ(C/E)	▲ 0.2	▲ 0.7	▲ 1.1
Efficiency	Δ(E/Y)	▲ 1.0	▲ 2.5	▲ 3.3
Economic Growth	ΔY	6.0	6.8	

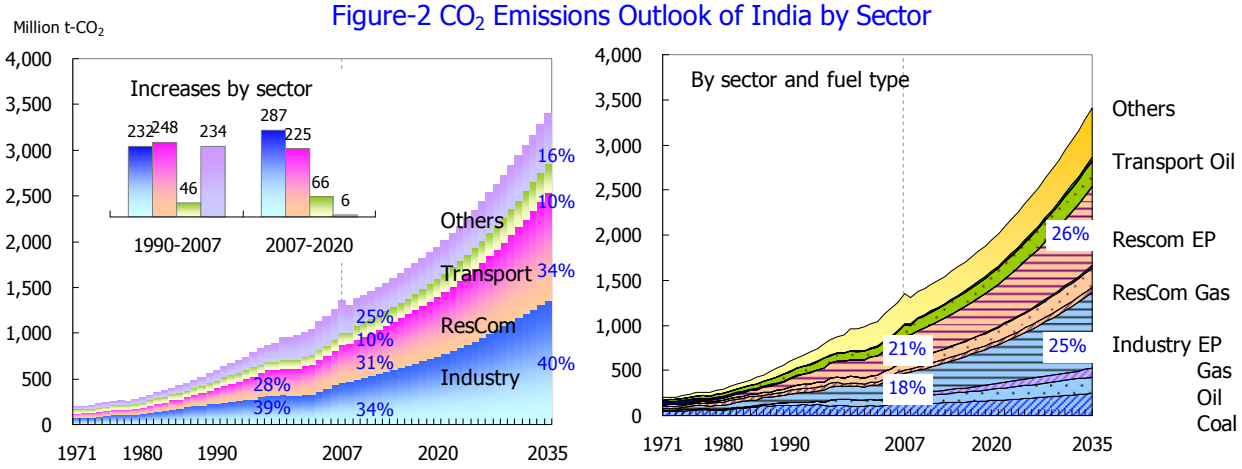
(Note) The above table analyzes the changes in CO2 emissions into the elements of de-carbonization (C/E), efficiency improvement (E/Y) and economic growth (Y) applying the following equation.
C=(C/E) x (E/Y) x Y,.hence ⊿C=⊿(C/E)+⊿(E/Y)+⊿Y
The original data is sourced from "IEEJ Asia/World Energy Outlook 2009" with updates on 2008 records.

[1] According to the same projection by the "IEEJ Asia/world Energy Outlook 2009", China's energy intensity per GDP will decrease 45% for the Reference case and 49 % for the Advanced Technology case in 2020 compared with the 2005 level, and 61% and 70% for 2035, respectively. K. Kanekiyo discusses similar issue in his article "Geopolitics of Energy and Global Warming in Northeast Asia", Geopolitics of Energy, January 2010, Canadian Energy Research Institute.

Compared with the past record, it is projected in the Reference Case that the Indian economy will grow at an annual rate of 6.8% in the 15 years between 2005 and 2020, while CO_2 emissions will increase by 3.4% a year; energy efficiency improvement will be 2.5% a year and de-carbonization of the energy structure will be 0.7% a year. Under the Advanced Technology scenario, however, improvement of energy efficiency will progress much faster at 3.3% a year and de-carbonization at 1.1% during the same period. Taken together, the average annual growth rate of CO_2 emissions will be curbed by 1.3% from 3.4% to 2.1% a year.

As shown in Figure-2, India's carbon emission is expected to increase mainly in industry and residential and commercial sectors. Since extensive investment for social infrastructure is needed while economic growth will be expected primarily in the service sector in the future economic development of India, CO_2 emissions are anticipated to increase mainly in the industrial and residential/commercial sectors. The share of the industrial sector in India's CO_2 emissions will increase from 34% in 2007 to 39% in 2020, while that of the residential/commercial sector will increase from 31% to 33%. Among others, CO_2 emissions derived from electric power consumption both in the industrial and consumer sectors are expected to grow significantly as shown in Figure-2. The ratio of CO_2 emissions from electricity consumption of the industrial sector over the total emissions will grow from 18% in 2007 to 21% in 2020, while that for the residential/commercial sector will grow from 21% to 23%. Among energy sources, electricity consumption in these sectors will be the main driver of energy demand increase. By contrast, energy consumption in the transportation sector, which is mainly oil and increasing fast, will have relatively moderate influence over the picture.

