

**APEC Expert Group on  
New and Renewable Energy Technologies**

**Welcome to EGNRET 41**



**Asia-Pacific  
Economic Cooperation  
EGNRET**

**EGNRET 41**

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# Progress/Status of Current EGNRET Projects

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EGNRET Secretariat



Asia-Pacific  
Economic Cooperation

**EGNRET**

# EGNRET Project Update



Status	Projects	Note
Completed	6	1 self-funded project
On-going	17	1 self-funded project; 5 for Session 2, 2013
New CNs submitted for approval for Session 3, 2013	6	Notification Date : 24 Oct, 2013

# Completed Projects: 6



- [C1] Addressing Challenges of AMI Deployment in APEC (EWG 07/2011A) (Chinese Taipei)
- [C2] Stock-take of Electric Vehicle Interface with Electricity and Smart Grids Across APEC Economies and the Potential for Harmonization (EWG 11/2011) (New Zealand)
- [C3] Piloting Smart/micro Grid Projects for Insular and Remote Localities in APEC Economies (S EWG 15 11A) (Russia)
- [C4] Prospects for Marine Current Energy Generation in APEC Region (S EWG 23 11A) (Russia)
- [C5] Best Practices in Energy Efficiency and Renewable Energy Technologies in the Industrial Sector in APEC Region (S EWG 19 11A) (Thailand) (*Cooperated with EGEE&C*)
- [C6] 2013 APEC Workshop on Geothermal Technology (SF EWG 01/2013) (self-funded, Chinese Taipei)

## Currently the EGNRET is implementing 17 projects.

- P1. Urban Development Smart Grid Roadmap: Christchurch Recovery Project (EWG 08 2012) (Cooperated with EGEE&C) (New Zealand)
- P2. 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)
- P.3 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)
- P4. APEC Peer Review on Low-carbon Energy Policies (PRLCE) Phase 2 (EWG 18 2012A) (Japan)
- P.5 APEC Workshop on Best Practices on Financing Renewable Energy (EWG 21 2012A) (Viet Nam)

# On-going Projects: 17



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(Cont'd)

- P.6 Promoting Stable and Consistent Renewable Energy Supply by Utilizing Suitable Energy Storage Systems (EWG 22 2012A) (China)**
- P.7 Operation Technology of Solar Photovoltaic Power Station Roof and Policy Framework (EWG 24 2012A) (China)**
- P.8 Study on Measures to Reduce Energy Intensity in APEC Low Carbon Town (EWG 23/2012A) (China)**
- p.9 APEC Smart DC Community Power Opportunity Assessment (Thailand)**  
*(Approval in Session 3, 2012)*
- p.10 APEC Low Carbon Model Town Capacity Building Development (China)**  
*(Approval in Session 3, 2012)*
- p.11 APEC Low Carbon Town Development with District Energy System (China)**  
*(Approval in Session 3, 2012)*
- p.12 APEC Low Carbon Town Plan and Design Contest (self-funded, China)**

# On-going Projects: 17



Asia-Pacific  
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(Cont'd)

- P13. APEC Low Carbon Model Town (LCMT) Promotion through Eco-Point Program (LCMT-EPP) (EWG 10/2013A) (Thailand) *(Session 2, 2013)*
- P14. APEC Low-Carbon Model Town Development Model and Tool Kit Study (LCMT-DMTK) (EWG 13/2013A) (China) *(Session 2, 2013)*
- P15. APEC Photovoltaic Application Roadmap and Model Study (PVARM) (EWG 11/2013A) (China) *(Session 2, 2013)*
- P16. APEC Workshop on Promoting the Development of Wind Energy (EWG 14/2013A) (Viet Nam) *(Session 2, 2013)*
- P17. APEC Photovoltaic Communication and Cooperation Platform (PVCCP) (EWG 16/2013A) (China) *(Session 2, 2013)*

# New Concept Notes Submitted for Session 3, 2013 (6 projects)



- [NRE133-1] Capacity building for Installers and System Designers for Solar PV Rooftop Installations (USA)
- [NRE133-2] APEC Conference on Facilitating the Solar Supply Chain (Viet Nam)
- [NRE133-3] APEC Low Carbon Model Town Building Index System Research (China)
- [NRE133-4] APEC Low-Carbon Model Town Energy Management System Development and Application Research (China)
- [NRE133-5] APEC Low-Carbon Model Town Heating System Application Model and Best Practices (China)
- [NRE133-6] District Energy Systems Development Roadmap Study in APEC Economies (China)

