



**TERMS OF REFERENCE (TOR) FOR
TECHNICAL EXPERTS / CONSULTANT**

PROJECT NAME:

**“REGIONAL GUIDELINE FOR MONITORING, VERIFICATION, AND ENFORCEMENT
(MVE) OF AIR CONDITIONER MEPS IN ASEAN “**

DEADLINE:

22 September 2025



1. Project Name

REGIONAL GUIDELINE FOR MONITORING, VERIFICATION, AND ENFORCEMENT (MVE) OF AIR CONDITIONER MEPS IN ASEAN

2. Post Title

Consultancy for the Development of a Regional Guideline for Monitoring, Verification, and Enforcement (MVE) of Air Conditioner MEPS in ASEAN

3. Background

The ASEAN Centre for Energy (ACE) is an intergovernmental organisation that independently represents the 10 ASEAN Member States' (AMS) interests in the energy sector. The Centre serves as a 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. It is guided by a Governing Council composed of Senior Officials on Energy from each AMS and a representative from the ASEAN Secretariat as an ex-officio member. Hosted by the Ministry of Energy and Mineral Resources of Indonesia, ACE's office is in Jakarta.

Part of the efforts to fulfil its function as a regional centre of excellence that builds a coherent, coordinated, focused and robust energy policy agenda and strategy for ASEAN, ACE conducts joint studies, policy dialogues and capacity buildings for ASEAN Member States to support the implementation of the ASEAN Plan of Action for Energy Cooperation (APAEC) 2016-2025.

The APAEC Phase II: 2021-2025 is the blueprint for enhancing energy connectivity and market integration in ASEAN to achieve energy security, accessibility, affordability, and sustainability for all. Under its Programme Area No. 4 – Energy Efficiency and Conservation (EE&C), one of the key strategies is Outcome-Based Strategy (OBS) 1: Expand, Harmonise, and Promote Energy Efficiency Standards and Labelling on Energy-related Products. This strategy is supported by Action Plan 1.3, which is to “Introduce monitoring, verification and enforcement (MVE) policy initiatives, including product registration database and testing infrastructures enhancement.”

In line with this mandate, and recognizing the significant energy consumption from space cooling, the 35th ASEAN Ministers on Energy Meeting (AMEM) endorsed the Regional Policy Roadmap on Harmonisation of Minimum Energy Performance Standards (MEPS) for Air-conditioners in 2017. This



roadmap aims to facilitate the alignment of MEPS for ACs across all AMS to enhance intra-ASEAN trade and deliver substantial energy savings.

Proper enforcement of standards, market monitoring, and performance verification are all essential to ensure the successful implementation of MEPS and energy labelling. A robust Monitoring, Verification, and Enforcement (MVE) framework is required to monitor compliance, support verification testing, and enforce the implementation of the regional policy roadmap. The development of a harmonized MVE Guideline will provide a common framework for AMS to follow when designing and implementing national market surveillance programs, or when revising and strengthening existing programs.

Therefore, ACE is seeking an experienced expert to develop a comprehensive MVE Guideline for Air Conditioners in ASEAN. The Guideline will provide an analysis of best practices and establish guiding principles for AMS to follow, which will be beneficial in strengthening the implementation of MEPS for air conditioners. This Terms of Reference (TOR) outline the engagement of the expert in developing the MVE Guideline for Air Conditioners in ASEAN.

4. Objectives

The overall objective of this consultancy is to develop a comprehensive, practical, and regionally aligned Monitoring, Verification, and Enforcement (MVE) Guideline for Air Conditioners. This Guideline will serve as a foundational document to support ASEAN Member States (AMS) in establishing and strengthening the implementation and compliance of their national Minimum Energy Performance Standards (MEPS) and energy labelling programs.

Specific objectives include:

1. To review existing policies, regulations, and institutional frameworks related to MEPS and MVE for air conditioners across the ASEAN region, identifying the status and operational capacities within each AMS.
2. To conduct a comprehensive assessment of international and regional best practices in MVE for appliances, analysing successful models and lessons learned that are applicable to the ASEAN context.
3. To identify and analyse the specific gaps, barriers (technical, financial, regulatory), and opportunities for strengthening MVE activities within the ASEAN region.
4. To develop clear guiding principles and detailed, actionable methodologies for each core component of the MVE framework:
 - a. **Monitoring** (e.g., market surveillance, entry conditions, risk-based product selection)



- b. **Verification** (e.g., screening and full verification testing protocols, laboratory requirements)
 - c. **Enforcement** (e.g., tiered response strategies, legal actions, and penalties)
- 5. To propose conceptual frameworks and actionable strategies aimed at strengthening regional cooperation and harmonizing MVE implementation

5. Scope of Work

The consultant shall undertake the following tasks:

1. Policy and Institutional Framework Review

- Conduct a comprehensive review of existing national policies, regulations, and legal frameworks related to Minimum Energy Performance Standards (MEPS) and Monitoring, Verification, and Enforcement (MVE) for air conditioners across all ASEAN Member States (AMS).
- Map the existing institutional landscape in each AMS, identifying the roles, responsibilities, and current capacities of government agencies, compliance bodies, and testing laboratories involved in MVE activities.
- Provide a detailed analysis of the policy and institutional environment for selected AMS that represent different levels of market maturity and regulatory development.