Figure-2 CO_2 Emissions Outlook of India by Sector



India's energy utilization efficiency is comparatively low. Given that energy demand increase will occur predominantly in electricity, one should look into the efficiency of thermal power generation that supplies the bulk of electricity demand. The thermal efficiency of power generation in India has yet to reach 30%; China's efficiency stands at 34% while Japan has reached the world's highest level of 41%. In the worldwide efforts of developing innovative technologies, the efficiency goal for Gas Turbine Combined Cycle (GTCC) is set at 60% and the target for the Integrated Coal Gasification Combined Cycle (IGCC) at 55%.

Compared with energy efficiencies already achieved in industrialized countries, energy efficiency of India would improve dramatically in the course of its economic development should all new facilities adopt most modern, state-of-the-art technologies. The outlook for the Advanced Technology scenario is based on the projection of the major energy and environmental technologies as illustrated in Table-2. Compared to the current R&D targets as mentioned above, the projected figures seem reasonably moderate and within reach. Setting

aside a question of whether emissions reduction targets will be agreed to or not at the COP-16, efforts to be made by countries to make a low-carbon society a reality will spur technological development and investment, leading emission reductions to undoubtedly surpass the BAU case projections at the very least.

Table-2 Outlook of Major Energy-Environmental Technologies in India

	2007	2020		2035	
		Ref	Adv-tech	Ref	Adv-tech
Nuclear (Share)	4 GW (2%)	20GW (8%)	27GW (9%)	36 GW (7%)	49 GW (7%)
Thermal Power Efficiency Coal-fired Gas-fired	 0.28 0.43	 0.33 0.43	 0.34 0.47	 0.4 0.44	 0.46 0.53
Renewables Photovoltaic Wind (Share)	 0.1 GW* 9.6 GW* (1.5%)	 3 GW 19 GW (2.1%)	 4 GW 21 GW (2.8%)	 10 GW 34 GW (2.9%)	 30 GW 43 GW (5.2 %)
Bio-fuel	0.1 Mtoe	1.4 Mtoe	1.9 Mtoe	3.0 Mtoe	7.3 Mtoe
Non-fossil Fuel Ratio on TPE	4%	8%	9%	9%	14%
CO2 Emission at Power Generation	948 g-CO_2/kWh	750 g-CO_2/kWh	644 g-CO_2/kWh	650 g-CO_2/kWh	441 g-CO_2/kWh
Primary Energy Consumption per GDP	100	71	63	53	40

(Note) The present generation capacities of PV and wind mills are those for 2008.

Energy Committee Highlights

Basic Energy Plan of Japan to be revised

At a meeting of the Basic Energy Plan Subcommittee of the Advisory Committee for Natural Resources and Energy held on February 9, the METI initiated procedures for the triennial revision of the Basic Energy Plan, last revised in 2007. The ministry aims to finalize the revisions in June.

Past versions set out plans for the succeeding decade, but this revision will address the pathways through 2030 in order to discuss comprehensively the necessary technological development, structural reform of the energy industry and social infrastructure development with a scope to reduce CO_2 emissions of the developed countries collectively by 80% by 2050. It will aim to: 1) introduce new quantitative indices on energy security incorporating equity oil development and nuclear power generation; and 2) present a future vision of an energy industry that is not confined to conventional classification of energy, namely, electric power, city gas and oil sectors.

The main points of the revisions will be:

- With a low self-sufficiency ratio, Japan is faced with higher risk factors for stable energy supply, such as significant energy demand growth in emerging economies, intensified international competition for resources acquisition, and violent fluctuations of resource prices. Under the circumstances, in addition to the traditional approaches to lower Japan's dependence on oil as well as the Middle East, it will become increasingly important to raise the ratio of non-fossil fuel energies, including nuclear power and renewable energies, while enhancing international competitiveness in resource security. In formulating the quantitative energy security indices as policy targets, not only the self-sufficiency ratio but also the share represented by indigenous energy resources and overseas development rights should be comprehensively considered.

- Japan will fundamentally enhance its climate change measures under the government policy "to mobilize all available policy tools to achieve GHG reductions by 25% in 2020," premised on the establishment of an international framework by all major economies and an agreement on ambitious targets. However, impacts on international competitiveness should also be considered.
- Against the backdrop of tightened restrictions on resources and environment, technological innovation in energy and environmental fields has come to serve as the engine of creating employment and boosting economic development. Future energy policy should be reviewed in the context of increased industrial competitiveness, international development of best-practice low-carbon technologies, and creating new markets and employment.