**Notification Date : 4 Nov, 2013**



# Project Deadlines for Session 3, 2013



Submission of Concept notes (standard projects) to APEC Secretariat	Sep. 4, 2013
BMC in-principle approval	Nov. 4, 2013
Submission of <u>Full proposals</u> to APEC Secretariat	Nov. 15, 2013
	Nov. 25, 2013

**\* Final Notification Date: 6 and 23 December, 2013**



## Summary of 29 EGNRET Projects

## C1. Addressing Challenges of AMI Deployment in APEC (EWG 07/2011A) (Chinese Taipei)

- 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.
- 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>

## C1. Addressing Challenges of AMI Deployment in APEC (EWG 07/2011A) (Chinese Taipei)

- Major findings of this project

- (1) Principles of AMI deployment: Major criteria such as economic efficiency, societal equity, sustainable development and security have been defined, and variables including standardization, interoperability, timing and cost-benefit analysis were also identified.
- (2) Guidelines for APEC economies: The process of improving public awareness, proposing comprehensive plan, and developing applicable demand control program are suggested. Afterwards, support schemes such as policy, privacy, security and cost-benefit analysis are needed to be carried out.

## C1. Addressing Challenges of AMI Deployment in APEC (EWG 07/2011A) (Chinese Taipei)

- Major findings of this project (*cont'd*)

(3) Transition from AMI to smart grids: AMI forms the fundamental networking for power grid systems, and enables the increment of renewable energy adoption and efficiency improvement.

(4) More considerations pop out while the power systems are turned into smart grids, such as scalability, interoperability, and customer services. All the issues are dependent, and require more efforts to maintain the integrity and functionality of smart grids.

## **C2. Stock-take of Electric Vehicle Interface with Electricity and Smart Grids Across APEC Economies and the Potential for Harmonization (EWG 11/2011) (New Zealand)**

- 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.

## C2. Stock-take of Electric Vehicle Interface with Electricity and Smart Grids Across APEC Economies and the Potential for Harmonization (EWG 11/2011) (New Zealand)

### • Major findings of this project

- 1) All APEC Economies are still at a relatively early stage in their PEV market development.
- 2) Detailed knowledge of PEV connectivity conditions across the stakeholder group was limited and gaps remained in the knowledge base after the completion of the survey despite supplemental desktop research. These gaps were attributed to the combined effects of early market development (meaning that stakeholders are still on a learning curve) plus inefficiencies in the survey process itself.

## C2. Stock-take of Electric Vehicle Interface with Electricity and Smart Grids Across APEC Economies and the Potential for Harmonization (EWG 11/2011) (New Zealand)

- Major findings of this project (*cont'd*)
  - 3) Barriers to trade from PEV connectivity conditions were identified in a number of areas such as charging interfaces, grid network interfaces, electrical safety regulations and energy market arrangements. However other barriers to trade such as vehicle homologation requirements and government incentives and other policies were also identified.
  - 4) Some barriers to trade of PEVs throughout APEC were unlikely to be resolved through a process of harmonization, due to the established and entrenched nature of some standards and regulations. Examples in this regard include standard grid configurations and certain electrical safety regulations and vehicle homologation requirements.



## C3. Piloting Smart/micro Grid Projects for Insular and Remote Localities in APEC Economies (S EWG 15 11A) (Russia)

- 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 was released in February 2012 to allow for wider dissemination of the information about the project. The project team also established a dedicated project website at [www.localenergy-apec.ru](http://www.localenergy-apec.ru), and the final report can be found at [http://publications.apec.org/publication-detail.php?pub\\_id=1359](http://publications.apec.org/publication-detail.php?pub_id=1359)

## C3. Piloting Smart/micro Grid Projects for Insular and Remote Localities in APEC Economies (S EWG 15 11A) (Russia)

### • Major findings of this project

- 1) Remote microgrids indeed appear as a standalone, ultimate case of decentralised electricity and a way towards energy independence. Many of these microgrids are designed to reduce diesel fuel consumption by integration of solar photovoltaics, a technology that is the primary driver for remote microgrids over the next 6 years.
- 2) Pike Research forecasts that the global remote microgrid market will expand from 349 MW of generation capacity in 2011 to over 1.1 GW by 2017, an amount that equals or perhaps even surpasses all other microgrid segments combined that are in the current planning stages or have already been deployed.

