Dissemination of EE&C Outcomes within ASEAN Member States

EMAK 10

4 December 2020

Presented by:
Christopher G. Zamora
Senior Manager of ASEAN Plan of Action For Energy Cooperation
About the ASEAN Centre for Energy

Inter-governmental organisation established on 1 January 1999
Possesses legal personality representing 10 AMS interests in the energy sector.
Enjoys political backing & support from AMS, DPs & IOs.
Plays (3) critical roles to advance ASEAN energy cooperation: Catalyst, Data and Knowledge Hub, Think Tank
Manages ASEAN Plan of Action for Energy Cooperation (APAEC).

**Vision:** As catalyst for the economic growth and **integration** of the ASEAN region by initiating and facilitating multilateral **collaborations** as well as joint and collective activities on **energy**.
Energy Efficiency and Conservation Under APAEC Phase I: 2016-2020

Action Plans
- Regional policy and roadmap for MEPS for AC and Lighting
- National Policy & roadmap for MEPS for AC and Lighting
- Awareness raising programme

Action Plans
- Create more opportunities for private sector
- Capacity Building
- ASEAN Energy Awards

Action Plans
- Establish network of FIs
- Financing Training
- Pilot Projects
- Guidelines on EE financing
- Implementation of EE financing projects

- Review of international experience on GBC
- Guideline of GBC
- Capacity building

To reduce energy intensity (EI) by 20% in 2020 based on 2005 level.
Performance of Energy Efficiency and Conservation Programme in APAEC Phase I: 2016-2020

- 2016: 2.78
- 2017: 3.58
- MTR: 3.67
- 2019: 4.38
- 2020: 4.97
ASEAN has exceeded the Energy Intensity Reduction Target and set a new target for APAEC Phase II: 2021-2025

• As of 2018, ASEAN has achieved 21% energy intensity reduction based on 2005 level.
• ASEAN to look into a more ambitious target for APAEC Phase II with 32% by 2025
• Expand the regional EE&C initiatives to Transport and Industrial Sectors

Sources: AEDS
Key Accomplishment
Energy Efficiency and Conservation

- Study on Financing Mechanism for EE Project Implementation
- Regional Policy Roadmap for Lighting
- Guidelines for EE integration to ASEAN EEE MRA
- Future of Cooling in ASEAN
Private Sector Participation

ASEAN Energy Business Forum
A high-level platform for information exchange and cooperation opportunities for key stakeholders of ASEAN energy sector.

ASEAN Energy Awards
A platform to showcase the best practices in EE&C, Renewable Energy, and Clean Coal Technology in accelerating energy transition.

ASEAN+3 Cleaner Energy Future Initiative for ASEAN
Facilitate collaboration between public and private sectors in ASEAN+3 For accelerating the deployment of cleaner energy and low carbon technologies in ASEAN region.
ASEAN Energy Awards – EE&C Categories

- Energy Efficient Building
  - New & Existing Building
  - Retrofit Building
  - Tropical Building
  - Special Submission
  - Cutting Edge Technologies
  - EE&C Development Technology
  - ZEB Ready Efforts

- Green Building
  - Added 2014
  - Small and Medium Building
  - Large Building

- Energy Management
  - Added 2017
  - Small & Medium
  - Large

- Building
  - Special Submission
  - Small & Medium
  - Large

- Industries
  - Added 2019

New added categories:
- Added 2014: Green Building
- Added 2017: Energy Management
- Added 2019: Industries
ASEAN Energy Awards – EE&C Categories

**Number of Entries**

**Year**

2000: 11, 12, 21, 17, 18, 12, 15
2001: 11, 12, 21, 17, 18, 12, 15
2002: 11, 12, 21, 17, 18, 12, 15
2003: 11, 12, 21, 17, 18, 12, 15
2004: 11, 12, 21, 17, 18, 12, 15
2005: 11, 12, 21, 17, 18, 12, 15
2006: 11, 12, 21, 17, 18, 12, 15
2007: 37, 33, 35, 36, 36, 36, 36
2008: 37, 33, 35, 36, 36, 36, 36
2009: 37, 33, 35, 36, 36, 36, 36
2010: 37, 33, 35, 36, 36, 36, 36
2011: 37, 33, 35, 36, 36, 36, 36
2012: 37, 33, 35, 36, 36, 36, 36
2013: 37, 33, 35, 36, 36, 36, 36
2014: 37, 33, 35, 36, 36, 36, 36
2015: 37, 33, 35, 36, 36, 36, 36
2016: 37, 33, 35, 36, 36, 36, 36
2017: 37, 33, 35, 36, 36, 36, 36
2018: 37, 33, 35, 36, 36, 36, 36
2019: 37, 33, 35, 36, 36, 36, 36
2020: 37, 33, 35, 36, 36, 36, 36
Harmonisation and Promotion of EE S&L Regional Policy Roadmap

Harmonisation of Energy Performance Standards for Air Conditioners in ASEAN: A Regional Policy Roadmap

Introduction

High energy efficiency products provide solutions to some of the key issues affecting the association of Sustainable Development Goals (SDGs) energy, such as climate change and energy efficiency and sustainable energy access. Besides, it is the key to human health and well-being, as highlighted in the 2015 Addis Ababa Outcome Document (AAOD). The Addis Ababa Outcome Document (AAOD) is the outcome document of the United Nations Conference on Sustainable Development Rio+20, which has been endorsed by all United Nations Members States.

