APEC Expert Group on
New and Renewable Energy Technologies

Welcome to EGNRET 39

Asia-Pacific
Economic Cooperation

EGNRET

EGNRET 39 *Shanghai, China* 11 - 14 December, 2012

Progress/Status of Current EGNRET Projects

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Keng-Tung Wu, PhD
EGNRET Secretariat

Asia-Pacific Economic Cooperation

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EGNRET Project Update

- 8 on-going projects
- 5 new project CNs received BMC in-principle approval for Session 3, 2012. Full proposals must be submitted by 9 Nov., 2012. 2 of them have been approved for APEC funding by BMC last week.
- A new self-funded project proposals for endorsement at EWG 44

On-going Projects: 8

1. Addressing Challenges of AMI Deployment in APEC (EWG 07/2011A) (Chinese Taipei)
2. Stock-take of Electric Vehicle Interface with Electricity and Smart Grids Across APEC Economies and the Potential for Harmonization (EWG 11/2011) (New Zealand)
3. Piloting Smart/micro Grid Projects for Insular and Remote Localities in APEC Economies (S EWG 15 11A) (Russia)
4. Prospects for Marine Current Energy Generation in APEC Region (S EWG 23 11A) (Russia)
5. Best Practices in Energy Efficiency and Renewable Energy Technologies in the Industrial Sector in APEC Region (S EWG 19 11A) (Cooperated with EGEE&C) (Thailand)

On-going Projects: 8

6. Urban Development Smart Grid Roadmap: Christchurch Recovery Project (EWG 08 2012) (Cooperated with EGEE&C) (New Zealand) (*Approval in Session 1, 2012*)
7. Research on the Application of Physical Energy Storage Technology to Enhance the Deployment of Renewable Energy in an APEC Low Carbon Town (EWG 16 2012A) (China) (*Approval in Session 2, 2012*)
8. The Comprehensive Analysis and Research of Key Technologies and Commercial Model of Low Carbon Model Town Applied in Yujiapu CBD EWG (EWG 11/2012A) (China) (*Approval in Session 2, 2012*)

New Projects for Session 3, 2012

The EGNRET submitted 6 project Concept Notes for funding in Session 3, 2012, and 5 projects in-principle approved by BMC in October. 2 of them have been approved for funding by BMC last week.

- APEC Peer Review on Low-carbon Energy Policies (PRLCE) Phase 2 (Japan) [Approved for funding by BMC last week] (EWG 18 2012A)
- APEC Workshop on Best Practices on Financing Renewable Energy (Viet Nam) [Approved for funding by BMC last week] (EWG 21 2012A)
- Promoting Stable and Consistent Renewable Energy Supply by Utilizing Suitable Energy Storage Systems (China)
- Operation Technology of Solar Photovoltaic Power Station Roof and Policy Framework (China)
- Study on Measures to Reduce Energy Intensity in APEC Low Carbon Town (China)

Self-fund Project

EGNRET endorsed self-funded project

2013 APEC Workshop on Geothermal Technology

- Led by Chinese Taipei
- Submitted to EWG 44 for endorsement

On-going Projects

1. Addressing Challenges of AMI Deployment in APEC (EWG 07/2011A)

- This project is to investigate the development strategies and current status of AMI in all APEC economies, and provide recommendations for AMI deployment. The methodology of this project involves survey and analysis of AMI development status, and an two-day AMI workshop.
- Currently the literature survey of global AMI deployment has been carried out to identify the objective and strategy to discover the purposes of AMI deployment as well as the supporting scheme.
- A two-day workshop for the project was held on August 24th -25th, 2011 in Chinese Taipei. The purpose of the workshop was to share the experience of AMI deployment among APEC economies. The workshop presentations are available on the workshop's website at: http://www.egnret.ewg.apec.org/workshops/AMIWorkshop/index.html

On-going Projects

2. Stock-take of Electric Vehicle Interface with Electricity and Smart Grids Across APEC Economies and the Potential for Harmonization (EWG 11/2011)

- The objective of the project is to enhance understanding in APEC economies of EV connectivity to electricity grids and identify opportunities to increase the harmonization of standards and requirements to promote the deployment and integration of EVs, both vehicles and supporting technologies.
- The methodology of this project involves 3 main steps, including a survey of APEC economies on existing EV connectivity infrastructure, regulations, and standards; a desktop review of the results; and a workshop to discuss the findings and collect APEC feedback.
- The APEC Electric Vehicle Connectivity Workshop 2012 will be held on 19 June 2012 in Wellington, New Zealand, alongside the EGNRET 38.

