

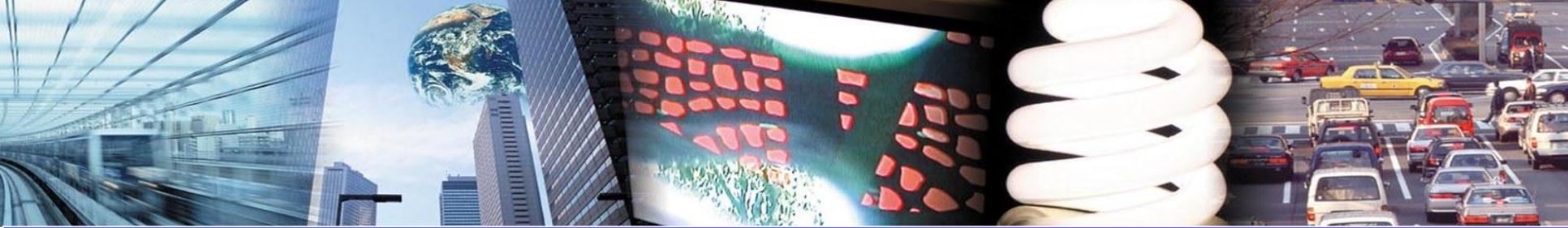


**EWG 46, Da Nang, Viet Nam**

**18 November 2013**

**4. APEC Peer Review on Energy Efficiency (PREE)  
Brunei Darussalam**

**Aishah Mohd Isa, Ph.D**  
**Asia Pacific Energy Research Centre**



## *Presentation Outline*

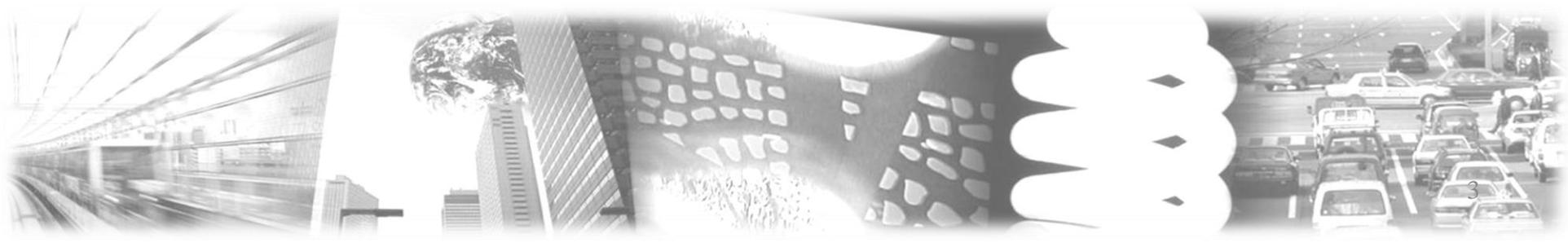
### Overview of EE&C in Brunei Darussalam

- Brunei Darussalam in brief
- EE&C Institutional Framework
- EE&C Key Policies

### PREE in Brunei Darussalam

- PREE Process for Brunei Darussalam
- Key Findings
- Some Recommendations
- Photos

# Overview of EE&C Measures in Brunei Darussalam

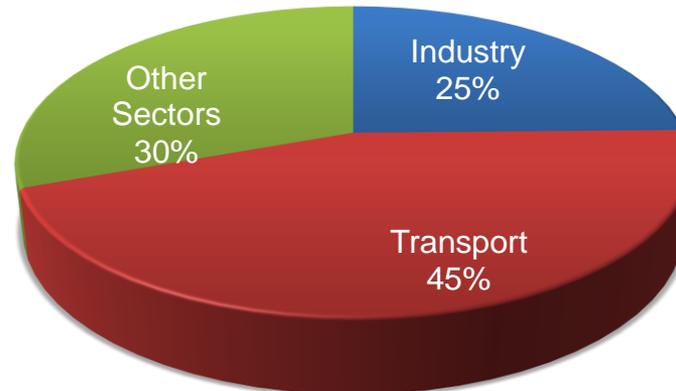


# Brunei Darussalam in brief



Facts and Figures	Brunei (2011)
Area	5765 km <sup>2</sup>
Population	393,372
Income per capita	BND 52,315/capita (≈USD 42264/capita)
Energy per capita	2.5 toe/capita
Electricity consumption per capita	8,300 kWh per capita (2008)
CO <sub>2</sub> emissions per capita	19.1 kg CO <sub>2</sub> /capita

