



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

**PROJECT NAME:**

**“REGIONAL POLICY ROADMAP ON PROMOTING ENERGY EFFICIENT  
HOUSEHOLD REFRIGERATORS THROUGH HARMONISATION OF STANDARDS  
AND MINIMUM ENERGY PERFORMANCE STANDARDS (MEPS)”**

**DEADLINE:**

22 September 2025



## I. PROJECT NAME

REGIONAL POLICY ROADMAP ON PROMOTING ENERGY EFFICIENT HOUSEHOLD REFRIGERATORS THROUGH HARMONISATION OF STANDARDS AND MINIMUM ENERGY PERFORMANCE STANDARDS (MEPS)

## II. POST TITLE

Consultant on Policy Roadmap for Household Refrigerator in the ASEAN Context

## III. 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 and joint and collective energy activities. 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 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 building for ASEAN Member States to support the implementation of the ASEAN Plan of Action for Energy Cooperation (APAEC) 2016-2025.

APAEC 2016 – 2025 serves as the blueprint for enhancing energy connectivity and market integration in ASEAN to achieve energy security, accessibility, affordability, and sustainability for all AMS. These provide the regional blueprint for reducing the energy intensity of the region by 32% by 2025. One of the main programme areas is Energy Efficiency and Conservation (EE&C). The Energy Efficiency and Conservation (EE&C) Programme Area adopts an outcome-based strategy (OBS), with OBS 1: Expand, Harmonise and Promote EE S&L (Energy Efficiency Standards & Labelling). To support this, Action Plan 1.1: Develop and implement regional and national policy roadmap for Minimum Energy Performance Standards (MEPS) is one of the key deliverables, aimed at harmonising EE standards, hence contributing to the long-term goal of reducing energy intensity across ASEAN.

Prior to the latest study, by 2050, the residential sector in ASEAN is expected to consume over 68.2 million tonnes of oil equivalent (Mtoe) annually, with refrigerators contributing 12.7% of that total, highlighting their substantial share of energy use. When translated into the electricity consumption, the electricity required to power household refrigerators by 2050 is estimated to reach approximately 100,000 GWh per year. This highlights the urgent need to adopt energy-efficient technologies, enforce performance standards, and promote smarter electricity use to meet climate goals and achieve a net zero future.

As the continuation of initial market assessment, developing a clear policy roadmap for household refrigerators is pivotal due to their significant impact on residential electricity consumption. A harmonised approach to Minimum Energy Performance Standards (MEPS) across the region is crucial to overcome technical and regulatory gaps, ensuring that manufacturers and consumers share the same goals. Consistent MEPS can reduce market fragmentation, limit low-efficiency products, and foster an environment for high-efficiency appliances. This alignment will expedite progress towards energy efficiency goals, making energy-saving technologies more accessible for households.

Considering these responsibilities, ACE seeks a consultant to produce the required outputs.



#### IV. OBJECTIVE AND OUTCOMES

The overall objective of this consultancy is to develop a policy roadmap towards the harmonisation of MEPS for household refrigerators in ASEAN, promoting the adoption of more stringent MEPS to encourage market penetration of energy-efficient refrigerators in the region.

Specific objectives include:

1. To review and validate the existing market assessment of household refrigerators in ASEAN, including policy, legislative and regulatory frameworks governing household refrigerators in all ASEAN Member States.
2. To assess the current minimum energy performance standards (MEPS) implementation and the readiness for AMS to improve the current MEPS.
3. To identify the current product landscape and assess the impacts of multiple energy-efficient refrigerator policy scenarios, including the business as-usual (BAU) scenario
4. To analyse existing testing methods, safety regulations, and energy labelling requirements, including a comparative analysis of the different standards across countries for prioritised refrigerator products.
5. To identify gaps, barriers, and opportunities for accelerating a regional and national market transition to efficient household refrigerators.
6. To formulate a set of clear, actionable recommendations and policy options to enhance the implementation of efficient household refrigerators. Recommendations should cover comprehensive policy harmonisation, MVE, institutional strengthening, and supporting mechanisms.

#### V. TASKS TO BE UNDERTAKEN

- Prepare an Inception Report, explaining the outline of the work plan, methodology, milestones and detailed timeline for each activity.
- Collect, review, and analyse contextual data from the refrigerator market across ASEAN Member States in terms of insights, opinions, and recommendations on the methodology and harmonisation of Minimum Energy Performance Standards (MEPS) for household refrigerators, along with barriers and challenges that might occur.
- Establish an impact assessment model by quantifying the energy, economic and carbon emissions impacts of the harmonisation of MEPS through various policy scenarios
- Design and lead a Focus Group Discussions (FGD) sessions with ASEAN Member States (AMS) and potential stakeholders (i.e. UNEP U4E), gathering insights, opinions, and recommendations on the methodology and harmonisation of Minimum Energy Performance Standards (MEPS) for household refrigerators, arranged and coordinated by ACE.
- Design and lead surveys or interviews with key manufacturers, distributors, retailers, national standardisation agencies, and ministries of trade.
- Engage with key stakeholders and conduct consultations with ASEAN Member States regarding the findings of the study before finalising the report, arranged and coordinated by ACE.
- Structure a comprehensive well-written report, covering all the expected outcomes of the study.
- Develop presentations of the findings.
- Develop policy roadmaps.



