

Interview with Jun Arima, Deputy Director-General for Environmental Affairs, METI

Japan: Make Greater Int'l Contribution in Energy-Saving, New Energy Technologies

Main Developing Nations Need Goals for GHG Cuts

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Jun Arima, deputy director-general for environmental affairs, METI

Amid volatile moves of crude oil prices, Japan, which relies on imports for 99% of its oil consumption, faces difficulties in adequately steering energy policy. Since how to cope with the energy problem greatly affects the fate of international efforts to cut greenhouse gas (GHG) emissions, it is all the more necessary for Japan to adequately address the issue from an international perspective as well. As a global leader, how is Japan addressing the energy problem? Jun Arima, deputy director-general for environmental affairs at the Ministry of Economy, Trade and Industry's (METI) Industrial Science and Technology Policy and Environment Bureau, discusses Japan's strategy in an interview with *Japan SPOTLIGHT*. He serves as Japan's chief negotiator in international talks on the global warming issue.

Transparency Needed in Moves of Hot Money

Q: You have long been involved in energy policy issues at the Agency for Natural Resources and Energy of Japan and the International Energy Agency (IEA). How do you assess the current energy situation?

A: In the 1970s when the IEA was set up, the only task facing energy policymakers was to ensure energy security. Today, policymakers need to consider how to achieve a balance between the two questions of reducing GHG emissions and ensuring energy security amid high oil prices. With international negotiations for a post-Kyoto Protocol regime set to be concluded by the end of 2009, policymakers face an extremely difficult situation.

Q: What do you think of future crude oil price developments? Behind price surges for crude oil and food reportedly lies excessive speculation. Do you believe restrictions on speculative moves necessary?

A: It is difficult to paint a future picture of crude oil prices. A basic structure is that the oil supply-demand situation is fundamentally tight, reflecting rapidly growing demand in China and India and declining surplus production capacity in oil-producing countries. But the oil price of nearly \$150 per barrel (at the time of this interview) can in no way be accountable from fundamental factors. The spike of oil prices

obviously stems from the rapid influx of hot money from financial markets. The IEA and OPEC are looking into to what extent hot money has affected oil prices. The United States, too, has decided to redouble efforts to gather information on such money. The current trend is toward boosting transparency in the flow of hot money. There are diverse opinions about whether money flow should be artificially restricted. The greatest question is that enough transparency has not been secured. I believe transparency should be improved first and foremost.

Japan Poor in Resources, Strong in Technology

Q: How is Japan going to pursue energy policy from now on? Please explain resource-poor Japan's basic strategy.

A: Japan's policy will focus on, among other things, energy conservation as far as demand aspects are concerned. Japan is strong in energy-saving technology and has so far achieved great results. Looking ahead, the question is how to curb energy consumption in the household and corporate sectors. As for supply aspects, the important task is to promote new energy and nuclear power generation as a means of curbing carbon dioxide (CO₂) emissions. In terms of energy-saving technology, model projects are under way in China and India, and at the same time trainees are being accepted from these countries. Japan should not only domestically spur energy conservation and development of alternative energy sources but also, as a global leader, make contributions and extend support

internationally. It is important for Japan to employ for its international contribution its technological strength attained as a resource-poor country. The strength in environmental technology holds the key to boosting competitiveness of businesses amid severe carbon constraints. That will be an area bringing benefit to Japanese businesses.

Q: Coal has the bottleneck of emitting GHG under the current technology. How do you assess the potential of coal?

A: Estimated reserves of coal are huge. Moreover, coal exists in developed and developing countries in a balanced manner. As a way of ensuring energy security, coal can be seen as a good resource. China and India will continue to use coal. Coal can be regarded as a desirable energy source from a long-term viewpoint if it can be used in an environment-friendly manner. Carbon capture and storage (CCS) technology has yet to be introduced in the market. The Japanese government is taking the initiative in promoting development of the technology with an aim to make coal usable as clean energy.

