

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:	Promotion of Energy Efficiency and Renewable Energy in Low Carbon Model Town of APEC through Distributed Energy Source – Identification of Potential, Challenges and Solutions
Source of funds (Select one): <input type="checkbox"/> Operational Account <input type="checkbox"/> TILF Special Account <input checked="" type="checkbox"/> <u>APEC Support Fund</u>	
Committee / WG / Sub-fora / Task-force:	EWG,EGNRET, LCMT
Proposing APEC economy:	China
Co-sponsoring economies:	USA, Chinese Taipei, Hong Kong China, Japan
Expected start date:	Dec 2011
Expected completion date:	Dec 2012
Project summary: Describe the project in under 150 words. Your summary should include the project topic, planned activities, timing and location: <i>(Summary <u>must be</u> no longer than the box provided. Cover sheet must fit on one page)</i>	<p>The project aims to study and identify the potential, challenges and solutions for application of distributed energy sources in promoting energy efficiency and renewable energy in low carbon model towns of APEC. This responds directly to the declaration by the Energy Ministers in Ninth meeting of APEC Energy Ministers at Fukui Japan in promoting energy efficiency and renewable energy technologies, and in implementing APEC low-carbon model town project.</p> <p>The project will start with a study (from Dec 2011 to September 2012) on the government policy required to support the distributed energy. The technical and economical barriers which may hinder the development of distributed energy and their possible solution will be discussed. The application of distributed energy and its potential benefit to APEC economies will be studied. Following the study, a workshop will be organised in October at Beijing, China to share the study finding and a field visit will also be organised to demonstrate some established distributed energy sites. Final report will be issued in Dec 2012.</p>
Total cost of proposal: (APEC funding + self-funding) USD 180,000	Total amount being sought from APEC (USD): 80,000 By category: <i>Travel (Eligible Speakers):\$27,000 (air tickets /accommodation)</i> <i>Travel (Eligible Participants) \$3,000(air tickets)</i> <i>Labour costs:\$ 50,000</i> <i>Hosting: self funded Publication & distribution: self funded Other:</i>

Project Proponent Information and Declaration:

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I declare that this submission has been prepared in line with the **Guidebook on APEC Projects**. If approved, I agree to develop the project in line with APEC project requirements.

XU Qinhua

Name of Project Proponent

Date: Monday, 18 April 2011

Project Synopsis

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

Electricity production in all the APEC fora relies heavily on central power plants. However, there is great energy loss in the transmission of energy from central power plants to the end users and the loss can be as high as 5 to 8 %. The use of distributed energy, putting the power production plant close to the end users, will effectively eliminate all such transmission loss and greatly enhance the overall energy efficiency. The division of central power plants to a number of smaller distributed energy located close to end users can also much reduce the possible impact of natural disaster to the power supply and thus greatly enhance regional energy security. Development of on-site renewable energy source as well as the smart grid technology is also the foundation of setting up distributed energy sources.

At the 9 th APEC Energy Ministers meeting, held in Fukui, Japan, the Ministers discussed and made a declaration on Low carbon paths to Energy Security : Cooperative Energy Solutions for a Sustainable APEC and emphasised that such solution should be integral to the APEC Growth Strategy. Among the messages the Ministers noted improving energy efficiency is one of the quickest, greenest and most cost effective ways to address energy security, economic growth and climate challenges at the same time, and instructed the EWG to continue its assessment of renewable energy options.

Introduction of low-carbon technologies in city planning to boost energy efficiency and reduce fossil energy use is vital to manage growing energy consumption in urban areas, the Ministers have therefore launched an APEC Low-carbon Model Town project to present successful models for coordinated usage of advanced low-carbon technologies.

The distributed energy source, which reduces the amount of energy lost in transmitting electricity because the electricity is generated near to where it is used, greatly improve the energy efficiency in power transmission and is considered one of the 4 most effective means to improve energy efficiency. renewable energy. e.g. building integrated solar panels and small wind turbines are also popular sources of distributed energy and thus the adoption of distributed energy will effectively promote the use of renewable energy as well.

Most APEC fora have been going through rapid urbanisation and relied heavily on central power stations in supporting the power demand in the cities, especially for developing economies like China, Indonesia, Malaysia, Thailand. Any interruption to the operation of this central power station, by natural disaster or other causes, may lead to severe impact to the energy security of the cities. The use of distributed energy will effectively reduce the possible damages arising from disruption in the operation of the central power plants. Therefore, in planning of low-carbon model towns, due consideration should be given in the application of distributed energy for the objective of improving energy efficiency, promoting renewable energy and enhancing energy security.