Total Final Energy Consumption  
(2012): 1012 ktoe





# *EE&C Institutions in Brunei Darussalam*

National Energy Efficiency and Conservation Committee (NEECC)

Energy Department,  
Prime Minister's Office

Energy Efficiency and  
Conservation (EEC)  
Unit

Department of  
Electrical Services  
(DES)

Strategic, Planning,  
Economic and  
Intelligence (SPEI)

Other Ministries

Ministry of Development

Ministry of Communications

Ministry of Education

Ministry of Finance

Other Institutions

Brunei National  
Energy Research  
Institute (BNERI)

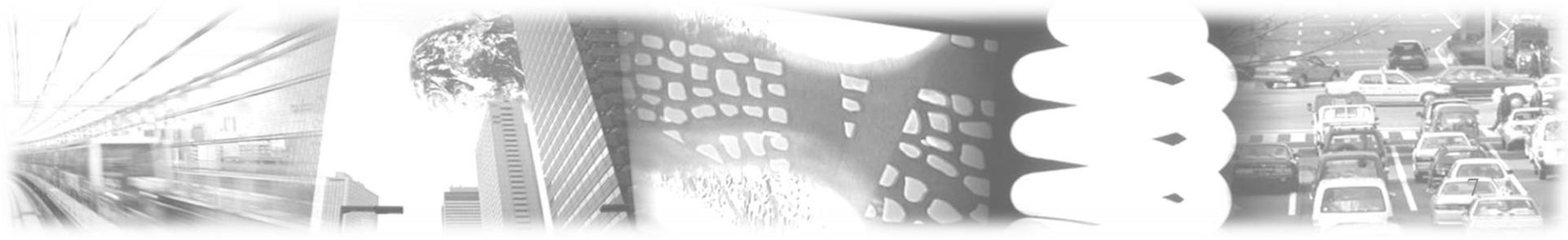
