



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

“Green Public Procurement Guidelines for Energy Efficient Air Conditioners in ASEAN”

Deadline: 8 November 2024



1. Project

Asia Low Carbon Buildings Transition

2. Assignment Title

Consultant on Green Public Procurement Guidelines for Energy Efficient Air Conditioners 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 catalyzes 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 located 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.

APAEC 2016 – 2025 is 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 region's energy intensity by 32% by 2025. One of the main programme areas is Energy Efficiency and Conservation (EE&C). The EE&C programme area has an outcome-based strategy (OBS) that is: OBS 3 - Strengthen Sustainability of Energy Efficiency in Buildings, which focuses on sustainable EE policies and technologies in the building sector through developing EE building and cooling roadmaps and sharing information on EE buildings initiatives.

The Asia Low Carbon Buildings Transition (ALCBT) project funded by the German Federal Ministry for Economic Affairs and Climate Action under the International Climate Initiative (IKI), seeks to significantly reduce greenhouse gas (GHG) emissions by catalyzing



nationwide transitions towards low carbon buildings in Asian countries. The Project is being implemented in 5 countries (Cambodia, India, Indonesia, Thailand, and Vietnam) for a duration of 5 years (2023–2028). The project implementation is led by Global Green Growth Institute (GGGI) and consortium partners, namely ACE, Habitat, Energy Application & Technology (HEAT) GmbH, and Energy Efficiency Services Limited (EESL). The ALCBT project targets policy makers (national and state/city governments), building industry professionals (including energy service companies or ESCOs), financial institutions and universities/academia as beneficiaries to advance a low-carbon building transition of the countries.

Under this project, Green Public Procurement Guidelines for adopting Energy Efficient Air Conditioners in ASEAN will be developed by integrating best available technologies and natural refrigerants. This initiative addresses the rapidly growing energy demand from cooling systems in buildings across the ASEAN region. The guidelines will provide a framework for policymakers and professionals to design and improve green public procurement processes for energy-efficient air conditioning technologies.

To effectively develop these comprehensive guidelines and ensure their applicability, ACE requires specialised expertise in energy efficiency, cooling technologies, and public procurement practices. Therefore, ACE is seeking the services of a qualified consultant to deliver the project output.

4. Duration of Engagement

The consultant awarded with the assignment will be hired from November 2024 until August 2025, obliged to work within the required deadlines, and available for calls or meetings, virtually and in person, as needed. The consultant will undertake this project for a period in line with the Scope of Work (in clause 6), which can be continuous or intermittent due to further discussion between ACE and the consultant.

The consultant should allocate time to review and incorporate government partners' feedback. This may include 2-3 weeks after submitting each major deliverable for consultation and revision.



5. Objectives

This consultancy work aims to develop comprehensive Green Public Procurement Guidelines for adopting energy-efficient air conditioners in the ASEAN region. The expected output from this work will consist of:

- 1) Regional Green Public Procurement Guidelines for Air Conditioner in ASEAN
- 2) National Green Public Procurement Guidelines for Air Conditioner in Cambodia, Indonesia, Thailand, and Vietnam

Specific objectives include:

- To conduct a thorough **market assessment** of best available technologies for energy-efficient cooling across ASEAN, providing a regional overview with in-depth analysis for Cambodia, Indonesia, Thailand, and Vietnam.
- To review **existing policies related to public procurement of air conditioners, energy performance standards, and labeling** across ASEAN member states.
- To develop **green procurement criteria, Life Cycle Assessment (LCA) tools, and a cost analysis framework** for air conditioner tailored to the ASEAN context, ensuring applicability to the region and adaptability to the specific contexts of Cambodia, Indonesia, Thailand, and Vietnam.
- To assess the formation of an **ASEAN Green Procurement Alliance Network**, and its associated Terms of Reference, facilitating collaboration and knowledge exchange among stakeholders across the region, with particular engagement from the four focus countries.
- To develop comprehensive, user-friendly **Regional Green Public Procurement Guidelines** that provide actionable recommendations and best practices for policymakers and professionals across ASEAN, with **National Guidelines** for the four focus countries.
- To **engage key stakeholders** and develop draft policy recommendations for promoting energy-efficient cooling through public procurement, addressing both region-wide considerations and country-specific needs for Indonesia, Cambodia, Vietnam, and Thailand.
- To design and implement **dissemination and capacity-building activities** to promote the adoption of the guidelines, focusing on Indonesia, Cambodia, Vietnam, and Thailand, while ensuring relevance to other ASEAN member states.



