

**APEC EXPERT GROUP ON
NEW & RENEWABLE ENERGY TECHNOLOGIES (EGNRET)**

**34th Meeting
Kuala Lumpur, Malaysia
26-28 April 2010**

Introduction

The 34th meeting of the Expert Group on New and Renewable Energy Technologies (EGNRET) was held on April 26-28, 2010, in Kuala Lumpur, Malaysia. This meeting included a joint meeting of the APEC Biofuels Task Force on April 29, 2010 and a joint Biofuels Task Force and EGNRET workshop on Sustainable Biomass Production on April 28, 2010.

The EGNRET meeting was co-chaired by Dr. Cary Bloyd of the U.S. Department of Energy's Pacific Northwest National Laboratory and Ms. Loo Took Gee, Deputy Secretary General (Energy), Ministry of Energy, Green Technology & Water, Malaysia. Representatives from Japan, Korea, New Zealand, Chinese Taipei, Malaysia, Singapore, APERC, and the United States of America participated in the meeting.

Dr. Bloyd welcomed the delegates and opened the meeting. Deputy Secretary General Gee then gave an official welcome to the group on behalf of the Malaysia. Deputy Secretary General Gee reported that Malaysia has identified the development of its renewable energy resources and green technology as a national priority. Their recent national green technology policy articulates four pillars consistent with comprehensive goals in sustainable development: Energy--Seek to obtain energy independence and promote efficient utilization: Environment--Conserve and minimize impact to the environment: Economy--Enhance the national economic development through the use of technology; and Social--Improve the quality of life for all. Renewable energy took a center role when the government announced a five fuels policy as part of its 8th National Plan covering 2001-2005. The five fuels identified for continued development were natural gas, coal, hydro, oil, and renewable energy.

Following the welcome, a final agenda distributed by the Chair was reviewed and accepted. Delegates were informed that following EGRNET 34, they were invited to a one day Workshop on Sustainable Biomass Production on April 28, 2009 followed by meeting of the APEC Biofuel Task Force on April 29, 2010, both to be held at the same venue. The delegate were also informed that there would be a site tour on April 30, 2010 hosted by Malaysia relating to all phases of palm biodiesel production, from cultivation of the oil palm, to processing of crude palm oil, to production of useful co-products, to conversion of crude palm oil to biodiesel.

Overview of New and Renewable Energy in Malaysia

Deputy Secretary General Gee then introduced Mrs. Badriyah Abdul Malek, Undersecretary, Sustainable Energy Division, Ministry of Energy, Green Technology and

Water, Malaysia, who gave a detailed overview of new and renewable energy utilization in Malaysia. Mrs. Malek's presentation reviewed the development of energy policy and related policies in Malaysia, the reasons for slow renewable energy development, the need for a national renewable energy policy in Malaysia, the global scenario for Malaysia's energy policy, and an introduction of Malaysia's new national renewable energy policy and action plan with a specific concentration on the renewable energy feed-in tariff support mechanism. Mrs. Malek then discussed the current major renewable energy programs. These included three programs: the small renewable energy power program which was launched in 2001 and enabled small renewable energy power producers (<10MW) to be eligible to sell electricity to the utility; the Malaysian Building Integrated Photovoltaic (MBIPV) project which was launched in 2005 with a goal of reducing GHG emissions by reducing the long-term cost of BIPV; and the Biomass-based Power Generation and Cogeneration (BIOGEN) project which was launched in 2002 to promote the utilization of biomass (EFB) and biogas (POME) from palm oil waste for power generation.

The Policy Statement of the new Malaysian National Renewable Energy Policy is "Enhancing the utilisation of indigenous renewable energy resources to contribute toward national electricity supply security and sustainable socio-economic development". The policy has five major objectives: to increase the renewable energy contribution to ensure reasonable renewable generation costs; to conserve the environment for future generations; and to enhance awareness on the role and importance of renewable energy. The plan has targets for cumulative capacity and renewable power as a percentage of the power mix. Renewable energy capacity targets and percentages by year are: 2010-73 MW (0.5%); 2015-985 MW (6%); 2020-2,080 MW (11%); and 2030-4,000 MW (17%).

Mrs. Malek's detailed presentation is available on the EGNRET website at: www.egnret.ewg.apec.org/meetings.

Program Overview and Recent APEC Activities

The Chair reviewed the agenda, and noted that the usual 2 ½ day agenda had been compressed to two days to enable members to attend the two related APEC Biofuel Task Force activities. The Chair then briefed the participants on the recent activities and developments that occurred after the last meeting of the Expert Group on October 5-6, 2009 in Chinese Taipei.