## C3. Piloting Smart/micro Grid Projects for Insular and Remote Localities in APEC Economies (S EWG 15 11A) (Russia)

- Major findings of this project (*cont'd*)

- 3) The challenge is to find business models that would be commercially viable and could be configured to meet specific requirements of individual economies and communities. APEC which brings together developed and developing economies and ensures the presence of both government and businesses at the discussion table, is well positioned to effectively address this task.
- 4) APEC EWG should indeed re-introduce microgrid within the ESCI as a core paradigm to build smart communities in a decentralized energy environment. APEC makes distinction for its flexible, cost-efficient capacity building projects, and the members should utilize APEC approach to foster training and raising awareness of microgrid project and technology development.

## C4. Prospects for Marine Current Energy Generation in APEC Region (S EWG 23 11A) (Russia)

- 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](http://www.marineenergy-apec.ru)

## C4. Prospects for Marine Current Energy Generation in APEC Region (S EWG 23 11A) (Russia)

### • Major findings of this project

- The project experienced operators/developers of the renewable energy solutions (marine and wind energy) will benefit from exposure of their success stories to an APEC-wide audience comprising dynamic developing and developed economies;
- Private sector stakeholders/investors (both in the energy and financial sector) will learn about investment opportunities with respect to energy efficient technologies and products; it's important to involve oil & gas companies because there is currently little experience in maintenance of offshore facilities and costly infrastructures from the oil industry (ships, platform equipment) have to be used;

## C4. Prospects for Marine Current Energy Generation in APEC Region (S EWG 23 11A) (Russia)

- **Major findings of this project (*cont'd*)**
- Regional Equipment Manufacturers and research & development entities will benefit from exploring wider perspective for commercial development and operation of their marine energy related technologies and products;
- Policymakers (in the ministries of energy, economic development and the environment, investment promotion agencies firstly in developing APEC economies) will receive a valuable input for setting up a conducive policy to enable innovative energy solutions to enter the market; in particular, they will learn how public intervention may help sharing the risks between private and public stakeholders.
- Indirectly, in case that the project encourages uptake of marine energy technologies, energy consumers and environmental groups will benefit from a greener and cost-effective energy supply.

## **C5. Best Practices in Energy Efficiency and Renewable Energy Technologies in the Industrial Sector in APEC Region (S EWG 19 11A) (Thailand) (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.

## **C5. Best Practices in Energy Efficiency and Renewable Energy Technologies in the Industrial Sector in APEC Region (S EWG 19 11A) (Thailand) (Cooperated with EGEE&C)**

- **Major findings of this project**

- The main outcome of the project is 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 leaders and citizens in APEC economies who will take the information developed in this project to develop clean renewable energy and energy efficiency based systems in their economies that will directly improve their local environment based on industrial sector development. .



## **C6. 2013 APEC Workshop on Geothermal Technology (SF EWG 01/2013) (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.
- The workshop was held 3 days from June 25 to 27, 2013 at NTUH International Convention Center in Taipei.

## C6. 2013 APEC Workshop on Geothermal Technology (SF EWG 01/2013) (self-funded, Chinese Taipei)

- **Major findings of this project**
- The APEC Workshop on Geothermal Energy Development has invited experts and industry heavyweights from the US, Japan and New Zealand to discuss the green energy's future trends and development
- Topics are to include the current status of geothermal energy, development policies and strategies, and an overview of the most advanced geothermal technologies
- The workshop serves as a pivotal step in gathering international capacities and in providing surging momentum in geothermal development.

## **P1. 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.

## P2. Research on the Application of Physical Energy Storage Technology to Enhance the Deployment of Renewable Energy in an APEC Low Carbon Town (China)

- Energy storage is essential to utilize renewable resources and reduce CO<sub>2</sub> 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.

## **P3. The Comprehensive Analysis and Research of Key Technologies and Commercial Model of Low Carbon Model Town Applied in Yujiapu CBD (China)**

- 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<sub>2</sub> 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.

## **P4. APEC Peer Review on Low-carbon Energy Policies (PRLCE) Phase 2 (EWG 18 2012A) (Japan) (*Approval in Session 3, 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.

