

**2011 Hawaii Asia Pacific Institute / NEAEF
Expert Working Group on
Energy Cooperation in Northeast Asia:
Challenges in Achieving Energy Efficiency***

Summary Report

WELCOMING DINNER

Attendants:

George Ariyoshi, Former Governor of Hawaii and Chairman, Board of Directors, HAPI

Jean Ariyoshi, wife of George Ariyoshi

Lee-Jay Cho, Chairman, NEAEF

Eun-Ja Cho, wife of Lee-Jay Cho

Brian Schatz, Lt. Governor of the State of Hawaii

Yoshihiko Kamo, Consul General of Japan

Etsuko Kamo, wife of Consul General Kamo

Denise Konan, Professor of Economics, Former Chancellor of the University of Hawaii

Abel Konan, husband of Denise Konan

Jiyao Bi, Director and Senior Research Fellow, Institute for International Economic
Research, State Development and Planning Commission, China

Yasuo Tanabe, Vice President and Executive Officer, Government and External Relations
Division, Hitachi

Kyung-Sool Kim, Senior Research Fellow, Korea Energy Economic Institute (KEEI)

Ganbold Baasanjav, Director General, Asia Department, Mongolian Ministry of Foreign
Affairs

Munadil Magsarjav, wife of Ganbold Baasanjav

Yoshiki Iinuma, Director, Research Department, Japan Electric Power Information Center
(JEPIC)

Hidetomo Nanbu, Vice-Consul, Consulate-General of Japan at Honolulu

Mitsuho Uchida, Former Director, Central Research Institute of Electric Power Industry;
Visiting Professor, Chukyo University, Japan

Olga Bogach, PhD Candidate and Research Assistant, University of Hawaii Economic Research Organization

Laura Kim, Office Coordinator, NEAEF

Dexter Suzuki, President, Luxtech Lighting

Kanae Tokunaga, PhD Candidate, University of Hawaii

Mark Valencia, Research Associate, Asia Bureau Research

SESSION I: GREEN ENERGY POLICIES – COUNTRY PERSPECTIVES

Session I consisted of seven presentations and one comment section (see agenda).

Colton Ching presented “Biofuels for power generation: a success story.” The quest for biofuel originating in Hawaii could promote local agriculture, stimulate the local economy and achieve self-sufficiency and energy security. A twenty year contract was awarded in January to Aina Koa Pono.

Kim Kyung-Sool presented “Korea’s Green Growth Policy”. Korea is the 10th largest global energy consumer and the 9th CO₂ producer. For Korea, the Prime Minister Lee Myong-bak has declared “This is not a matter of choice, it is where we should go, and what we are already undertaking.” Korea has an ambitious and aggressive five year action plan to achieve its goals in converting to green energy.

Yasuo Tanabe presented “Japan’s Green Energy Policies: Hitachi’s Contribution.” Hitachi has a green energy strategy and a green energy business. Hitachi has many projects in and with China. Its business includes power systems, power generation, smart grid solutions, an environmentally conscious data center, and factory energy management.

Jiyao Bi presented “China’s Efforts to Develop New Energy.” China is committed to a 15% non-fossil primary energy consumption by 2020 and a decrease in CO₂ emission per unit of GDP by 40% by 2020 (based on 2005). The 12th Plan for energy strategy shifts from guaranteeing supply to controlling consumption, transforming the growth model and restructuring the

economy to save energy and reduce emissions, and giving priority to new and renewable energy within the energy structure.

Terry Surlles presented “Aspects of a US Energy Policy: A Biased Primer.” The US energy policy is driven by regional and congressional initiatives. The result is coal is still “king” and corn to ethanol subsidies (and tariffs) has regional bipartisan support. Decisions are strongly influenced by lobbyists and local considerations and national risk aversion. There is no coherent US energy policy. States are more aggressive in developing policy instruments. Government remains a critical part of the equation, e.g., providing financial instruments, regulations and institutional changes, public/private partnerships for technology development, laws that promote new environmentally acceptable technology, public education and information dissemination, and linking of public policies with technology development and scientific findings.

Olga Bogach presented “Achieving Energy Efficiency in Russia” (by Damina Olga and Novitskiy Alexey). Energy efficiency has truly become a national policy priority in Russia but are its goals realistic? The goal is energy saving but the trend is toward more energy exports. The RFE is neither energy deficient nor energy intensive but has enormous untapped energy sources, e.g., hydro, geothermal and tidal. There are some opportunities for increasing energy efficiency through international co-operation.

Ganbold Baasanjav presented “Mongolia’s Renewable Energy Development and International cooperation.” Given its rich natural resource reserve, particularly coal and uranium, Mongolia is conscious about the future of energy market for the country’s economic growth. Regarding renewable energy implementation within the country, renewable energy is seen as a solution for providing electricity to rural communities that are sparsely distributed.

The commentators felt that overall the optimistic projections for green energy use are encouraging. But many things could go wrong. It is not clear sailing with biofuels – if they must be grown and harvested in a sustainable manner, only a few suppliers can meet these standards thus lessening competition and raising prices. Continuity of supply is still a problem and Hawaii will still be importing fuel for the foreseeable future whether it be oil or biofuel. Also, in Hawaii, biofuels are only one type of competing natural energy source such as geothermal, solar, wind, OTEC etc. How can biofuels compete with those sources that are

subsidized? And they still cost more than oil. While China's energy goals may be optimistic, economic growth cannot be sustained growing environmental degradation. In the U.S. coal is still king and security of energy supply still uncertain. South Korea's energy plans are admirable but unification could drastically disrupt them. In Mongolia coal is also king and has led to heavy air pollution near the coal burning plants. Although for Mongolia, solar, wind and hydro power on dispersed small scales still holds the promise of "small is beautiful", financing and technological adaptation are needed.

