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## Energy policy post-Fukushima: Japan needs to show leadership

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Following the Great East Japan Earthquake last March, Germany immediately abandoned its policy of promoting nuclear power. It has now embarked on the road to denuclearization and aims to play a leading role in the renewable energy sector. Japan also needs to show leadership in this area.

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The events of March 2011 led to a radical shift in the energy policy of Germany, a country some 9,000 kilometers from the Fukushima No. 1 nuclear power plant. Nuclear power currently accounts for 25 percent of Germany's total energy supply, but its new energy policy, known as "Energiewende" (energy revolution), aims to replace nuclear energy with renewables by 2022.

It is hoped that by 2050, most electricity will be provided by low carbon, renewable energy technologies. This plan should enable Germany to phase out nuclear power without reducing its targets for cutting greenhouse gas emissions.

If Germany, one of the world's largest economies, can successfully change its energy policy, this could have great significance for the world's energy future. That's why the current debate in Japan is of so much interest to Germany too--if Japan decides to embark on a pro-renewables trajectory, our two countries can share our experiences with system design and so on. This would also help drive technological innovations in the global renewable energy industry.

Before the accident, nuclear power accounted for 30 percent of Japan's energy needs. If nuclear were phased out, this could lead to a massive increase in the use of renewables such as wind, solar, geothermal and biomass.

Japan is actually the third largest solar energy market in terms of installed capacity and is also projected to have the third largest geothermal energy resources. However, the share of renewables (excluding hydropower) in the national energy supply stood at less than 2 percent in March 2012, significantly lower than in other developed countries. For example, wind power in Japan accounted for 0.01 percent of total installed capacity in 2011, compared to 28.3 percent in Denmark.

### SIGNS OF CHANGE ALSO SEEN IN JAPAN

Things are changing, though. In July last year, Japan launched a feed-in-tariff (FIT) system (a mechanism for purchasing electricity at set prices for a fixed period). This is now the most attractive such scheme in the world. A wind park developer, for example, can count on a 20-year guarantee of energy purchases at 23.1 yen/kilowatt-hour (about 27 cents/kwh). This is double the amount on offer in Germany today. Solar tariffs are also very high at 42 yen/kwh.

This system is adding new dimensions to Japan's successful performance as a top-class economy. Softbank President Masayoshi Son, for example, has been very active in promoting renewable energy alternatives. Kyocera Co., a Kyoto-based electronic and ceramics manufacturer, is planning to build a solar power plant in Kagoshima Prefecture, while one of the largest convenience store operators in Japan, Lawson, has also decided to equip 2,000 stores with solar power panels.

According to estimates by the International Energy Agency (IEA), 1.3 billion people across the globe have no access to electricity, with 95 percent of these living in Sub-Saharan Africa or developing countries in Asia. This is a forceful reminder that solar and other sustainable energy solutions also have a vital role to play in solving humanitarian problems.

A growing Japanese domestic market in renewables would have a major impact on world energy prices. As a rule of thumb, photovoltaic costs fall by 20 percent for each doubling of installed capacity. Although the FIT policy could increase energy bills in the short term, it should be seen as an investment in the long-term stability of electricity prices. It will also attract investors to Japan. In 2008, that marked the first year when investment in renewables surpassed that for fossil fuel technologies. In 2011, total investment in renewable energy amounted to \$257 billion, a six-fold increase compared to 2004.

### PUBLIC DEBATE THE KEY TO CHANGE IN GERMANY

Four general observations can be made when reflecting on Germany's experiences so far with regards to the nuclear power question.

The first lesson is that public debate is crucial. The Energiewende discussions date back to the 1970s. Popular discontent over the safety of nuclear energy emerged in 1974 in response to the government's plans to build a nuclear power plant in southern Germany. The Green Party was founded in 1980 and contributed significantly to the emerging debate about nuclear power in the aftermath of the 1986 Chernobyl nuclear disaster. Without the decade-long opposition to nuclear power and the public debate it spurred, the Energiewende would probably not be what it is today: a national project that enjoys the support of two-thirds of all society.

The second lesson is that ethical considerations are important prerequisites for any lasting consensus. In response to the Fukushima disaster, Germany established an Ethics Commission for a Safe Energy Supply, co-chaired by Klaus Töpfer. In its final report, the commission argued that politicians have an ethical responsibility to replace nuclear power with less risky alternatives. This position does not necessitate an immediate ban of nuclear, but it does argue for a process to promote the shift to safer energy sources.

The third lesson is that the political context determines whether such ethics-based arguments can succeed against day-to-day realpolitik. In Germany's case, Fukushima was the trigger that led Chancellor Angela Merkel to immediately shelve the government's plans to prolong nuclear power generation. The commission's diverse membership was another factor behind the report's success. Stakeholders from science, politics, civil society and the business community all took part and all agreed unanimously on the final recommendation to phase out nuclear power.

The fourth lesson is that an international embedding is crucial. In a global economy, no sizable country can decide on major changes to its energy system without affecting others. For example, the German energy utility RWE has announced the sale of its British nuclear power subsidiary. Germany also has plans to obtain electricity from Scandinavian hydroelectric plants, while there are talks of complementing Europe's energy supply with desert solar power from North Africa.

Though Germany's new energy policy still requires a lot of work, our experience can perhaps be of value to Japan as it also seeks to embark on a pro-renewables trajectory.

In the 1980s, Japan was among the first large-scale innovators in the field of solar energy. This could happen again. If Berlin and Tokyo can take lessons from Fukushima and emerge as global leaders in sustainable energy, other nations would have to sit up and take notice.

(This article was compiled by Daisuke Igarashi from Asahi Shimbun's GLOBE, based on an essay written by Klaus Töpfer and Ulrich Mans)

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Töpfer was born in 1938. He served as chairman of the Ethics Commission for a Safe Energy Supply, established in Germany following the Great East Japan Earthquake. Töpfer is also the former Executive Director of the United Nations Environment Program (UNEP).

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