Asia Pacific Energy Research Centre (APERC)

Report on APERC Activities

the 45th Meeting of

the APEC energy working group (EWG-45)

KOH SAMUI, THAILAND

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**CONTENTS**

**Page**

**Ⅰ progress in on-GOING WORK　 3**

**Ⅱ Ｎｅｗ　workpLaN 11**

**Ⅲ Researchers 　 13**

**Ⅳ　Revenue and expenses 　　 14**

**Ⅰ　PROGRESS IN ON-GOING WORK**

## apec energy DEMAND AND SUPPLY OUTLOOK 5th EDITION

## BACKGROUND

APERC has previously produced four APEC Energy Demand and Supply Outlooks, and the 5th Edition was published in February of this year. The Outlook provides a long term (2010-2035) perspective on APEC energy demand and supply. It consists of two volumes. Volume 1 discusses the APEC- wide situation sector-by-sector. Volume 2 has sections discussing each APEC economy.

**ObjectiveS**

The key objectives of the APEC Energy Demand and Supply Outlook are to help facilitate APEC cooperation by providing policymakers with

1. A useful reference work on energy in the APEC region
2. A statistically-supported review of the challenges and opportunities facing the APEC economies individually and as a region
3. A source of ideas and approaches for dealing with these energy challenges and capitalizing on the energy opportunities

**PROGRESS**

1. Entirely new modelling software has been developed, including new models for transport demand, industrial demand, residential/commercial/agricultural demand, electricity supply, and summary tables.
2. Necessary data and assumptions have been loaded into the models and preliminary business-as-usual projections have been estimated for all economies.
3. A thorough internal review of the business-as-usual projections for each economy was completed.
4. Software to summarize and graph key results by economy, by region, and APEC-wide has been developed
5. Three sets of alternative scenarios to business-as-usual have been developed and included in the Outlook: a High Gas Scenario, Alternative Urban Development Scenario, and Virtual Clean Car Race Scenario.
6. Writing and editing of Volume 1 and Volume 2 were completed.
7. Peer reviews of the results for each economy were invited through APEC EWG representatives.

**MILESTONE**

1. APEC Energy Outlook Workshops are being planned in both Southeast Asian economies and Latin American economies in April and May of this year.
2. Several topics presented in the Outlook will be further elaborated in papers to be presented at the forthcoming 2013 IAEE International Conference in Daegu, Korea, 18-20 June of this year.

## B. apec energy overview 2011

## BACKGROUND

At the EGEDA 11th meeting held in March 2000, the project “APEC Energy Overview” was proposed by Australia, and it was approved at the EWG19 meeting in April 2000. The APEC Energy Overview is an annual publication, which contains updated energy demand/supply data as well as descriptions of energy policy and notable energy developments including energy efficiency, infrastructure development, upstream development, energy source diversification, regulatory reform and environment protection.

Energy demand/supply data are drawn from the APEC Energy Database. APERC is responsible for coordinating information gathered from member economies and preparing a draft Overview for EGEDA review. The finalized Overview is published by APEC. The Overview is published on both the APEC and APERC websites. Since the inaugural issue in 2001, eleven editions have been issued up to 2011.

**Objective**

1. The objective of APEC Energy Overview is to share information on government energy policies of member economies, and to provide useful information and insights to policy makers in the region.

**PROGRESS**

1. APERC completed APEC Energy Overview 2011, which is now available at <http://aperc.ieej.or.jp/publications/reports/energy_overview.php>.
2. APERC started the work on the APEC Energy Overview 2012 in September 2012.

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**MILESTONE**

1. APEC Energy Overview 2012 will be published in March/April 2013.

## Peer Review on Energy EfficiencY (PREE)

## background

The improvement of energy efficiency offers many cost-effective opportunities to achieve energy security, improve business productivity and mitigate greenhouse gas emissions. In the Sydney Declaration of September 2007, APEC Leaders agreed to start a peer review of energy efficiency policies through the voluntary APEC Energy Peer Review Mechanism.