Boosting Solar Power Generation 40 Times

Q: Japan once took the lead in photovoltaic power generation in the world. Of late, however, it has been outpaced by Germany in that area. Sharp Corp., Sanyo Electric Co. and other advanced companies are planning huge amounts of investments. What policy measures do you have for promoting such efforts?

A: Japan has indeed lost to Germany as the world's No. 1 producer of solar cells. To regain the top slot, the Japanese government has set forth the target of boosting photovoltaic power generation by 40 times from the current level by 2030. It is important to make subsidies for solar cell production as efficient as possible and thus heighten cost-benefit performance. Germany's policy measures have produced desired effects. But the indirect subsidies in Germany are so large that they cannot be seen as minimum costs from the standpoint of the national economy. Unless cost-reduction pressures are applied, indirect subsidies for solar cells could become cash handouts like those for agriculture. In Japan, it is important to determine support measures for solar cells after projecting their cost-benefit effect for consumers.

Q: Japanese electrical machinery makers are implementing aggressive international measures to promote atomic power generation as well.

A: Nuclear power generation is the most reliable technology when we try to resolve the questions of global warming and energy security in the medium term. The United States has not set up nuclear power plants for as long as 30 years and thus is weak in technology in that area. It is only Japan and France that have persistently developed nuclear power technologies. Reflecting

growing interest in global warming, some industrial nations such as Britain have clearly shifted energy policy. Italy is now moving to make nuclear power generation one of its options. Some developing countries are also considering building nuclear power stations. It is only natural that developing countries should meet requirements in terms of safety and nuclear nonproliferation. It is necessary to export safety-related infrastructure to developing countries ahead of transferring related technologies to them. Nuclear power is a comprehensive system, let alone generation plants. Japan is receiving trainees from such countries as Indonesia and Vietnam to foster a safety culture.

Dramatic Technology Innovation Vital for Long-Term Goals

Q: The 14th Conference of the Parties to the United Nations Framework Convention on Climate Change (COP14) is set to deal with a post-Kyoto Protocol framework for 2013 and thereafter in earnest. During last summer's Toyako Summit, the Group of Eight (G-8) nations agreed on the long-term goal of halving GHG emissions by 2050. But it remains unclear how that goal will be achieved under a post-Kyoto regime.

A: It is impossible to attain the long-term target of halving GHG emissions along the lines of the current system of technologies alone. Development of new, innovative technologies that do not exist today is essential. In addition, society itself should be made a low-carbon one. The government needs to take the leadership in developing innovative, strategic technologies. Current technologies are not enough to promote photovoltaic power generation. Development of technology to dramatically heighten efficiency is a must. To introduce the CCS technology to the market, it is also necessary to lower costs to the level that is competitive with those for fossil fuels.

Developing Nations Grouped into 3 under New Proposal

Q: Japan has not committed itself to achieving numerical medium-term targets said to cover the years up to 2020. What stance is Japan taking?

A: Ahead of full-fledged negotiations for COP15 starting in 2009, the Japanese government submitted to the U.N. Secretariat in September its view on the next framework so that it will be incorporated into the chairman's paper. Japan proposed in the document that not only Annex I Parties, which are currently obliged to set and achieve absolute GHG emission reduction targets under the Kyoto Protocol, but those which joined the OECD after the 1997 adoption of the protocol and those that have yet to join the OECD but have strong economic performances similar to those of industrial countries should be required to commit themselves to setting the same kinds of targets as well. While not mentioning such countries by name,