## **P5. APEC Workshop on Best Practices on Financing Renewable Energy (EWG 21 2012A) (Viet Nam) (*Approval in Session 3, 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.

## P6. Promoting Stable and Consistent Renewable Energy Supply by Utilizing Suitable Energy Storage Systems (EWG 22 2012A) (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.



## P7. Operation Technology of Solar Photovoltaic Power Station Roof and Policy Framework (EWG 24 2012A) (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.

## **P8. Study on Measures to Reduce Energy Intensity in APEC Low Carbon Town (EWG 23/2012A) (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.

## **P9. APEC Smart DC Community Power Opportunity Assessment (Thailand) (Approval in Session 3, 2012)**

- Smart direct current (DC) community power systems have the capability to provide energy services at the community level at a reduced cost and higher reliability than conventional fossil fuel based microgrid systems. Such systems are particularly suited for the rural areas of developing APEC member economies that often lack grid connected electrical service.
- Smart DC power systems link together electricity produced from renewable energy systems (photovoltaic (PV), wind, biomass, or small hydro) and efficient DC appliances including electric vehicles (EVs) without the need for costly conversion of the power from DC to AC via an inverter which is typically utilized in fossil energy based microgrids. This project will include a report which identifies the current DC community power landscape and opportunities in the APEC region and a project workshop which will bring representatives from the research community, industry, and government officials in the APEC region to help develop an overall roadmap for smart DC community power systems development in the APEC region.

## **P10. APEC Low Carbon Model Town Capacity Building Development (China) (Approval in Session 3, 2012)**

- Smart direct current (DC) community power systems have the capability to provide energy services at the community level at a reduced cost and higher reliability than conventional fossil fuel based microgrid systems. Such systems are particularly suited for the rural areas of developing APEC member economies that often lack grid connected electrical service.
- Smart DC power systems link together electricity produced from renewable energy systems (photovoltaic (PV), wind, biomass, or small hydro) and efficient DC appliances including electric vehicles (EVs) without the need for costly conversion of the power from DC to AC via an inverter which is typically utilized in fossil energy based microgrids. This project will include a report which identifies the current DC community power landscape and opportunities in the APEC region and a project workshop which will bring representatives from the research community, industry, and government officials in the APEC region to help develop an overall roadmap for smart DC community power systems development in the APEC region.

## **P11. Promote APEC Low Carbon Town Development with District Energy System (China)**

- This proposed project is designed to establish a framework of District Energy System with Multiple Forms of Supply in the low-carbon town, including CCHP (combined cooling, heating and power), roof solar energy and water source heat pump. The low-carbon town here will be the efficient and sustainable stepped utilization model of planned energy resources as well as diversified and clean energy utilization structure, with low carbon emission and the principle of scientific energy using, comprehensive energy using and systematic planning.
- With enormous potential in terms of energy intensity reduction and CO<sub>2</sub> emission, it is beneficial to assess energy policies of APEC member economies and achieve the goal of APEC's meeting.

## **P12. APEC Low Carbon Town Plan and Design Contest (self-funded, China)**

- To promote the concept of low-carbon towns, enhance the public awareness of low-carbon buildings, demonstrate the effectiveness of green building design, share knowledge on low-carbon town design, the organizer will hold an international contest on low-carbon building and towns design for selected demonstrative buildings and towns in China. The winner of the contest will get the contract for the projects. The organizer will assist the winner to start business in China. The contest will also align with other international organizations like EU, World Energy Council, IEA and Energy Charter.
- This contest is a process of exploring and sharing knowledge of energy-efficient buildings and low-carbon towns. Contest will be held within different groups: college students, professionals and the public. The project will consist of three phases: (1) May 2013, contest rules to compose and start to invite teams (2) Jul 2013, team start design process with support from the organizer, (3) Oct 2014, board members to choose outstanding teams and award will be announced.

