ASEAN Standards Harmonization Initiative for Energy Efficiency
An EU SWITCH Asia Programme

**Sponsor:** European Union (SWITCH Asia), Grant: 1,749,099 EUR

**Program duration:** 2013 - 2016

**Program Lead:** European Copper Institute (Belgium)

**Overall Management and Coordination:** ICASEA (Thailand)

**Partners:**
- Electrical and Electronics Institute (Thailand)
- SIRIM QAS International (Malaysia)
- Research Center for Energy and Environment (Vietnam)
- Integrated Institute of Electrical Engineers (Philippines)
- United Nations Environment Programme (Bangkok)

**Associates:**
- 10 ASEAN ministries in charge of energy (EE&C SSN Focal Points);
- Underwriters Laboratories, CLASP
Growing Energy Demand

**Estimated Household Annual Electricity Consumption (TWh) in ASEAN, 2007**

<table>
<thead>
<tr>
<th>Country</th>
<th>Estimated Consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>Viet Nam</td>
<td>23.5</td>
</tr>
<tr>
<td>Thailand</td>
<td>7.3</td>
</tr>
<tr>
<td>Singapore</td>
<td>2.1</td>
</tr>
<tr>
<td>Philippines</td>
<td>2.1</td>
</tr>
<tr>
<td>Myanmar</td>
<td>1.7</td>
</tr>
<tr>
<td>Malaysia</td>
<td>1.7</td>
</tr>
<tr>
<td>Lao PDR</td>
<td>1.7</td>
</tr>
<tr>
<td>Indonesia</td>
<td>6.8</td>
</tr>
<tr>
<td>Cambodia</td>
<td>0.7</td>
</tr>
<tr>
<td>Brunei</td>
<td>0.3</td>
</tr>
</tbody>
</table>

- Household electricity consumption in ASEAN estimated at **144,038 GWh** in 2007
- Air-conditioners account for about **50%** or more in Singapore, Brunei, Philippines and Thailand

Source: UNEP/ICA 2010
### Huge Energy Saving Potential

#### Electricity Consumption by Air-conditioners, 2010

<table>
<thead>
<tr>
<th>Country</th>
<th>Appliances below MEPS cut-off</th>
<th>Appliances that meet MEPS cut-off</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vietnam</td>
<td>85%</td>
<td>15%</td>
</tr>
<tr>
<td>Thailand</td>
<td>75%</td>
<td>25%</td>
</tr>
<tr>
<td>Singapore</td>
<td>33%</td>
<td>67%</td>
</tr>
<tr>
<td>Phillippines</td>
<td>74%</td>
<td>26%</td>
</tr>
<tr>
<td>Myanmar</td>
<td>100%</td>
<td>0%</td>
</tr>
<tr>
<td>Malaysia</td>
<td>77%</td>
<td>23%</td>
</tr>
<tr>
<td>Laos</td>
<td>100%</td>
<td>0%</td>
</tr>
<tr>
<td>Indonesia</td>
<td>72%</td>
<td>28%</td>
</tr>
<tr>
<td>Cambodia</td>
<td>100%</td>
<td>0%</td>
</tr>
<tr>
<td>Brunei</td>
<td>61%</td>
<td>39%</td>
</tr>
</tbody>
</table>

- **Huge energy saving potential due to low penetration rate of higher efficient air-conditioners**
- **ASEAN Economic Community: momentum to harmonize standards to remove non-tariff barriers to trade**
Huge Energy Saving Potential

- Total energy savings in ASEAN per annum amount to 5,373 GWh
- Assuming 4 baht per kWh tariff, total energy savings is 21.5 billion baht

TOTAL COST SAVINGS
USD 716.4 million
or 21.5 billion baht (at electricity tariffs of 4 baht per kWh)
**ASEAN Community**

In 2003, ASEAN leaders signed the Bali Concord II to establish ASEAN Community in 2020.

In 2007, ASEAN Leaders signed the Sebu Concord ASEAN Community in 2015.

In 2007, ASEAN Economic Ministers ratified the AEC Blueprint which is a work plan to establish the (ASEAN Economic Community: AEC).