6. Scope of Work

a. Market Assessment

The consultant will conduct a regional market assessment of energy-efficient air conditioner technologies in ASEAN. This assessment should include, but not be limited to, the following tasks:

- **Collect data for regional product registration database**, using product registration databases maintained by AMS as the primary source of market data where available. Collect data from relevant ministries or other official sources for countries without established product registration systems (e.g., Cambodia), data from relevant ministries or other official sources could be considered. Supplement official data with information from relevant public studies, research papers, and industry reports to fill any data gaps.
- **Conduct regional market analysis of energy-efficient cooling technologies** available in ASEAN, including identifying and analyzing the best available technologies (BAT) for air conditioners in the region.
- **Analysis** will include, but is not limited to:
 - Market penetration, pricing, supply chain and availability of energy-efficient air conditioners in these countries.
 - Energy efficiency ratings, cooling capacity, and other relevant technical specifications of air conditioners available in the market.
 - Refrigerants use, focusing on their Global Warming Potential (GWP) and environmental impact.
 - Identify key barriers and opportunities to the adoption of energy-efficient cooling technologies.
 - Recommendations for prioritizing specific BAT air conditioner products for the scope of the green procurement guidelines.

b. Policy Review

The consultant will conduct a regional policy review related to public procurement of air conditioners and energy-efficient cooling systems across ASEAN Member States (AMS), and further deep-dive focus on Cambodia, Indonesia, Thailand, and Vietnam. This analysis should include, but not be limited to:

- Review existing policies, regulations, and guidelines for public procurement of air conditioners and cooling systems in the ASEAN region. Review and analyse the ASEAN



Taxonomy for Sustainable Finance and UNEP U4E Sustainable Public Procurement Guidelines, particularly its relevance to energy-efficient cooling systems and green public procurement.

- Building codes and energy efficiency standards for AC/cooling systems
- Minimum Energy Performance Standards (MEPS) and High Energy Performance Standards (HEPS)
- Mapping of relevant stakeholders, such as the respective procurement and energy agencies, industry associations, etc.
- Government procurement programmes and their inclusion of energy efficiency criteria
- Financial incentives (e.g., rebates, tax credits, low-interest loans) for energy-efficient cooling
- Regulations on refrigerants and their environmental impact
- Environmental standards for air conditioning products, such as Global Warming Potential (GWP) levels of refrigerants as well as current deployment of LCA assessments
- Prepare a comparative report of the policy landscape, identifying key trends, gaps, and opportunities for improving green public procurement policies for energy-efficient cooling in the ASEAN region.

c. Development of Green Procurement Criteria and Tools

- Identify relevant parameters, standards, assessments, and calculations for evaluating energy-efficient cooling systems, considering:
 - Energy efficiency metrics (e.g., EER, COP, CSPF)
 - Environmental impact factors (e.g., GWP of refrigerants, CO₂ emissions)
 - Economic considerations (e.g., life-cycle costs, return on investment)
- Based on the identify parameters, compile them into a user-friendly tool, preferably in an accessible format such as an Excel spreadsheet, that includes:
 - Energy efficiency calculations (e.g., Annual Energy Consumption, Energy Saving Percentage, Total Energy Saved Over Lifespan)
 - Economic analysis (e.g., cost-benefit analysis, return on investment calculations)
 - Environmental impact assessments (e.g., operational CO₂ emissions, GWP levels of refrigerants)
- Integration of investment planning options for on-bill financing and ESCO business models
- Refine the criteria and tools based on feedback from the stakeholder consultations

d. Formation of ASEAN Green Procurement Alliance Network



The consultant will support the establishment of the ASEAN Green Procurement Alliance Network. This task includes:

- Develop a proposed structure for the network, including governance, membership criteria, and operational procedures.
- Identify key stakeholders from public and private sectors across ASEAN member states to be included in the network.
- Draft a comprehensive network TOR detailing its purpose, scope, activities, and expected outcomes.