## P13. APEC Low Carbon Model Town (LCMT) Promotion through Eco-Point Program (LCMT-EPP) (Thailand)

- The project will develop a guideline (including the identification of goal and scope definition, certification criteria, an institutional framework, short- and long-term benefits) of an eco-point program for supporting the implementation of low carbon measures previously proposed in the APEC projects. It will also build up an Eco-Point Program (EPP) Forum which is an on-line networking system for sharing experiences and knowledge on low carbon technologies and society among the APEC member economies.
- A roadmap for the guideline implementation will be developed using Samui Island as a case. Planned project activities include the guideline, roadmap and EPP Forum development, public consultation via the EPP Forum, meetings and seminars. The project will be carried out over 1 year period from May 2013 to April 2014 in Thailand. Nonetheless, the EPP Forum will broaden the physical boundary of project results to be capable for wide applications in APEC member economies.

## P14. APEC Low-Carbon Model Town Development Model and Tool Kit Study (LCMT-DMTK) (China)

- The APEC economies have already possessed a great number of technologies, plans and models which apply to the Low-Carbon Model Town (LCMT), and create huge market at the same time. How to develop large scale LCMT in a short time window efficiently and properly is a big challenge to APEC member economies as a whole.
- APEC Low-Carbon Model Town Development Model and Tool Kit Study (LCMT-DMTK) is aimed to provide recommendation and suggestion regarding: 1) Procedure that help to improve development efficiency, 2) Solution, from existing project, research and other industry, 3) Tool kits, especially feasibility study and planning, etc., on the basis of China-EU cooperation, and the Solar Decathlon competition held in China in August 2013. The deliverable achievement of this project will be a published research report, and one symposium in China in 2014.



## P15. APEC Photovoltaic Application Roadmap and Model Study (PVARM) (China)

- The Photovoltaic Application Roadmap and Model Study (PVARM) project responds to the 20th APEC Economic Leaders' Meeting and 10th APEC Ministerial Meeting in Russia in 2012; to explore potential field and model for large scale application of Photovoltaic in future. The key activities are:
  - 1) to carry out case study and SWOT analysis to typical PV project, including casualty and losses, in different area and environment,
  - 2) to bring suggestion of possible PV application roadmap for APEC economies' reference,
  - 3) to compare and discuss the advantages and weakness of different PV development models, including large size ground-mounted power plant, industrial and commercial project, residential project, and application in agriculture, transportation, etc.
- A workshop will be held in China as APEC chair in 2014 and a written report will be shared in EWG website.

## P16. APEC Workshop on Promoting the Development of Wind Energy (Viet Nam)

- In the context of significant industrial and population growth, increasing shortages of conventional energy and sharp fluctuation of price, renewable energy, including wind energy appears to be an efficient and sustainable alternative.
- The APEC Workshop on Facilitating the Development of Wind Energy aims to:
  - (i) identify obstacles for a wide application of wind energy;
  - (ii) exchange and discuss current strategies, policies and technologies in the APEC region which also creates a platform for member economies, especially developing ones to build up capacity for government officials in the process of policy making and implementation of wind energy projects;
  - (iii) explore further cooperation opportunities among APEC member economies, with the ultimate goal of ensuring energy security for the sake of APEC's sustainable growth

## P17. APEC Photovoltaic Communication and Cooperation Platform (PVCCP) (China)

- The Photovoltaic Communication and Cooperation Platform (PVCCP) project is:
  - 1) To establish a PV System Life-cycling Risk Management Scheme, to identify and control potential risks of different period including planning, design, manufacturing, construction, maintenance, etc
  - 2) To develop tool kits to carry out risk analysis and provide compatible and consistent evaluation systems, standards, evaluation methods, and database,
  - 3) To provide support to EGNRET and related stakeholders who wish to evaluate the risk and quality of specific PV project,
  - 4) To provide content and tool support concerning PV to the Knowledge Sharing Platform (KSP) of Energy Smart Communities Initiative (ESCI). A workshop will be organized in China in 2014

## [NRE133-1] Capacity building for Installers and System Designers for Solar PV Rooftop Installations (USA)

- This Project is proposed to overcome important barriers in the form of lack of or inadequate competency of rooftop solar PV installers and system designers, through appropriate training and certification programs.
- The training will focus on aspects insufficiently addressed and often overlooked: selection of appropriate materials and products, proper installation practices, rooftop fire safety hazards during installation and overall safety of installation during operation, wiring and connection to the grid.
- The long-term objective of this project is therefore to increase the performance/output of rooftop solar PV systems and facilitate connection to the grid for rooftop solar PV systems, as a means to support APEC economies' efforts in increasing the share of electricity from renewable energy sources

