

# ASEAN Regional Product Registration System

**24 August 2021**

Presented by:  
Rio Jon Piter Silitonga  
Research Analyst  
ASEAN Centre for Energy



**One Community  
for Sustainable  
Energy**



# Table of Contents

---

1. Basic Direction on EE Database under the APAEC Phase II

---

2. The Significance of PRS System for ASEAN Region

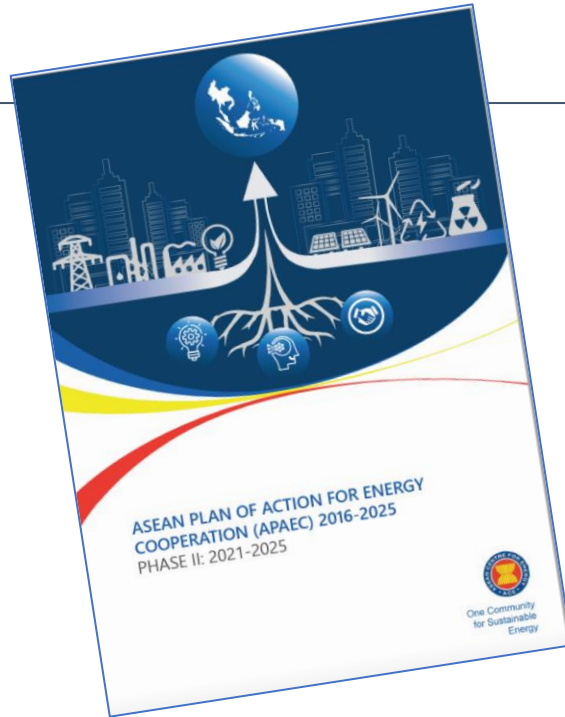
---

3. Utilization of the data at the regional level and linkages to mutual recognition agreement

---

4. Key Issues and the Way Forward

# Key Outcomes of the 38<sup>th</sup> AMEM



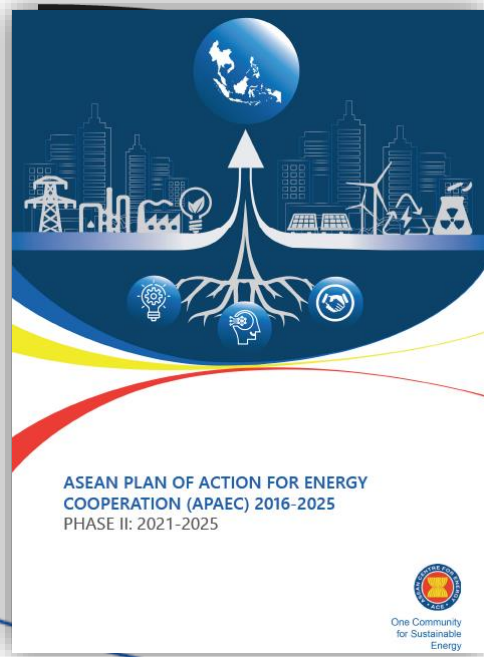
## APAEC Phase II: 2021-2025

- ❑ **Endorsed** the ASEAN Plan of Action for Energy Cooperation (APAEC) Phase II: 2021-2025 with a sub-theme of “Accelerating Energy Transition and Strengthening Energy Resilience through Greater Innovation and Cooperation” to serve as the blueprint for the long-term transformation of ASEAN’s energy landscape towards a sustainable future.
- ❑ **Endorsed** the 6th ASEAN Energy Outlook (AEO6) to complement APAEC Phase 2.
- ❑ **Endorsed** the new regional targets for the development of EE&C and RE:
  - ✓ **Energy intensity reduction target of 32% by 2025, based on 2005 levels.**
  - ✓ *RE share target of 35% of Total Installed Power Capacity by 2025, which will contribute to achieving the aspirational RE share target of 23% in the ASEAN Total Primary Energy Supply.*



# ASEAN Plan of Action for Energy Cooperation (APAEC ) Phase II: 2021-2025

*“Accelerating Energy Transition and Strengthening Energy Resilience through Greater Innovation and Cooperation”*



→ ASEAN Power Grid

→ Trans-ASEAN Gas Pipeline

→ Clean Coal Technology

→ **Energy Efficiency and Conservation**

→ Renewable Energy

→ Regional Energy Policy and Planning

→ Civilian Nuclear Energy

APS Targets

**EI REDUCTION TARGET**  
Reduce EI by **20% in 2020**,  
**32% in 2025**  
based on 2005 level.

# Programme Area No. 4: Energy Efficiency and Conservation

## 'To Reduce Energy Intensity at 32% by 2025'

### Outcome-Based Strategies and Programmes



#### Harmonised EE Standard

- Harmonised standard for AC and Lighting (existing).
- Expansion plan to cover refrigerator, electrical motor, TV , etc.,.
- MRA



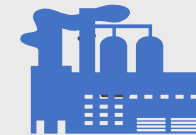
#### Private Sector and EE Finance

- Energy Efficiency Fund, ESCO Fund, Tax Incentives, Subsidy, Concessional Loan (GCF, IFIs), On-Bill Financing, Blockchain
- Business Forum



#### Sustainable Building

- Green Building Code
- Roadmap Development
- Energy Audit and training
- EE and Net Zero Award for building
- Sharing Best Practices on Net Zero Building



#### Industry – EMS technology uptake

- Energy Management Adoption
- Energy Manager training (AEMAS)
- ASEAN EE Award for Industry
- EE Pilot Projects