At the EWG 35 meeting (Iquitos, March 2008), the APEC Peer Review on Energy Efficiency (PREE) was proposed by Japan as a concrete program and endorsed by EWG members.

Two activities are undertaken as part of the PREE, namely:

(1) Peer Review of volunteer member economies on the progress towards their goals in energy efficiency improvement (“Peer Review of volunteer member economies”)

(2) Compendium of energy efficiency policies/measures and action plans of APEC member economies under a common format (“Compendium”)

## Peer Review

## objectives

The objectives of APEC Peer Review are to;

1. Share information on Energy Efficiency performance as well as policies and measures for improving energy efficiency among member economies,
2. Provide opportunities for learning from other member economies’ experiences and for broadening the network among energy efficiency policy experts,
3. Explore how Energy Efficiency overall/sectoral goals and action plans could be effectively formulated in each APEC economy under review, taking into account the diversity of possible strategies to be used,
4. Monitor progress toward attaining Energy Efficiency goals on an overall and/or sectoral basis and implementing action plans,
5. Provide recommendations on how implementation of action plans could be improved with a view to achieving energy efficiency goals.

## Progress

1. Guidelines for the Peer Review were endorsed by EWG in late 2008.
2. The inaugural Peer Review for New Zealand was carried out during the period of 23-27 February 2009, with a review team comprised of experts from member economies and from APERC. This was followed by Peer Review for Chile during the period of 16-20 March 2009.
3. The Draft Review Report of PREE for New Zealand and Chile were discussed and endorsed by EWG members at the EWG37 meeting in Santiago in April 2009. The third Peer Review for Vietnam was conducted on 8-12 June 2009. The draft Review Report of PREE for Vietnam was discussed and endorsed by EWG members at the EWG38 meeting in Bali in November 2009.
4. The fourth Peer Review for Thailand was carried out on 9-13 November 2009.

The draft Review Report of PREE for Thailand was discussed and endorsed by EWG members at the EWG39 meeting in Tokyo in March 2010.

1. The fifth Peer Review for Chinese Taipei was carried out on 23-27 August 2010. The Draft Review Report of PREE for Chinese Taipei was discussed and endorsed by EWG members at the EWG40 meeting in Brunei-Darussalam in November 2010.
2. The sixth Peer Review for Peru was carried out on 8-12 November 2010. And the seventh Peer Review for Malaysia was carried out on 26 November-3 December 2010.
3. The Draft Review Report of PREE for Peru was discussed and endorsed by EWG members at EWG41. And the Draft Peer Review Report of PREE for Malaysia was also discussed and endorsed by EWG members at the EWG41 meeting.
4. The eighth PREE for Indonesia was carried out on 10-14 October 2011. The Draft Review Report of PREE for Indonesia was discussed and endorsed by EWG members at the EWG 43 meeting.
5. The review team visit for the ninth PREE in the Philippines was carried out on 6-10 February 2012. The Draft Review Report of PREE in the Philippines was discussed and endorsed by EWG members at the EWG 44 meeting.
6. The 1st Follow-up PREE activity, a training workshop on analytical methods to monitor the effectiveness of implementing energy efficiency measures, was carried out in Viet Nam on 27 February-2 March in 2012. The Summary Report was submitted to the EWG 44 meeting.

**(2) Compendium**

## objectives

The objective of the Compendium is to serve as a basis for information sharing on energy efficiency policies and measures, reflecting the diversity of approaches that could be adopted by member economies.

## Progress

1. APERC presented the draft common format for the Compendium at the APERC workshop and EWG 36 in Manila in December 2008 where it was discussed and endorsed
2. APERC published the 2009 Compendium of Energy Efficiency Policies of APEC Economies on the APERC website in April 2010.
3. Since its inaugural, APERC published the 2010, 2011 Compendium of Energy Efficiency Policies of APEC Economies on APERC website when they were completed.

