Post-Earthquake Climate Policy in Japan: Proposal on the Policy Transformation and Issuance of Low Carbon Recovery Bonds

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1. The Time for Fundamental Policy Reform is Now

Formulation of energy and climate policy following the recent earthquake disaster will have a big impact on the fate of Japan henceforth. Reasons behind policy reform are not limited to energy security or climate security. The present time offers Japan a good opportunity to make great changes in the policy formation process itself, and to create a sustainable energy system in the true sense of the word.

Promotion of nuclear power has been given top priority in energy policy to date. In comparison, adoption of decentralised renewable energies and energy conservation has had a lower degree of priority. Reasons are trifold: 1) the government is overly confident in nuclear power and the strength of Japanese technology, and has acted on the premise of "low cost for power production" without consideration of various risks and costs; 2) power companies have evaded adoption of decentralised renewable energies that lead to modifications in existing oligopolistic structures and power grids; and 3) power companies have not necessarily been fully committed to energy conservation, which leads to a reduction in sales.

Both a cause and result of the situation described above is evident. The Nuclear and Industrial Safety Agency, while designed to be a body that applies the brake on promotion of nuclear energy from the perspective of safety, is placed under a pro-nuclear ministry, and former bureaucrats are appointed to high positions in power companies. There is an obvious lack of sound checks and balances in the relationship between the government and the energy sector. Even with changes in political party administrations, this structure could not be changed.

There was no hope for genuine climate policy under energy policy biased toward promotion of nuclear power. The reason being that adoption of renewable energies and promotion of energy conservation play an extremely important role in global warming mitigation. However, under government reasoning that "nuclear power helps global warming mitigation", promotion of nuclear power was given top priority, in actuality leaving only watered-down climate policy on renewable energies and energy conservation.

While it is not commonly known, from the viewpoint of adoption of renewable energies and energy conservation, Japan's climate policy, without any solid laws or institutions, compares unfavorably not only with the European Union (EU) to be sure, but also China and India. For instance, the EU's 2020 numerical target for the ratio of primary energy accounted for by renewable energies is 20 percent. Whereas, the maximum adoption case (Note: This is not a numerical target. Japan does not have an official numerical target that deals comprehensively with renewable energies) in the "Long-term Outlook for Energy

Supply and Demand (recalculated)" released by the Ministry of Economy, Trade and Industry in 2009, was nine percent. Furthermore, in China last year, limits on energy supply were enforced in various areas in order to maintain energy conservation targets (this raises issues of the appropriateness of burden sharing among regions for energy conservation targets).

Accordingly, in order to achieve substantial adoption of renewable energies and energy conservation, the political resolution to fundamentally re-evaluate policy to date is required. For example, regarding reconstruction of power infrastructure, separation of power generation from power transmission and distribution enterprises, small-scale decentralisation of power enterprises, and guarantee of consumer choice of power sources, should be immediately deliberated and implemented.

Adoption of controls and large-scale investment is needed in the short term. In order to ensure the advancement of energy conservation, policies with higher degrees of obligation are required. These would cover total emission controls on the air conditioning and heating systems, lighting, power equipment and operation management of heavy users of energy, as well as the installation of various devices and compliance with energy conservation standards in the civil sector. Increasing the proportion of high-efficiency next generation vehicles in new cars and bold investment in infrastructure, such as electric vehicle charging stands, are also indispensable.

However, economic incentives are also required to add practicality to these measures. Support by public funds and meticulous institutional design are essential.

2. Coal-fired Power Exacerbates Global Warming

Amidst the need for radical reform of energy and global warming policy, the opinion that the expansion of coal-fired power should replace nuclear power, as well as the opinion that Japan should reconsider the Kyoto Protocol target setting a six percent decrease (compared to 1990) in GHG emissions and the 2020 mid-term target (25 percent reduction), have been voiced. However, such short-sighted policy aimed at partial solutions serves only to preserve rigid and collusive structures. From the mid- and long-term perspective, such choices are desirable neither politically nor economically for Japan.
First, present GHG emissions should be confirmed.