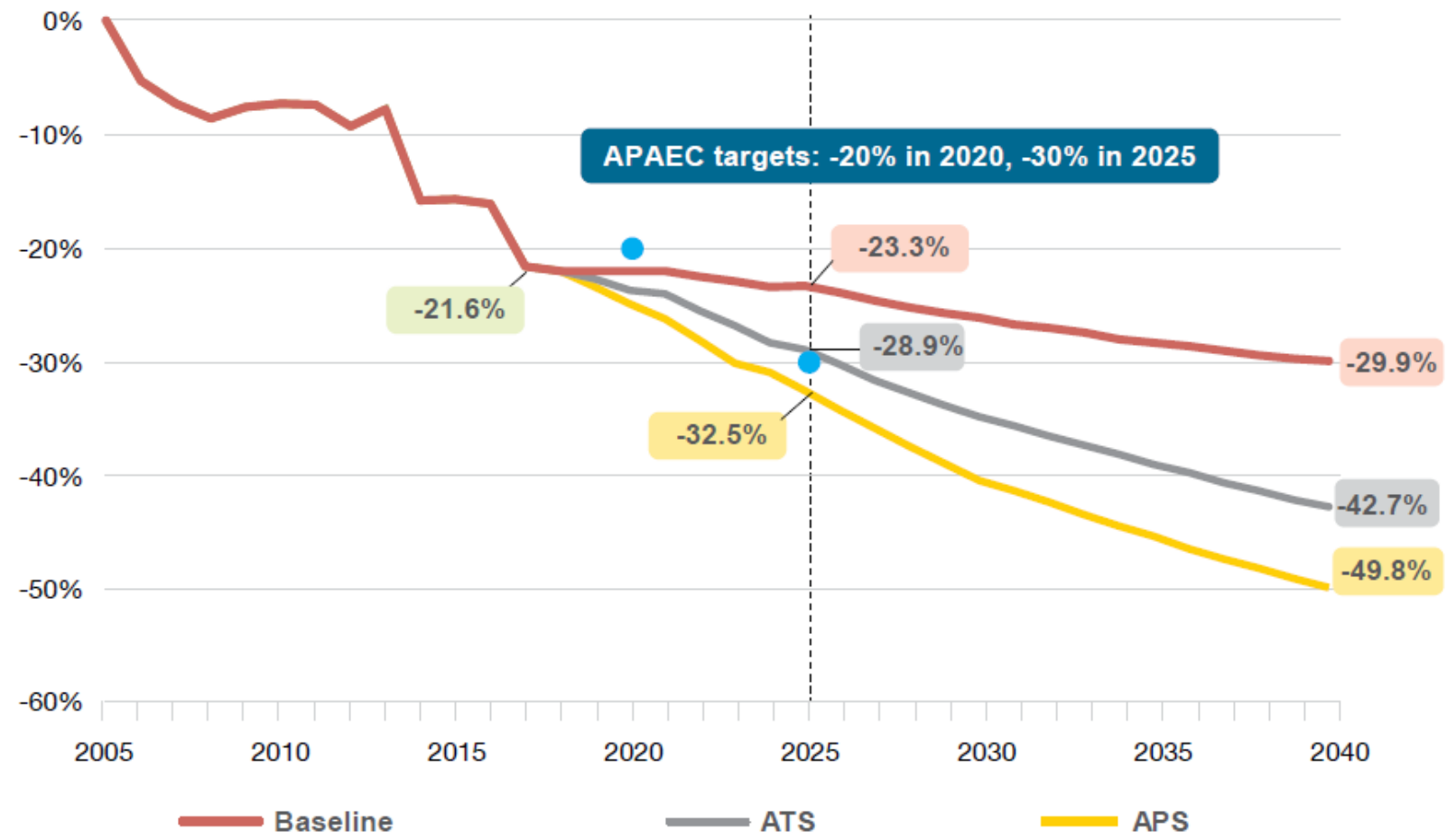


#### Transport - Fuel Efficiency and EV system

- E- Mobility
- Fuel Economy Standard
- Demand Side Management & Demand Response
- Information sharing on best practices

# ASEAN Energy Intensity Reduction (Progress and Projection)

Scenarios from the 6<sup>th</sup> ASEAN Energy Outlook



**ASEAN has attained a 21% energy intensity level in 2018, surpassing the aspirational target of 20% set for 2020.**

# Basic Directions of Energy Efficiency under APAEC Phase II: 2021-2025



One Community  
for Sustainable  
Energy

- To achieve the indicative target at the ASEAN level of at least 32% primary energy intensity reduction in 2025
- Expansion on Standard Harmonisation for more appliances and Industry Equipment
- Business forum activities to enhance ASEAN energy R&D and EE investment.
- Strengthen cooperation in EE&C sector, capacity building and sharing on best practices
- Improve the ASEAN energy efficiency database system (data management on building, industry & transport and product registration system for policy making, facilitate exchange information and analysis
- ASEAN Sustainable Energy Manager Training and Certification
- EE investment and financing projects (Mobilizing private Capital in EE investment)
- To increase energy efficiency in all sector including transport and industry

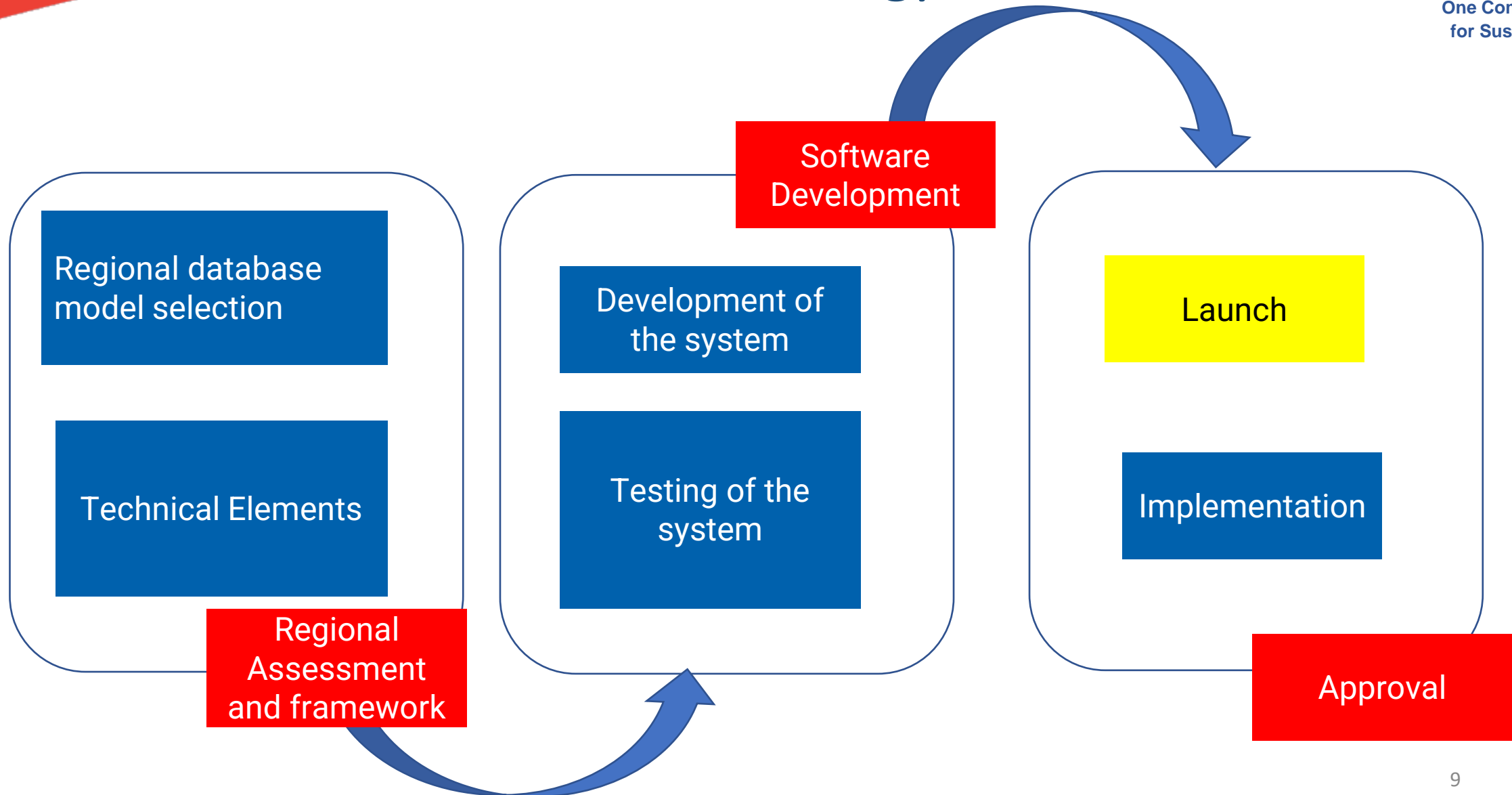
# Significance of ASEAN Product Registration System

