

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

36th Meeting

Washington, D.C., USA

February 28- March 4, 2011

Introduction

The 36th meeting of the Expert Group on New and Renewable Energy Technologies was held on February 28 to March 4, 2011 in Washington, D.C., USA. In addition to EGNRET 36, there were a two-session Joint Meeting with the APEC Expert Group on Energy Efficiency and Conservation (EGEE&C) on February 28 and March 2, respectively, and a conference on Green Buildings and Green Growth: the Enabling Role of Standards and Trade held by the APEC Subcommittee on Standards and Conformance (SCSC) on March 3-4. The conference was part of the project on “Sustainability in Building Construction (Commercial Buildings) – Efficiency and Conservation” (CTI-SCSC 33/2010T), which also included a survey of APEC member economies on Sustainability in Building Construction (Commercial Buildings) carried out in early 2011.

The EGNRET 36 meeting was co-chaired by Dr. Hom-Ti (Tom) Lee of the Industrial Technology Research Institute (ITRI) and Dr. Cary Bloyd of the U.S. Department of Energy’s Pacific Northwest National Laboratory. Representatives from Canada, Chile, Japan, Korea, Mexico, New Zealand, Peru, Philippines, Singapore, Chinese Taipei, Thailand, USA, APEC Biofuels Task Force (BTF), and APERC participated in the meeting. Before the meeting, the Chair requested that an EGNRET secretariat should be established to assist the Chair in organizing EGNRET meetings and provides administrative support to the EGNRET. Dr. Keng-Tung Wu, Assistant Professor at National Chung Hsing University, Chinese Taipei was nominated and endorsed by the Representatives to hold the EGNRET secretariat for a two year term.

1st Session of EGNRET/EGEE&C Joint Meeting

The first session of the Joint Meeting with the APEC Expert Group on Energy Efficiency and Conservation (EGEE&C) was held in the morning of February 28. The last joint meeting of two groups had taken place in Chinese Taipei on October 6, 2010.

Dr. Phyllis Yoshida, APEC Energy Working Group (EWG) Lead Shepherd gave an official welcome to the delegates, and opened the meeting, and EGEE&C and EGNRET Chairs, Dr. Terry Collins and Dr. Tom Lee also welcomed all the participants. Following the welcome, the final agenda of the joint meeting distributed by the Chairs was reviewed and accepted.

Mr. Luis Enrique Vertiz, APEC Program Director for Energy then gave a presentation on recent high-level APEC activities including key developments and project management developments within APEC. Mr. Enrique Vertiz mentioned

that based on the APEC Leaders Declaration “The Yokohama Vision - Bogor and Beyond” in 2010, the APEC 2011 priorities are strengthening regional economic integration and expanding trade, promoting green growth, and expanding regulatory cooperation and advancing regulatory convergence. Mr. Enrique Vertiz also described the 2011 APEC project funding criteria. The criteria will be used for ranking all of APEC’s funded projects which can be divided into 3 categories including

- Rank 1: Projects that specifically and significantly contribute to promoting regional economic integration via free and open trade and investment.
- Rank 2: Projects that directly support the Action Plan in the APEC Leaders’ Growth Strategy.
- Rank 3: Projects that are linked to other priorities identified by Leaders and Ministers but are less closely linked to regional economic integration via free and open trade and investment.

According to the record, a total of 10 Concept Notes endorsed by EWG were submitted for Session 1 in 2011 including 2 from EGEE&C, 1 from EGNRET, and 3 from LCMT TF.

After Mr. Enrique Vertiz’s presentation, Ambassador Kurt Tong, the U.S. Senior Official for APEC addressed his welcome to the delegates. He also mentioned the three specific priority areas for APEC 2011, especially the green growth promotion that is applicable for the two Expert Groups.