the proposal calls for widening the framework to include a greater number of nations by comprehensively taking account of such standards as per-capita gross domestic product (GDP) and the ratios of their emissions to the global total. Under the Kyoto Protocol, China belongs to the same category of developing nations that are in a low stage of development. The latest Japanese proposal classifies developing nations into three categories – “major developing countries,” “underdeveloped countries being greatly affected by global warming,” and “those developing countries lying between the two categories.” The proposal calls for major developing countries to set economy-wide intensity targets – namely, the amount of energy or CO₂ emissions that is required to produce one unit of GDP. In addition, the proposal calls for major developing countries to set sector-specific intensity targets in key sectors. For instance, as for the steel industry, energy consumption or CO₂ emissions per 1 ton of crude steel output could be envisaged as such an intensity target. As for the transport sector, a fuel efficiency target of vehicles could be set. Thermal efficiency of coal-fired power plants and the share of non-fossil fuel power in the total power generation could be envisaged in the power sector. GDP is affected by a wide array of factors, with its intensity changing due to a shift in industrial structure and foreign exchange fluctuations that have nothing to do with a country’s energy-saving or mitigation efforts. This is the reason why Japan is proposing sectoral approaches which enable the introduction of objective yardsticks and international comparison.

Multiple-Choice System for Base Years of Industrial Nations

Q: What sorts of CO₂ reduction goals will industrial nations be required to achieve under the Japanese proposal?

A: The proposal calls for developed countries to set total GHG emission amounts as their targets. These targets are set by aggregating sectoral emission reduction potentials and then calculating a national reduction potential as objectively as possible. Based on the calculated figures, each developed country sets its GHG emission goal. Unlike the Kyoto Protocol that set a single base year, namely 1990, and expresses each developed country’s target in the form of percentage reduction from the base year, the Japanese proposal calls for each developed country to figure out its absolute GHG emission level as its target. It also makes it possible for developed countries to select multiple base years such as 1990 and 2005. Reduction rates change greatly depending on base years selected, thus a single base year does not provide the sense of fairness to all countries. The Kyoto Protocol set 1990 as the base year. In the European Union, a drastic conversion from coal to natural gas occurred in Britain in the first half of the 1990s. The reunification of East and West Germany helped reduce the number of obsolete factories, making Germany’s emission reduction results look better. Due to these factors, which do not have anything to do with mitigation efforts based on the Kyoto Protocol, the EU has got a tremendous advantage

from the base year of 1990. Japan has consistently insisted on a change of the base year. The new Japanese proposal calls for setting absolute GHG emission amounts as targets by aggregating potential emission reductions based on scientific analysis and expressing percentage reductions from plural base years. I believe such an arrangement provides more fairness.

Q: Will industrial and developing nations remain deeply split?

A: It may be difficult for developing countries to set gross reduction goals just like developed nations do because their economies are set to grow from now on. If intensity is used for setting goals, developing nations can reduce emissions from the BAU (business as usual) level without decelerating their economic activities. Developed countries are supposed to extend technological cooperation when developing countries try to improve their intensity. Adoption of the sectoral approach enables Japan to transfer its advanced environment-related technologies overseas. This will help reduce the global amount of emissions on the assumption that developing countries will come up with their own intensity targets in return for technological help, thus making clear Japan’s contribution in the field of environmental technology. At present, we do not believe the Japanese proposal will easily be accepted by China and India. The two countries apparently want the framework of the Kyoto Protocol maintained because the two countries have no obligations under the protocol. What suits them best is to see developed countries buy carbon credit from developing countries through such means as the clean development mechanism (CDM). The United States, however, will not join the agreement if such a situation continues. Unless the United States comes on board, the framework for stemming global warming itself will remain ineffective. The most important challenge facing Japan is to have all GHG-emitting countries participate in a new framework so that we do not repeat the mistake of the Kyoto Protocol, which failed to have the United States on board.

Obama Administration Prioritizing Economic Policy?

Q: What effect will the US administration of Barack Obama have on the energy problem?

A: The Obama administration is expected to prioritize economic policy for the time being because the United States is now beleaguered with the financial crisis. Obama pledged during his election campaign to take a much more open-minded, forward-looking stance toward the global warming issue than the Bush administration. Therefore we expect Obama to take policy actions to tackle global warming. However, the new administration will find it hard to set forth measures that impose burdens on the daily lives of US citizens. The new US government is unlikely to make clear its stance until after next summer. We will keep a close watch on the moves of the new administration.