“ A joint collaboration between ACE and UNEP to support the harmonisation of EE standards in the region “





# Methodology



# ASEAN Regional Roadmap for EE Harmonisation on AC

## Component

### 1. Harmonization of Testing Methods

- ASEAN will harmonize testing standards referencing ISO 5151-2010
  - ✓ Brunei, Indonesia, Malaysia, Philippines, Singapore, Thailand, Vietnam to adopt by 2016
  - ✓ Cambodia, Laos, Myanmar to adopt by 2018

### 2. Harmonization of Evaluation Methods

- Evaluate fixed speed and inverter ACs separately
- Consider a common evaluation method (CSPF) using ISO 16358-1 by 2020

### 3. Harmonization of MEPS

- ASEAN countries will notify minimum MEPS of 2.9W/W for EER/weighted EER and 3.08W/W for CSPF
- The MEPS would be reviewed and revised periodically at interval of 5 year or less

### 4. Testing Infrastructure

- Establish an appropriate framework for round robin testing ( RRT) and evaluation process for testing facilities by 2020

### 5. Mutual recognition Agreements (MRA)

- Evaluate feasibility of incorporating energy performance testing into existing MRA (AHEEERR)
- If existing MRA not appropriate, establish new MRA by 2020

### 6. Reporting

- ASEAN will establish a regional product database by 2020

#### Harmonization of Energy Performance Standards for Air Conditioners - A Regional Policy Roadmap

##### Introduction

Air conditioning represents a large proportion (up to 50%<sup>1</sup>) of electricity demand in the residential and commercial sectors in ASEAN economies. The market of room air conditioners is expected to grow at a pace of at least 10% per year over the next 5 years<sup>2</sup>, further increasing energy demand. The economies of the ASEAN countries are moving towards a common market by 2016. It becomes imperative that the product performance standards are harmonized. A number of efforts have already taken place for harmonizing electro technical standards for various products. This paper describes the policy roadmap for the harmonization of energy performance standards of small and medium residential air conditioners. This regional policy roadmap closely follows the ASEAN Plan of Action for Energy Cooperation (APAEC).

The policy roadmap herein, enumerates various components that have been recommended by the policy and technical working groups of the ASEAN SHINE project and where concrete action is required.

##### Objectives:

To provide clear guidelines in the adoption of policies to promote the use of more efficient air conditioning equipment and define the targets to be achieved by all ASEAN countries with regards to the adoption of harmonized energy performance standards of ACs by 2020.

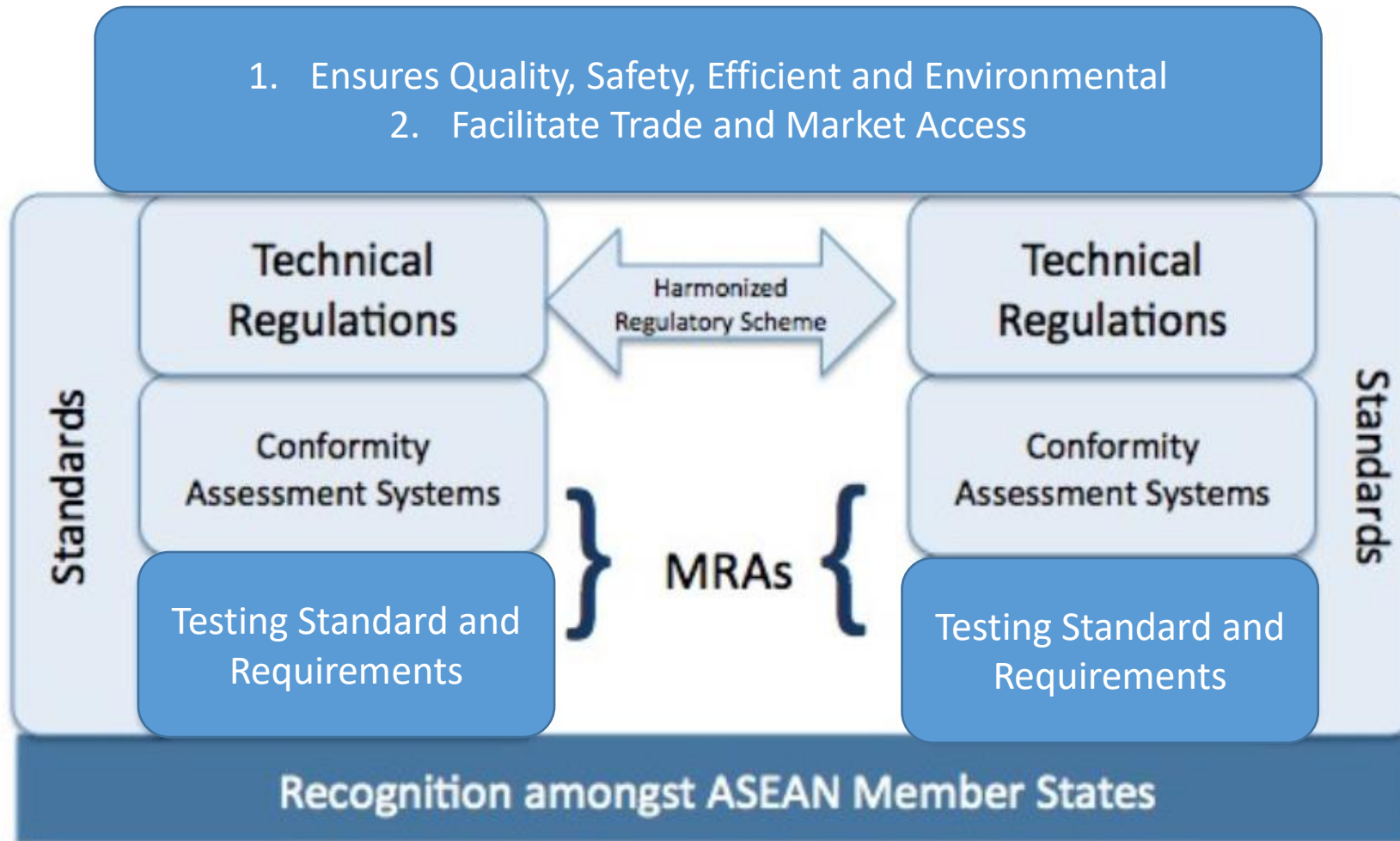
##### Components:

