

Thailand New Project Proposal

EGNRET -39
Shanghai, China
December 11-12, 2012

APEC Smart DC Community Power Opportunity Assessment

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.

APEC Smart DC Community Power Opportunity Assessment: Project activities

- 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.
- Cost: Total \$120,000 APEC Support fund: \$95,000
- Project start date: March 2013 Project end date: December 2012

APEC Concept Note

*Please submit through APEC Secretariat Program Director. Concept Notes of more than **3 pages** (including title page) or incomplete submissions will not be considered.*

Project Title:	APEC Smart DC Community Power Opportunity Assessment
Source of funds (Select one):	<input type="checkbox"/> Operational Account <input type="checkbox"/> TILF Special Account <input checked="" type="checkbox"/> APEC Support Fund
Committee / WG / Sub-fora / Task-force:	Energy Working Group/Expert Group on New and Renewable Energy Technologies
Proposing APEC economy:	Thailand
Co-sponsoring economies:	USA
Expected start date:	March 2013
Expected completion date:	December 2014
Project summary: Describe the project in under 150 words. Your summary should include the project topic, planned activities, timing and location: <i>(Summary must be no longer than the box provided. Cover sheet must fit on one page)</i>	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.
Total cost of proposal: (APEC funding + self-funding) USD 120,000	Total amount being sought from APEC (USD): 95,000 By category: <i>Travel:</i> 45,000 <i>Labor costs:</i> 50,000 <i>Hosting:</i> <i>Publication & distribution:</i> <i>Other:</i>

Project Overseer Information and Declaration:

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As Project Overseer and on behalf of the above said Organization, I declare that this submission was prepared in accordance with the **Guidebook on APEC Projects** and any ensuing project will comply with said Guidebook. Failure to do so may result in the BMC denying or revoking funding and/or project approval. I understand that any funds approved are granted on the basis of the information in the document's budget table, in the case of any inconsistencies within the document.

Name of Project Overseer

Date:

Project Synopsis

1. **Relevance:** Why should APEC undertake this project? What problem or opportunity will the project address and why is it important?

Demand for electricity is growing across the APEC region. Community DC power systems coupled small scale renewable can play an important role in meeting this demand while supporting sustainable economic development, particularly in rural areas. Information that can be shared between the developed and developing APEC economies and ensure that community DC power systems are developed to their full potential and take advantage of new smart grid technologies to maximize their efficiency while lowering their overall cost.

2. **Objectives:** Describe the 2-3 key objectives of the project. (e.g., to... create a framework...; ensure participants will be able to...; share experiences...; enhance understanding...; develop recommendations...; build interest...; revise strategies... etc.)

This project will support a research report which identifies the current DC community power landscape and opportunities in the APEC region and a workshop to be held along-side an APEC Expert Group on New and Renewable Energy Technologies (EGNRET) meeting that would bring together leading researchers, private sector representatives and government representatives from APEC member economies. The workshop will be targeted at both the presentation of best practices and the definition of the next steps forward in the development of an overall roadmap for smart DC community power systems development in the APEC region.

3. **Alignment:** Describe how the project will help achieve APEC's key priorities and meet your forum's work-plan or medium-term plan.

This project proposal aligns exceedingly well with both EWG and APEC-wide priorities. This project directly supports the implementation of cost effective energy efficiency technologies that was supported in the Manila Action in 1996 with a call for clean technologies that promote sustainable development. It also aligns directly with the APEC Leader's key ECOTECH priorities of Climate Change, Energy Security and Clean Development. The project also directly supports the EWG 2011 Work Plan by promoting sustainable growth combined with reduced energy intensity.

4. **Methodology:** How do you plan to implement the project? In this section, address:

- **Timeline:** Project timelines and dates for key activities and deliverables

The project will be carried out in the following 5 steps:

1 (one month after project approval) development RFP for consultant report on current DC community power landscape and opportunities in the APEC region

2. (fourteen months after project approval) Complete consultant report after review by APEC EGNRET representatives

3. (sixteen months after project approval) Plan and organize the workshop. Thailand will make arrangements for the workshop that will include the following activities:

 Venue identification. Identify the venue to correspond with a planned EGNRET meeting.

 Develop Workshop Agenda. Thailand will develop an initial agenda and submit it for review by representatives from other APEC economies.

 Identify Appropriate Speakers. Chairs and expert chosen from both the public and private sector.

4. (twenty months after project approval) *Conduct the Workshop*. The workshop will be conducted over a 2 day period with the following schedule of activities:

 Day 1: Presentations by invited speakers

 Day 2: Develop an overall roadmap for smart DC community power systems development in the APEC region.

5. (twenty-one months after project approval) Follow up the workshop. Relevant papers and

overheads will be compiled and published as a Workshop Proceedings and framework on the way forward will be developed.

- **Stakeholders: Beneficiaries and stakeholders (APEC & non-APEC) and how they will be engaged**

Beneficiaries and stakeholders include all elements of civil society since all sectors will benefit from the development of smart DC community power systems that could occur as a result of the project. Invited participants from both the public and private sectors will include representatives from APEC economies who have experience in community power system development.

- **Previous projects/activities: If and how this proposal builds on the findings or lessons learned from previous projects/activities, while avoiding duplication**

The project will build on the recent related APEC projects by China on “Promotion of Energy Efficiency and Renewable Energy in Low Carbon Model Town of APEC through Distributed Energy Source – Identification of Potential, Challenges and Solutions” and Russia on “Piloting smart/micro grid projects for insular and remote localities in APEC economies” and Vietnam on “Small Hydro and Renewables Grid Integration Workshop”.

- **Communication: How you plan to communicate the results or benefits of this project to others**

The workshop is meant to share the outcomes of this project among APEC member economies in conjunction with the EWG/EGNRET meeting. Materials from the workshop will be made available on the EGNRET website.