



APEC Peer Review on Energy : Opportunities for APEC Member Economies to develop Effective Policies for EE and RE Promotion"

**The Energy Business Forum at the 40th APEC Energy Working Group
(EWG40)**

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Kenji Kobayashi, President

Asia-Pacific Energy Research Centre (APEREC)



Asia-Pacific
Economic Cooperation



Outlines

- 1. Overview of APEC Peer Review on Energy Efficiency (PREE) and Peer Review on Policies to promote Low-Carbon Energies including Renewable Energy (PRLCE)**

- 2. Value of PREE for APEC Economies including Brunei to develop Effective Policies to promote EE**
 - Recommended Best/High Performance EE Practices for Brunei and Policy Recommendations

- 3. Value of PRLCE for APEC Economies including Brunei to develop Effective Policies to promote RE**
 - Recommended Best/High Performance RE Practices for Brunei and Policy Recommendations



1-1 Overview of APEC Peer Review on Energy Efficiency (PREE)

PREE (Peer Review on Energy Efficiency)

Objective:

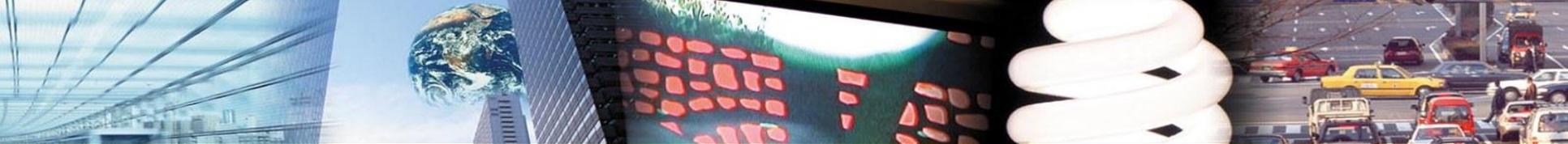
- Provide a *broad review* of EE policies and measures for more effective EE strategies, institutional setup, and policy measures in all sector at a time for a volunteer economy;
- Provide ***recommendations*** for a volunteer economy on how implementation of action plans could be improved with a view to achieving EE goals;

Progress:

- The first four PREEs were completed for New Zealand, Chile, Viet Nam and Thailand.
- The PREE team visit in Chinese Taipei and Peru were carried out in August and November 2010 respectively. The next PREE team visit for Malaysia will be carried out by early December 2010.

Plan:

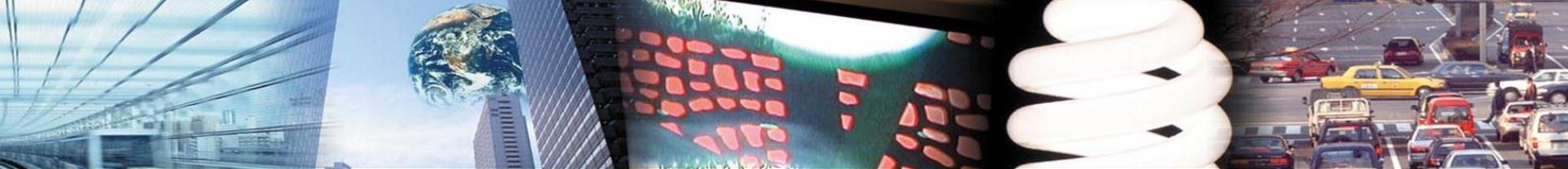
- PREE will be continued to cover more economies as instructed by EMM9 in Fukui.



1-2 Overview of APEC Peer Review on Energy Efficiency (PREE)

CEEDS (Cooperative Energy Efficiency Design For Sustainability)

- Supplementing to PREE, CEEDS provides an *in-depth* peer review of **EE policies and measures in a single sector for several economies at a time.**
- Phase 1 of CEEDS focused on *Appliance EE Standards and Labeling* with 6 participating economies: Chile, China, Malaysia, Philippines, Thailand and Viet Nam hosted by Chinese Taipei and Japan.
- Energy saving potential study in CEEDS Phase 1 revealed a potential energy savings of 14-26% of residential electricity demand could be achieved in those economies through implementing minimum energy efficiency standards for 7 appliances and appliances standby power mode.
- Currently, CEEDS Phase 2 hosted by Thailand and Hong Kong, China, is in progress, focusing on *Building Energy Efficiency Codes and Labeling.*



1-3 Peer Review on Policies to promote Low-Carbon Energies including Renewable Energy (PRLCE)

Peer Review Mechanism will assist APEC economies to:

- Set *goals* and formulate *action plans* for introducing low-emission power sources, based on the success of PREE, as instructed by Fukui EMM9.
- Improve the effectiveness of policies in promoting low-carbon energy (e.g. renewable energy and provide useful *recommendations* on how implementation of action plans could be improved with a view to achieving the goals.