## [NRE133-2] APEC Conference on Facilitating the Solar Supply Chain (Viet Nam)

- This project proposes to hold a 2-day APEC Conference on Facilitating the Solar Supply Chain in Viet Nam in the 2nd quarter of 2014. The main objectives of the projects are:
  1. To update information on trends of solar panel source and possible changes in demographics on supply chains in the future;
  2. To create a platform for APEC member economies to discuss current supply chain management procedures and networks in the solar industry;
  3. To discuss opportunities and challenges in the solar equipment industry, with possible recommendations to tackle with such challenges;
  4. To explore potential cooperation opportunities among APEC member economies in facilitating the solar supply chain.

## [NRE133-3] APEC Low Carbon Model Town Building Index System Research (China)

- This project proposes to hold a 2-day APEC Conference on Facilitating the Solar Supply Chain in Viet Nam in the 2nd quarter of 2014. The main objectives of the projects are:
  1. To update information on trends of solar panel source and possible changes in demographics on supply chains in the future;
  2. To create a platform for APEC member economies to discuss current supply chain management procedures and networks in the solar industry;
  3. To discuss opportunities and challenges in the solar equipment industry, with possible recommendations to tackle with such challenges;
  4. To explore potential cooperation opportunities among APEC member economies in facilitating the solar supply chain.

## [NRE133-4] APEC Low-Carbon Model Town Energy Management System Development and Application Research (China)

- APEC Low Carbon Model Town (LCMT) related projects have provided lots of valuable reference information concerning policy, model and best practices to APEC member economies. Energy Management System (EMS) is an important tool and approach to push forward LCMT
- The LCMT-EMSDA project's goals including:
  - 1) Briefly review the latest development, technology, solution and research concerning EMS in APEC region.
  - 2) Analysis the advantages and potential risks or weakness of EMS application.
  - 3) Summary the proper procedure and process, key points to develop EMS.
  - 4) Best practices of different EMS development and application, including residential house, building, renewable energy power plant, harbour, etc.
  - 5) A final report will be published and special workshop will be organized as part of APEC China year 2014.

# New Concept Notes Submitted for Session 3, 2013 (6 projects)



## [NRE133-5] APEC Low-Carbon Model Town Heating System Application Model and Best Practices (China)

- The central and distributed heating system is an important component of energy system in Low Carbon Model Town (LCMT). Poor planning, design, operation and maintenance of Heating System would not only waste lots of energy and money, but could also cause serious safety risk and pollution to the city and wide region around.
- The APEC Low-Carbon Model Town Heating System Application Model and Best Practices (LCMT-HSAM) project is aimed to:
  - 1) Summarize the latest development of research, product and solution of different economic heating system.
  - 2) Analysis best practices, advantage and weakness of different heating system.
  - 3) Provide application model to help related stakeholders to choose or analysis different heating system.
  - 4) Organize a workshop in APEC China year 2014 to share LCMT-HSAM project outputs and exchange knowledge and experiences among participants. A written report will be prepared as part of workshop materials.



# New Concept Notes Submitted for Session 3, 2013 (6 projects)



## [NRE133-6] District Energy Systems Development Roadmap Study in APEC Economies (China)


- It is proved in many economies that District Energy System (DES) is a cost-effective measure to increase energy efficiency and reduce carbon emission. This project aims to share DES techniques and practice experiences to all APEC economies. The following activities are planned:
  1. Case studies including site visits and interviews, seminars, and campaigns shall be organized to study a number of selected DES cases in and around APEC economies, led by an expert team. A comprehensive research report shall be created to summarize and categorize the case studies.
  2. A set of practice guidelines shall be developed by the expert team to specify the techniques and protocols of certain DES systems.
  3. An international DES symposium shall be organized to involve stakeholders from main APEC member economies for technique and policy communication to share the research fruits.
- The guideline development and symposium shall both take place in China in 2014

# Thank you for your attention!



**EGNRET website: <http://www.egnret.ewg.apec.org/>**

APEC Energy Working Group  
EXPERT GROUP ON NEW AND RENEWABLE ENERGY TECHNOLOGIES



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The EGNRET has been established by - and reports - to the APEC Energy Working Group (EWG)

The mission of the EGNRET is to facilitate an increase in the use of new and renewable energy technologies in the APEC region



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