## VI. EXPECTED DELIVERABLES

A comprehensive and well-written report in the English language, that delivers the expected outcomes of the study. The documents are required to be submitted using the layout and design provided by ACE.

The reports will be made feasible to be uploaded on the ACE website:

- Roadmap for harmonisation of testing methods, standards, and safety.
- Roadmap for harmonisation of MEPS
- Roadmap for strengthening the testing infrastructure in ASEAN
- Policy recommendation for fostering energy-efficient refrigerators through PRS and MRA.

The draft outline report is expected to be delivered as follows:

Chapter	Methodology
<b>Executive Summary</b>	
<b>Chapter 1 – Introduction</b> <ol style="list-style-type: none"> <li>Background</li> <li>Current policy context in harmonised MEPS for refrigerators in ASEAN</li> <li>Objective</li> </ol>	<ul style="list-style-type: none"> <li>• Desktop study and literature review</li> </ul>
<b>Chapter 2 – Market Context in ASEAN</b> <ol style="list-style-type: none"> <li>Market size (USD per year and units sold per year)</li> <li>Supply chain in Southeast Asia</li> <li>Current Testing Methods and Standards including Safety Standards</li> <li>MEPS and Policy Comparison among ASEAN Member States</li> <li>Electricity Consumption for Refrigerators in ASEAN</li> </ol>	<ul style="list-style-type: none"> <li>• Obtain secondary data</li> <li>• Desktop study and literature review</li> <li>• Reference to Market Assessment of Household Refrigerator published by ACE, 2025</li> </ul>
<b>Chapter 3 – Consideration for Harmonisation</b> <ol style="list-style-type: none"> <li>Current Policy Evaluation in ASEAN</li> <li>MEPS Benchmarking with Other Economies</li> <li>Market Readiness, Availability of Energy-Efficient Refrigerators in Member States and their Impact Assessment to the market on improved MEPS</li> <li>Modelling Impact Assessment: Energy, Economics, and Carbon Emission Impacts of the Recommended Harmonised MEPS</li> </ol>	<ul style="list-style-type: none"> <li>• Desktop study and literature review</li> <li>• Obtain secondary data</li> <li>• Obtain primary data through questionnaires/interviews with AMS</li> </ul>
<b>Chapter 4 – Policy Roadmap Recommendation</b> <ol style="list-style-type: none"> <li>Barriers and Enablers toward Harmonised MEPS</li> <li>Harmonisation of Testing Methods and Standards, including prioritised product categories and safety standards</li> <li>Testing Infrastructure</li> <li>Harmonisation of MEPS and Calculation Methods</li> </ol>	<ul style="list-style-type: none"> <li>• Desk Study</li> <li>• Obtain secondary data</li> <li>• Obtain primary data through questionnaires/interviews with AMS</li> </ul>



Chapter	Methodology
e. Use of MRA and PRS to foster adoption f. Monitoring, Verification and Enforcement Recommendations g. Phase-step Approach of Policy Implementation	
<b>5. Conclusions and Way Forward</b>	

*\*Content of the report is subject to change, following the development of the study as agreed by ACE and consultant*

## VII. WORK MECHANISMS

The implementation of the project is arranged as below:

- Led by the Energy Efficiency and Conservation (CEE) Department, ACE is responsible for the project's full implementation. It will manage and facilitate the work and communication with government officials from ASEAN (EEC-SSN focal points), SOME, and AMEM, including with other official parties, if needed.
- External Consultant to provide the technical expertise and support as described in this TOR. The consultant is responsible for communicating with external parties required under this project, particularly private sectors or companies. During the work period, the consultant must have regular check-in call meetings with ACE to discuss progress in every step of the work. Any interaction with the external parties to support the project by the consultant must be approved by ACE.

## VIII. DURATION OF ENGAGEMENT

The Consultant awarded with the assignment will be hired from **September 2025 until the end of January 2026** 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	October 2025
2.	Inception Report (identifying outlines of the workplan, methodology, milestones, and detailed timeline for each activity)	Mid October
3.	Start Data Collection and Analysis, which includes: <ul style="list-style-type: none"> <li>- Data Primary: Survey and Questionnaire</li> <li>- Secondary data and literature review</li> </ul>	Mid-October 2025
4.	Initial Draft Reports (Preliminary Findings)	Mid-November 2025
5.	FGD sessions with AMS and relevant stakeholders	Early December 2025
6.	Draft Final Report of Policy Roadmap	December 2025
7.	Circulation to AMS for final review	January 2026



