APERC Research Activities

PREE and CEEDS

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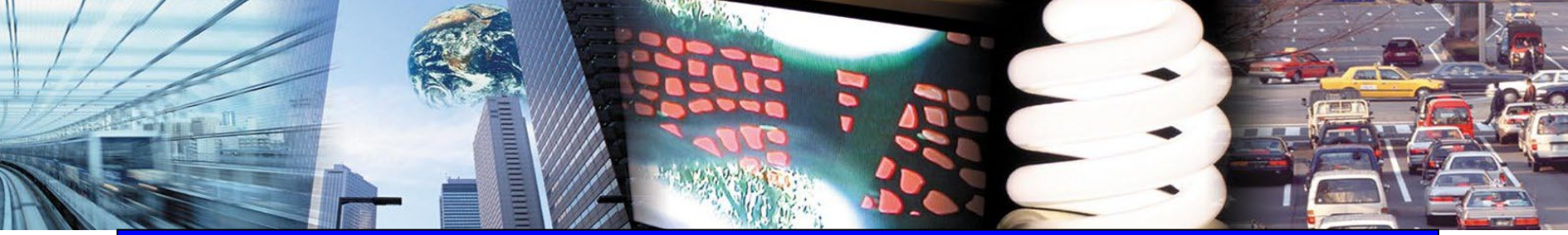
The 40th Meeting of the Expert Group on Energy Efficiency and Conservation (EGEE&C)
Taipei, Chinese Taipei, 8 - 9 November, 2012



Outline

1. Peer Review on Energy Efficiency (PREE)

2. Cooperative Energy Efficiency Design for Sustainability (CEEDS)

1. Peer Review on Energy Efficiency (PREE)

Two activities are organized in PREE: “Peer Review” and “Compendium”

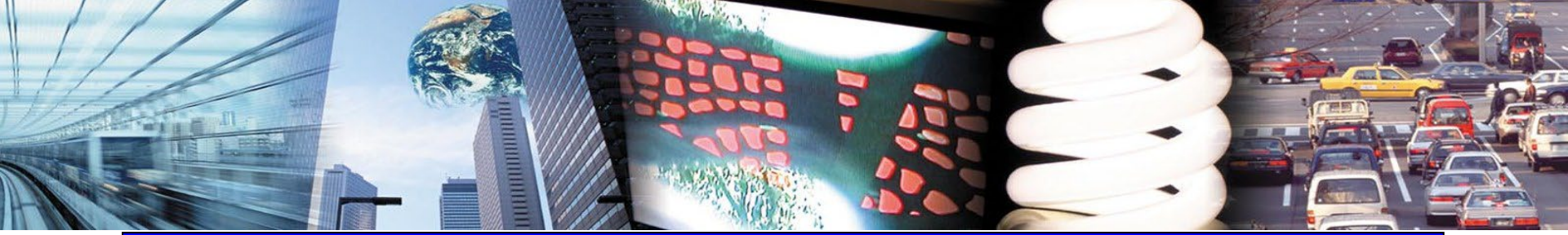
Objectives of PREE

(Peer Review)

- To provide a broad review of EE goals, EE strategies, EE strategies, institutional setup, and policy measures in all sectors at a time for a volunteer economy;
- To provide recommendations for a volunteer economy based on best and high performance practice in order to implement the best practice in as many economies as possible.