**MILESTONE**

1. APERC will request EWG members to provide APERC with updated relevantinformation for the 2012 version soon.

## D. cooperative energy efficiency design for sustainability (CEEDS)

## background

At the 8th Meeting of APEC Energy Ministers in Darwin, Australia in May 2007, APEC Energy Ministers encouraged APEC economies to individually set goals and formulate action plans for improving energy efficiency on an overall and/or sector basis. Ministers also directed the EWG to compile best practices that can be used to help formulate and track progress towards such voluntary goals and action plans.

At the EWG 37 meeting in Chile, April 2009, the CEEDS project was proposed by Japan and endorsed by EWG members.

While PREE considers the whole range of energy efficiency policies and measures for one economy at a time, CEEDS considers specific high performance energy efficiency policies and measures for several economies in one sector at a time. Both PREE and CEEDS are designed to be multi-year activities, with PREE examining a continuing sequence of volunteer APEC economies, while CEEDS focuses on a continuing sequence of sectors.

## objectives

APEC CEEDS aims at promoting “high-performance” energy efficiency policy measures in economies in the APEC region. The key objectives are:

* To indentify and share information on “high-performance” energy efficiency policy measures in a selected sector
* To estimate the energy saving potential of the “high-performance” energy efficiency measures in a selected sector in participating APEC economies
* To assist participating economies in designing and implementing “high-performance” energy efficiency policy measures in a specified sector

To achieve the above objectives, two activities are undertaken, namely;

1) Analysis on energy saving potential in participating economies if high performance measures were implemented in the related sectors;

2) A set of two workshops organized with the support of host economies for the purpose of assisting participating economies who wish to design and implement measures for achieving energy efficiency improvements in the selected sectors.

As a workshop organizer, APERC is responsible for selecting measures to be discussed based on the interests in various APEC economies, making the workshop program, inviting APEC delegates to participate, and producing a summary report with experts’ suggestions on how measures might be implemented effectively in the participating economies. APERC will also carry out a study on energy saving potentials for a selected sector in participating economies, which will be presented at the workshop.

## Progress

<CEEDS Phase 1>

1. The 1st CEEDS Phase 1 Workshop, hosted by Chinese Taipei, was held on 19-21 October 2009, in which delegates from six economies, Chile, China, Malaysia, The Philippines, Thailand and Viet Nam participated. At the workshop, delegates from participating economies worked together with experts (ASE, CLASP, IEEJ and LBNL) and APERC researchers to develop proposals on “Next Steps” for advancing “Appliance Energy Efficiency Standards and Labelling” programs in their economies.
2. The 2nd CEEDS Phase 1 Workshop, hosted by Japan, was held on 1 and 2 March 2010. At the workshop, the refined proposals for “Next Steps”, which had undergone consultation with the delegates’ colleagues in their home economy, were presented by the delegates.

<CEEDS Phase 2>

1. The 1st CEEDS Phase 2 Workshop, hosted by Thailand, was held on 8-10 September 2010, in which delegates from 5 economies, China, Indonesia, Malaysia, Mexico and Viet Nam participated. At the workshop, delegates from participating economies worked together with experts and APERC researchers to develop proposals on “Next Steps” for advancing “Building Energy Codes and Labelling” programs in their economies.
2. The 2nd CEEDS Phase 2 Workshop, hosted by Hong Kong, China was held on 26-28 January 2011. At the workshop, the refined proposals for “Next Steps”, which had undergone consultation with the delegates’ colleagues in their home economy, were presented by the delegates.