- 1) **Harmonization of Testing Methods:** On the basis of various recommendations the ASEAN countries have agreed for a uniform testing method derived from ISO 5151-2010. These testing methods are to be adopted and notified by countries by 2016. The countries also need to agree to take into consideration metrics to measure part-load energy performance, in accordance with the ISO 16358-1 and any revision to ISO 5151-2010 in the future. Any revision of the harmonized testing standards at the national level should be discussed and coordinated in the EE&C SSN.
- 2) **Harmonization of metrics:** For fixed speed and inverted based ACs the ASEAN countries will report the performance as EER and CSPF respectively until 2018. A common metrics namely CSPF using ISO 16358-1 may be considered after 2020. A

<sup>1</sup> International Copper Association, "Market Study for Harmonization of Energy Efficiency Standards for Air-conditioners and Refrigerators in South-east Asia", Research report, ICA, 15th November 2010.

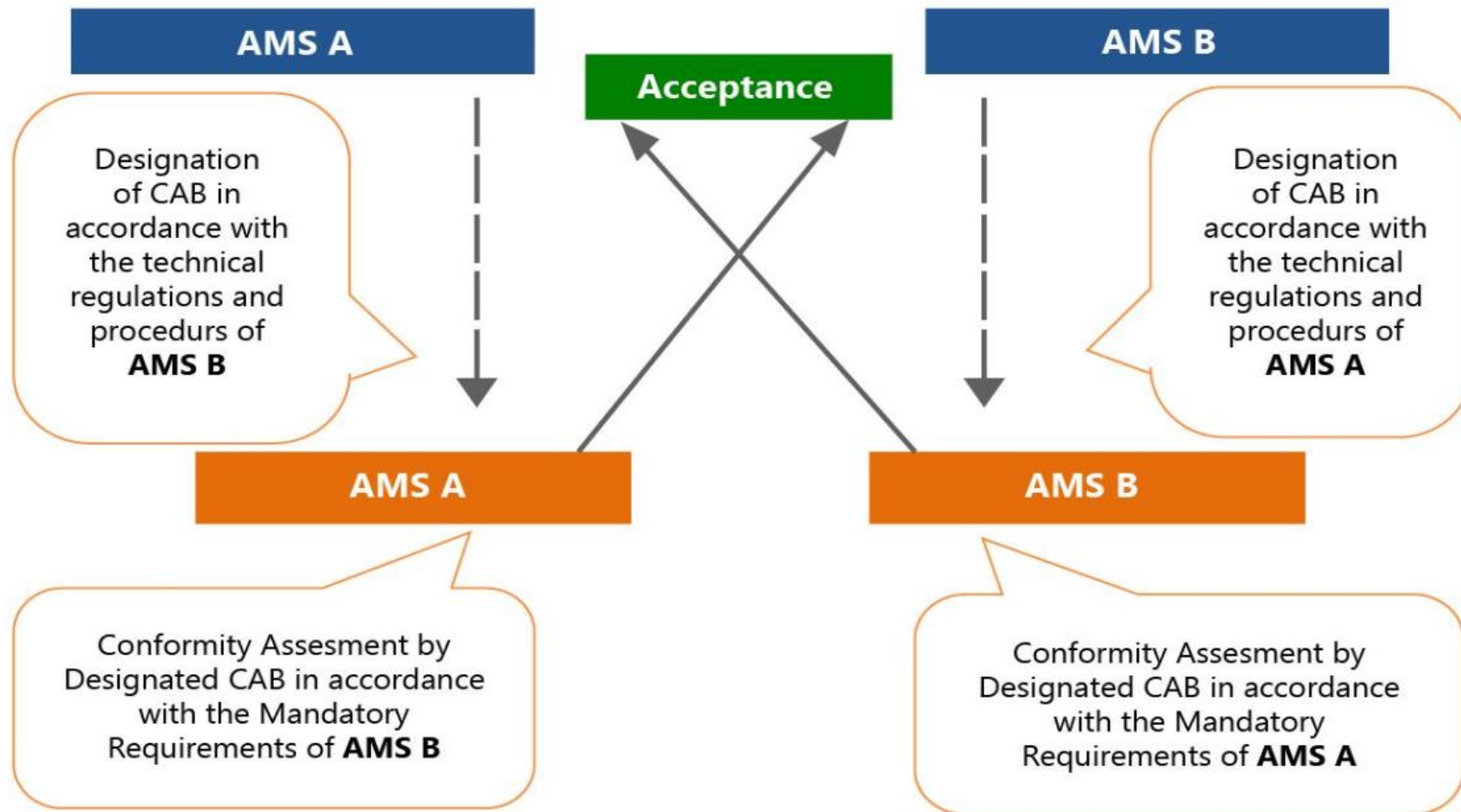
<sup>2</sup> Source: Euromonitor.

# EE Standard Harmonisation in ASEAN



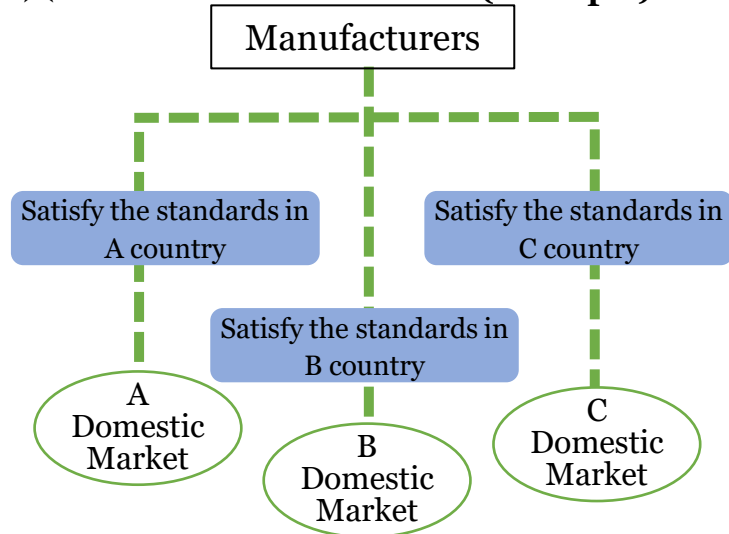
- **The Regional Policy Roadmap for MEPS** for RACs was endorsed by the 35th AMEM in 2017
- **Reduction of 3,456 Gigawatt hour (per annum)** of the cooling energy use in the residential through increasing and harmonized standard on AC
- **The Guidelines** for the Integration of Energy Efficiency into the ASEAN Sectoral Mutual Recognition Arrangement for Electrical and Electronic Equipment (ASEAN EEE MRA)
- **Developing with UNEP PRS System** as repository of conformity assessment and market monitoring