(Compendium)

- APERC annually publishes “The Compendium of Energy Efficiency Policies of APEC Economies” in order to promote information sharing in the field of energy efficiency and energy conservation across the APEC economies under a common format on the website



PREE Mechanism

Peer Review

Discussion

APEC PREE team

Experts from member economies
Experts from International Organization
APERC Researchers

Host economy

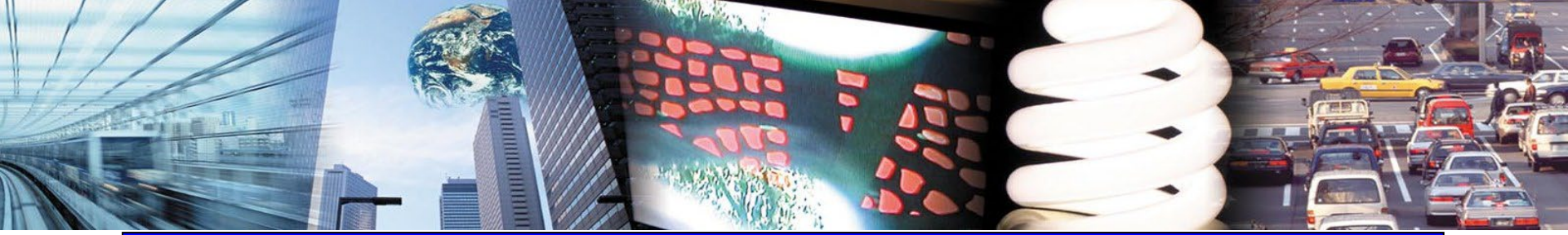
APEC EWG meeting

Learning from other APEC member economies' experiences and deepening the understanding of effective policy design and implementation processes

Review Report

Encouraging a PDCA cycle (plan, do, check and act)

for further improvement of Energy Efficiency Policy.



PREE

1. New Zealand: February 2009～ (22)
2. Chile: March 2009～(21)
3. Viet Nam： June 2009～(40)
4. Thailand: November 2009～(34)
5. Chinese Taipei: August 2010～(35)
6. Peru: November 2010～(51)
7. Malaysia: November 2010～(41)
8. Indonesia: October 2011～(50)
9. Philippines: February 2012～(54)

(The number of recommendations)

PREE in Indonesia

- PREE in Indonesia was carried out on 10 – 14 October 2011
- Three experts (from China, Japan and the Philippines) and three APERC staff participated as the peer review team members.
- The presentations on energy efficiency policies and measures were made by the following Indonesian Government Organizations on 10 – 13 October 2011;

  The Ministry of Energy and Mineral Resources (MEMR), Directorate General of New Renewable Energy and Energy Conservation (DGNREEC), Ministry of Industry, Ministry of Public Works, National Planning and Development Agency, National Energy Council, Green Building Council Indonesia, Indonesia Energy Conservation Association, Education and Training Center on Electricity and New-renewable Energy, Surabaya Belum Memiliki Gedung Hemat Energy.

PREE Report

Part 1 Background Information (By the host economy)

- Statistics, Forecasts and Trends in Energy Consumption
- Energy Efficiency Institutions, Policies and Major Programs

Part 2 Review Team Report

(Achievement & Challenge & Recommendation)

- Institutional Context
- Energy Efficiency Goals, Targets and strategy
- Energy Data Collection and Monitoring
- Policy Measures-Sectoral Analysis: Industrial Sector, Electricity Sector, Supply Side, Demand Side, Transmission and Distribution, Commercial and Residential Sector
- Energy Management Mechanism and Training
- Appliances and Equipment

PREE – Major Findings

- Indonesia has in place comprehensive energy efficiency and conservation programs mandated by Law and regulation.

- The Energy Law mandates implementation of specific energy conservation measures.

- The Ministry of Energy and Mineral Resources (MEMR) is the agency in government which by Law is responsible for energy conservation.

- The National Energy Conservation Master Plan (RIKEN), which is legally binding, provides comprehensive programs, action plan, goals and target for energy efficiency and conservation.

PREE Recommendations

- The Peer Review Team made 49 recommendations on energy efficiency policies and measures in Indonesia on 14 October 2011.