## IX. CONSULTANT QUALIFICATION

ACE requires a consulting service provider or technical experts with proven experience and capacity to provide the necessary tasks, outputs/deliverables as described above

- **Energy Efficiency and Cooling Technologies**
  - Individual or team members hold a post graduate degree in engineering (mechanical, electrical, industrial), energy management, environmental science, or other related fields.
  - Relevant certifications such as Certified Energy Manager (CEM) or other recognised energy management credentials will be an advantage.
- **Policy Analysis**
  - Understanding of local and regional energy regulations and standards that apply to the commercial or industrial sector, especially on refrigerator appliances.
- **Market Assessment Analysis**
  - Strong quantitative and qualitative data analysis skills with preference for deep knowledge of Life Cycle Analysis (LCA) methodologies.
- **Regional Expertise**
  - Extensive experience of working in ASEAN Region.
  - Familiarity with sustainable development principles and practices, particularly in the context of energy efficiency goals under the ASEAN Plan of Action for Energy Cooperation (APAEC).
  - Familiarity with international standard and ASEAN energy efficiency standards for appliances (i.e. ISO, IEC, TVCN, etc.).
- **Roadmap Development and Technical Writing**
  - Demonstrable experience in developing policy roadmaps, technical standards, or MEPS for energy-consuming products. Experience with refrigeration is a strong asset.
  - Ability to produce detailed and comprehensible reports, including actionable recommendations for energy efficiency improvements.
- **Additional Requirements**
  - Proficient in English, both writing and speaking.
  - Bidders are to attest their expertise by submitting, e.g., reports, studies, analyses, consultancy products, research analyses, and data management related to energy efficiency and cooling technologies in the ASEAN region.

## X. SERVICE FEE

- For satisfactory performance of the assignment, the Consultant will **be paid a fixed fee, of a maximum USD 15,000 (Fifteen Thousand US Dollars) with below term of payments**
  - **1<sup>st</sup> payment:** 20% upon signing of the contract.
  - **2<sup>nd</sup> 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.



- **3<sup>rd</sup> 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.
- The service fee awarded to the consultant will depend on the scope of the work and tasks to be delivered. ACE and consultant will agree upon a detailed price breakdown before the start of the activities.
- The fee shall include all stakeholders or consultation meetings necessary to collect the data for the assessment.
- We strongly encourage all interested candidates to submit a competitive price proposal. Given the high level of competition, proposals that demonstrate equivalent qualifications at a more favourable price point will be given preferential consideration.
- Payment will be made to Consultant's nominated bank account.
- ACE is an intergovernmental organisation and not liable for any taxes. You shall file and settle any payment for income tax arising from the income from ACE. ACE shall not be responsible for any consequences of your failure to fulfil your obligation relating to income taxation laws of your respective country.

## XI. REQUIRED DOCUMENTS

Interested consultants or individual experts should submit a proposal (maximum 10 pages), divided into two sections:

### A. *Technical Proposal*

- **Introduction:** explain your expertise and experience that is relevant to the ToR
- **Scope of work:** understanding about the tasks and deliverables of the study
- **Methodology:** explain your data collection method, analysis, stakeholder to engage
- **Timeline:** breakdown detail activities with Gantt chart and milestones towards completion of the project
- **Resource Management:** provide experts' profile/CV to be involved in the projects with their roles, identify potential risks that may hamper the projects and how to mitigate, and regular reporting mechanisms to ACE

### B. *Financial Proposal*

Provide a detailed cost breakdown that may include personnel cost (man-days x rate), travel cost for collecting data (*if necessary*), consultation meeting, report development, and other specific expenditures which may be applicable.

## XII. SELECTION PROCESS AND TIMELINE

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

- Call for Proposals : From September 1 to September 22, 2025
- Shortlisting of Proposals : From September 23 to September 24, 2025
- Interview : From September 25 to September 26, 2025
- Final Evaluation : From September 29 to September 30, 2025
- Clarification with the Winner : October 1, 2025



- Contract Award : October 6, 2025

### XIII. SUBMISSION OF APPLICATION

Please submit the proposal alongside your CV or Company Profile to email with the subject: "**Proposal Policy Roadmap Harmonisation Refrigerator ASEAN**", to ACE's Procurement Division ([procurement@aseanenergy.org](mailto:procurement@aseanenergy.org)) and cc to [cee@aseanenergy.org](mailto:cee@aseanenergy.org) and [tung.phuong@aseanenergy.org](mailto:tung.phuong@aseanenergy.org) no later than **22 September 2025 (GMT+7)**.

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

### XIV. AMENDMENT TO TERMS OF REFERENCE

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

### XV. CONFIDENTIALITY AGREEMENT

Without written permission from ACE, the consultants shall not disclose any data or information to external parties.

### XVI. 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.

### XVII. COPYRIGHT AND INTELLECTUAL PROPERTY

All material produced under this assignment will belong to ACE and remain the property of ACE. The consultants will not have any control over copyright claims and intellectual property.

### XVIII. CONTACT PERSON

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