# ASEAN Electrical and Electronic Equipment Mutual Recognition Arrangement (ASEAN EEE MRA)



# Benefits of PRS System to Support S&L Harmonization

## ★ Current Status (Example)



### Status

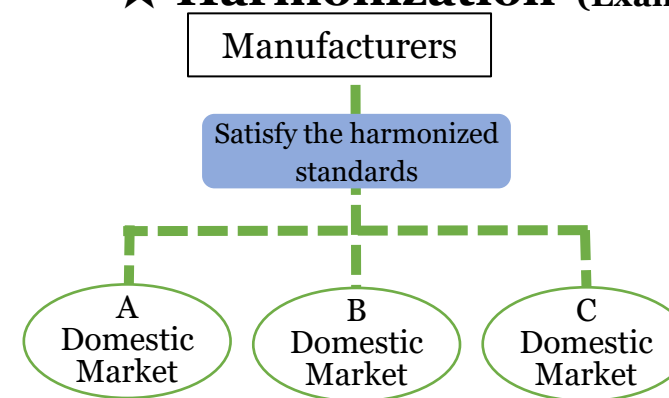
Non-unified energy efficiency standard

- Test standards
- Evaluation index (e.g. APF, CSPF, EER, Weighted EER)
- Energy efficiency standard values
- Rating standards(in the multi rating system)
- Indication rules

### Issues

- ✓ Lacking testing laboratories
- ✓ Workloads for administration and manufacturers etc.

## ★ Harmonization (Example)



### Status

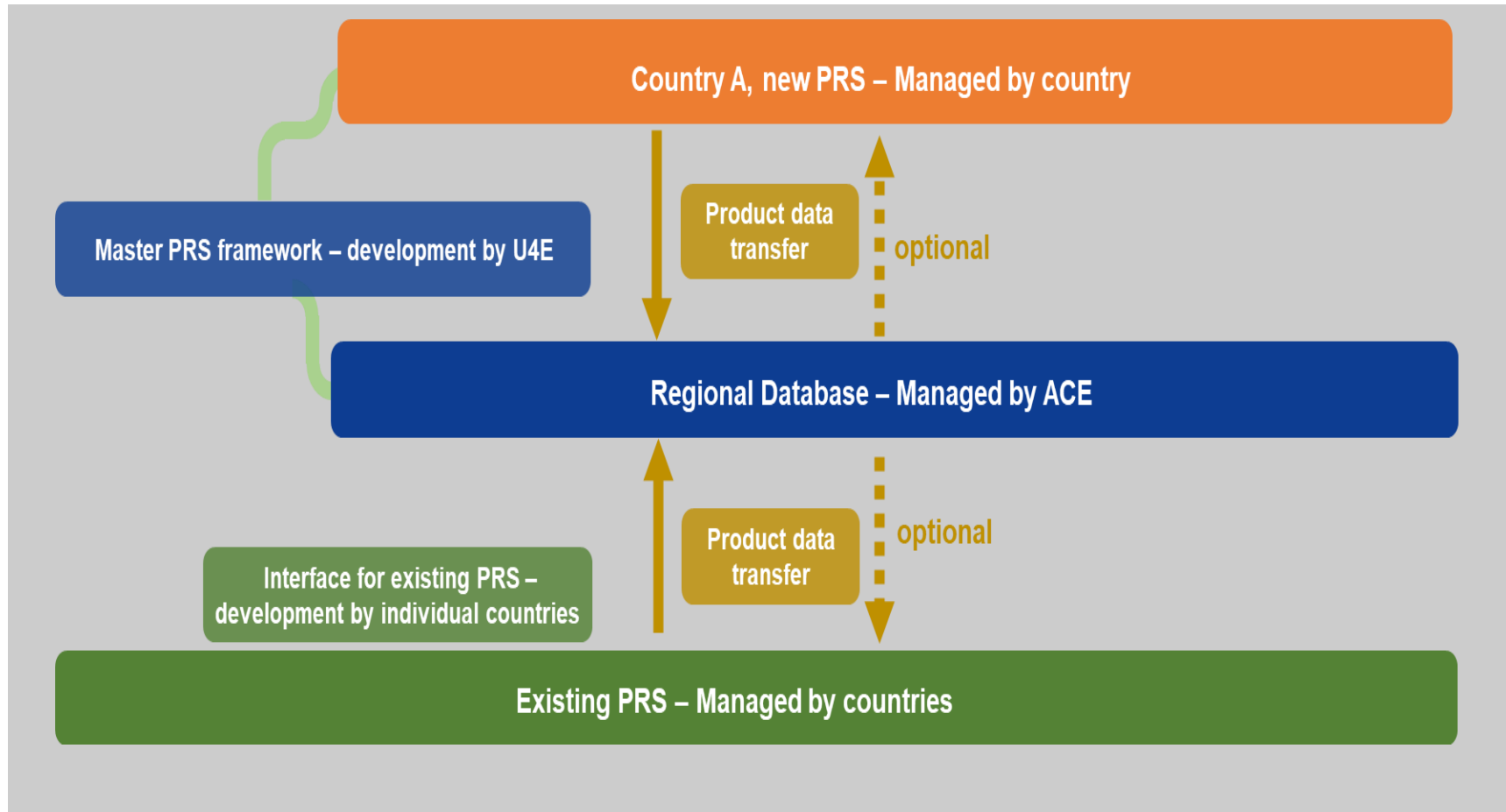
Harmonized energy efficiency standard

- Unified test standards by ISO 5151
- Unified evaluation index by ISO 16358 (CSPF)
- Unified MEPS value
- Common rating standards
- One ASEAN Database
- 

### Countermeasure & expected Benefit

- ✓ i.e. Mutual Recognition Agreements(MRA)
- ✓ Mitigation of workloads for administration and manufacturers, etc. by easier and more smooth operation
- ✓ Lower the product price through the administration cost reduction
- ✓ Chances to expand territories to sell RACs