Domestic emissions in 2008 showed a 1.6 percent increase over the Kyoto Protocol baseline year of 1990. A 5.1 percent decrease has been settled through forest sinks and Kyoto credits already purchased by the government. In order to reach the Kyoto Protocol target of a six percent reduction compared to the baseline year, another 2.5 percent decrease is required. However, if Kyoto credits purchased independently by the industrial sector are considered (approximately 5.0% in 2008 and 4.1% in 2009 by power companies only[1]), the six percent reduction was roughly achieved for fiscal year 2008. Domestic emissions in 2009 showed a 4.1 percent decrease compared to the baseline year, and another 5.3 percent decrease is settled through forest sinks and Kyoto credits already purchased by the government. In other words, for 2009, even without consideration of foreign credits obtained by the industrial sector a 3.4 percent margin remains. Meanwhile, the influence of the recent nuclear accident should be considered. According to Tokyo Electric Power Company, if the total power generated at Fukushima I nuclear power plant were to be replaced by fossil fuel power generation, an increase of 1.7 percent in greenhouse gas emissions would occur compared to 1990 nationwide totals. In other words, the 3.4 percent

[1] Asahi newspaper, Apr. 26, 2011.

margin as of 2009 equals the increase in emissions that would arise from a switch from nuclear power to coal-fired power (1.7 x 2 = 3.4 percent, based on a two-year period from 2011-12).

These figures show that even if an economic recovery brought about an increase in emissions in 2010 and nuclear power plants do not operate, when foreign credits obtained by the industrial sector are considered and if the present level of energy conservation continues for a year or two, the situation does not immediately require a declaration of non-compliance with the Kyoto Protocol.

On the other hand, it is difficult at present to discuss the 25 percent reduction target for 2020 spearheaded by former Prime Minister Hatoyama. Plainly stated, achievement of this target depends on, 1) the kind of energy policy, society and lifestyles we will choose for ourselves and our children following the energy crisis we will face this coming summer, and 2) whether government can actually succeed in creating policy and enduring institutions that reflects these choices, while breaking free from the bonds of vested interests.

Yet, to say the least, the international community will not accept easily an effortless expansion of coal-fired power plants. Once a coal-fired power plant is built, it will operate for 20 to 30 years. While awareness both in Japan and in the international society is lacking, one major reason for Japan's increase in emissions after 1990 was the more than 30 percent increase in power generation capacity and power generation volume of coal-fired power plants.

Japan's present situation is actually exactly the same as that of developing countries. Namely, developing countries in the past have mainly chosen inexpensive coal power with its strong vested interests in order to meet growing energy demand. Until now, Japan has criticised such choices. That same Japan, even after experiencing an earthquake disaster, will inevitably lose the trust of the international community if it advocates the exact opposite of what it has hitherto opposed. Criticisms can be expected, such as the fact that global warming increases the damages of typhoons and tsunami, and that Japan is attempting to export to the world the tsunami that caused so much damage at home. Another criticism could revolve around the fact that major disasters are nothing out of the ordinary in developing countries.

Expansion of coal-fired power is also economically unfavourable at this stage. The reason being that at present, the cost of power generation by renewable energies is dropping rapidly due to technological development and market expansion. Meanwhile, a steep rise in fossil fuel costs is forecast. Considering the possibility that carbon dioxide emissions reduction measures must be devised in the future, such as carbon capture and storage (CCS), the cost advantage for renewable energies could potentially reach the same level as coal, or exceed it. (Moreover, Japan possesses no suitable places to store the massive volume of carbon dioxide collected.) Further, European and North American nations, as well as emerging nations, are substantially expanding investment and technological development in renewable energies and energy conservation, reputed to be the only growing industries of the 21st century. An even greater gap will arise between other countries and the Japanese industries that already have fallen behind.

