# *Policies/Programmes to promote the development of ESCO*

5 March, 2012

**APERC Workshop, Kuala Lumpur**

**Bing-Chwen Yang**
**Team Leader**
**Asia Pacific Energy Research Centre**

Asia-Pacific
Economic Cooperation

# Outline

- Introduction
- Concept for ESCO
- Value for the promotion of ESCO
- Highlight of CEEDS Phase 4
- Key question to be solved

# Characteristics of ESCO

An ESCO is a business that provides a wide range of solutions to reduce energy consumption for client energy consumers. A full ESCO business has the following characteristics:

(1) it implements energy efficient technology and infrastructure, and sometimes energy supply measures;

(2) it provides the capital to carry out the project;

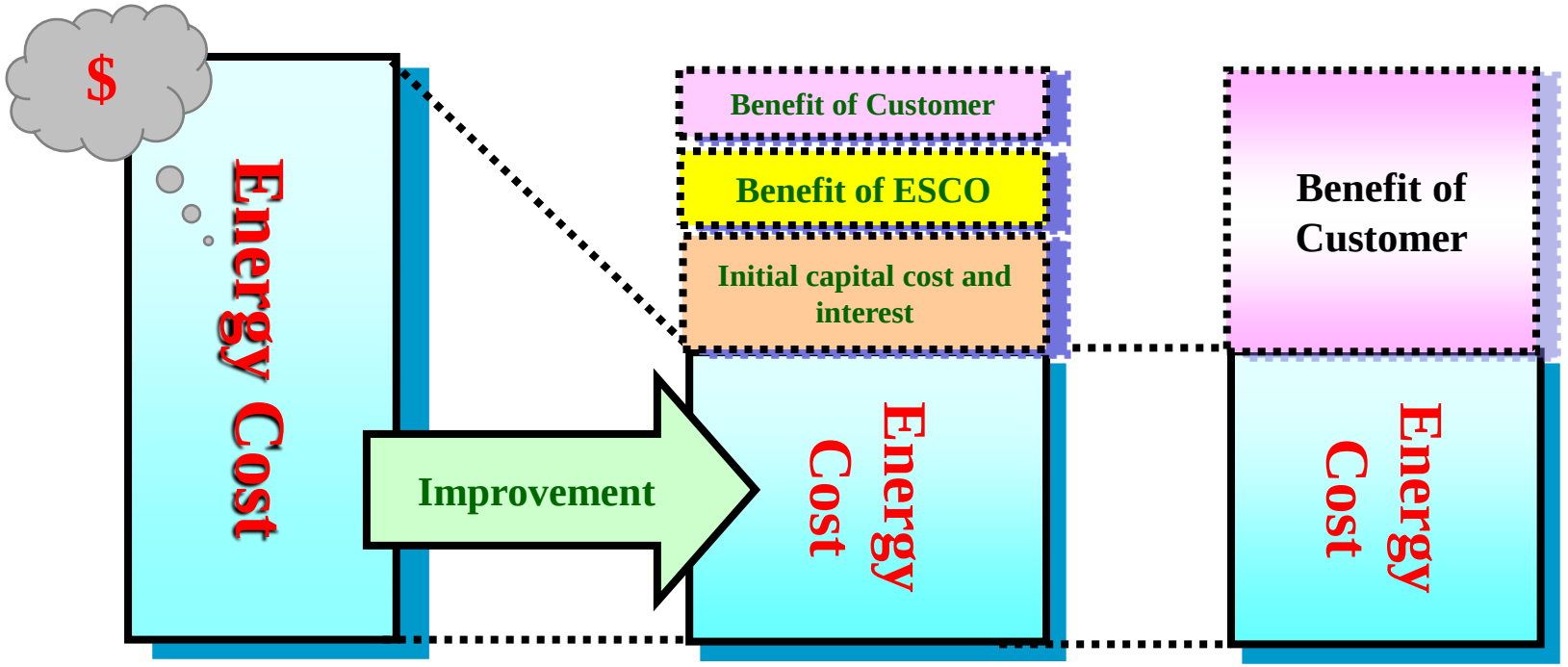
(3) it gets paid for its work from the energy cost savings (**ESPC**, Energy Saving Performance Contract));

(4) it maintains the efficiency monitoring system during the payback period.