- Institutional Context
- Energy Efficiency Goals, Targets and Strategy
- Energy Data Collection and Monitoring
- Industry Sector
- Electricity Sector
- Commercial and Residential Sector
- Appliances and Equipment
- Education and Energy Efficiency Related Research and Development

PREE Recommendations (Continued)

Industry Sector

- **Recommendation 18** *Continue to build energy manager's capacity to develop energy saving plans, energy reporting, financial plans addressed to the company's board of directors regarding concepts such as retrofitting and process change to reduce energy consumption.*
- **Recommendation 19** *Continue the capacity building of energy auditors and consider creating energy audit guidelines to improve the quality of the energy audit results.*
- **Recommendation 20** *Encourage large energy users to report energy data and follow the progress (Law No.70 2009). It is also important to spread EE regulation information among company employees.*
- **Recommendation 21** The *government should provide information on the international best practice technologies within all energy consuming sectors.*
- **Recommendation 22:** *The government should make large information, education and communication campaigns across demand sectors, particularly those from the energy intensive industrial establishments to be able to educate the sector on matters that require government compliance for better energy management.*
- **Recommendation 23:** *The government in cooperation with the private Energy Service Provider (ESP) must promote energy audit services and their recommendations as the first key step for energy conservation in the industrial sector.*
- **Recommendation 24:** *Given that the industrial sector is a large energy consuming sector, policies targeted at energy efficiency and long term energy supply security should be handled and coordinated by a central agency such as the MEMR.*

PREE Recommendations (Continued)

Industry Sector

- **Recommendation 25:** *The Review Team suggests the emphasis of the relevance of the financial sector in providing financing opportunities for EE projects; this includes State Owned or private financial institutions.*
- **Recommendation 26:** *In the short-term plan, the MEMR must consider the endorsement of imported Energy Saving Capital Equipment or pioneering energy efficient technologies and products for use by the Industry through the Ministry of Finance through tax incentives.*
- **Recommendation 27:** *With the government lacking the necessary resources (financial and manpower), the government must consider strengthening its ties under a "Voluntary Program" with its stakeholders such as NGOs, Professional Associations, environmental advocacy groups, Information agency of the government, and other private entities; to become a partner in delivering the needed services to industry.*
- **Recommendation 28** *SPV is part of one of the most energy intensive industries in Indonesia which necessitates assistance from the government through MEMR. The government should extend the above mentioned recommendations to SPV as well and focus on assistance with energy management within a company and on the evaluation of workshops held, participation at workshops can be encouraged through a National Efficiency Award program that recognizes and acknowledges companies efforts in reducing their energy consumption through improved energy consumption performance supported by energy efficiency projects and actual energy saved.*

PREE Recommendations (Continued)