# Framework of ASEAN PRS System



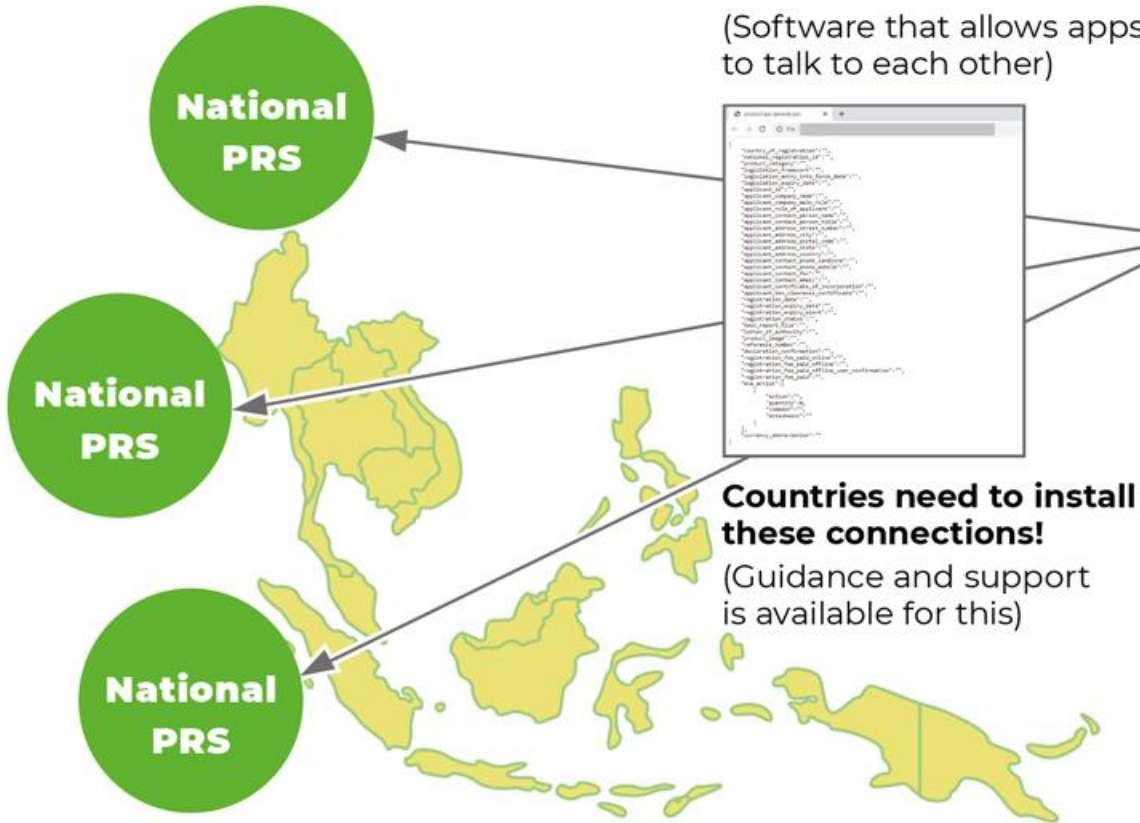
## Data Features

- **Product Characteristic**
- **Provision of compliances and legislation**
- **Complement product information with sales data**
- **International units CSPF (APF optional), Watt, etc**

# DATA EXCHANGE IN SOUTHEAST ASIAN SYSTEM

Existing national systems

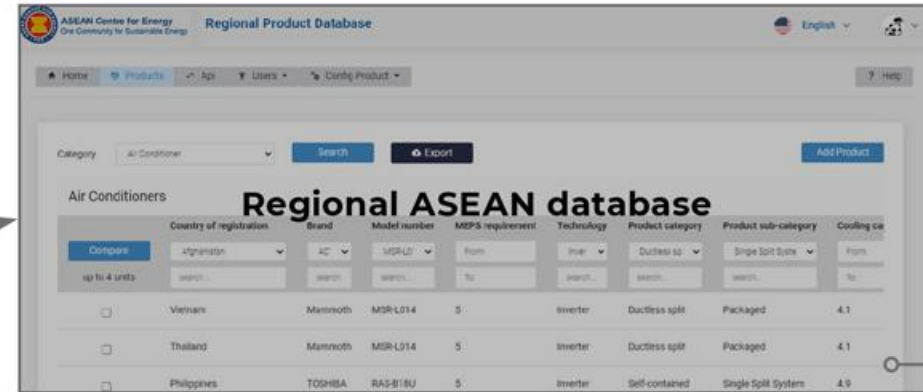
Data transferred via API connections  
(Software that allows apps to talk to each other)



Countries need to install these connections!  
(Guidance and support is available for this)

Products continue to be registered in existing national PRS

The regional system collects the information from the national systems in a common database

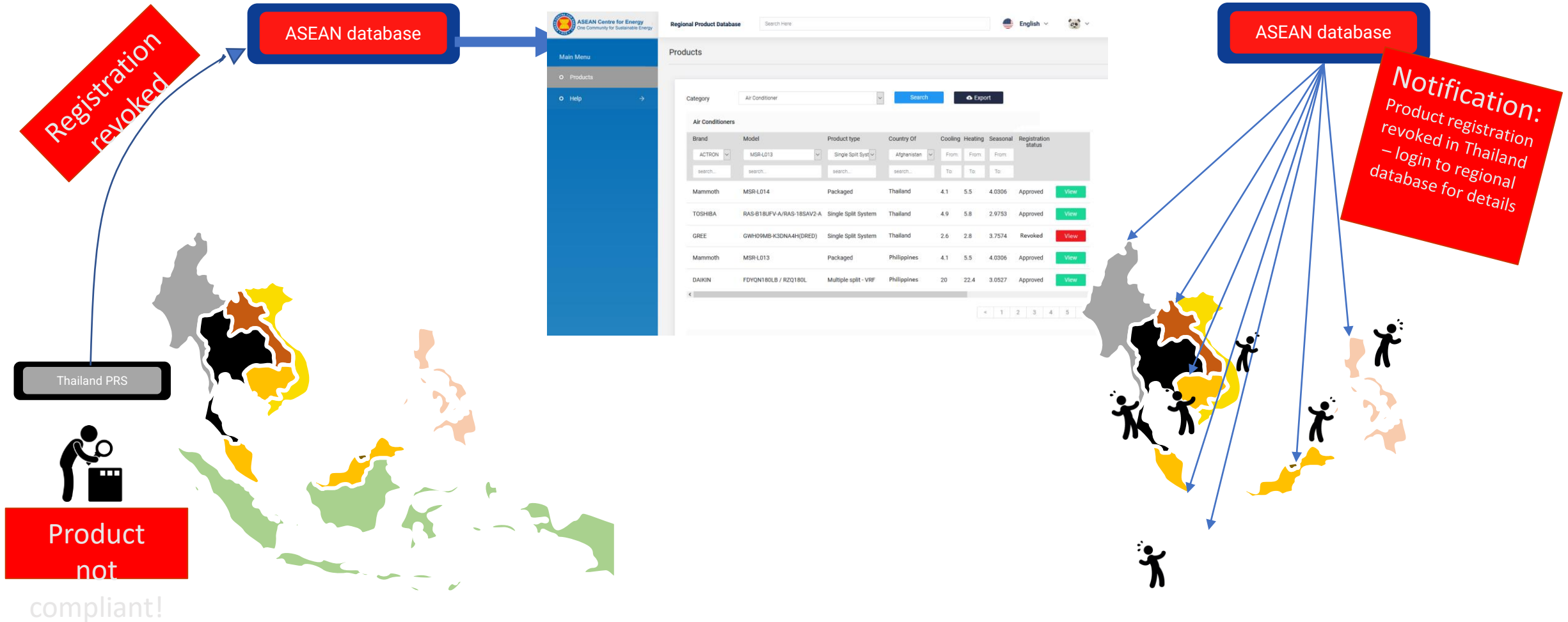


Access to the database is restricted to the ASEAN Centre for Energy and the national regulators from the 10 ASEAN countries.