The EWG has met twice since EGNRET 33. EWG 38 was held on November 16-20 in Bali, Indonesia and EWG 39 was held on March 9-13, 2010 in Tokyo, Japan. At EWG 38, three EGNRET projects which had been submitted were ranked highly and submitted to the APEC Secretariat for further funding consideration. At EWG 39, the EWG presented their proposed Work Plan for 2010. The Work Plan should be finalized by the time of EGNRET 35 and will be made available to members at that time.

At EWG 39, it was also reported that EWG 40 will be held in Brunei-Darussalam on November 22-26, 2010.

Overview of APERC Activities

APERC president and team presented a detailed review of APERC activities. The review included a discussion of the role of APERC in support of APEC; activities related to energy efficiency improvement in APEC economies; APEC cooperative pathways to sustainable energy futures; APEC Energy Demand and Supply Outlook 4th Edition: Renewable Energy; and APEC cooperation to promote low carbon energy. It was reported that the primary objective of APERC activities is to conduct research to foster understanding among APEC members of regional energy outlook and energy policies issues. Key areas of APERC's work program in 2010-2011 include working to deepen the understanding of how policies and programs can contribute to energy efficiency improvements and the development of activities on APEC cooperative pathways to a more sustainable energy future including effective policies to promote low carbon energy. In support of the latter area, which is directly related to EGNRET activities, APERC is planning to assess an alternative scenario focusing on a sustainable energy future in the next APEC Energy Demand and Supply Outlook. APERC will also analyze effective and efficient policies to promote low-carbon energy (renewables) in the APEC region through a peer review mechanism. This activity will build on the success APERC has had with the Peer Review on Energy Efficiency (PREE) by examining policies to promote low-carbon energy with an initial focus on renewables through a Peer Review on Renewable Energy (PRRE). The President of APERC, Mr. Kenji Kobayashi, expressed the desire to work with EGNRET on this activity starting in 2011. EGNRET members welcomed the activities and said they would look forward to working with APERC on the implementation of PRRE.

Member Economy Presentations: Current New and Renewable Energy Utilization in APEC Member Economies

The economy presentation topic for EGNRET 34 was: "Current New and Renewable Energy Utilization in APEC Member Economies." This topic was chosen because there was significant interest shown at the recent Energy Working Group meeting in Japan in March 2010 for the establishment of a baseline accounting of renewable energy capacity and generation in APEC member economies. The meeting presentations are available on the EGNRET Web site at www.egnret.ewg.apec.org/meetings

EGNRET Project Update

Detailed presentations were next presented on the two recently completed EGNRET projects.

APEC 21st Century Renewable Energy Development Initiative (Collaborative VI): Best Practices in New and Renewable Energy Technologies in Urban Areas in the APEC Region (EWG 04/2008)

It has been estimated that 75% of the world energy's energy consumption takes places in

cities. APEC, as home to many of the world's most dynamic and fastest growing cities, could set an example of how to best use new and emerging technologies to reduce energy consumption while maintaining economic growth. This project highlights best practices in the use of new and renewable energy and energy efficient technology based systems as they have been applied in APEC cities. Best practices include not only specific technology application such as building integrated photovoltaics (BIPV) but also innovated renewable energy purchasing policies being implemented in APEC urban areas. The project report includes the development of a city energy roadmap that would help guide further cooperation in the area of clean and efficient urban energy systems.

The project was completed, and a final report was distributed by the US to all APEC member economies. A two-page project summary was also developed and distributed at EWG 39.

APEC 21st Century Renewable Energy Development Initiative (Collaborative IX): Workshop and Report on Implications of Bio-refineries for Energy and Trade in the APEC Region (EWG 05/2008A)

The objective of this project is to provide APEC decision makers with recent advances in bio-refinery development. A bio-refinery integrates various biomass conversion processes to produce not only biofuels but also high value co-products. As many economies highly support the development of bio-refinery technology, it is very likely that bio-refinery applications will get into the trade market in the APEC region before 2015. This project brought together experts who have been involved in the development of bio-refineries so that APEC decision makers can benefit from their experiences in setting up policies. A workshop was held to discuss the future of bio-refineries in many aspects including the technological and economic assessment, market penetration, and trade opportunities. This project also prepared a report to integrate and synthesize the information gained in the workshop. The project workshop was held October 7-8, 2009, just after EGNRET 33, in Chinese Taipei.

The project was completed, and a final report was distributed by the Chinese Taipei to all APEC member economies. A two-page project summary was also developed and distributed at EWG 39.

The EGNRET is currently implementing two projects, as described below.

Addressing Grid-interconnection Issues in Order to Maximize the Utilization of New and Renewable Energy Sources (EWG 02/2009)

This Japan-led project is examining the grid-interconnection issues associated with large penetration levels of renewable energy. Power output from new and renewable energy power sources like solar photovoltaics and wind turbines fluctuates depending on environmental conditions. When these new and renewable energy sources are connected to power grids, these fluctuations can negatively affect power grid frequencies, voltages, and harmonics. For this reason, power utility companies often limit the amount of new

and renewable energy that can be grid-interconnected. The aim of this project is to identify and summarize research that is being undertaken or solutions that have already been identified regarding issues that limit the amount of new and renewable energy that can be grid-interconnected, including a focus on energy storage solutions.