The first two PRREs in volunteer economies are planned to start in 2011.



2-1 Value of PREE for APEC Economies including Brunei to develop Effective Policies to promote EE

- APERC has identified 15 Best/High Performance EE Practices in consultation with *expert groups* and carefully considering internationally-recognized best/high EE practices.
- **15 Best / High EE practices will be useful to strengthen the rate of full implementation of these practices toward achieving the APEC-wide EE goal.**



2-2 Recommended 15 Best/High Performance EE Practices

Recommended 15 best/high performance EE Practices in APEC	
Cross-Sectoral	
1.	Set energy efficiency goals and action plans for overall economy and various sectors
2.	Increase investment, facilitate private sector involvement and encourage financial institutions' participation in energy efficiency
3.	Monitor , enforce and evaluate energy efficiency measures for successful implementation
Industry	
4.	Collect energy efficiency data for industry e.g. end use data for various sub-sectors
5.	Assist in developing energy management capability and encourage or require the implementation of these practices by major industrial energy users
6.	Develop policies and measures to promote energy efficiency in small and medium-sized enterprises (SMEs).
7.	Introduce minimum/high energy performance standards for motors
Transport	
8.	Set mandatory/high fuel efficiency standards for light-duty and heavy-duty vehicles and labels
9.	Encourage Eco-driving
Residential, Commercial and Public	
10.	Set and update mandatory building codes for new buildings and establish standards to promote energy efficiency in existing buildings
11.	Encourage the construction of highly energy efficiency buildings such as Passive Energy Houses and Net-Zero Energy Buildings
12.	Encourage the introduction and update of building certification systems
Appliances and Equipment	
13.	Adopt and update mandatory/high energy performance standards and labels
14.	Adopt international measurement standards , where appropriate, to aid in benchmarking and comparison of traded products and reduce compliance costs, as well as standard harmonization .
15.	Phase-out incandescent bulbs and introduce higher efficiency lighting systems



2-4 Recommended Best/High Performance EE Practices for Brunei and Policy Recommendations

Built on APERC's Recommended best/high performance EE Practices : EE Goals

(The overall energy efficiency goal of Brunei Darussalam is to reduce energy intensity in Brunei Darussalam by 25% in 2030 with 2005 as the base year. This goal is in line with the *APEC Leaders 2007 Sydney Declaration*)

- **Adopt a sectoral quantitative goals to help assist in the achievement of the national overall energy efficiency goals**

EE Strategy

- Hold continuous and intensive awareness campaigns
- **Encourage EE&C through energy education by incorporating energy education in curriculum syllabus, incorporating EE&C activities and dissemination of energy saving tips booklet to public and private agencies including schools**

Energy Data Collection and Monitoring

- Set up Monitoring Mechanism for EE improvement



2-5 Recommended Best/High Performance EE Practices for Brunei and Policy Recommendations

Industrial Sector:

- Promote practices of energy management
- **Introduce minimum energy performance standards for industrial motors which will contribute EE improvement in energy-intensive industry**

Residential, Commercial and Government Sector:

- Strengthen the Introduction of *Energy Efficient Buildings Guidelines*
- **Establish Mandatory Building Energy Codes for New Buildings and Existing Buildings.**

Transportation Sector: (Largest consumer of energy in Brunei)

- **Set Fuel Efficiency Standards for Vehicles**
- **Promote techniques for energy saving driving / Eco- Driving**

Electricity Sector:

- **Improve power generation thermal efficiency and for new gas-fired power plant with minimum energy performance standard.**
- **Improve energy efficiency of street lighting.**



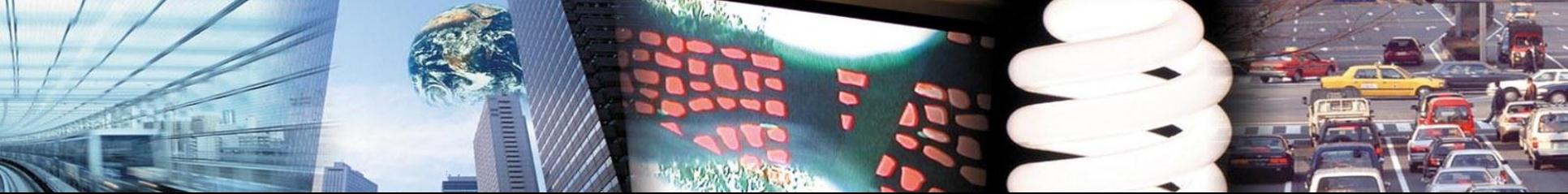
2-6 Recommended Best/High Performance EE Practices for Brunei and Policy Recommendations