The United Nations Environment Programme estimates that a full transition to the most efficient lighting technology across ASEAN member states could reduce the region’s electricity use by 15% by 2030. The adoption of efficient lighting would therefore allow for the reduction of greenhouse gas emissions and contribute toward the goal of limiting the global temperature rise by 2°C above pre-industrial levels by 2050.

Expansion to other Electrical Appliances

- Harmonisation of Energy Performance Standards for Electric Motors
- Harmonisation of Energy Performance Standards for Transformer
- Regional Product Registration Database and System on AC and Refrigerator for ASEAN: to assist tracking and monitoring products in the ASEAN market

A roadmap to facilitate harmonisation or clear alignment of minimum energy performance standards for air conditioners and Lighting in ASEAN economies.
Harmonisation and Promotion of EE S&L
Integration of Energy Efficiency to ASEAN EEE MRA

Provide the action steps as well as harmonised guidelines, processes, and documentation to enable ASEAN Member States (AMS) to integrate their energy efficiency regulations into the processes of the ASEAN EEE MRA.
Green Building Codes to increase the penetration of high energy efficient products

Future initiative
Roadmap for Sustainable and Energy Efficient Buildings in ASEAN – with IEA

Goals
• Improve the understanding, design and implementation of buildings and cooling energy efficiency policies.
• Support the requirement for harmonised targets and standards that enable the transfer of learnings and further the integration and connectivity of the region

Output
• Long term buildings roadmap for ASEAN
• Sustainable cooling roadmap for ASEAN
Enhance the participation of financial institutions in EE&C development

**Mapping of Energy Efficiency Financing in ASEAN**
- EE policies, rules and regulations
- Financing schemes, mechanism and incentives
- Stakeholder mapping
- Challenges and recommendations

**EE Financing Guidelines in Thailand**
- Current EE situation in Thailand
- EE financing mech. under the ENCON Fund
- Eligibility criteria & application process for each mechanism
- Decision-making matrix to select the suitable mechanism

**Financing Mechanism Design for EE&C Project Implementation**
- EE financing best practices
- National EE Financing Mech. Recommendations
- Regional EE Financing Mech. Recommendations
Objectives
1. To improve the quality and quantity of trainers for Energy Management Training
2. To build up or refine the Energy Manager Certification System in each AMSs
3. To ensure sustainability of Energy Manager Capacity Building in each AMSs

Participant should complete the required activities as follows:
1. Practice-1 : Training of Trainers
2. Practice-2 : Trial Energy Audit
3. Report & Presentation of Trial Energy Audit
4. Examination at Training Center(Mini-plant)
5. Examination at ECAP
Achievements of the AJEEP Scheme 2

Numbers of AJEEP Certified Trainers
ASEAN Energy Manager Trainers Under AJEEP Scheme 2

Group A: Indonesia, Malaysia, Thailand, Vietnam
Group B: Brunei Darussalam, Philippines, Myanmar
Group C: Cambodia, and Lao PDR

<table>
<thead>
<tr>
<th></th>
<th>2019-2020</th>
<th>Total (Trainer)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Group A</strong></td>
<td>1 / Indonesia</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>2 / Malaysia</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 / Thailand</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 / Vietnam</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total : 8 Trainers</td>
<td></td>
</tr>
<tr>
<td><strong>Group B</strong></td>
<td>2 / Brunei</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>2 / Myanmar</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total : 4 Trainers</td>
<td></td>
</tr>
<tr>
<td><strong>Group C</strong></td>
<td>2 / Cambodia</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>2 / Lao PDR</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total : 4 Trainers</td>
<td></td>
</tr>
<tr>
<td><strong>Singapore</strong></td>
<td>2 / Singapore</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Total : 2 Trainers</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>18</td>
<td>50 + ACE:4</td>
</tr>
<tr>
<td></td>
<td>Total: 54</td>
<td></td>
</tr>
</tbody>
</table>

Group A: Indonesia, Malaysia, Thailand, Vietnam
Group B: Brunei Darussalam, Philippines, Myanmar
Group C: Cambodia, and Lao PDR
Objectives
To narrow the gap of the EE&C promotion capabilities such as:
1. Establishment of better EE&C Policy & EE&C Legal Framework
2. Capacity building to implement the EC law
3. Awareness raising on the EE&C policy and Law/Regulation

Areas of support:
1. EE&C Policy and Law
2. EE Standard and Labeling System
3. Energy Management System
## 1. EE&C Policy and Law

<table>
<thead>
<tr>
<th></th>
<th>Cambodia</th>
<th>Lao PDR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Master Plan for EE&amp;C</td>
<td>-</td>
<td>Master Plan for EE&amp;C: finalized in 2016</td>
</tr>
<tr>
<td>EE&amp;C Act</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>EE&amp;C Decree</td>
<td>-</td>
<td>Prime Minister Decree was approved on 11th May 2020.</td>
</tr>
</tbody>
</table>