From this perspective, this revision of the Basic Energy Plan will involve discussions on designing a desirable energy supply-demand structure, R&D of innovative energy technologies, overseas deployment of energy technologies/industries, and creating new energy industries. Regarding energy supply and demand, promoting the further introduction of nuclear power and renewable energies and enhancing the effective use of fossil fuels by employing CCT have been raised on the energy supply agenda. Consumption issues include strengthening measures addressing the residential/commercial and transportation sector energy consumption, the key contributors to energy demand increase in recent years, and establishing a comprehensive next-generation energy/social system. Furthermore, given heightened international competition for both resource security and market access, the Subcommittee seeks to present a vision of the future energy industry that can serve as the axis for next-generation energy and society.

Before this review, all subcommittee members except the Chairman, Professor Masahiro Kuroda and Professor Takao Kashiwagi of the Tokyo Institute of Technology, were replaced. The number of members was also reduced from thirty to eighteen. METI has made clear its intention to conduct this review under political initiative. Hence, the only subcommittee member representing industry is Seiichi Taneoka, Vice President of the Japanese Trade Union Confederation. Voices of industry will be heard through hearings led by the Minister, Vice-Minister and Parliamentary Secretary.

Interim Report on Next-Generation Energy and Social Systems

At the seventh meeting of the Conference on Next-Generation Energy and Social Systems held on January 19, the METI compiled its interim report. It advocates that, by introducing new and renewable energies and energy efficiency and conservation measures, energy security and environmental goals can be pursued simultaneously, along with improved trade balances. In order to overcome obstacles entailed in introducing renewable energies and effective use of energy as a whole, a smart energy network (SEN) combining power, heat and renewable energy supply, adequately combined with demand-side energy management (DSM), must be established.

For such purposes, the report proposes an Action Plan, which is described below:

- Establish a "smart community," an area-specific energy management system that encompasses the local transportation system and urban development plans. The efficiency of the system should be promptly verified. Two or three cities will be chosen from nationwide candidates as model sites for *low-carbon town* demonstration projects.
- Develop and integrate smart community-related technologies into systems with a view to

exporting them and growing a new industry. A promoting body with alliance of private enterprises, or a Conference on Smart Grid Promotion, should be launched to promote international standardization and design a medium-term roadmap.

- Establish and verify a "Japanese Smart Grid" model that accommodates both the intensive introduction of renewable energies and a secure supply of electricity by establishing a mutually complementary relationship between a "Local-production-for-local-consumption model" of energy (electricity and heat) with a DSM and a power/energy network.

This report reflects a point of conflict yet to be solved. The power sector seeks to maintain Japan's power supply/demand structure and its unique position prioritizing the existing grid system. On the other hand, from the bitter experience on mobile phones, other industries prefer to establish a system that will represent world standards to avoid another Galapagos Island syndrome, or isolation from the world. Conference member, Professor Matsumura of the University of Tokyo pointed out that, "Deciding to focus on grid-oriented measures through 2020 introducing the DSM only slowly, Japan would be almost declaring to the world that Japan would keep a full distance behind the U.S. and EU." He hoped a better solution should be worked out in the final report by METI.

In February, METI began selecting model sites for low-carbon town demonstration projects via public application based on the report. This report will be finalized by April incorporating other sub-group reports and selection of model sites. Demonstrative projects in and outside Japan will be implemented for two years and the outcome will be compiled as a final report.

Energy News in Japan & Asia

Fast Breeder Monju to Restart test operation in March

The fast breeder reactor (FBR) nicknamed "Monju" will resume its test operation within March. On March 11, the Advisory Committee for Natural Resources and Energy approved the evaluation report on the anti-earthquake safety of the reactor submitted by METI, which was requested by the local authority. The final green light will be given by the Nuclear Safety Committee of the Cabinet Office shortly.

An FBR is a dream nuclear technology as it theoretically generates plutonium with more energy than it consumes, but significant hurdles must be overcome before practical use. Monju is a test reactor that was built to collect data on the properties of an FBR and its materials; its operation was suspended 14 years ago when a damaged thermometer caused an accident of sodium coolant leakage.

The Japan Atomic Energy Agency (JAEA), responsible for the operation of Monju, plans to compile the research results by 2015, with a vision of moving on to the next stage of launching a demonstration reactor around 2025, and further proceeding to development of a commercial reactor by 2050. Although the U.K., U.S., and France have withdrawn from the FBR races owing to high development cost, roles of nuclear power are now being recognized anew amid a response to a growing momentum of movements to counter global warming. China reportedly plans to bring its test reactor to criticality soon, while India has announced a plan to commercialize FBRs by 2020 while Russia plans to start operating a demonstration reactor in 2014 and export commercial reactors by 2017.

Monju stopped operation during a test run at 40% load level. The JAEA intends to verify the design and examine conditions required for safe operations based on the data to be obtained through continuous runs at 100% load. Fast breeder reactors are costlier than light water

reactors and a number of cost reduction measures must be examined to move the plan forward to launch a demonstration reactor.