Dr. Yoshida, EWG Lead Shepherd, then gave a presentation on recent EWG activities. She mentioned that in 2010 the APEC Economic Leaders in Yokohama agreed to formulate an APEC Growth Strategy to shape the region’s growth following the financial and economic crisis. The new APEC Growth Strategy aims to achieve Balanced, Inclusive, Sustainable, Innovative, and Secure Growth. , Dr. Yoshida also reviewed the new Leader’s endorsed Energy-Smart Communities Initiative (ESCI) which was announced by the U.S. and Japan as part of continuing momentum of sustainable growth activities from Japan’s APEC year into the U.S. APEC year. With the purpose of promoting green growth, sustainable development and long-term job creation for the Asia-Pacific region as well as realizing APEC Leaders’ 2008 agreed goal of reducing the energy intensity of their economies by 25 percent by 2030, the ESCI intends to promote and integrate strategies and technologies in four pillar areas: *Smart Transport, Smart Buildings, Smart Grid, and Smart Jobs and Consumers*. Dr. Yoshida noted that building upon the Low Carbon Model Towns initiative and other existing EWG work can help create a comprehensive package of projects for the APEC region.

APERC president Mr. Kenji Kobayashi presented a detailed review of APERC activities. The review included APERC’s activities in progress and 2011 which included the work plan on Peer Review on Energy Efficiency (PREE) and Cooperative Energy Efficiency Design for Sustainability (CEEDS), the Peer Review on Policies to Promote Low-Carbon Energy Supply (PRLCE), and Low-Carbon Model Town (LCMT) Projects.

In 2009, the first four PREEs for New Zealand, Chile, Viet Nam and Thailand were

undertaken with reports published on the APERC website (<http://www.ieej.or.jp/aperc>). In 2010, the PREE for Chinese Taipei, Peru and Malaysia were undertaken. The feedback received from all the host economies was that the peer reviews have provided very useful recommendations. The additional two PREEs will be conducted in the period between April in 2011 and March in 2012.

APERC's CEEDS provides an in-depth peer review of energy efficiency policies in one single sector for multiple economies through interactive workshops. In Phase I, Chinese Taipei and Japan hosted workshops respectively on Appliance EE Standards and Labeling, and participating economies included Chile, China, Malaysia, Philippines, Thailand and Viet Nam; in Phase II, Thailand and Hong Kong, China hosted workshops respectively on Building Energy Efficiency Codes and Labeling, and participating economies included Chile, China, Indonesia, Malaysia, Mexico, Philippines, Thailand and Viet Nam. Theme of Phase III will be on Energy Efficient Transport for Smart Communities in APEC economies, and the first workshop is scheduled in September 2011.

The objectives of PRLCE are to assist volunteer APEC economies to voluntarily set individual goals to promote more energy and power supply from low-emission sources and to formulate actions to achieve the goals through peer review. Currently, Malaysia and Thailand are interested in hosting PRLCE Phase 1 with focus on renewable energy.

The Low Carbon Model Town project was launched in 2010 and is part of the Green Growth initiative for APEC 2011, which envisages addressing climate change by promoting climate-friendly, low-carbon and energy efficient technologies. Currently, Yujiapu Financial District, about 40 km east of Tianjin, China, was chosen as the first Low-Carbon Model Town test case.

Both EGEE&C and EGNRET Chairs introduced the groups' recent activities including projects in progress and new projects proposed for 2011 to the delegates. Meanwhile, to understand the renewable energy and energy efficiency linkages across the US DOE, Dr. Cary Bloyd (PNNL), U.S. EGNRET representatives, and Mr. Marc LaFrance (US DOE), U.S. EGEE&C representative presented the Smart Grid Activities by the U.S. Department of Energy, and US DOE Clean Energy - Efficiency and Renewable Investments in the joint meeting, respectively.

Afterwards, the two groups continued their respective meetings including a discussion of joint project opportunities, and gathered again for the next joint session in the afternoon of March 2. All presentations from 1st Session of the Joint Meeting are available on the website at:

<http://www.egnret.ewg.apec.org/meetings/egnret36/index.html>

Overview of New and Renewable Energy in the U.S.

After 1st Session of the Joint Meeting, Dr. Lee welcomed the EGNRET delegates and opened the EGNRET 36 meeting. Dr. Bloyd then gave an official welcome to the delegates on behalf of the U.S. Following the welcome, a final agenda distributed by the Chair was reviewed and accepted.

Dr. Bloyd then gave a detailed overview of current U.S. new and renewable energy utilization. Dr. Bloyd's presentation reviewed the current and projected U.S. energy supply/demand, U.S. renewable energy consumption, state renewable energy targets, and renewable energy activities from the private sector.