Universiti Brunei  
Darussalam

# 8 Key EE&C Policies in Brunei Darussalam

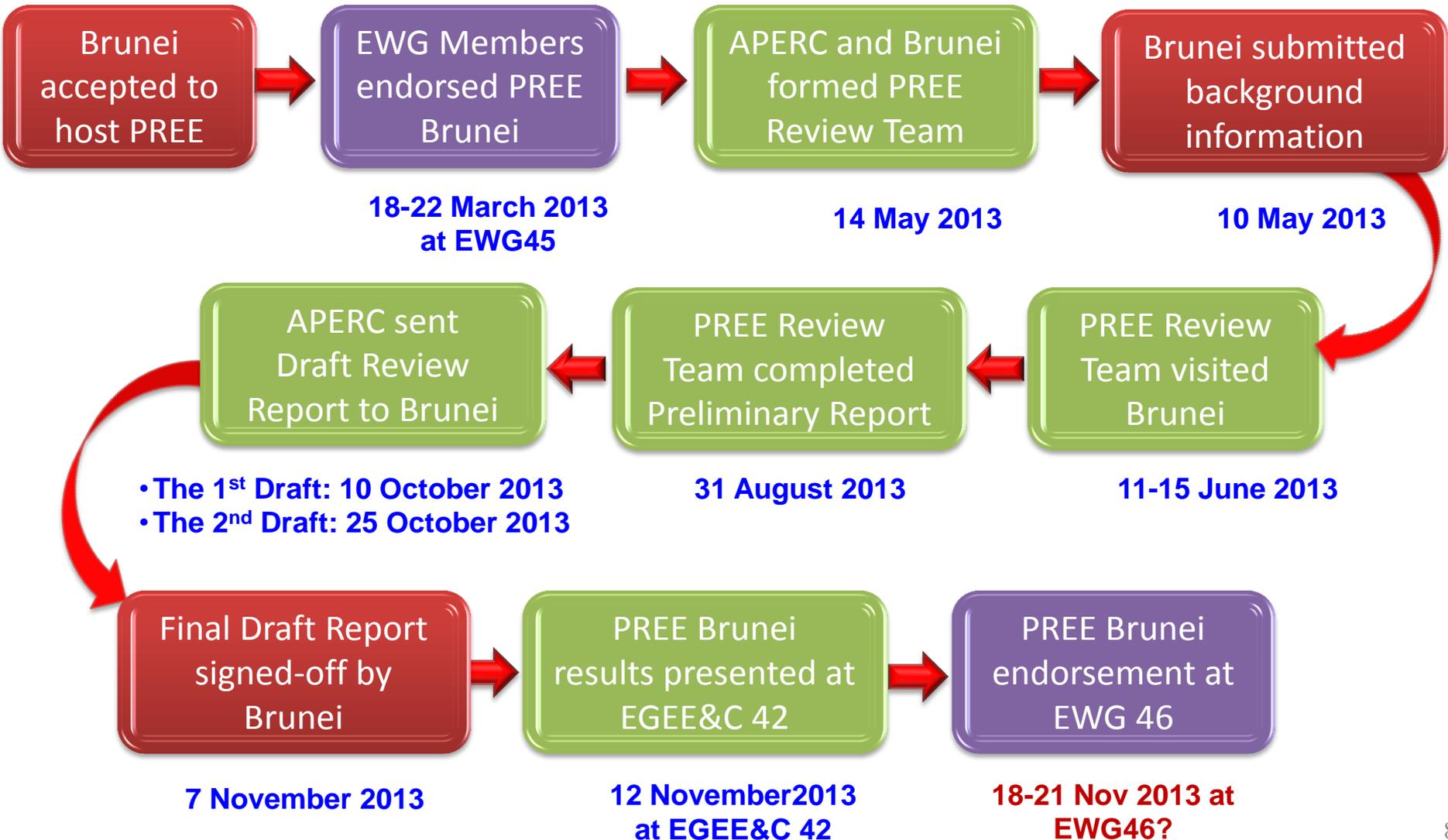


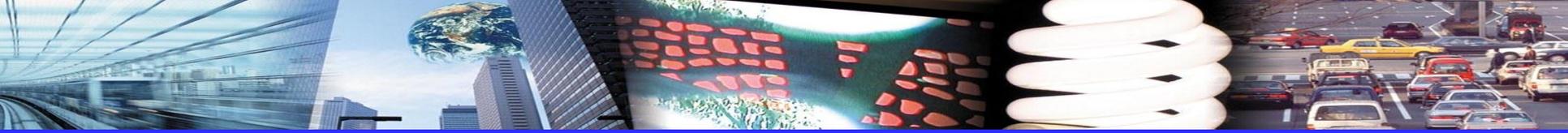
# **PREE in Brunei Darussalam**

11-15 June 2013



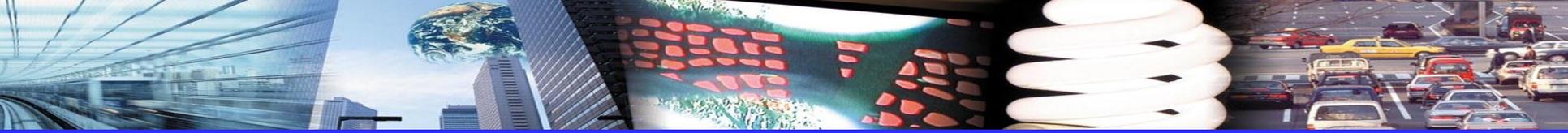
# PREE Process for Brunei Darussalam



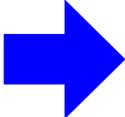


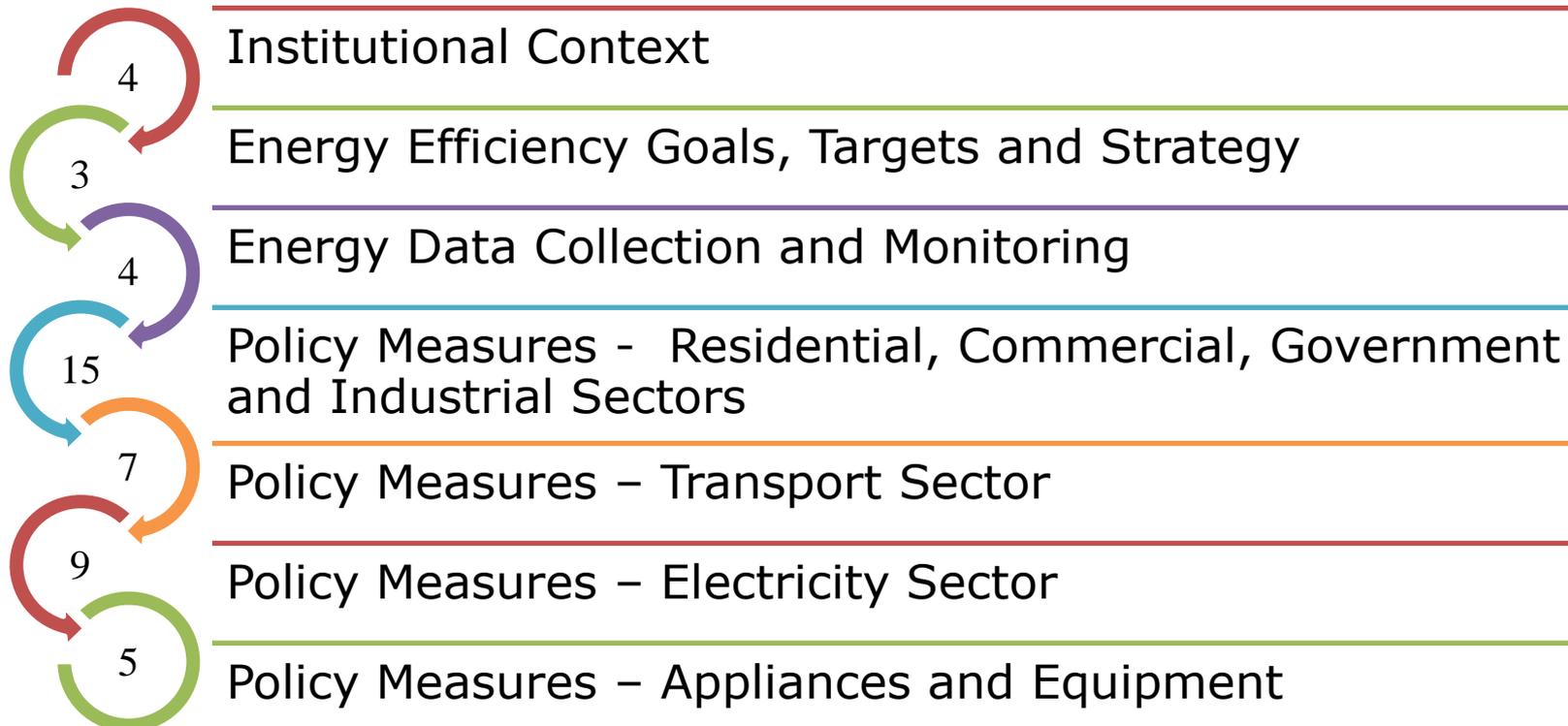
## *PREE Brunei Darussalam Key Findings*

- Brunei Darussalam has high GDP per capita and is energy self-sufficient; likely to remain an energy exporter beyond 2035.
- Then, why have EE&C?
  - Extremely high energy consumption per capita.
  - To avoid the environmental costs of energy wastage.
  - Allows more oil and gas to become available for exports, this will increase or prolong export revenues.
- Brunei Darussalam has already identified key policy options that should be implemented in order to achieve the **goal of 45% reduction in energy intensity by 2035** (using 2005 as the base line).
- Energy efficiency initiatives face **substantial barriers** due to the current energy pricing mechanism, which in the long-run may not be sustainable.