The **benefits** of the regional database for all users are:

- Visibility of products allowed for sale in other countries
- Notification of new products in other countries
- Notification of products revoked in other countries
- Facilitates application of Mutual Recognition Agreements
- Ultimately, this information helps the region to adjust their policies better and to create synergies in transforming their markets to energy-efficient products

# Example Compliance with MEPS

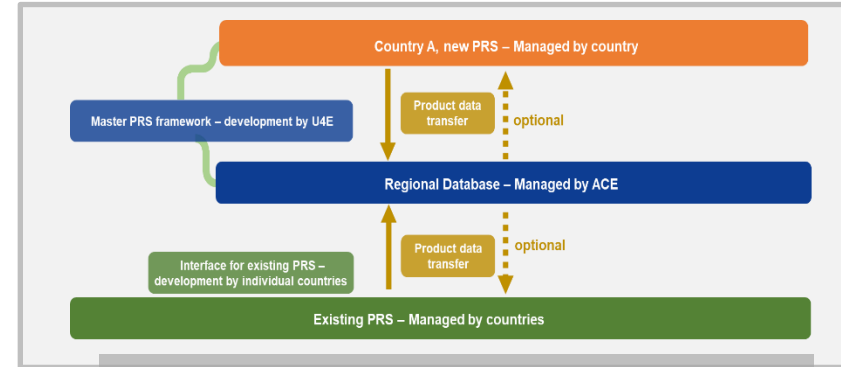




# Recent achievements

## Regional ASEAN Database (1)

- **Agreed to harmonization approach** for product registration activities in the region which has been developed based on four harmonization options
- Agreed to **Policy roadmap** to implement the agreed to harmonization approach
- Trained stakeholders of all ten countries of the region during a **regional workshop** in February 2020



### Regional harmonization approach



Regional workshop of February 2020

#### Development of Regional Product Database and Harmonization of National Product Registration Systems

##### A Regional Policy Roadmap

14 May 2020

**Introduction**

This product registration roadmap requests to develop made by the 3<sup>rd</sup> ASEAN Ministers on Energy Meeting (AMEM) on the continued enhancement of an ASEAN Energy Database System and supports the strategic objective of the ASEAN Plan of Action for Energy Cooperation (APFAC) towards achieving energy security and sustainability for the region.

A product registration system is a powerful tool used for policy making on energy efficiency. A well working product registration system allows effective Monitoring, Verification and Enforcement (MVE) activities, which enable policymakers to manage the compliance of the products entering the market, establish the right policy decisions and to monitor the products in the market. At the center of MVE activities is a product registration system, which is a database that captures up-to-date information on the products in the market. An effective product registration system contributes ultimately to save electricity due to higher efficient products in the market, a less strained electricity grid which improves energy security and helps countries to meet international climate commitments. United for Efficiency (U4E) estimates that, with a transition to energy-efficient lighting, air conditioners and refrigerators, the ASEAN region could save up to 10 TWh, which is equivalent to 43 large power stations of 500 MW each, 62 Million  $\text{tCO}_2\text{e}$ , which is equivalent to 43 large power stations of 500 MW each, 62 Million  $\text{tCO}_2\text{e}$ , which is equivalent to 43 large power stations of 500 MW each, 62 Million  $\text{tCO}_2\text{e}$ .

As of March 2020, six ASEAN member states, i.e., Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Vietnam, have developed product registration systems to support the implementation of their MVE and labeling programs. These product registration systems vary in their design, function and product coverages, depending on the scope of the MVE and labeling program in each country, and they are operational as only paper-based (Philippines), paper and web-based (Thailand, Vietnam) and only web-based systems (Indonesia, Malaysia, Singapore). Other countries have started the process and are at different stages in the implementation phase, as follows:

- Countries that are in an advanced planning process (Laos PDR);
- Countries that are currently implementing a registration framework and aim to develop a product registration system thereafter (Brunei Darussalam, Cambodia);
- Countries that expressed general interest in developing a product registration system (Myanmar).

Adopting a regularly coordinated approach for product registration in ASEAN brings significant benefits and has a much larger impact than having efficient systems within one region. The synergistic effect of regional harmonization enables governments to reduce costs for product registry activities significantly and enhance the enforcement of the regulations in place.

Access [here](#) for more details on the U4E Country Being Assessments.

**Objective and Scope**

The objective of this roadmap is to provide a framework for the activities which are necessary to harmonize product registration activities in the ASEAN region for energy-efficient air conditioners, refrigerators and lighting.

There are different levels of harmonization of product registration activities that are possible. The levels reach from using one system in the region that is centrally managed to individual systems in the countries with similar frameworks and data storage in the countries. One of the roadmap priorities at four options, an external annex to this roadmap (Option to Harmonize Product Registration Systems in the ASEAN region) explains the options more in detail, including advantages, disadvantages and cost implications for each possibility.

**Recommended Actions**

➡ Data inform or consults IEC/IEA representatives

The graph above provides an overview of the recommended actions to achieve a harmonization of product registration activities in the ASEAN region. The proposed activities presented in detail below, including a summary of the required action, objective, responsibilities and timeline.

**1. Formed Regional Database Model Selection and Adoption of the Roadmap**

In the first step, a decision should be taken by the ASEAN region on which type of harmonization of product registration activities will be carried forward. The systems that have been identified are the following:

A. All countries may wish individual systems and develop a web application programming interface (Web API) to enable communication and data exchange between each individual system and the regional database. The countries are responsible for developing this Web API within their existing systems. The set of data points for the regional database will be provided in due course. Their product data (e.g. energy efficiency data of products) from the regional database will then be available to the other countries for monitoring, verification and enforcement activities. Read access to the regional database may be restricted to member countries only through a secure interface, or open to the public and applicants, data access rights and levels to be decided by the IEC/IEA representatives.