2. Best Practice Assessment and Gap Analysis

- Conduct a desk review of international best practices and successful case studies of MVE program implementation for appliances from leading regions (e.g., European Union, Australia, North America).
- Identify and analyze the gaps between current AMS capacities/practices and international best practices across all MVE components (Monitoring, Verification, and Enforcement), including assessment of the broader market and consumer-related impacts of an effective MVE regime,
- Evaluate the technical, financial, and regulatory barriers that hinder the effective implementation of MVE in the ASEAN region.

3. MVE Guideline Development

- Draft a comprehensive MVE Guideline document that is practical, actionable, and structured into clear, logical chapters.
- Develop detailed methodologies and standard operating procedures for **Monitoring**, including:



- Prerequisites criteria or market entry requirements of practices.
 - Market surveillance strategies (e.g., retail and online store checks, import monitoring).
 - Risk-based criteria for selecting products for inspection and testing.
 - Procedures for handling non-compliance found during market surveillance.
- Develop detailed methodologies and frameworks for **Verification**, including:
 - Protocols for screening tests and full verification tests.
 - Guidance on sampling strategies and sample procurement.
 - Minimum requirements for laboratory accreditation and technical competence.
- Develop a framework and guiding principles for **Enforcement**, including:
 - A tiered approach to addressing non-compliance (e.g., an "Enforcement Pyramid" model).
 - Procedures for applying sanctions, penalties, and corrective actions.
 - Policies for public disclosure of non-compliant products and suppliers.

4. Regional Collaboration Frameworks

- Conduct a feasibility assessment and develop a draft framework or procedures for a regional Mutual Recognition Arrangement (MRA) for AC performance testing, identifying the technical and institutional prerequisites for its establishment.

5. Recommendations and Strategy Development

- Develop specific and actionable recommendations tailored for AMS to strengthen their national MVE systems, addressing the gaps identified in the analysis.
- Propose a strategic roadmap for the phased implementation of the MVE Guideline across the region, considering the different levels of readiness among AMS.

6. Stakeholder Consultation and Engagement

- Design and facilitate at least one (1) regional consultation workshop with the ASEAN Energy Efficiency and Conservation Sub-Sector Network (EE&C-SSN) and other relevant stakeholders.
- Present the draft Guideline and preliminary findings to solicit feedback and ensure the final document meets the needs of the AMS.
- Incorporate stakeholder feedback into the final version of the MVE Guideline.



6. Deliverables

A comprehensive and well-written report in the English language, that delivers the expected outcomes of the study

Table 1. Description and timeline of the deliverables

DELIVERABLE	DESCRIPTION	DEADLINE
Inception Report	A detailed work plan, methodology, and timeline for the study. The report will outline: <ul style="list-style-type: none">• The consultant's approach to each task.• Initial data requirements and collection methods.• A plan for stakeholder engagement.	Mid-October 2025
Policy Review and Gap Analysis Report	A comprehensive report detailing the review of existing national MVE-related policies and institutional frameworks in AMS, benchmarked against international best practices to identify key gaps.	End of October 2025
First Draft of the MVE Guideline	The first complete draft of the MVE Guideline for Air Conditioners, covering all chapters, methodologies for Monitoring, Verification, and Enforcement, and conceptual frameworks for regional collaboration (PRS and MRA).	Mid-November 2025
Regional Consultation Workshop and Report	Facilitation of one online regional workshop with stakeholders to present the draft Guideline. A summary report must be submitted, including: <ul style="list-style-type: none">• Key discussion points and feedback received.	End of November 2025



	<ul style="list-style-type: none"> Proposed revisions to the Guideline. 	
Final Report	<p>The final, publication-ready version of the "MVE Guideline for Air Conditioners in ASEAN," incorporating all stakeholder feedback. The document will be a single comprehensive report with supporting annexes, structured as follows:</p> <ul style="list-style-type: none"> Chapter 1 - Introduction: Background, Description of MVE, Objective of the Guideline. Chapter 2 - MEPS for ACs in ASEAN: MEPS policy for ACs and current MVE implementation in AMS. Chapter 3 - Best Practice of MVE Implementation: Best practices for Monitoring, Verification, and Enforcement. Chapter 4 - Regional Collaboration: Frameworks for a Product Registration System (PRS) and Mutual Recognition Arrangement (MRA). Chapter 5 - Conclusions and Recommendations: Key findings and actionable recommendations. 	Mid-December 2025

7. Work Mechanism

The implementation of the project is arranged as below:

1. Led by the Energy Efficiency and Conservation (EE&C) Department, the ASEAN Centre for Energy (ACE) is responsible for the project's full implementation. It will manage and facilitate the work



and communication with government officials, including the ASEAN Energy Efficiency and Conservation Sub-Sector Network (EE&C-SSN) focal points and other relevant stakeholders.