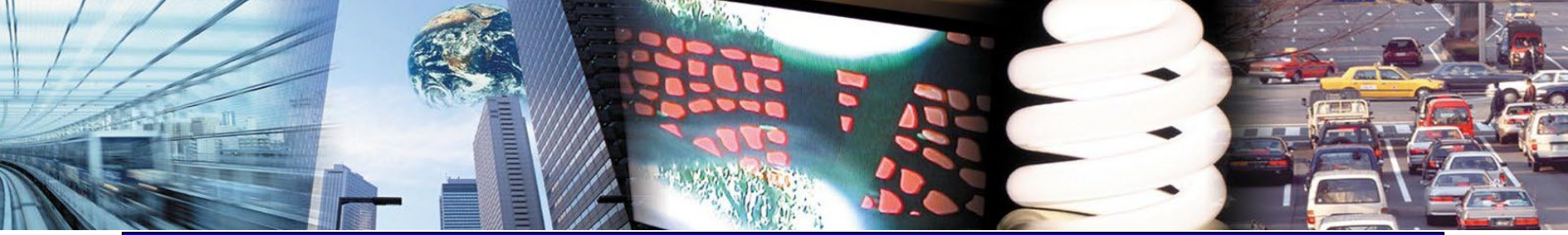
Electricity Sector

- **Recommendation 29:** *With regard to current achievements and challenges in the future, PLN should maintain frequent training on energy efficiency and conservation; establish energy manager qualifications – to power industry specifications for personnel in power generation, in particular; and exchange of experience in implementing Efficiency Drive Program.*
- **Recommendation 30:** *PLN should formally establish an energy manager and energy team in its units to execute energy audits and establish energy efficiency and conservation targets and programs for approval by management.*
- **Recommendation 31:** *The Review Team considers that PLN should formally declare energy reduction targets and thermal efficiency targets for power generation as part of the combined energy efficiency and conservation target in electric supply, stated in the electricity supply master plan – RUPTL. Energy reduction targets and thermal efficiency targets in power generation should be one of the criterions for assessment of the company's performance and the direct responsibility of management.*

Compendium

Compendium

- APERC Compendium team collected and compiled Summary Table and Detailed Compendium of Energy Efficiency policies and measures for 21 APEC Economies.
- Under a common format, information includes each economy's goals, measures and action plan for energy efficiency improvement in a comparative manner.
- The 3rd Summary Table and Compendium are available at APERC's website. (http://www.ieej.or.jp/aperc/CEEP2011html.)
- APERC would publish the 4th Summary Table and Compendium on April 2013 at APERC's website.



Follow-up PREE

- The Follow-up PREE is designed to assist former PREE host economies in implementing the earlier recommendations of the PREE review teams.

- The first Follow-up PREE was held in Viet Nam on 27 February – 2 March 2012.

- The objective is to fill the gap between the implementation of energy efficiency action plans and the monitoring and evaluation of those plans.

Follow-up PREE in Viet Nam

The first Follow-up PREE in Viet Nam on 27 February – 2 March 2012

- 5 day workshop on “Evaluating and Monitoring the Implementation of Viet Nam’s National Energy Efficiency Programs”.
- 7 experts (1:Indonesia, 2: New Zealand, 2: Chinese Taipei, 1:Thailand and 1: USA), 12 participants (Viet Nam) and 4 APERC staff participated.
- The Experts made presentations on “Energy Efficiency Indicators” and “Decomposition Analysis”. The participants were also giving practice (training) for the use of software tool.
- On the final day, participants were divided by three groups and made their presentations on “Energy Efficiency Index” by using decomposition analysis for Indonesia, Viet Nam and Thailand respectively.

PREE Phase 4

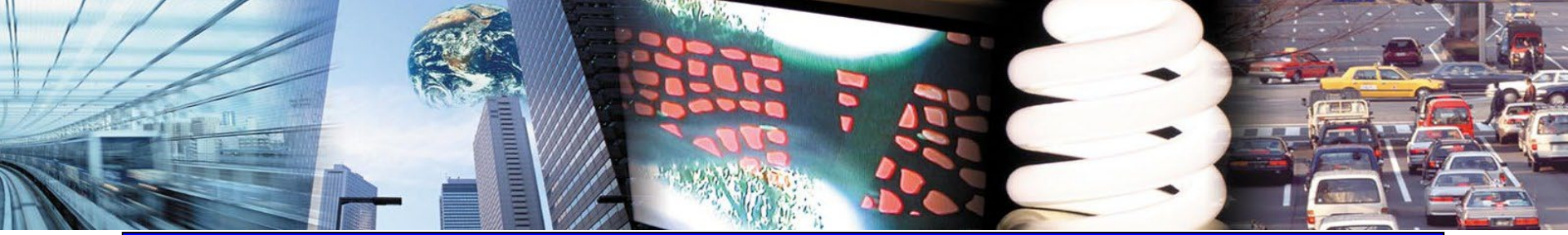
- We are preparing for PREE Phase 4.
- We will carry out PREE in Brunei Darussalam in 2013.
- We will carry out Follow-up PREE in Thailand in 2013. The subject is “Urban transportation.”

2. Cooperative Energy Efficiency Design for Sustainability (CEEDS)

Objectives of CEEDS

- To promote "high-performance" energy efficiency policy measures in developing economies in the APEC region.