<CEEDS Phase 3>

1. The 1st CEEDS Phase 3 Workshop, hosted by the United States was held on 14-16 September 2011, in which delegates from 5 economies, China, Mexico, the Philippines, Thailand and Viet Nam participated. At the workshop, delegates from participating economies worked together with experts and APERC researchers to develop proposals on “Next Steps” for advancing “Energy Efficient Urban Passenger Transportation” programs in their economies.
2. The 2nd CEEDS Phase 3 Workshop, hosted by Singapore was held on 17-19 January 2012, in which delegates from 5 economies, China, Indonesia, the Philippines, Thailand and Viet Nam participated. At the workshop, refined proposals for “Next Steps”, which had undergone consultation with the delegates’ colleagues in their home economy, were presented by the delegates.
3. The Summary Report on CEEDS Phase 3 has been published on APERC website.

<CEEDS Phase 4>

1. The 1st workshop of CEEDS Phase 4 hosted by Thailand was held on 21-23 January 2013, in which delegates from 5 economies: Chile, China, Malaysia, the Philippines, Thailand, participated. At the workshop, delegates from participating economies worked together with experts to develop proposals on “Next Steps” for promoting Energy Service Companies (ESCOs) in their economies.

## MILESTONE

1. The second workshop for CEEDS Phase 4 will be hosted by Chinese Taipei in 26 -28 March 2013. At the workshop, the refined proposals for “Next Steps”, which had undergone consultation with the delegates’ colleagues in their home economy, will be presented by the delegates.

## E. Peer Review on Low-Carbon Energies (PRLCE)

## BACKGROUND

In their Fukui Declaration in June 2010 on “Low-Carbon Paths to Energy Security: Cooperative Energy Solutions for a Sustainable APEC”, the APEC Energy Ministers instructed the EWG to “explore mechanisms to encourage economies to set individual goals and action plans for introducing low-emission power sources, building upon the success of the PREE, with assistance from APERC and relevant technology expert groups”

Modelled on the successful Peer Review of Energy Efficiency (PREE), PRLCE is planned to assist volunteered economies in developing policies that support energy security and environmental protection through promoting low-carbon energy supply (e.g. renewable energies).

**PROGRESS**

1. Guidelines for PRLCE were endorsed by EWG members in August 2011.
2. The 1st PRLCE, with focus on renewable energy, was held in Thailand on 21-25 May 2012. The Draft Review Report of PRLCE in Thailand was discussed and endorsed by EWG members at the EWG 44 meeting.
3. The 2nd PRLCE, with focus on the National Renewable Energy Program (including the Feed-in Tariff (FIT) system for renewable energy) was held in the Philippines on 19-23 November 2012. The peer review was conducted by a team of nine experts (from China, Japan, Malaysia, New Zealand, Thailand, IRENA and APERC). The review team experts have drafted policy recommendations.

**MILESTONE**

1. The first draft of Review Report for the 2nd PRLCE in the Philippines is now under review by the Philippines Government.

## F. Low Carbon Model Town (LCMT) project

## BACKGROUND

This project directly responds to the declaration at the 9th APEC Energy Ministers Meeting, held in Fukui, Japan on 19 June 2010.

Ministers discussed low carbon paths to energy security, which also provide cooperative energy solutions for a sustainable APEC as well as growth strategies. They noted that the introduction of low-carbon technologies in city planning to boost energy efficiency and reduce fossil energy use is vital to manage rapidly growing energy consumption in urban areas of APEC.

In this context, APEC Energy Ministers have agreed to launch an “APEC Low-Carbon Model Town (LCMT) Project” to present successful models for coordinated usage of advanced low-carbon technologies. This project is considered as one of the priority projects for APEC.

**Objective**

The key objectives of LCMT are:

(1) to develop the “Concept of the Low-Carbon Town”, which is intended to be a guidebook to the principles and implementation of low-carbon urban design,

(2) to assist in the implementation of the concepts in selected Low Carbon Model Towns by providing feasibility studies and policy reviews of these urban development projects,

(3) to share the best practices and real-world experiences with low-carbon urban design with planners and policymakers through the APEC region.