2. The External Consultant is to provide the policy and technical expertise as described in this TOR. During the work period, the consultant must have regular check-in meetings with ACE to discuss progress at every step of the work. Any interaction with external parties by the consultant to support the project must be approved by ACE.
3. The consultant shall work with ACE to establish a clear process for engaging with government partners, including timelines for review and feedback on key deliverables.

8. Duration of Engagement

The Consultant awarded with the assignment will be hired from **September 2025 until the end December 2025** and obliged to work within the required deadlines and be available for call if needed. An indicative timeline is provided below:

No.	Activities	Deadline
1.	Kick-Off Meeting Consultant - ACE	Late October 2025
2.	Inception Report Submission	Early November 2025
3.	Policy Review and Gap Analysis Report Submission	Mid-November 2025
4.	Submission of First Draft of the MVE Guideline	Early December 2025
5.	Regional Consultation Workshop	Mid-December 2025
6.	Final Report Publication	End of December 2025



9. Consultant Qualifications

ACE requires a consulting service provider or technical experts with proven experience and capacity to provide the necessary tasks and deliverables as described above. The following qualifications and expertise are required:

a. Educational Background:

- Advanced degrees (Master's or PhD) in a relevant field such as Mechanical or Electrical Engineering, Energy Policy, Public Policy, Law, or a related discipline.

b. Professional Experience:

- A minimum of 10 years of professional experience in the field of energy efficiency, with a specific focus on appliance standards and labelling (S&L).
- Demonstrated experience in designing, implementing, or evaluating Monitoring, Verification, and Enforcement (MVE) programs for energy-consuming products.
- A proven track record of working on projects related to Minimum Energy Performance Standards (MEPS) for air conditioners or similar cooling appliances.
- Experience in conducting policy analysis, institutional reviews, and gap assessments in the energy sector.

c. Regional Expertise:

- In-depth knowledge of the energy sector and regulatory landscape in ASEAN countries.
- Previous experience working with government agencies, regional bodies (like ACE), or international organizations on energy efficiency initiatives within the ASEAN region.

d. Technical Skills:

- Strong understanding of the technical aspects of air conditioner performance, including energy efficiency metrics (e.g., CSPF, SEER, EER) and international testing standards (e.g., ISO 5151, ISO 16358).
- Excellent analytical skills with the ability to collect, analyze, and synthesize complex technical and policy information.
- Proficiency in developing clear, actionable guidelines and strategic recommendations.



- Excellent report writing and presentation skills in English.

e. Stakeholder Engagement:

- Demonstrated ability to engage effectively with a diverse range of stakeholders, including government officials, national standards bodies, testing laboratories, and private sector representatives.
- Experience in designing and facilitating multi-country workshops and consultation meetings (online and/or in-person).

f. Language Skills:

- Excellent command of English (both written and spoken) is mandatory.
- Proficiency in one or more languages of the ASEAN Member States would be a significant advantage.

g. Additional Requirements:

- **Expertise of the firm/organisation:** The consulting service provider or technical experts should demonstrate proven delivery records for similar tasks/products over the most recent five years. Bidders are to attest their expertise by submitting examples of previous work (e.g., reports, guidelines, policy studies) related to appliance energy efficiency, MEPS, or MVE programs.
- **Team Composition:** The proposal must demonstrate a balanced team composition, including:
 - At least one (1) **Technical Expert** with a strong engineering background and expertise in HVAC systems and testing protocols.
 - At least one (1) **Policy/Legal Expert** with experience in regulatory framework development and compliance mechanisms.
- **Regional Expert:** The team must consist of at least one (1) regional (ASEAN) expert with experience in the ASEAN energy landscape and policy-related work in multiple ASEAN countries.

10. Service fee

Compensation for the entire performance is arranged according to the project budget. For the assignment's satisfactory performance, the consultant will be paid a fixed fee of a maximum of **USD 10,000 (Ten Thousand US Dollars)**. Payment will be made to the consultant's nominated bank account with below term of payments.

- **1st payment:** 20% upon signing of the contract.