Currently, the total U.S. primary energy consumption is projected to increase from 94.8 quadrillion Btu in 2009 to 114.3 quadrillion Btu in 2035. The fossil fuel share of energy consumption falls from 84 percent of total U.S. energy demand in 2009 to 78 percent in 2035. Total U.S. consumption of liquid fuels, including both fossil liquids and biofuels, grows from 36.6 quadrillion Btu (18.8 million barrels per day) in 2009 to 41.8 quadrillion Btu (22.0 million barrels per day) in 2035. The transportation sector dominates demand for liquid fuels, and its share (as measured by energy content) grows only slightly, from 72 percent of total liquids consumption in 2009 to 74 percent in 2035. The total electricity consumption, including both purchases from electric power producers and on-site generation, grows from 3,745 billion kWh in 2009 to 4,880 billion kWh in 2035, increasing at an average annual rate of 1.0 percent. Although the mix of investments in new power plants includes fewer coal-fired plants than other fuel technologies, a total of 21 GW of coal-fired generating capacity is added from 2009 to 2035. Coal remains the dominant energy source for electricity generation because of continued reliance on existing coal-fired plants and the addition of some new plants in the absence of an explicit Federal policy to reduce greenhouse gas emissions.

In 2009, U.S. renewable energy consumption increased by about 8% between 2008 and 2009, contributing about 8% of the Nation's total energy demand, and 10% of total U.S. electricity generation in 2009. Electricity producers consumed 53% of total U.S. renewable energy in 2009 for producing electricity. About 26% of renewable energy used was biomass consumed by industry for industrial applications (principally paper-making) by facilities producing only heat and steam. Biomass is also used for transportation fuels (ethanol and biodiesel) and to provide residential and commercial space heating. The largest share of the renewable-generated electricity in 2009 came from hydroelectric energy (66%), followed by wind (17%), wood (9%), biomass waste (4%), geothermal (4%), and solar (0.2%). Wind-generated electricity increased by 28% in 2009 over 2008, more than any other energy source.

Dr. Bloyd also mentioned that U.S. solar energy capacity has continued to grow. Total U.S. solar electric capacity from photovoltaic (PV) and concentrating solar power (CSP) technologies climbed past 2,000 MW, enough to serve more than 350,000 homes. Total U.S. solar thermal capacity approached 24,000 MWth. Meanwhile, U.S. wind energy capacity continues to grow as well. The U.S. wind industry had 40,181 MW of wind power capacity installed at the end of 2010, with 5,116 MW installed in 2010 alone. There are now 5 states that produce more than 5% of their electricity from wind. Iowa is the first state to exceed 10% wind energy generation (14.2%) on an annual basis followed by Minnesota (9.4%), North Dakota (8.1%), Oregon (6.4%), and Colorado (5.8%).

Dr. Bloyd finally pointed out that the private sector is taking a leading role in the utilization of PV in the U.S. Wal-Mart Stores, Inc., the largest U.S. commercial

energy user, has set a goal of 100% renewable energy. Its proposed activities would place approximately 100 MW of PV on 3,900 stores across five states. Wal-Mart also stated that their goal is to reduce GHG emissions by 20% in 8 years and design a store that will use 30% less energy. By installing PV across its stores, Walmart hopes to supply each location with 20 to 30 percent of its total energy needs. In addition, in 2007, Google installed a 1.6 MW PV system with full cost payback expected by 2013 (supplies 30% of peak energy). Google also signed a 114 MW, 20-year wind purchase power agreement in July 2010, and made a decision to become carbon neutral starting in 2007.