B. The countries which currently do not have a product registration system (e.g. Lao PDR, Brunei Darussalam, Cambodia, Myanmar) may adopt a master product registration framework as their national system, which is then independently maintained by the country. The countries, which already have an existing product registration system in place, may stay with their systems and build a Web API data transfer interface to allow access to the regional database. Basic product data from the regional database will then be available to the other countries for monitoring, verification and enforcement activities, as above. This may be a read access level for member countries only, or open to the public and applicants.

C. One master product registration framework is adopted as national product registration system by all countries that wish to do so. In this case the software and data is still stored in each country, but the maintenance and updates are performed by a regional team. The countries that wish to keep their existing product registration system build a data transfer interface to the regional

### Regional roadmap

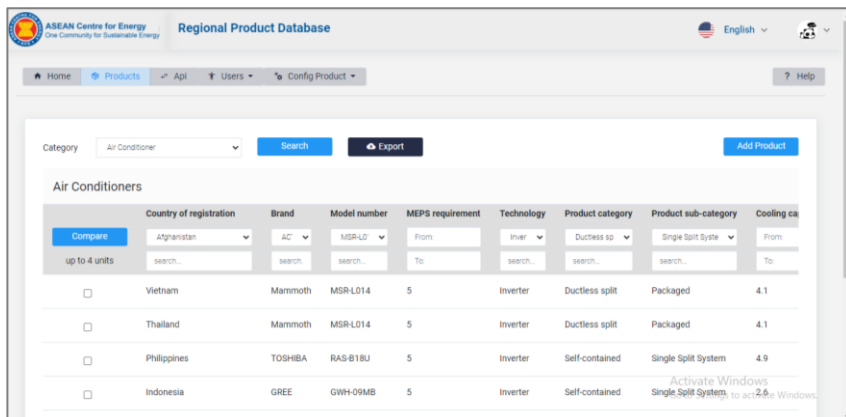
# Recent achievements

## Regional ASEAN Database (2)

- Establishment and regular meetings of a **Technical Working Group** to guide the software development
- Development of **common datapoints** for regional exchange of data
- Development of draft **mock-up for regional database & prototype PRS** that has been reviewed by technical experts
- **Development version** (“draft software”) has been developed
- **Software development** currently in its last testing phase



**2<sup>nd</sup> Technical Working Group meeting**



**Mock-up regional database**

General	AC	Refrigerators	Lighting
Country of registration	Testing standard (AC)	Testing Standard (refrigerator)	Testing Standard (lighting)
National registration ID	Brand name	Brand name	Brand name
Product Category	Model number	Model number	Model number
Legislation framework	Family name/other models (if applicable)	Family name/other models (if applicable)	Family name/other models (if applicable)
Legislation entry into force date	Global Trade Item Number (GTIN)	Global Trade Item Number (GTIN)	Global Trade Item Number (GTIN)
Legislation expiry date	Manufacturer's name	Manufacturer's name	Manufacturer's name
Applicant id	Country of manufacture	Country of manufacture	Country of manufacture
Applicant Company name	Date of product availability	Date of product availability	Date of product availability
Applicant Company's main role	Projected annual sales (product units)	Projected annual sales (product units)	Projected annual sales (product units)
Applicant Role of applicant	Website with product information	Website with product information	Website with product information
Applicant Contact person's name	QR code	QR code	QR code
Applicant Contact person's title	HS code	HS code	HS code
Applicant Address: Street, number	General comment	General comment	General comment
Applicant Address: City	Climate group	Product Category	Product Category
Applicant Address: Postal code	Operating modes	Product Sub-category	Product Sub-category

**Common datapoints**

# Studies and Publications to Support ASEAN in Achieving its EI Reduction Target

## Ways Forward and their Implications for Energy Security, Development and the Environment.

- The 6<sup>th</sup> ASEAN Energy Outlook 2017-2040

## Energy Efficiency Financing

- Mapping of Energy Efficiency Financing in ASEAN
- Financing Mechanism Design for EE&C Project Implementation

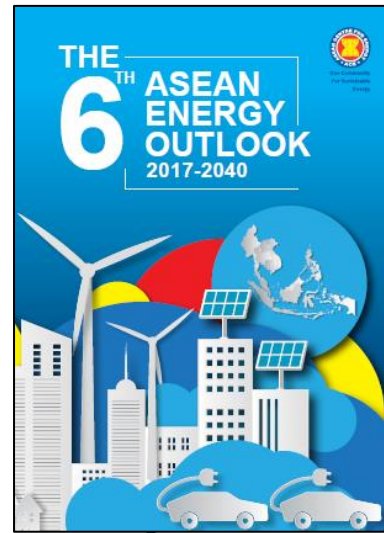
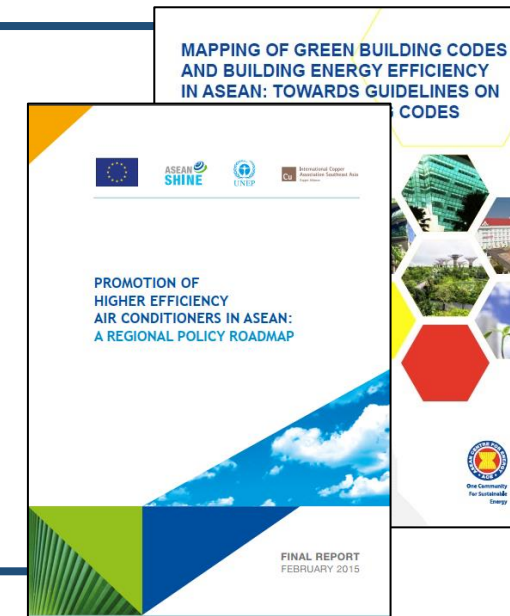


## Private Sector Participation

- ASEAN ESCO Report
- ASEAN Best Practices in Energy Efficiency and Conservation

## Green Building and EE Codes & Harmonization of EE S&L

- Mapping of Green Building Codes and Building Energy Efficiency in ASEAN
- Regional Policy Roadmap for Promotion of Higher Efficiency of AC in ASEAN





**ASEAN Centre for Energy**  
One Community for Sustainable Energy



One Community  
for Sustainable  
Energy

To know more about the latest ACE Publications, those are available for download from <http://www.aseanenergy.org/resources/publications> or scan QR Code below.

For further information or to provide feedback, please contact ACE at [secretariat@aseanenergy.org](mailto:secretariat@aseanenergy.org)



[www.aseanenergy.org](http://www.aseanenergy.org)



[www.linkedin.com/company/asean-centre-for-energy](http://www.linkedin.com/company/asean-centre-for-energy)



[www.twitter.com/ASEAN\\_Energy](https://www.twitter.com/ASEAN_Energy)



Thank You