More refineries will be shut down facing oil demand plunge

Following the decision to reduce refining capacity by Nippon Oil and Nippon Mining, who are going to consolidate their businesses as JX Holding, INC. as of April 1st, other Japanese oil companies also plan to shut down their refineries. Sale of petroleum products in Japan in the calendar year 2009 ended in a consecutive four year decline and with a record plunge of – 6.9% from the previous year. It was only 81.1% of the petroleum products sold in 2005.

Showa-Shell Sekiyu announced on December 16 that the company will close down the Ogimachi-plant (120,000 bpd) before 2023; the plant belongs to a group company "Toa-Oil." It is about a 24% reduction of the total refining capacity of the group currently at 515,000 bpd. Idemitsu-Kosan also announced on March 10 that the company will control its crude oil processing for FY2010 at 96% of the previous year, by way of shutting down its refineries on a rotation basis for a total of 100 days. In addition to the stagnant economy, increasing concerns on vehicle fuel mileage and expanding price gaps with natural gas, more nuclear plants will resume operation this year, having been shut down due to the 2007 earthquake. The Japanese oil demand is forecast to decline further in FY 2010; the drop could be more severe than the IEEJ's forecast of -2.6% year-on-year decrease projected last December.

APERC News

APERC hosts open seminar on low-carbon energy

Nine expert speakers on policies to promote low-carbon energy supply were featured at an Open Seminar organized by APERC on 10 March. The Open Seminar, held in conjunction with the semi-annual meetings of the APEC Energy Working Group, addressed the question of how government policy can best promote low-carbon energy supplies, especially renewables. Speakers included a Silicon Valley energy entrepreneur, Dr. Edward Cazalet; a well-known expert on geothermal energy, Dr. Gordon Bloomquist; the chair of the APEC Expert Group on New and Renewable Energy Technologies, Dr. Cary Bloyd; a representative from the Asian Development Bank, Dr. V. Anbumozhi; the lead author of a recent IEA report on polices for deploying renewables, Ms. Samantha Ölz; a representative from the National Renewable Energy Laboratory in the USA, Mr. Ted James; and three high-level renewable energy policy officials, Dr. Gao Shixian from China, Mr. Osamu Onodera from Japan, and Dr. Twarath Sutabutr from Thailand.

The speakers emphasized that effective promotion of renewables involves a number of elements. Some of the key elements discussed were:

1) maintaining predictable and transparent incentives for renewables, as well as sustained and consistent support for low-carbon energy R&D;
2) removal of fossil fuel subsidies, implementation of carbon pricing and implementation of a pricing scheme for electricity that reflects the true cost of electricity at each moment in

time, rather than flat rate pricing;
3) ensuring renewable resources have access to the grid and other key infrastructure, including storage, under a competitive regime;
4) sharing of knowledge between economies, including capacity-building (that is, technical education) in developing economies;
5) developing an understanding of available low-carbon energy resources in each economy;
6) flexibility to match policies with the specific circumstances of each economy and each technology;

Presentations from the Open Seminar are available on the APERC's website at http://www.ieej.or.jp/aperc/conferences.html.

Final report of PREE is now available

APERC has released the final report of the Peer Review on Energy Efficiency (PREE) in Thailand. The Thailand PREE is the fourth in a series initiated at the request of APEC leaders. Under the PREE program, APEC economies can volunteer to have their energy efficiency policies reviewed by a panel of experts from other APEC economies. Prior PREE's have examined the energy efficiency policies of New Zealand, Chile, and Viet Nam.

The report provides evaluations on Thailand's energy efficiency policy and programs, and recommendations to further improve energy efficiency in the country. The PREE survey was undertaken in Bangkok from 9 -14 November 2009 by a team of APERC researchers. The survey team attended a series of meetings on comprehensive presentations and discussions with participation of Thai officers and experts from various government and private sectors.

Due to rapidly growing energy demand, energy efficiency and conservation is a central element in Thailand's energy policy framework. The PREE team found that impressive efforts have been undertaken by the Thai Government to improve energy efficiency. However, there is substantial additional energy-saving potential that could be achieved. Through extensive examinations, the PREE team listed 34 recommendations to reinforce weakest links in the existing policies and programs. The complete Thailand PREE report is available on APERC's website at http://www.ieej.or.jp/aperc/PREE/PREE_Thailand.pdf.

In view of the successful PREE programs conducted in 2008-2009 for four APEC economies, three more APEC economies, Chinese Taipei, Peru and Malaysia, have volunteered themselves for the next stage of PREE survey to be implemented in 2010.

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