On-going Projects

3. Piloting Smart/micro Grid Projects for Insular and Remote Localities in APEC Economies (S EWG 15 11A)

- The objectives of the project are
  - to compile and share member economies' experiences in introducing new technologies for local energy systems including smart & micro grid technologies to support sustainable development of remote and isolated areas,
  - to review microgrid as a critical component of smart grid concept for local energy systems with a view to maximize the economic and environmental effect of tested and ready-to-use technologies,
  - to provide a menu of options to APEC economies for piloting of smart/micro grid projects in the form of assessment methodologies, business scenario models and specific recommendations.
- A project newsletter will be released before the end of February to allow for wider dissemination of the information about the project. The project team has also been working towards establishing a dedicated project website. It is expected to be available at www.localenergy-apec.ru by the end of February 2012.

On-going Projects

4. Prospects for Marine Current Energy Generation in APEC Region (S EWG 23 11A)

- The objectives of the project are within the context of APEC Sustainable/Green Growth agenda, to raise awareness of the benefits of marine energy generation with particular focus to marine current energy, and to compile widely dispersed information on the deployment of marine current generating technologies and to make this information accessible to APEC economies.
- The methodology of this project consists of two major components, including review of marine renewable energy technologies and stocktake of successful deployment models, and two-day conference structured along the lines of the review and stocktake exercise.
- The project steering committee and the lead consultant of the project are now preparing to launch the review and stocktaking exercise, which corresponds to an essential component of the project work plan.
- Project website: www.marineenergy-apec.ru (available in March 2012).

On-going Projects

5. Best Practices in Energy Efficiency and Renewable Energy Technologies in the Industrial Sector in APEC Region (S EWG 19 11A) (Cooperated with EGEE&C)

- The key objective of this project is to develop a report which clearly identifies the examples of successful adoption of new and renewable energy technologies combined with energy efficiency in the APEC industrial sector, the obstacles that prevent the adoption of technologies, and the applicability of lesson learned from previous reports including APEC supported activities.
- The final output will be suggested roadmap for the successful implementation of industrial sector new and renewable energy and energy efficiency system in APEC member economies.
- The project has been approved for nine months, but the contract was prepared and signed with some delays. The PO has applied for an extension till March 31, 2013.

On-going Projects

6. Urban Development Smart Grid Roadmap: Christchurch Recovery Project (EWG 08 2012) (New Zealand lead) (Cooperated with EGEE&C)

- Christchurch, New Zealand has been hit by a series of earthquakes in 2010 and 2011. The resulting damage has required demolition of significant areas of the city. The recovery and rebuilding process will take time, but offers a unique opportunity to establish cutting edge energy efficiency and renewable energy technologies in Christchurch.
- The New Zealand Energy Efficiency and Conservation Authority (EECA) proposes to lead a study that will result in a 'Road Map' for establishing a 'smart electricity grid' in Christchurch, to deliver the maximum social, environmental and economic benefits to the city.
- The recovery of Christchurch represents a remarkable opportunity to provide learning and demonstration value to the APEC Community on integrating smart grid technologies into the rebuilt city.

On-going Projects

7. Research on the Application of Physical Energy Storage Technology to Enhance the Deployment of Renewable Energy in an APEC Low Carbon Town (China lead)

- Energy storage is essential to utilize renewable resources and reduce CO_2 emissions considerably because of the intermittent and uncontrollable availability of renewables. It is also an acceptable method of smoothing power demand, which is a major part of our national energy security and sustainable development.
- With the research and demonstration of energy storage technology, energy consumption of buildings will be reduced by 20%. The technology offers substantial benefits in terms of reducing the need for traditional air conditioning and it allows for the shifting of electricity usage from on-peak to off-peak hours.
- This research will provide a base for policy and the criteria of energy storage system which will contribute to the exploitation of energy storage technology and promote its application in APEC regions.

On-going Projects

8. The Comprehensive Analysis and Research of Key Technologies and Commercial Model of Low Carbon Model Town Applied in Yujiapu CBD (China lead)

- This project will propose a smart energy network system that encompasses the entire circle for sustainable and low-carbon development in Yujiapu financial district, Tianjin city.
- Smart grid (SG) which could achieve deployment and integration of distributed resources such as solar and wind energy and area energy supply network (cooling, heating) have been extensively discussed independently.
- In this study, the Smart Energy Network system proposed will integrate those two systems together in order to promote use of renewable energy and consequently reduce CO_2 emission of entire city.
- The smart energy network makes it possible to collect real-time data from both demand side of energy use and operation status of energy supply side within Yujiapu district, which could substantially support the management staff to achieve an efficient operation.