**PROGRESS**

<LCMT Phase1 :Tianjin, china>

1. Tianjin, China was selected as the case for the LCMT Phase 1 Project. The feasibility study was conducted and completed by a private consulting company on November 2011.
2. “The Concept of Low Carbon Town in the APEC Region” was completed by Low Carbon Model Town Task Force on October 2011.
3. Policy review for Tianjin, China was carried out on 30 August-1 September 2011.

<LCMT Phase2 :Samui Island, Thailand>

1. Samui Island, Thailand, was selected as the case for the LCMT Phase 2 Project.
2. The refinement of “The Concept of Low Carbon Town” has been completed, by Study Group-A assisted by APERC.
3. The feasibility study was carried out by qualified urban design consultants and a progress report was made at the LCMT Task Force meeting held in conjunction with the EWG 44 meeting.
4. Policy reviews on the plan have been conducted by Study Group-B assisted by APERC on 24-28 September 2102. The Policy Review report is now under review by LCMT Task Force [TBC] .
5. The project will be completed with these three elements in due course.

**MILESTONE**

<LCMT Phase3 :Da Nang, Viet Nam>

1. Da Nang, Viet Nam, was selected as the case for the LCMT Phase 3 Project.
2. The schedule for Phase 3 will be discussed at the LCMT Task Force meeting to be held in conjunction with the EWG 45 meeting.[TBC]

## G. Oil & Gas Security Exercises (OGSE)

## BACKGROUND

APEC Energy Ministers, met in St. Petersburg, Russia on 24-25 June 2012, and encouraged the APEC Energy Working Group (EWG) and Asia Pacific Energy Research Centre (APERC) to work on activities to improve the response to oil and gas emergency situations, including emergency response workshops and exercises. EWG and APERC are expected to perform these activities in collaboration with the International Energy Agency and the Association of Southeast Asian Nations (ASEAN).

This instruction by energy ministers was confirmed at the highest level: APEC leaders agreed to promote activities to improve the response to oil and gas emergency situations in the APEC region at Vladivostok, Russia on 8-9 September 2012.

**PROGRESS**

1. APERC discussed the participation (including hosting) of this project with several APEC member economies, and also ASEAN and IEA, to plan emergency workshops and exercises as instructed by the Ministers. The work plan is explained below.

**Ⅱ 　NEW　WORKPLAN**

APERC’s new work plan is designed to assist EWG in responding to the instructions by APEC Energy Ministers as described in the previous Part I.

APERC conducts research activities, particularly for producing the *APEC Energy Demand and Supply Outlook*. In addition, APERC, as the designated executants, assists project overseers by carrying out the following five APEC projects, on the condition that the budget from the APEC fund is approved for those projects by APEC BMC.

1. APEC Energy Demand and Supply Outlook 6th Edition

(a) APERC will continue research activities for the preparation of *APEC Energy Demand and Supply Outlook 6th Edition.*

(b) In particular, as natural gas will continue to increase its importance in the energy mix due to the availability of unconventional gas resources and its relative cleanliness compared to other fossil fuels, production and trade of natural gas will be one of major research themes to be pursued. In order to gather first-hand information on natural gas, APERC will co-host the 2nd LNG Producer-Consumer Conference with the Japanese Ministry of Economy, Trade and Industry in September 2013 in Tokyo, as a follow-up to the 1st LNG Producer-Consumer Conference help in September 2012 in Tokyo.

2. PREE Phase 4

(a) Continuation of PREE

As PREE is a multi-year project, the 10th Peer Review on Energy Efficiency in Brunei will be conducted in June 2013.[TBC]

(b) Follow-Up PREE

Based on the APEC Energy Ministers’ instructions, Follow-Up PREEs will aim to assist economies in implementing the recommendations of a previous PREE.

Thailand will host the second Follow-up PREE on the theme of “Energy Efficient Urban Transportation” in the 3rd Quarter of 2013. [TBC]

(c) Given the resource constraints of APERC, it may be necessary to reduce the number of peer reviews per year. For, example, instead of one PREE and one Follow-up PREE (in total two) in 2012 and 2013, there may be one PREE or one Follow-up PREE (in total one) after 2014.