Appliances & Equipment

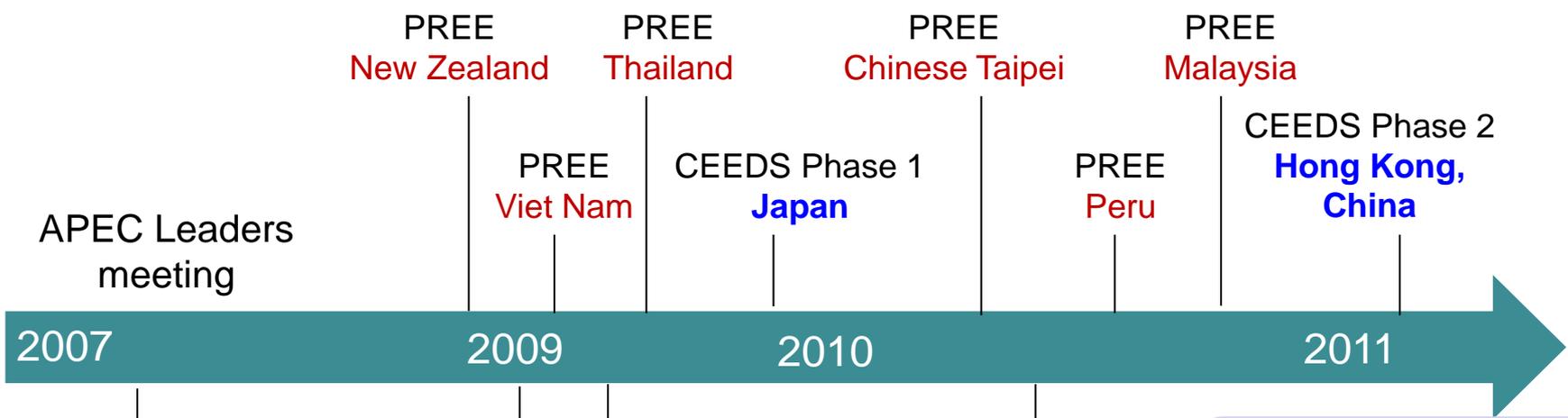
- **Adopt MEPS for several electrical appliances and equipments**
- **Phase out incandescent bulbs and introduce more efficient lighting systems**

R&D for EE promotion

- **Provide sustainable funding for research and development in EE&C**



2-7 Welcome Brunei to host PREE and CEEDS



Declaration to reduce energy intensity of APEC region by at least 25% by 2030

Introduction of Peer Review Mechanism

APERC reported progress on peer review mechanism

Future:
 PREE in 2011, 2012, ...
 CEEDS Phase 3, 4,

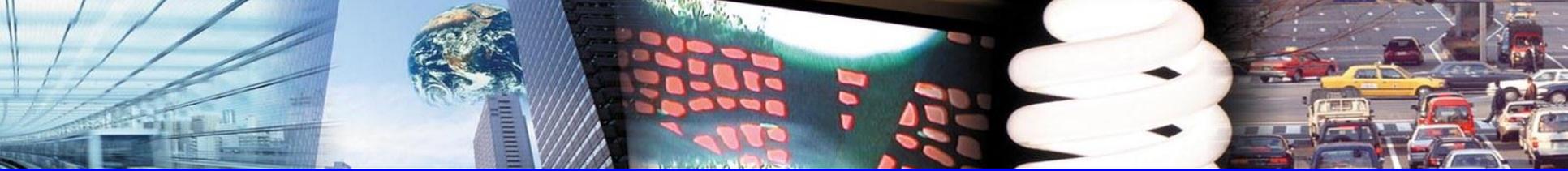
Brunei is welcome to host future PREE and participate in CEEDS.....