Dr. Boyd's detailed presentation is available on the EGNRET website at:
<http://www.egnret.ewg.apec.org/meetings/engret36/index.html>

Later, Dr. Boyd also introduced the APEC Smart Grid Initiative (ASGI) to the delegates. The 9th Energy Ministerial Meeting (EMM 9) in 2010 instructed EWG "to start an APEC Smart Grid Initiative (ASGI) to evaluate the potential of smart grids to support the integration of intermittent renewable energies and energy management approaches in buildings and industry." Suggested elements of the Smart Grid Initiative include survey of smart grid status and potential (Phase 1), smart grid road map (Phase 2), smart grid test beds (Phase 3), and development of smart grid interoperability standards (Phase 4). Currently, a number of APEC economies have already begun the process of road mapping various aspects of smart grid implementation. Examples from current smart grid road maps in the U.S., Korea, and Chinese Taipei illustrate the type of targets, scale, and coverage of current APEC smart grid road maps. For further information, a 20-page draft concept paper for the APEC Smart Grid Initiative prepared by Dr. Boyd for EWG 41 is available on the EGNRET website at:

<http://www.egnret.ewg.apec.org/meetings/engret36/index.html>

Member Economy Presentations: New and Renewable Energies in Transportation (i.e., EVs and alternative fuels)

The economy presentation topic for EGNRET 36 was "New and Renewable Energies in Transportation (i.e., EVs and alternative fuels)." This topic was suggested by Singapore because it would be beneficial in the lead-up to the inaugural Energy and Transport High-Level Conference in September 2011. APEC member economies shared their experiences in developing new and renewable energies in transportation, especially for EVs and alternative fuels. The meeting presentations are available on the website at:

<http://www.egnret.ewg.apec.org/meetings/egnret36/index.html>

Invited Presentations

Three invited presentations were given at the meeting. Dr. David Natusch (Resource Development, Ltd.) presented Alternative Transport Fuels: Implementation Guidelines. He concluded that based on the related information that has been assembled, a set of guidelines for implementation of alternative transport fuels has been developed. Once these are in place, market forces must be allowed to operate with guidance and occasional assistance from government through a project coordinating committee that should function increasingly like a

board of directors as the market develops. Mr. Pierre Cazelles (International Copper Association, ICA) provided an update on renewable energy programs from ICA. Comprised of 39 member companies, ICA is a leading organization for promoting copper worldwide. ICA now promotes higher efficiency in electrical and thermal energy applications including standards, policies, OEMs support, end-users education, and market mechanisms. Currently ICA seeks cooperation with APEC, and offers technical, financial supports and other resources to support economies in projects promoting renewable energy. Mr. Jeff Skeer, Chair of the APEC Biofuels Task Force (BTF) gave a presentation on Sustainable Biofuel Development Policies, Programs, and Practices in APEC Economies. Mr. Skeer concluded that there are a number of current and potential policies and measures to encourage biofuels to be developed sustainably. However, there is no single feedstock, production process, or activity that can be promoted as a universally-sustainable solution. Therefore, he provided three recommendations including (1) Collaborate on sustainable biofuels activities and share lessons learned; (2) Promote all areas of sustainability simultaneously, rather than look at a select few elements of sustainability; (3) Incorporate more performance-based approaches to monitoring compliance with, and impacts of, sustainable biofuel policies, programs, and practices to ensure that the intended outcomes of those activities are realized and negative unintended consequences are addressed.

The invited presentations are available on the website at:
<http://www.egnret.ewg.apec.org/meetings/egnret36/index.html>

Following the invited presentations, there were two special invitations to provide feedback for clean energy related projects from other APEC Fora. Ms. Jennifer Stradtman from the U.S. International Trade Administration gave a review of the Subcommittee on Standards and Conformance (SCSC) two new renewable related TILF projects: Solar Standards and Conformance Measures Survey and Workshop, and the PV Reliability and Durability Workshop. Mr. Keith Curtis from the U.S. Department of Commerce, representative the APEC Small and Medium Enterprise Working Group (SMEWG), then gave a review of their upcoming Workshop on How to Grow Your Green Small Business in APEC Members' Markets, which is to occur in conjunction with SOM 2 this May in Big Sky, Montana.

EGNRET Current Project Update

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 grid-interconnection issues associated with large penetration levels of renewable energy. However, 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. Because of this, 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.