# Process for ESCO

| Phase | Customer | ESCO Activity |
|---|---|---|
| **1. Planning** | Consider project motivation. | |
| **2. Project Development** | Review M&V Plan,<br>Review Risk & Responsibility Matrix. | Develop Initial Proposal,<br>Develop Initial M&V Plan and Risk & Responsibility Matrix. |
| **3. Negotiation and Award** | Evaluate M&V Plan(s).<br>Witness DES and M&V activities. | Perform Detailed Energy Survey (DES),<br>Develop Baseline,<br>Refine M&V Plan. |
| **4. Implement DO** | Witness M&V activities.<br>Review and approve reports. | Commission Project,<br>Submit Post-Installation Report,<br>Submit Annual Reports |

# Operation of ESCO




Before implement ESCO Project

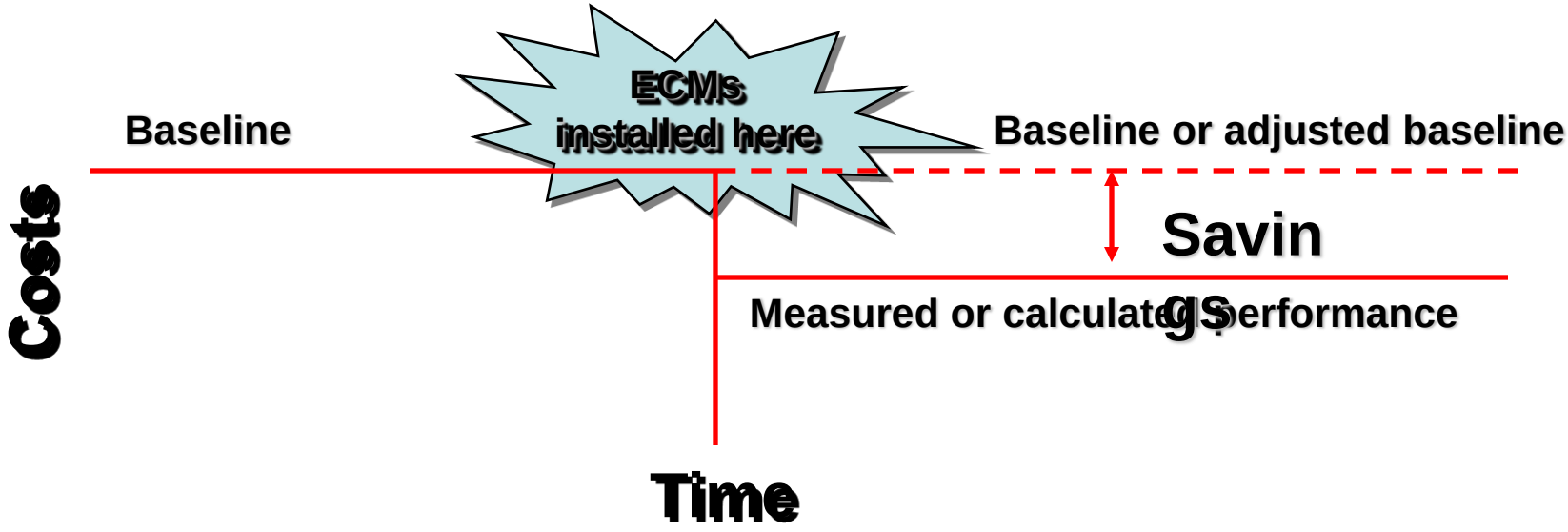
During ESCO Contract Period

End of ESCO Contract

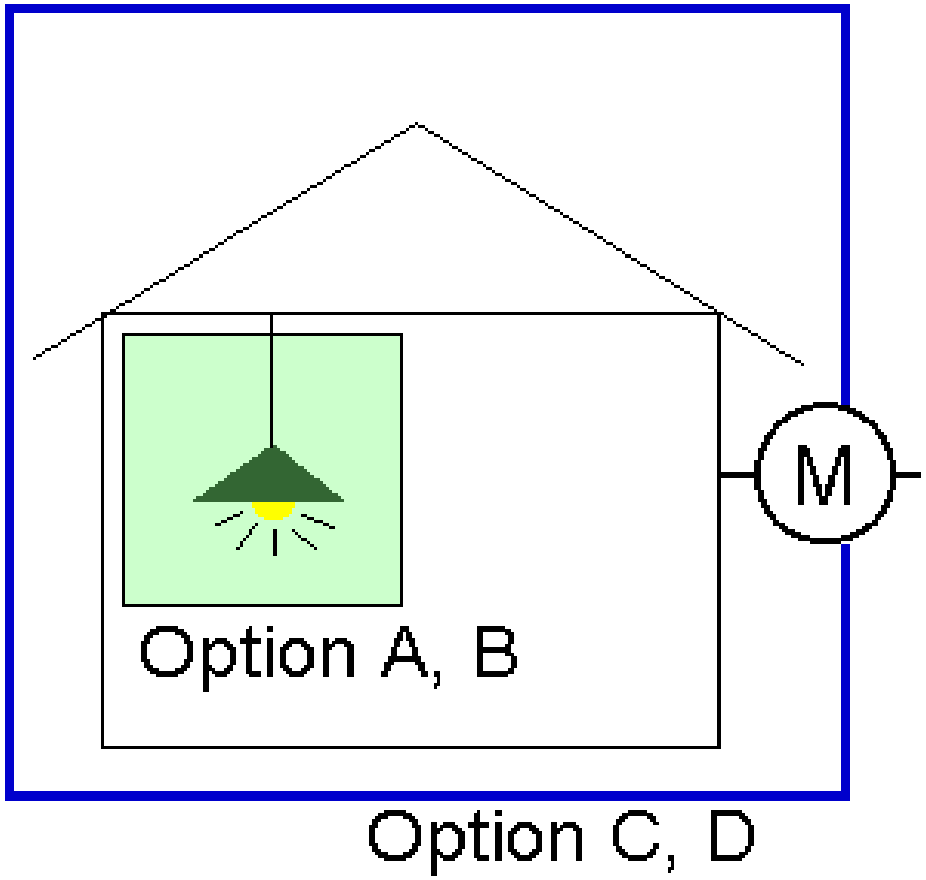
# Definition of Energy Conservation

- Energy Savings = $Use_{Baseline}$ - $Use_{Post\text{-}Retrofit}$

- Energy Savings = ($Use_{Baseline}$ ± Adjustment) - $Use_{Post\text{-}Retrofit}$



# Option for M&V




Options A&B are retrofit isolation methods.

Options C&D are whole-facility methods.

The difference is where the boundary lines are drawn.

By IPMVP

# Why ? ESCO

1. Provide professional design, construction, operation and maintenance – for technology integration

2. Handle the financial problem to reduce the burden of customer

3. Keep the system in the optimum operation condition

4. Maintain a good monitoring and reporting mechanism to fully understanding the real energy consumption for further improvement

# Value of ESCO

1. Introduce the professional engineer to help the improvement the energy efficiency

2. Create a new energy service company to help the implementation of energy conservation policy

3. Encourage the energy user to improve their energy consumption system for cost and carbon emission reduction