- To assist developing economies who wish to design and implement measures for achieving energy efficiency improvements in a specified sector



(CEEDS)

Activities of CEEDS

- Analysis and Study on energy saving potential

- A set of two workshops for participating APEC economies to study on how the best practice of policy measures might be implemented in the selected sector.

CEEDS

Work Plan on CEEDS

- CEEDS Phase 1 on "Appliance Energy Efficiency Standards and Labelling"

- CEEDS Phase 2 on "Building Energy Efficiency Codes and
- Labelling"

- *CEEDS Phase 3 on "Energy Efficiency for Urban Passenger Transportation"*

- *CEEDS Phase 4 on "Promotion of Energy Service Company (ESCO)"*

CEEDS Mechanism

1st Workshop

1. Delegates present the present status of selected measures including barriers /challenges.

2. Brainstorming on what are the next steps to develop selected measures for each participating economies.

3. Discussions to identify key points in the next steps.

2nd Workshop

1. Delegates present updated Next Steps.

2. Brain storming among participants.

3. Delegates present refined proposals on the Next Steps.

Delegates from participating economies

Present measures

Proposal on Next Steps

Support

Host economy

Colleagues at home economies

Invited Experts

Updated Next Steps

Support

APERC

Refined Next Steps

Support

Progress - CEEDS Phase 3

- The **1st CEEDS Workshop** on "**Energy Efficient Urban Passenger Transportation**" was held in San Francisco in September 2011 to develop proposals for energy efficient urban passenger transportation programs for the participating economies: China, Mexico, Philippines, Thailand and Viet Nam and worked together with experts from ASE, LTA Singapore, ADB, ITDP and JAMA.

- The **2nd CEEDS Workshop** was held in Singapore in January 2012 with further "fine-tuning" on the proposals and recommendations on **how selected measures could be effectively implemented in those participating economies**.

CEEDS Phase 3

∗ Why focus on Energy Efficient Urban passenger Transport ?

- Mobility and Safety

  The urban population in the APEC region is increasing, particularly in developing economies.

- Public Health

  Mitigating air pollution through improvements in transport efficiency can thus have significant health benefits for urban populations.

- Energy Security

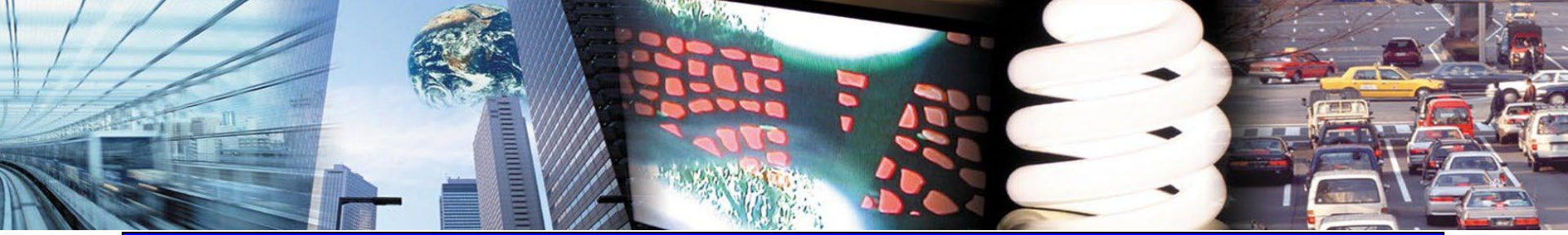
  Rising energy prices and access to oil supply thus raise concerns about economies' ability to meet transport energy needs, as well as general issues of energy security and economic competitiveness.

- Greenhouse Gas (GHG) Emissions

  Almost a quarter of global CO2 emissions from fuel combustion are transport related.

- Costs of Urban Infrastructure

  Transport accounts for a large and expanding share of urban infrastructure costs.