A report was issued to characterize the main issues with the integration of stochastic and only partially predictable renewable energy technologies into distribution networks, i.e., distributed generation (DG). It summarizes the approaches currently being used to address them, including research and development activities. It then identifies best practices in addressing these issues, including non-technical approaches. Also it outlines future research and development activities that may be required to fully integrate distributed generation into electricity networks of the 21st century. Finally it discusses the factors that influence the potential for applying best practices throughout the APEC region. In addition, a one day workshop for the project was held with this meeting on October 12, 2010 to review the draft final report and provide feedback to the project developers. The project was completed in 2010 and the report and workshop presentations are available on the workshop's website at:

<http://www.egnret.ewg.apec.org/workshops/Grid-interconnection/index.html>

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

This U.S. 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, energy efficiency and renewable energy technologies “behind the customer meter” (including “smart buildings”), and 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 a greater demand-side efficiency response in APEC economies.

A detailed survey was sent out and the results are being analyzed. A follow-up workshop will take place to examine the findings of the study and lay a path forward for future progress in these areas. A draft report is currently being prepared. The project is on schedule, and should be completed by May 2011.

EGNRET New Project Proposals for Funding in 2011

At the EGNRET 35 meeting, ten new EGNRET project proposals including a self-fund project for funding in 2011 received endorsement. However, only four project concept notes were submitted to EWG for endorsement. The results at EWG 40 showed that four EGNRET proposals were ranked at 5, 6, 7, and 8 among 12 EWG proposals:

- The Status, Potential, Barriers, and Opportunities of Electric Vehicles in APEC (Ranking: 5)
- Addressing Challenges of AMI Deployment in APEC (Ranking: 6)
- Potential for Biomass to Liquid (BTL) Production & Trading throughout

- APEC Region (Ranking: 7)
- Workshop on Opportunities for Marine Energy Development in APEC (Ranking: 8)

Nevertheless, by the submission deadline of Session 1/2011, five EGNRET proposals were withdrawn and two EGNRET proposals were pending. Except the self-fund one, only two EGNRET proposal concept notes were uploaded to the APEC project database for priority assessment:

- APEC 21st Century Renewable Energy Development Initiative (Collaborative IX): The Status and Potential of Electric Vehicles in the APEC Region (New Zealand lead)
- Addressing Challenges of AMI Deployment in Order to Enable Smart Grid Applications (Chinese Taipei lead)

On March 2, APEC Budget & Management Committee (BMC) gave the EGNRET proposal Addressing Challenges of AMI Deployment in Order to Enable Smart Grid Applications in-principle approval, and the budget is US\$ 60,000. The project proponent will be requested to develop the full project proposal for further submission.

The information of rating results for EGNRET new proposal submitted to EWG 40 is available on the website at:

<http://www.egnret.ewg.apec.org/meetings/egnret36/index.html>

Review of APEC Project Proposal Process

The Chair emphasized again that project proposals had changed since 2010. For 2011, the BMC will hold three inter-sessional project approval sessions as defined below:

Session 1/2011

- Submissions close 7 February
- BMC in principle notification by 2 March
- Final approvals likely done by end of April

Session 2/2011

- Submissions close 7 April
- BMC in principle notifications by 29 April
- Final approvals likely done by end June

Session 3/2011

- Submissions close 29 September
- BMC in principle notifications by 21 Oct
- Final approvals likely done by mid December

The new APEC project cycle can be described as 5 stages and 16 steps:

STAGE 1: Concept Note Preparation and Submission

1. Project Proponent (PP) reviews guidebook and prepares concept note using NEW template.

2. PP submits concept note to forum for comment, endorsement, and at least two cosponsors.
3. Originating forum prioritizes endorsed concept notes.
4. PP uploads concept note to the APEC project database by the submission deadline.

STAGE 2: Priority Assessment of Concept Notes

5. Committees and SFOM (Senior Finance Officials Meeting) prioritize concept notes, and sorts them by rank according to the APEC-wide funding criteria.
6. Secretariat combines the rankings of committees and SFOM to determine the availability of funding for concept notes.
- 6a. Depending on the availability of funds, PDMs (Principal Decision Makers) create an APEC-wide prioritization list respecting the priority of committees and SFOM.
7. Secretariat recommends to BMC (Budget & Management Committee) in-principle approval of highest-priority concept notes that fit within the funding cap.
8. BMC considers concept notes and gives in-principle approval or rejects concept notes.
9. Proponents are notified of preapproval or rejection of concept notes.