New Project Proposals for Funding in Session 3/2012 (BMC in-principle approval)

(1) APEC Peer Review on Low-carbon Energy Policies (PRLCE) Phase 2 (Japan) [Approved for funding by BMC, noticed on 6 Dec., 2012]

- The PRLCE responds to the Energy Ministers' instruction from their meeting in Fukui, Japan in 2010; to explore mechanisms to encourage APEC economies to set individual goals and action plans for introducing low-emission power sources.
- As with the APEC Peer Review on Energy Efficiency (PREE), a peer review team comprised of experts on low-carbon energy supply policy from APEC member economies will review goals and policies to promote low-carbon energy supply. The review team will provide recommendations based on this and assist with effective policy making in this area as well as the effective formulation of action plans etc.
- Low-emission power sources include renewable, nuclear and fossil-fuel with carbon capture and storage. The scope of review will be decided depending on the host economy's priorities. Two additional PRLCE's are planned in 2013.

New Project Proposals for Funding in Session 3/2012 (BMC in-principle approval)

(2) APEC Workshop on Best Practices on Financing Renewable Energy (Viet Nam) [Approved for funding by BMC, noticed on 5 Dec., 2012]

- This Project aims at holding an APEC Workshop on Best Practices on Financing Renewable Energy. The Workshop is scheduled to take place in Vietnam in March 2013. The key objectives of the proposed project are to analyze the current situation and best practices on financing renewable energy in the APEC region; present best practices and exchange views of policy-makers, regulators, academia and business representatives on financing renewable energy; and develop recommendations for more effectiveness in renewable energy financing.

New Project Proposals for Funding in Session 3/2012 (BMC in-principle approval)

(3) Promoting Stable and Consistent Renewable Energy Supply by Utilizing Suitable Energy Storage Systems (China)

- The project will provide key findings and recommendations regarding the construction, operation and management of energy storage utilization in three different types of renewable energy generation systems. It will detail suitable technology solutions, outline essential business model parameters, and develop policy recommendations – all aimed at promoting widespread understanding and deployment of renewable energy storage systems that supply affordable, stable, and consistent electricity in APEC region.
- The project will select representative demonstrations integrating energy storage systems in wind farms, solar power generation projects, and distributed energy micro-grids in APEC economies as the test cases. The project will measure and analyze in-depth first-hand data in cooperation with world leading organizations from APEC economies. Also, the project will provide a useful platform for sharing findings and experience and recommendations with all key stakeholders.

New Project Proposals for Funding in Session 3/2012 (BMC in-principle approval)

(4) Operation Technology of Solar Photovoltaic Power Station Roof and Policy Framework (China)

- Central cities of many APEC economies have sufficient space resource for solar photovoltaic power station roof, which is a realization way of APEC low carbon model town. Solar photovoltaic power station roof is an emerging electricity market model that has already proved its efficiency of transforming the electric supply industry into a centralized, producer-controlled network.
- Can this model be an effective solution to the PV stations? Does it require a special policy in combining to the grid? What design a pilot project should follow to introduce solar photovoltaic power station roof to APEC economies where urban space resources are abundant? These are the questions that the project seeks to address through analytical and physical meeting activities.
- Official website and expert database will be established before July 2013. A congress is arranged in Beijing in Aug 2013.

New Project Proposals for Funding in Session 3/2012 (BMC in-principle approval)

(5) Study on Measures to Reduce Energy Intensity in APEC Low Carbon Town (China)

- This project, submitted from Shanghai, China, is intended to quantitatively investigate the measures to reduce energy intensity of economic output in APEC Low Carbon Town (LCT). These measures include establishing low carbon industries, applying low carbon urban layouts, generating low carbon energy, developing low carbon buildings, establishing low carbon transportation and promoting resources recycling.
- The objective of the project is to provide a practical framework for developing LCTs under the context of developing APEC economies in terms of its economic level, energy sources, climatic conditions and investment capabilities.
- The project activities will mainly include: 1) investigation on the effect and effectiveness of the various measures, 2) identification of best practices thereof and their benefits in terms of reducing energy intensity, 3) organization of a workshop to disseminate the practices of the new town of Songhua River Farm in Heilongjiang province, China.

Self-fund Project

2013 APEC Workshop on Geothermal Technology (self-funded, Chinese Taipei)

- EMM9 in 2010 has instructed EWG to continue its assessment of renewable energy options for reducing carbon emissions. Abundant geothermal resources in the APEC region should be developed intensively. Therefore, the objectives of this project are to exchange the information and promote geothermal systems.
- The activities of this workshop include two parts: (1) two days of workshop in Taipei covering exploration, drilling, reservoir engineering, and energy conversion of geothermal systems and (2) one day of by invitation only Tatun volcanic site visit and a visit to related research institute to understand local capabilities and discuss possibilities of collaboration on exploiting geothermal energy.
- It is expected the whole event will take 3 days **from April 23 to April 25, 2013**.

Thank you for your attention!

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EGNRET website: http://www.egnret.ewg.apec.org/