- o **2nd payment:** 40% of the contract's cost, paid after final submission of the **Draft report** upon acceptance and approval of the final version by the Project Management Team.
- o **3rd payment:** 40% of the contract's cost, paid after final submission of the **Final report** upon acceptance and approval of the final version by the Project Management Team.

ACE is an intergovernmental organisation and is not liable for any taxes. The consultant shall file and settle any payment for income tax arising from the income from ACE. ACE shall not be responsible for any consequences of the failure to fulfil obligations relating to the income tax laws of the respective country.

The consultant shall propose the milestone-based disbursement timeline under the proposal, and the mechanism will be agreed upon between ACE and the consultant during the contract signing process.

The consultant must submit a report on the person-days usage and timesheet to ACE for each disbursement.

11. Submission Requirements and Award Criteria

Interested Consultants or Technical Experts are invited to submit a proposal in response to these Terms of Reference (Max 10 pages, excluding CVs).

The proposal shall be separated into two components: a Technical component and a Financial component.

The Technical component should present the following information:

1. Expertise of the Firm/Organization

- a. Provide a brief description of the organization/firm, its legal status, year of incorporation, and types of activities undertaken.
- b. Demonstrate that the consultant has completed at least three (3) projects with similar topics (such as MVE framework development, MEPS policy analysis, or appliance standards and labelling). At least one (1) of these projects should have been conducted in the ASEAN region.
- c. Provide references or examples of previous work related to the scope of this TOR.

2. Approach and Implementation Plan

- a. Provide a detailed description of the methodology for how the organization/firm will achieve the objectives of this TOR, including the approach for the policy review, best practice assessment, guideline development, and stakeholder consultation.



- b. Submit a Gantt chart or Project schedule indicating the detailed sequence of activities and their corresponding timing to meet the deliverables schedule.
- c. Describe potential risks for the project's implementation and the mitigation measures that will be put in place.

3. Personnel

- a. Provide the CVs for key personnel (e.g., Team Leader, Technical Expert, Policy Expert) who will be assigned to this project. CVs should demonstrate qualifications relevant to the Scope of Work.
- b. Provide a spreadsheet showing the activities of each staff member and the time allocated for their involvement. (Note: No substitution of personnel will be tolerated once the contract has been awarded except in extreme circumstances and with prior approval from ACE).

The Financial component should specify the following information:

- The Financial Proposal must provide a detailed cost breakdown, including personnel costs (man-days x rate). A template for the cost breakdown can be provided upon request.
- The proposed fee should be a fixed lump-sum amount, inclusive of all costs required to complete the assignment.
- ACE is an intergovernmental organization and is excluded from any tax obligation. Any tax and/or levy that may be imposed upon the professional fee shall be the responsibility of and borne solely by the consultant.

Table 2. Format of Man-days proposed by the Consultant and Cost

Deliverable	Cost Category	Role/Description	Rate (USD)	Days	Cost (USD)
Inception Report	Personnel	Senior Consultant	\$ xx	xx	\$ xx
		Junior Consultant	\$ xx	xx	\$ xx
	Travel	Travel for Data Collection	\$ xx	xx	\$ xx
	Other Direct Cost	Data purchase	-	-	\$ xx



Total					\$ xx

12. Selection Process and Timeline

The selection process and timeline for this procurement are as follows:

Activity	Date
Call for Proposals	2 - 23 September 2025
Shortlisting of Proposals	24 - 26 September 2025
Interview	30 September - 4 October 2025
Final Evaluation & Contract Award Announcement	7 - 11 October 2025

13. Submission of Application

Please submit the proposal by email with the subject: **“Proposal for MVE Guideline for Air Conditioners”** to ACE’s Procurement Division procurement@aseanenergy.org and cc to cee@aseanenergy.org and tung.phuong@aseanenergy.org no later than **17 September 2025 (GMT+7)**.

Technical and Financial proposals are to be submitted as separate electronic files. The proposals are to be submitted in PDF format.

We encourage early applications as the recruitment process will close upon the selection of a suitable candidate.

14. Intellectual Property Rights

All material produced under this assignment will belong to ACE and remain the property of ACE.



15. Confidentiality Clause

Without any prior consent from ACE, the consultant shall, in no case, disclose any data or information to external parties without written permission from ACE.

16. Amendment to Terms of Reference

These Terms of Reference may be amended in writing only, subject to the agreement of both parties.

17. ACE Governance Policies on Fraud and Corruption

ACE takes a zero-tolerance approach to fraud and corruption involving ACE Staff Members and third parties concerning their work with ACE. ACE encourages the use of the Whistle-Blower Policy to report any identified cases of fraud and/or corruption in ACE operations.

18. Contact person

All communications and queries related to this ToR shall be submitted in writing through email to cee@aseanenergy.org and cc to tung.phuong@aseanenergy.org , procurement@aseanenergy.org