# ***PREE Brunei Darussalam Recommendations***

- 
- The PREE Review Team made **47 recommendations**
  - PREE recommendations are tailored towards:
    - aligning and prioritizing policy options under a unified framework
    - sharing innovative EEC approaches that are suitable for Brunei Darussalam





# ***PREE Brunei Darussalam Recommendations***

## ***- Getting the right information -***

- ❑ **Recommendation 8:** Define a structured energy efficiency data collection framework and ensure regular implementation.
- ❑ **Recommendation 27:** Continue developing a database of fuel efficiency of light vehicles in the Brunei Darussalam fleet to be the basis on which vehicle fuel efficiency policies and initiatives, including consumer information, can be designed and monitored.
- ❑ **Recommendation 31:** Continue to periodically survey daily vehicle usage patterns (range of trip distances, range of daily driving distances and trip purpose) to increase understanding of travel patterns to assist in the design of future policies and initiatives.



# ***PREE Brunei Darussalam Recommendations***

## ***- Sending the right message -***

- ❑ **Recommendation 4:** The Government of Brunei Darussalam should consider implementing gradual energy pricing reforms which draws on successful approaches used in other countries.
- ❑ **Recommendation 10:** Publish energy efficiency indicators monitoring reports periodically to evaluate progress and encourage continuing efforts in energy efficiency improvements.
- ❑ **Recommendation 12:** Brunei Darussalam should conduct a detailed market research to identify which EEC messages would appeal the most to different consumer groups.
- ❑ **Recommendation 19:** Appropriate incentives should be designed to motivate facility managers and operators, particularly those in government-owned facilities, to apply EEC improvements that minimize operation costs.
- ❑ **Recommendation 28:** Provide consumer information on vehicle fuel consumption through the implementation of a vehicle labelling programme and energy efficient driver behaviour.



# ***PREE Brunei Darussalam Recommendations***

## ***- Building local capacity to manage EEC issues -***

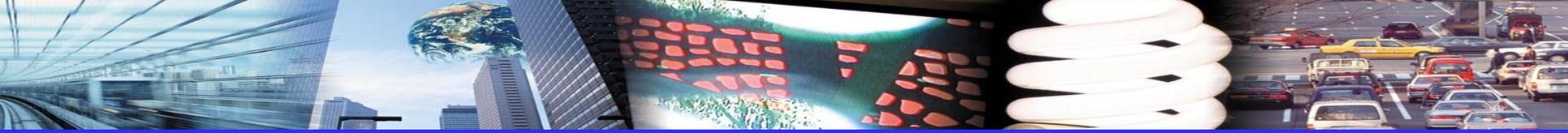
- ❑ **Recommendation 13:** School Energy Clubs should be enhanced by developing an energy efficiency curriculum to reach all students in all levels of education.
- ❑ **Recommendation 18:** In support of the energy management law, a sufficient number of qualified external auditors should be trained to conduct monitoring and verification exercises to ensure compliance.
- ❑ **Recommendation 23:** Build local capacity for addressing the EEC elements of the Building Code.



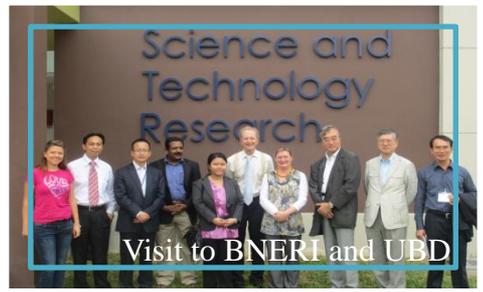
# ***PREE Brunei Darussalam Recommendations***

## ***- Applying innovative technologies -***

- ❑ **Recommendation 5:** Identify appropriate incentives to further enhance EEC measures. (For example by applying the Opower Home Energy Report as social incentive for saving energy).
- ❑ **Recommendation 32:** Investigate information technology based, demand responsive transit models which may be more suitable to Brunei Darussalam's population size and urban density than traditional fixed-route public transport and better meet customers' needs.
- ❑ **Recommendation 38:** Consider using other innovative tariffs such as "time of use (TOU) tariffs" to encourage consumers to increase their use of energy efficiency and lower overall system consumption.
- ❑ **Recommendation 42:** As part of the efforts to supply electricity to the eco-tourism Temburong area, conduct a feasibility study that applies intensive energy efficiency measures integrating small-scale renewable energy supply (keeping the diesel generation facility as a back-up if needed).



# Photos from PREE Review Team Visit





**Thank you for your  
kind attention**

<http://aperc.ieej.or.jp>