STAGE 3: Full Project Development & Quality Assessment

10. Project overseers with in-principle approval develop proposals using Project Proposal template, with assistance from forum and the Secretariat.
11. Forum endorses full proposal and carries out quality assessment using Quality Assessment Framework (QAF) template.
12. Secretariat carries out quality assessment of proposal using quality criteria.
13. Secretariat recommends satisfactory-quality proposals to BMC for final approval. BMC approves or rejects.

STAGE 4: Implementation

14. Approved projects are implemented in line with the Guidebook on APEC Projects.
15. PO (Project Overseer) submits monitoring reports at six-month intervals using Project Monitoring Report template.

STAGE 5: Project Completion

16. PO submits a project completion report within two months of the end of the project using Project Completion Report.

In Step 12, the APEC Project Quality Criteria are called REEIS, e.g., Relevance, Effectiveness, Efficiency, Impact, and Sustainability.

The Chair also mentioned that the concept notes (including title page) should be less than 3 pages, and the project proposals are to be completed using the APEC new Project Proposal template. Each project proposal should be no more than 12 A4 pages, including the budget. The Guidebook on APEC Projects (7th Ed.) (effective from

January 1, 2011) should be a useful kit for project submission.

Also, an APEC Training Session on Improving Project Quality sponsored by APEC Technical Assistance and Training Facility (APEC TATF) held at 16:00-17:00 on Monday, 28 February was arranged for the EGNRET delegates.

The useful information for project submission including 7th ed. Guidebook can be found at APEC Project website directly:

<http://www.apec.org/Projects/Projects-Overview.aspx>

Administration and Operation

EGRNET members discussed joint project opportunities with EGEE&C, and future potential joint activities including assisting APERC in reviewing guidelines for Peer Review on Policies to Promote Low-Carbon Energy Supply, and supporting Low-Carbon Town Task Force to introduce low-carbon technologies in city planning to boost energy efficiency and reduce fossil energy use. The outcome of EGNRET 36 would be presented at 2nd Session of EGNRET/EGEE&C Joint Meeting later.

The next EGNRET meeting was also discussed and Chinese Taipei will host EGNRET 37 in Taipei in late August or early September. A two-day AMI workshop will be held alongside the meeting, including smart grids (1st day) and AMI (2nd day). The Chair asked if there was any additional new business, there being none, the Chair and EGNRET members thanked the U.S, for hosting the meeting and closed the 36th meeting of the APEC Expert Group on New and Renewable Energy Technologies. Meeting minutes will be distributed and approved out of session.

2nd Session of EGNRET/EGEE&C Joint Meeting

The second Session of the Joint Meeting was held in the afternoon of March 2. Both Chairs first presented the respective meeting outcomes; afterwards the meeting was opened to discuss the joint project opportunities. The action plan after discussion was drawn as:

ACTION 1: Thailand representative will update concept note for energy efficiency and renewable energy best practices in the industrial sector and submit to the expert group secretariats to seek approval from expert groups. Thailand will seek funding opportunities from ICA and amend concept note as necessary.

ACTION 2: EWG was instructed by energy ministers under EMM9 to start an APEC Smart Grid Initiative (ASGI). Therefore, Expert Groups seek expressions of interest from economies in sponsoring projects for:

- survey of load pattern of households
- energy storage systems for the residential sector
- electric vehicle charging

Forward a concept note to expert group secretariats who will circulate to expert groups for approval.

ACTION 3: Expert Group secretariats will circulate concept note for demand response capabilities in appliance to expert group members to seek approval to adopt

the proposal as a joint EGNRET/EGEE&C project.

ACTION 4: Expert group members are asked to identify possible contacts from their economies to participate in smart grid activities under the Energy Smart Communities Initiative (ESCI).

ACTION 5: Request agenda item for EWG-41 meeting in May to discuss how to deliver work for the smart grid initiative (in response to energy ministers' instructions under EMM9).

Finally, the Chairs and all delegates of two Groups thanked U.S. for hosting the meeting and closed the Joint Meeting.

The presentations of the meeting outcomes and the full version of the action plan are available on the website at:

<http://www.egnret.ewg.apec.org/meetings/egnret36/index.html>

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* The list did not include the participants at the joint meetings.