SESSION II: ENERGY MARKETS AND ENERGY EFFICIENCY

Session II consisted of three presentations and one comment section (see agenda).

Yoshiki Inuma presented "Efficient Energy System for Green Economy." He showed a view of the utilities and challenges after Fukushima Daiichi. In order to reduce CO2 emission, we need to switch our energy use from fossil fuel to carbon neutral energy source. In terms of the nuclear energy and Fukushima, the magnitude of the earthquake and tsunami was so large and it was a large shock to national security. Now we need to observe very closely to what will happen to Fukushima for the future nuclear energy planning.

James Griffin presented "Overview on Hawaii-Okinawa Initiative and Smart Grid Demonstration Projects in Hawaii." Some renewable energy technologies such as wind and solar PV has intermittency problem. Large-scale implementation of those technologies means unstable load, which may lead to blackouts. In order for the stable electricity supply, smart grid technology is being tested in the regions of Maui. Smart grid allows utilities to oversee loads and distribution to manage their various types of energy source to supply electricity.

Dexter Suzuki presented "Research to Application: High Illuminance Plasma Light Technology." Plasma light technology has great potential for commercial and industrial application. Compared to existing street lighting technology, this new plasma technology saves half of the energy cost and more environmentally friendly. This lighting has been tested and

implemented internationally. Compared to LED, this technology is better suited to light larger area.

The participants discussed challenges towards renewable energy and energy efficiency. From the utilities perspective, the cost is a critical issue. If the cost can be passed onto the ratepayers and is accepted by them, it is easier. In the US, some State, including Hawaii introduced decoupling scheme, which decouples the utilities' profit from its revenue. This provides incentive for utilities towards energy efficiency. From the public utility commissions' perspective, it sounds good but when it comes to actually managing this scheme, it is not easy and means larger managing cost. Government, utilities, the public must all work together in order to overcome those difficulties towards greener energy future.

SESSION III:

Session III consisted of three formal presentations, one informal presentation on updates on Fukushima Daiichi nuclear power plant, and one comment section (see agenda).

Terry Surles presented "Perspectives on Energy Efficiency and Renewable Energy Futures." In order to promote the renewable energy, Terry Surles pointed out the importance of linking the policy to the process of research and development. This is because renewable energy development requires high upfront investment cost. It is also important to choose the right renewable source; for instance, producing corn-based ethanol in the U.S. is not cost effective.

Mitsuho Uchida presented "Electricity is the Key Energy for Low Carbon Future." Fukushima nuclear plant disaster, caused by massive Tsunami, pose questions to safety of nuclear power plant and impacts global development of nuclear energy. This may lead to more reliance on natural gas in the Northeast Asia region. Tackling global warming problem, electricity is a key to reduce greenhouse gas emissions. Japan needs to revise its plan to reduce greenhouse gas emissions if it chooses to stop development of nuclear power.

Kyung-Sool Kim presented “Challenges and Solutions for Integrating Renewable Energies (RES) into Energy Markets and the Asia Pacific Region.” Korea’s strategic plan and policy to integrate renewable energy in the market plays key roles in identifying renewable energy sources and develop sustainable energy system based on those sources towards green growth. Renewable energy implementation takes parts in both energy supply system and end-use sectors. Globally, more countries have renewable energy implementation targets compared to before.

Yasuo Tanabe provided updates on Fukushima Daiichi nuclear power plant accident, followed by the earthquake and Tsunami on March 11, 2011. The accidents occurred when diesel based backup cooling system failed. Atmospheric readings of radioactive materials within 100km radius of the plant came down to the safe level. Food and water are at safe level for human consumption. The estimated damage to the economy due to the earthquake is about 16 – 25 trillion yen (\$195 – 305 billion), which is approximately 3-5% of Japanese Gross Domestic Products. Reconstruction Planning Council is formed.

The commentator raised timeliness and significance of having the expert energy meeting in Honolulu based on Honolulu as a host for upcoming APEC meeting and what happened at Fukushima Daiichi. Participants discussed the possibility and feasibility of cross-country grid system and natural gas pipeline for more stable energy system. Fukushima disaster poses question to safe and reliable supply from nuclear energy, which ultimately leads to vulnerability in energy system.

CLOSING:

Lee-Jay Cho, concluded the meeting by raising six areas of discussion towards future energy system: 1) linkage- cooperate regional interanitorial institutional mechanism, 2) domestic and regional cooperation on advancing technology of alternative and renewable energy, 3) overcoming perceptual impact of Fukushima disaster and significance of public education on

the issue, 4) linkage between water and electricity, 5) cross-border infrastructure , 6) Increased role of natural gas.

Government policy from different countries were gathered at the expert meeting. Northeast Asian countries plans and policies for energy efficiency and renewable energy shows promising future. while it seems that the U.S. is lagging behind on institutional cooperation on energy issues. APEC meeting here will prop up US integration and integrative arrangement and energy cooperation.