CEEDS Phase 3

∗ Discussion at the two meetings focused on:

- The importance of energy efficient transportation as a cornerstone strategy for achieving significant energy savings to meet APEC energy efficiency goals, as well as to achieve numerous co-benefits in developing APEC economies.
- The large energy savings potential of efficient urban design and the danger of continuing with business as usual growth patterns.
- The current status of efficient transportation programs and planning in each of the participating economies.
- Effective strategies for developing and strengthening efficient urban passenger transportation programs with a focus on transit-oriented development and livable communities, transit planning and strategies for improving vehicle fuel economy.
- Status reports and proposals on the next steps to be pursued by each participating economy to advance efficient urban passenger transportation.

CEEDS Phase 3

∗ Main Challenges that developing APEC economies face;

- Urban traffic congestion, resulting in limited mobility, traffic accidents, and pollution.
- Congested and inadequate bus and rail systems.
- Lack of traffic infrastructure and facilities.
- Proliferation of unregistered, unregulated transit operators and motorbikes for personal transport.
- Lack of government capacity to implement energy efficient transport policies and regulations.
- Population movements out of cities that result in long commutes.
- Unregulated and inefficient used vehicle imports.

CEEDS Phase 3

∗ Key Findings:

Economies can use the ”Avoid-Shift-Improve” framework to effectively improve the efficiency of transportation system.

(1) Avoiding or reducing the need to travel or use motorized vehicles through the integration of land use and transportation planning (e.g. transit-oriented development: TOD).

(2) Shifting to more energy efficient modes of travel by improving and promoting the use of public transit systems and encouraging the use of non-motorized transport.

(3) Improving vehicle and fuel technologies in order to reduce the impact of each kilometer travelled.

CEEDS Phase 3

* Fine-tuned proposals (Excerpts)

(1) China

Promote green, transit-oriented transport system, develop a congestion management project.

(2) Indonesia

Develop intelligent transport system, reform BRT system, eco-driving.

(3) Philippines

Best practice in non-motorized transport, fuel economy standards for new vehicles.

(4) Thailand

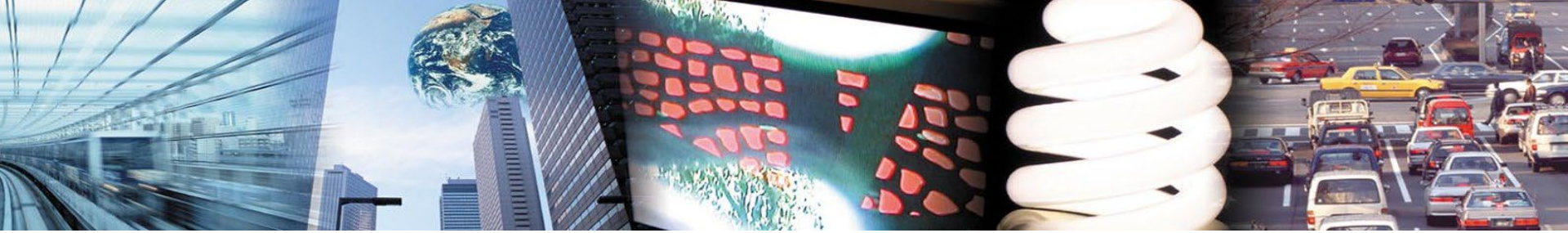
Improved traffic control, R&D for alternative fuels, promote low-emission/ high efficiency vehicles.

(5) Viet Nam

Improve roads and parking, impose tax on vehicle ownership, introduce coordinated traffic signal system

CEEDS Phase 4

- The first workshop of CEEDS Phase 4 will be host by Thailand during the week starting on 21 January 2013.
- The second workshop of CEEDS Phase 4 will be held in 26-28 March 2013 and hosted by Chinese Taipei
- We have initiated the invitation process for participating eligible economies. We are very welcome to your active participation.



Thank You

APERC looks forward to cooperating with you in the future !

http://www.ieej.or.jp/aperc/