In Nov 2007, ASEAN Leaders signed the “ASEAN Charter” and the work plan to establish the AEC and to confirm commitment to establish AEC by 2015.
ASEAN Economic Community (AEC) Framework

1. Integrated Market and Production Base
   - Free flow of goods
   - Free flow of investment in services
   - Free flow of investment
   - Free flow of capital
   - Free mobility of skilled labor

2. Increase Competitiveness
   - e-ASEAN
   - Tax policy
   - Competitiveness
   - Intellectual Property
   - Consumer protection
   - Infrastructure investment

3. Inclusive Development
   - Reduce gap between new and old members
   - Support SME development

4. Integration with global economy
   - Adjust economic policies
   - Build production and sale network
   - FTAs with countries outside region
ASEAN EE MRA and ASEAN Agreement on harmonization of EEE Regulatory Regime (AHEEERR)

• ASEAN EE MRA signed in April, 2002
  – Acceptance of Labs test Reports;
  – Acceptance of Certificates of Certification Bodies.

• ASEAN Agreement on Harmonization of EEE Regulatory Regime (AHEEERR)
  – Signed in December 2005;
  – Effective on January 1, 2011
Challenges

• Disparity in economic and social development
• Reaching consensus
• Institutional setup/capability
• Availability of market data
• Availability of technical resources
• Communications
Program Objectives

Reduction in the electricity consumption from the residential sector

Reduced emissions of greenhouse gases

Removal of non-tariff barriers to trade within ASEAN; enhance regional market integration

Increase market share of high efficiency air-conditioners

- Harmonize test methods and energy efficiency evaluation standards
- Harmonize Minimum Energy Performance Standards (MEPS)
- Change consumer purchasing attitudes
Work Packages

- **WP1**: Establishment of ASEAN SHINE
- **WP2**: Harmonize standards for testing methods (Co-funded by APEC)
- **WP3**: Recommend MEPS, HEPS and develop regional policy roadmap
- **WP4**: Develop national policy roadmaps for MEPS and HEPS
- **WP5**: Capacity building for testing laboratories
- **WP6**: Capacity building for AC manufacturers
- **WP7**: Consumer awareness
The ASEAN-SHINE is established and its sustainability is ensured allowing activities to continue in the future and harmonization of EE standards for other appliances.

The standards for testing methods and evaluation standards related to the energy performance of ACs are harmonized in ASEAN.

A regional policy roadmap for MEPS and HEPS is adopted at the ASEAN level.

National policy roadmaps for implementation and increase of MEPS are developed.

Capacity building for testing laboratories on the new testing and evaluation methods.

Capacity building for local AC manufacturers.

Consumers education and awareness.
Project Structure

**Technical Support:**
- UNEP
- UL
- ACE
- EEI
- CLASP

**EU-Switch Asia**

**ECI (Lead Applicant)**

**Project Manager**

**ICA**

**Project Advisor**

**ICA**

- **Country Coordinator - Thailand**
  - ICA

- **Country Coordinator - Malaysia**
  - SIRIM

- **Country Coordinator - Philippines**
  - IIEE

- **Country Coordinator - Vietnam**
  - RCEE

- **Country Coordinator - Indonesia**
  - ICA

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Establish Country Chapters

Supervise project accounting, financial and technical reporting & liaise with EU

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**ICA**

**SIRIM QAS International**

**Institute of Integrated Electrical Engineers of the Philippines**

**RCEE**

**Research Center for Energy and Environment**

**United Nations Environment Programme**
Components

1. Harmonization of Testing Methods
2. Harmonization of Evaluation Methods
3. Harmonization of MEPS
4. Testing Infrastructure
5. Mutual Recognition Agreement (MRA)
6. Establishment of MV&E Network
Harmonization of MEPS

Figure 2: Average EERs of ACs in the region

- EER 3.3
- EER 2.9

<table>
<thead>
<tr>
<th>Cooling capacity (Btu/h)</th>
<th>Thailand</th>
<th>Vietnam</th>
<th>Malaysia</th>
<th>Philippines</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;= 9000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt; 9000 &lt;= 15000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt; 15000 &lt;= 20000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt; 20000 &lt;= 27000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt; 27000 &lt;= 30000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt; 30000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Harmonization of MEPS

Figure 3: MEPS stringency and coverage (cooling capacity) in ASEAN economies for single split ACs

- EER 3.3
- EER 2.9
ASEAN-SHINE – Beyond 2016

- Platform for energy efficiency regulations, policies, standards
- Expansion of harmonization initiatives
  - Lighting – implementation of en.lighten
  - Refrigerator, electric fan, water pump, etc.
  - Transformer, electric motor
- Partnerships and funding for sustainability of platform
  - Long-term self-sustainability
Thank you

For more information, please contact Bek Chee Jin, bek.cheejin@copperalliance.asia

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