# Highlight for CEEDS Phase 4

1. A set of the two workshops to discuss the key issue for the promotion of ESCO in APEC Region

2. Support the participating economies to set up the roadmap and mechanism for the development of ESCO

3. Identify the key technology for the energy conservation or low carbon technology

4. Set up a platform for the experience exchange on the promotion of each economy

# Key Questions to be Addressed (1/3)

1. Key policies to encourage private sector firms to become clients of the ESCO industry (such as tax credits, low interest loans, energy indexes for building or manufacturing process, etc.), this will create the market opportunity for ESCOs.

2. Set up infrastructure to support the ESCO industry (such as licensing, regulations, specifications, etc.) in order to ensure that there is mutual trust between ESCOs and their client firms.

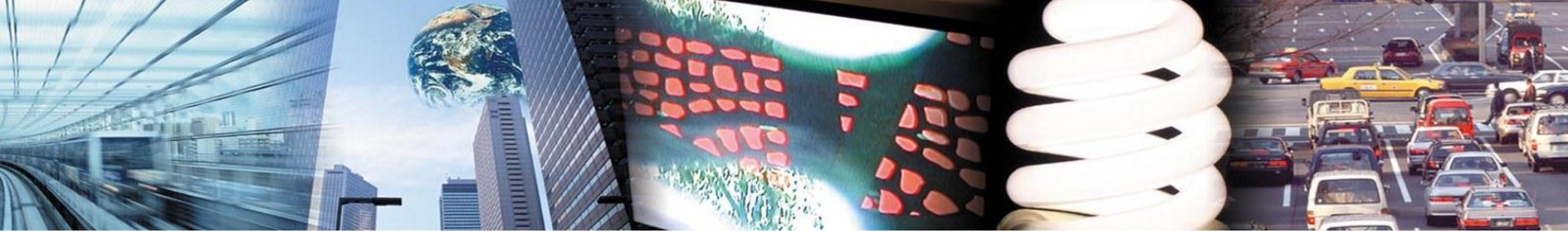
# Key Questions to be Addressed (2/3)

3. Upgrade the capabilities of professional engineer to support the ESCO industry (such as through changes to professional licensing, training courses, academic involvement, etc.)

4. Identify the measurement and verification (M&V) processes/regulations to increase the confidence of potential clients in the ESCO business (such as ensuring impartiality in energy saving performance verification, transparency for the system commissioning processes, etc.), thus ensuring that the reported energy and cost saving can be accepted by both parties.

# Key Questions to be Addressed (3/3)

5. Support the R&D to develop the necessary technology for carrying out ESCO projects (such as monitoring and metering technology or instruments, energy conservation technologies/measures, low carbon energy supply technologies, etc.) in order to implement highly energy-efficient operations.



# Thank you for your kind attention

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