This proposed project aims to study and identify the potential, challenges and solutions for application of distributed energy sources in promoting energy efficiency and renewable energy in low carbon model towns of APEC, and thus is particularly relevant to the declaration made by the Energy Ministers at the EMM9.

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.)

The project seeks to identify the potential of the distributed energy in improving the energy efficiency and promoting renewable energy sources in the low carbon model towns. The current challenges and their solutions, in various perspectives including government policies, economic viability as well as technological development modelling, will be studied. The ultimate objective is to develop and formulate a model and the best practices for application of distributed energy in new cities as well as existing cities under expansion and reconstruction needs.

The issues, the formulated model as well as the best practices to be adopted will then be shared in a forum for all APEC fora.

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

At the 2010 Yokohama meeting, APEC leaders described the APEC growth strategy should achieve five attributes, namely, balanced, inclusive, sustainable, innovative and secure growth. The proposed project is directly related to two of the attributes, sustainable and innovative. In sustainable growth, the adoption of distributed energy will greatly help to improve energy efficiency and promote application of new cities and cities under reconstruction. Noting the rapid urbanisation of many APEC fora, how to achieve a sustainable growth in an innovative way is a great challenge to many APEC economies. The adoption of distributed energy in the urbanisation is certainly one of the innovative means to achieve sustainable growth as directed by the APEC leaders. China, being one of the APEC economies facing most rapid urbanisation challenges, has actively participated in the low-carbon model city project directed by the Energy Ministers and has one of its major cities "Tianjin" included in the low-carbon town study. The study of distributed energy and the low-carbon town project will have strong synergy effect and the study result of both projects will benefit each other and enable them contributing more to the sustainable and innovative growth of APEC.

For this APEC Support Fund application, the study on the distributed energy will enable most of the developing APEC economies like China, Malaysia, Thailand in making the full potential of distributed energy in the rapid urbanisation process so that the new cities they are going to develop can achieve more sustainable growth in an innovative way. The best practice formulated in the study will be shared among all the APEC economies for them in a workshop to facilitate their future application of distributed energy in their new towns or town under reconstruction/expansion to improve energy efficiency and promotion of renewable energy.

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

- **Timeline: Project timelines and dates for key activities and deliverables**
 - Literature survey on the status, planning and policy of distributed energy in the world with emphasis on APEC economies (Dec 2011 to Feb 2012)
 - Focus group study involving major stakeholders such as policy makers, city planners, experts and entrepreneurs to seek ideas and views on the models and best practices to be adopted in promoting distributed energy in APEC economies, with an APEC economy taken as an example to demonstrate the applicability of the model and best practice in APEC fora. (March 2012 to May 2012)
 - Expert review to prepare and circulate report to experts in APEC for comment/discussion. (June 2012 and July 2012)
 - Report finalisation for report fine-tuning, then submitting final report to APEC EWG for review. (August and September, 2012).
 - Following the study, a workshop will be organised in October at Beijing, China to share the study finding and a field visit will also be organised to demonstrate some established distributed energy sites.
 - Final report will then be issued in Dec 2012 and publish report on the website
- **Stakeholders: Beneficiaries and stakeholders (APEC & non-APEC) and how they will be engaged**

Since the purpose of the project is developing distributed energy in the urbanisation process e.g. establishment of new towns and reconstruction/expansion of existing towns so as to achieve energy efficiency and wider application of renewable energy, policy makers and government officials responsible for energy policy in the developing economies are the target beneficiaries. Relevant beneficiaries and stakeholders are those government officials responsible for town planning and construction. The study report and the workshop will help to disseminate the study finding to those beneficiaries.
- **Previous projects/activities: If and how this proposal builds on the findings or lessons learned from previous projects/activities, while avoiding duplication**
- **Communication: How you plan to communicate the results or benefits of this project to others**

The workshop and final report will be advertised on the APEC, EWG and this applied project websites, through press releases and by targeting stakeholders in all APEC economies. Both CDs and hard copies of the workshop presentations and final project report will be prepared and circulated to each APEC economy and to interested stakeholders. If requested, additional workshops will be conducted after conclusion of the project.