## 2. S&L System Arrangement

<table>
<thead>
<tr>
<th></th>
<th>Cambodia</th>
<th>Lao PDR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rating standard, MEPS &amp; Label design</td>
<td>Finalised by MME and TWG and prescribed in the draft Sub-decree</td>
<td>Finalised by IREP, MEM and TWG and prescribed in the draft Provision</td>
</tr>
<tr>
<td>MVE, Supplier &amp; product registration system</td>
<td>Finalised by MME and TWG and prescribed in the draft Sub-Decree (Outline)</td>
<td>Finalised by IREP, MEM and TWG and prescribed in the draft Provision</td>
</tr>
<tr>
<td>MRA (AC test lab.)</td>
<td>Under discussion with related ministries</td>
<td>Accreditation Centre in MOST is the MRA’s jurisdiction.</td>
</tr>
</tbody>
</table>
### AJEEP Scheme 3 Progress and Achievements

#### 3. Energy Management System Arrangement

<table>
<thead>
<tr>
<th></th>
<th>Cambodia</th>
<th>Lao PDR</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Threshold of designation</strong></td>
<td>- Drafted tentative level of threshold with reference to electricity consumption data provided by EDL</td>
<td>- Prescribed in Prime Minister Decree on EE&amp;C (Factory: 20 TJ/y / 1000 kW / 1175 kVA) (Building: 20,000 m²)</td>
</tr>
<tr>
<td></td>
<td>- Set tentative threshold with Type 1 and Type 2 for factories and buildings respectively</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Collecting fuel consumption data for the further examination</td>
<td></td>
</tr>
<tr>
<td><strong>&quot;Model Project&quot;</strong></td>
<td>- Held the stakeholder meetings among the concerned ministries, university and companies.</td>
<td>- Held the stakeholder meetings among the concerned ministries, university and companies.</td>
</tr>
<tr>
<td><strong>EC Guideline</strong></td>
<td>- Under consideration</td>
<td>- The outline was prescribed in the Decree. - Under consideration</td>
</tr>
<tr>
<td><strong>Periodical report</strong></td>
<td>- Deepen understanding through group work practice and information sharing by supporting countries</td>
<td>- Obligation of submission was prescribed in the Decree. - Deepen understanding through group work practice and information sharing by supporting countries - Trial making by cooperative companies with their own data - Supposed to be drafted the template</td>
</tr>
<tr>
<td></td>
<td>- Supposed to be drafted the template</td>
<td></td>
</tr>
<tr>
<td><strong>Qualification system and training for Energy Manager</strong></td>
<td>- Energy Manager Training Committee was established in 2019. Resources in Scheme 2 will be utilized.</td>
<td>- Obligation of assignment was prescribed in the Decree - Drafted in 2018 - Detailed design: under development</td>
</tr>
</tbody>
</table>
APAEC Phase II: 2021 - 2025

38th AMEM endorsed APAEC Phase II: 2021-2025, 19 Nov 2020

- 23% RE share in TPES & 35% in power capacity
- 32% Energy Intensity Reduction Target by 2025

Enhancing Energy Connectivity & Market Integration in ASEAN to Achieve Energy Security, Accessibility, Affordability & Sustainability for All
Accelerating Energy Transition & Strengthening Resilience through Greater Innovation and Cooperation

The ASEAN Plan of Action for Energy Cooperation (APAEC) is a series of guiding policy documents that aims to promote multilateral energy cooperation and integration to attain the goals of the ASEAN Economic Community (AEC). It serves as the platform for deeper cooperation both within ASEAN as well as with DPs and IOs towards enhancing energy security, accessibility, affordability, and sustainability within the framework the AEC.
Key Strategies for APAEC Phase II: 2021 - 2025

1. ASEAN Power Grid
To expand regional multilateral electricity trading, strengthen grid resilience and modernisation, and promote clean and renewable energy integration.

2. Trans-ASEAN Gas Pipeline
To pursue the development of a common gas market for ASEAN by enhancing gas and LNG connectivity and accessibility.

3. Clean Coal Technology
To optimise the role of CCT in facilitating the transition towards sustainable and lower emission development.

4. Energy Efficiency and Conservation
To reduce energy intensity by 32% by 2025 and encourage EE&C efforts, especially in transport and industry.

5. Renewable Energy
To increase the share of RE to 23% in TPES and 35% in installed power capacity by 2025.

6. Regional Energy Policy and Planning
To advance energy policy and planning to accelerate the region’s energy transition and resilience.

7. Civilian Nuclear Energy
To build human resource capabilities on nuclear science and technology for power generation.
Programme Area No 4: Energy Efficiency & Conservation

5 Outcome-based Strategies and 14 Action Plans

OBS1
Expand, Harmonise, and Promote EE S&L

OBS2
Enhance Participation of Private Sector, Financial Institutions, and Clusters

OBS3
Strengthen Energy Efficiency in Building

OBS4
Pursue Energy Efficiency in Transport

OBS5
Advance Energy Efficiency in Industry

One Community for Sustainable Energy
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Thank You