3. CEEDS

CEEDS is a very complicated project to be properly arranged. It includes two workshops in two different economies, with the same participating economy delegates and the same expert speakers for both workshops.

Given the resource constraints of APERC, it may be necessary to simplify the structure of the project itself. For example, rather than two workshops for the several participating economies, with invited experts attending both workshops, there might be only one workshop open to the all APEC economies with fewer invited experts.

The topics of this workshop would be selected from the issues in the previous PREEs. Such a workshop could be called a “Policy Workshop” and become an integral part of the PREE project.. And this PREE Policy Workshop might be held in conjunction with a meeting of EGEEC (Expert Group of Energy Efficiency and Conservation) once a year.

4. PRLCE Phase 2

(a) Modelled on the successful PRLCE Phase 1 in Thailand and the Philippines, PRLCE Phase 2 will assist two additional economies in developing policies to promote low-carbon energy supply.

Indonesia will host PRLCE-3 in May 2013.

One more economy is currently invited to volunteer to host PRLCE-4.

(b) Given the resource constraints that APERC faces, and recognizing the smaller number of potential host economies (compared to PREE), it may be necessary to reduce the number of PRLCE peer reviews per year. For example, instead of the two PRLCEs per year in 2012 and 2013, there may be one PRLCE per year after 2014.

5. Low Carbon Model Town (LCMT) Project Phase 3

APERC will assist Study Group A and Study Group B in revising the “Concept of the Low-Carbon Town” and in drafting “Policy Reviews” in the next Phase 3 of the LCMT project in Da Nang, Viet Nam by December this year.

6. Oil & Gas Security Exercises (OGSE)

APERC is planning to proceed Oil & Gas Security Exercises as follows:

1. The 1st Security Forum, a kick-off meeting, will be held on 18~19 April 2013 in Tokyo.
2. Scenarios for the security exercises will be developed by APERC with the cooperation of outside experts.
3. The 1st case study is expected to be a joint exercise by Southeast Asian APEC economies in September 2013, possibly in Bangkok, Thailand [TBC].
4. The 2nd case study of the security exercises is expected to be Indonesia in October 2013 in Jakarta [TBC].
5. A 2nd Security Forum, a wrap-up meeting, will be held in Spring 2014 in Tokyo.

**Ⅲ　APERC RESEARCHERS**

APERC researchers are generally drawn from energy research organisations, both government and non-government, in APEC member economies. The minimum term of researchers supported by APERC’s budget is one year, which may be extended subject to consultations with the relevant organisations in member economies.

APERC would like to invite all economies to send their researchers to APERC. In principle, APERC accepts one researcher from each APEC member economy.

APERC offers living expenses, housing in Tokyo, transportation, moving expenses and health insurance to the researchers.

As of 1st March 201, APERC had a total of 13 researchers, of which 9 are from overseas.

##### Table 1: APERC Researchers

|  |
| --- |
| Name |
| Takato Ojimi (President) |
| Ralph D. Samuelson (Vice President) |
| Kazutomo Irie (General Manager) |
| Tran Thanh Lien (Team Leader) |
| Goichi Komori |
| Elvira T. Gelindon |
| Dmitry Sokolov |
| Juan Roberto Lozano Maya |
| Aishah Binti Mohd. Isa |
| Luke H. Leaver |
| Chisato Katsuki |
| Chrisnawan Anditya |
| Du Bing |

Ⅳ　Revenue and Expenses

Since its inception, APERC’s budget has been provided by the Japanese government and partly in fiscal 2004, 2005 & 2006 by the Australian government.

This budget has been used to facilitate research activities, know-how transfer programmes to the member governments, and the energy data network service.

The table below is a summary of annual financial statements since APERC was established in July 1996.

##### Table 2: APERC Revenues and Expenses