3. Issuance of Low-Carbon Recovery Bonds

In order to restore the damaged areas in Eastern Japan and stabilise energy supply, investment of funds on a national, corporate and individual level will be required on a scale of several trillion to several ten trillion JPY. The problem is who will raise such funds and how and for what they will be used. Two proposals follow.

First, a reorganisation of the energy-related budget that is excessively biased toward nuclear power is required. Until now, over 90 percent of the government's general account energy expenditures (approximately JPY 100 billion) and over 70 percent of the energy-related special account budget (approximately JPY 400 billion) was put toward nuclear power.

Second, "low-carbon recovery bonds" should be issued aimed specifically at investment in renewable energies and energy conservation. Already, "construction bonds" exist in Japan for improvements in social infrastructure. Under the centralised management of a "Rehabilitation and Recovery Agency" that rejects the vertical divisions of government offices, and moreover with limits set on uses, the impact of these bonds of a scale of several trillion JPY on interest rates and inflation would likely be small. As for redemption, methods that do not give the impression of forsaking fiscal discipline can be devised. For example, tax revenue based on the establishment of a temporary consumption tax aimed at recovery and additional levying of income tax and corporate tax could be applied.

An important point regarding these "low-carbon recovery bonds" is that they will ultimately pay for themselves. According to calculations of the Central Council for Environment's Committee on the Mid-term Roadmap, in order to realise a 25 percent GHG emission reduction (compared to 1990) by 2020 and achieve a low-carbon society, an additional investment of approximately JPY 10 trillion annually is required. However, approximately half of the total amount invested up to 2020 in global warming measures (the majority of which are essentially adoption of renewable energies and energy conservation) and an amount nearly equaling the entire amount invested by 2030, can be recovered due to savings on fossil fuel costs.

In other words, a substantial reduction in the cost of importing fossil fuels, which at present exceeds JPY 20 trillion (JPY 23 trillion in 2009) and is expected to further increase as prices rise in the future, is possible. Furthermore, as this spending represents investments not costs, revitalisation of the economy can be expected. Moreover, great contribution can also be made Japan's energy security. Taking the initiative in technological development for renewable energies and energy conservation, lowering costs and mass popularisation will again raise estimations of Japan and lead to new economic development through global contributions.

Influence on future generations must also be addressed. Generally in the case of bonds, particularly deficit-covering bonds, future generations bear the costs in the form of increased taxes. However, "low-carbon recovery bonds" are not to be applied to ordinary expenditures for the present generation. They will provide a great benefit to future generations in the form of cuts in energy costs, establishment of energy security and creation of a low-carbon society. In other words, these bonds are a favourable option from the perspective of appropriate burden-sharing among generations.

Already some trust companies have begun investment trust funds for recovery support, and market interest seems high. Measures could be taken in order to make investment more appealing for the individual investor. For example, a mechanism for favourable treatment within the tax system devised for individuals who purchase low-carbon recovery bonds would not only facilitate purchases, but would simultaneously raise the sense of participation of citizens. There are multiple options for specific mechanisms for this favourable treatment. For example, an income tax deduction could be given for a certain percentage (50 percent, etc.) of the purchased amount when an individual directly purchases a bond. Likewise, when a bond is purchased using a monetary gift from a parent or grandparent, the

capital transfer tax could be waived. In particular for capital transfer tax special measures, a precedent exists in the case of high-quality housing purchases. From the perspective of leaving a stock of high-quality assets for the next generation, compared to inheritance, these bonds are highly significant for both the individual and society.

In any case, recent experiences call for shock therapy on the politics and society of Japan. The potential for Japan to utilise the recent crisis as an impetus to become a global leader in the construction of a new society and the creation of new paradigms rides on the determination and actions taken in politics.

In a worst case scenario, token measures for renewable energies and energy conservation will be merely drawn up, while excessive dependence on nuclear power and fossil fuels, as well as the system lacking checks and balances between government and the power sector, will remain as it is. This scenario would result in a large bill for later generations to settle, and would be an act of betrayal to the people who suffered in the recent tragedy. The responsibility to be borne by survivors is great.