As the introduction of fluctuating renewable energy sources, including wind power and solar photovoltaics, expands, each APEC economy is working to find solutions that support the expansion of these clean energy sources. The project consultant will be charged with analyzing what research has been/is being undertaken in various APEC economies and which measures/technologies have been successful or hold great promise. This Japan-led project is on schedule and is expected to be completed in 2010.

Using Smart Grids to Enhance the Use of Energy Efficiency and Renewable Energy Technologies (EWG 01/2009S)

This US self-funded project will examine the status and potential within APEC economies of smart grid technologies to enhance the use of renewable energy and energy efficient buildings, appliances and equipment. Smart grids integrate technologies to improve the management of the grid itself, increase energy efficiency and renewable energy technologies “behind the customer meter” (including “smart buildings”), and enhance intelligent controls to link the grid with customers in a more efficient and seamless fashion. The report will focus on APEC economies and include a survey of how smart grid technologies and practices have been used to enable new products and services, optimize the use of power grids, allow greater use of renewable energy options, and encourage greater demand-side efficiency response in APEC economies. A follow-on workshop will take place to examine findings of the study and lay a path forward for future progress in these areas. The project is expected to be completed in early 2011.

Review of APEC Project Proposal Process

The Chair reported that project proposals had changed for 2010. For 2010, the BMC will hold three inter-sessional project approval sessions as defined below:

<u>Session One:</u> Proposal application deadline	March 10, 2010
<u>Session Two:</u> Proposal application deadline	June 9, 2010
<u>Session Three:</u> Proposal application deadline	September 23, 2010

Projects that have been ranked by EWG 38 and submitted for funding in the project Session One will be evaluated by the APEC Secretariat under 2009 guidelines. However, projects that are to be submitted to session two or three have changed. For session two, the process is outlined below:

1. Propose concept at an EGNRET meeting.

2. Develop a 2-3 page Concept Note for submission to EWG for ranking by May 14, 2010.
3. EWG ranks the projects and submits the concept note to the APEC Secretariat by June 2, 2010
4. EWG Secretariat uploads the concept note by June 9, 2010
5. The concept notes are ranked from 1 to 4 (takes 3 weeks)
6. Full project proposals and QAFs are developed for top ranked projects; Secretariat will work with developers who have high priority ranked but low quality proposals
7. When satisfactory quality is reached, the Secretariat will recommend that the project commence
8. Proponents have until the next project approval session deadline to submit proposals

There will be an opportunity within each funding round to review projects following feedback from the Secretariat Project Assessment Panel. The new format was developed to support the development of projects which receive a high ranking in their support of APEC priorities but are deemed to be of lower quality. In the new process, if a project is shown to be high priority, the APEC Secretariat will work with the project proponent to revise the proposal and improve its quality.

As with 2009 projects, a number of important general changes to previous project management apply:

- All sessions will operate with immediate funds disbursement. In line with this, there is no longer an “urgent project” classification. All projects, whether or not they are related to the Leader’s Statement, may be submitted in session one.
- The two-year disbursement rule has been removed. New projects must now specify a project end date. It is expected that any unspent funds at the nominated end date will be returned to APEC. Deviations will be considered only in exceptional cases.
- Multi-year projects will only be considered from Session Three.
- Projects may only be submitted for approval twice. Unsuccessful projects must go through a complete reassessment if they are being re-submitted.

All EGNRET projects will still need to be ranked by the EWG. Thus, first session 2011 project proposals will need to be submitted at EWG 40. The deadline for submission to the EWG will be provided when it is available. Once ranked by the EWG, the projects may be submitted to any of the three 2011 funding sessions. Additional information about the project proposal process 2011 will be provided by the Chair prior to EGNRET 35 since 2011 project proposal will need to be developed at that time.

Administration and Operation

The next EGNRET meeting was discussed and Japan agreed to host EGNRET 35 from October 12-15 in Tokyo. A one-day workshop related to the Japan-sponsored project **Addressing Grid-interconnection Issues in Order to Maximize the Utilization of**

New and Renewable Energy Resources will be held in conjunction with EGNRET 35. The Chair also noted that EGNRET will hold its election of officers at EGNRET 35. At this meeting, elections will be held for the positions of Chair and Vice-Chair. Economies interested in holding an office are asked to provide the current Chair with the nomination prior to EGNRET 35. The Chair asked if there was any other business. There being none, the Chair and EGNRET members thanked Malaysia for hosting the meeting and closed the 34th meeting of the APEC Expert Group on New and Renewable Energy Technologies. Meeting minutes will be distributed and approved out of session.

LIST OF PARTICIPANTS

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