3-1 Value of PRLCE for APEC Economies including Brunei to develop Effective Policies to promote RE

PRLCE will assist volunteer APEC economy to

- Share experiences and knowledge of APEC economies in promoting low-emission power sources by setting goals and action plans;
- Encourage APEC economies to set individual goals on power supply from low-emission power resources and formulate action plans to achieve the goals.
- Provide recommendations for voluntary implementation on how implementation of action plans could be improved with a view to achieving the goals.
- Scope and focus of PRLCE should vary from economy to economy by carefully considering different circumstances in different economies.



3-2 RE Situation in Brunei

- Brunei's great effort in the development, promotion and deployment of RE as an alternative not only for final energy requirement but also for electricity generation is impressive.
- The Prime Minister's Office – Energy Division has been playing a leading role to provide the framework for sustainable use of RE with reasonably priced energy supply as the basis of RE policy to be less dependent on fossil fuels and enhance energy security of the economy.
- RE resources in Brunei (e.g. hydro, wind, biomass, biofuels) are very limited. The significant RE resource potential for Brunei is *solar energy*.



3-3 Recommended RE Program and Plan

To promote and enhance the deployment of RE, it is recommended that the Government of Brunei Darussalam develop comprehensive plan and program to:

- Conduct more *in-depth* studies on potential of all forms of renewable energy.
- Carefully assess the cost and benefits of using various kinds of RE
- Address the technical, economic, social and regulatory issues to effectively enhance the development and deployment of renewable energy, taking into account the cost-effectiveness of support mechanisms.
- Promote R&D of RE technologies to explore maximum cost reduction.



3-4 Important Questions to be addressed for RE Promotion

- What policy incentives are most appropriate to promote investment in renewable energy ?
- What kinds of effective policies that can encourage entrepreneurial innovation in promoting RE in Brunei ?
- What policies are needed to promote cost-reducing innovation in renewable power generation?
- What electricity pricing policies are most appropriate for promoting renewable electricity ?
- What is the most effective way to achieve a smooth transition towards mass marketing integration of renewable energy in Brunei ?



3-5 Recommended Best/High Performance RE Practices for Brunei and Policy Recommendations

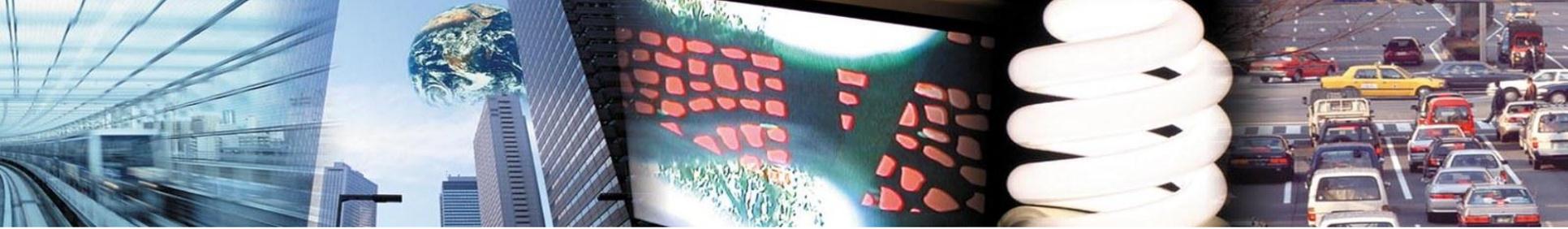
Preliminary Policy Recommendations for Brunei to promote RE

- Appropriate policies on *feed-in tariffs* / RPS to promote RE.
- RE *financing* (e.g. fiscal incentives such as tax exemptions or investment grants).
- Designed policies to encourage entrepreneurial innovation in promoting RE.
- Policies to overcome *non-economic* barriers at various stages of RE development and deployment.
- More effective R&D policy to promote RE.
- *Carbon pricing* policies (e.g. emission trading / carbon tax)
- More comprehensive policy design to encourage *low-carbon communities* in Brunei



3-6 Conclusion

- APEC PREE and PRLCE will assist economy-wide *EE and RE promotion* in Brunei Darussalam.
- We welcome Brunei Darussalam to voluntarily host the future PREE and PRLCE, *APEC Peer Review Mechanism*, to enable Brunei Darussalam to set goals and formulate policies and action plans in promoting Energy Efficiency Improvement and Renewable Energy Development.
- The APERC and APEC Peer Review Experts are willing to contribute to sustainable development in Brunei Darussalam by identifying effective EE and RE policies and best practices, and providing useful *policy recommendations*.



Thank You

PREE Reports

CEEDS Phase 1 and 2 Reports

are available in APERC website

<http://www.iej.or.jp/aperc/>