Q: What is the schedule for post-Kyoto negotiations? Some countries propose that a preliminary agreement should be struck by so-called “like-minded” countries ahead of a full agreement on a new international framework.

A: COP13 took place in December 2007. In 2009, four rounds of main negotiations are scheduled to take place – in late March through April in Bonn, and then before summer and in autumn in the run-up to COP15 in Copenhagen. As the negotiations are hosted by the United Nations, a final decision will be worked out by all nations. But it is important for the core group to have frank discussions. One of the frameworks is the Major Economies Meeting on Energy Security and Climate Change (MEM). Sixteen countries – G-8 nations plus another eight countries – which account for 80% of overall global CO2 emissions have held diverse discussions. They took the occasion of the Toyako Summit to hold their summit meeting. US President-elect Obama is also sympathetic about a limited number of countries laying the groundwork for full negotiations, let alone negotiations by 190 UN member countries. MEM-like approaches will continue even after the inauguration of the new US administration.

Transfer of Energy-Saving Technologies to Asia

Q: Japan is proposing the concept of creating an Asian Economic and Environmental Community as one means to make international contributions as a global leader.

A: The concept envisages transferring Japanese know-how to other Asian countries and creating a variety of models there in a bid to secure a balance between economic development and environmental protection in the Asian region. Japan is proposing the concept as a way to make international contribution in Asia. First, Japan transfers to other Asian countries its expertise on how it addressed economic growth and ensuing local environmental problems such as environmental pollution in the past. It transfers its energy-saving technologies as well. Before doing so, Japan is supposed to work out an outlook for environmental burdens stemming from economic expansion if the current situation is left unattended and discuss with Asian countries what Japan can do in regional cooperation.

Q: Amid the rapid growth of the BRICS (Brazil, Russia, India and China), global issues facing the world economy cannot be resolved easily under the existing international economic regime steered by the IEA, OECD and other international organizations.

A: It has become an urgent challenge for the IEA, for example, to strengthen its activities involving nonmember countries. The IEA was able to cover main consumer countries through

discussions within its framework when it was set up. Today, however, it cannot grasp the whole situation unless China and India join discussions. Nonmember countries need to join the OECD if they hope to become members of the IEA. In addition, they have to meet such requirements as a 90-day national oil stockpile. Therefore, it is unrealistic to believe China will soon become an IEA member. But it is important for the IEA to bolster cooperation with nonmember states. Nobuo Tanaka, who became executive director of the IEA in September 2007, believes it his most important mission as Asia’s first IEA chief to have Asian countries participate in IEA activities.

Broad Returns Prepared for Securing Resources

Q: China and Europe are proactively conducting “resource diplomacy” toward Africa. Japan is also pursuing such diplomacy. Tell us about Japan’s basic strategy concerning resource diplomacy.

A: It is important to conduct resource diplomacy in a multifaceted manner. It will become significant to prepare a broad range of returns such as economic cooperation and investment promotion, acting not just from the viewpoint of securing interests in natural resources alone. Saudi Arabia and other Middle East countries are trying to diversify their economies. To assist those countries in this respect, Japan is seeking to extend economic cooperation and help them develop human resources. METI is in charge of a wide range of areas and thus in an advantageous position to conduct resource diplomacy. To help secure resources, METI is utilizing trade insurance and helping resource exploration and development. We are offering a broad array of menus.

Q: Innovation has an extremely great role to play in the field of energy as well. The expanding scale and increasing complexity of technology make it an urgent challenge to carry out open innovation through international collaboration. What role should Japan play in that area?

A: To attain long-term goals in dealing with climate change, it is indispensable for the government to take risks involved in technological development. In March 2007, Japan worked out a “Cool Earth Innovative Technology Development Program.” Specifically, with a view to achieving global goals for halving GHG emissions by 2050, the program has identified 21 key technologies which should be developed in a strategic manner and crafted road maps for their development. We believe it necessary for other industrial countries as well, which are interested in those technologies, to share the road map and take the initiative for international cooperation. **JS**

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