e. Regional and National Guideline Development

- The consultant will develop regional green procurement guidelines, including the tender selection criteria framework and common key performance indicators (KPIs) specific to air conditioner products, referring to the regional context. The guidelines will also include the best practices from the countries within or outside the region and recommendations for regional cooperation.
- The consultant will develop national green procurement guidelines tailored for Cambodia, Indonesia, Thailand, and Vietnam by considering each country's policy development status and market conditions. The guidelines should include the procurement decision-making process and evaluation criteria, as well as recommendations for implementation and adoption.
- The guidelines should include a glossary of terms and use standardised terminology. Practical examples or case studies should be included to illustrate the application of each parameter.

f. Stakeholder Engagement

The consultant will support ACE in stakeholder engagement activities, primarily participating in and supporting workshops organised by ACE, including developing concept notes, identifying key stakeholders, preparing guiding questions for discussion and presentation, and gathering feedback. This involvement will include:

- Regional Stakeholder Consultation Workshop – in-person
- National Stakeholder Consultation Workshops through national working group/committee – online/hybrid

g. Dissemination and Capacity Building



The consultant will provide support to ACE in dissemination and capacity-building activities, primarily facilitating the dissemination and capacity-building workshops (in Cambodia, Indonesia, Thailand, and Vietnam) organized by ACE, including developing agenda, preparing training materials and presentations, as well as facilitating practical and technical exercises.

7. Work Mechanism

The implementation of the project is arranged as below:

- Led by the Energy Efficiency and Conservation Department, ACE is responsible for the project's full implementation. It will manage and facilitate the work and communication with government officials, including ASEAN Energy Efficiency and Conservation Sub-Sector Network (EE&C-SSN) focal points and the ALCBT National Project Steering Committee/Technical Advisory Committee.
- External Consultant to provide 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 a regular conference call meeting with ACE to discuss progress in every work step. Any interaction with the external parties to support the project by the consultant must be approved by ACE.
- 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. Deliverables

Table 1. Timeline of the deliverables

DELIVERABLES	DESCRIPTION	DEADLINE	PAYMENT SCHEDULE
Inception Report	Submission of: <ul style="list-style-type: none">• Detailed work plan and methodology	Within 2 weeks of contract signing	20%



- Data collection framework (including a list of data, preliminary data, and related references)
- Timeline for all activities and deliverables

Market Research and Policy Review

- Market Assessment Report, including collected data on product registration (excel)
- Policy Review Report
- Green Procurement Criteria and LCA tools

31 January 2025

25%

Draft Green Public Procurement Guidelines

- First draft regional guidelines, including procurement criteria parameters, vendor selection and awarding process, and best practices.
- First draft of national guidelines
- Draft Terms of Reference for the ASEAN Green Procurement Alliance Network, including its proposed structure and operational guidelines.

28 February 2025

25%

Consultation Workshops

Workshop Reports for:

- One (1) Regional Stakeholder Consultation Workshop (physical)
- National Stakeholder Consultation Workshops for Cambodia, Indonesia, Thailand, and Vietnam (virtual/hybrid)

2 weeks after the workshops - 31 May 2025

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Final Green Public Procurement Guidelines	Final regional and national guidelines	30 June 2025	20%
Dissemination and Capacity Building	Capacity building report for Cambodia, Indonesia, Thailand, and Vietnam, including training modules and presentation materials, as well as Handouts and reference guides	2 weeks after the workshops – 31 August 2025	10%

All reports will be in narrative (Word) and presentation (PowerPoint).

9. Required Qualifications and Expertise

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

a. Energy Efficiency and Cooling Technologies

- Advanced degree in Energy Engineering, Environmental Science, or related field
- Minimum 10 years of experience in energy efficiency and sustainable cooling technologies
- In-depth understanding of energy-efficient air conditioning systems
- Familiarity with energy efficiency standards, labelling programs, and MEPS

b. Policy Analysis and Public Procurement

- Advanced degree in Public Policy, Economics, or related field
- Experience in analysing energy and environmental policies for public procurement
- Knowledge of green public procurement processes and best practices, including GPP tools development
- Understanding of ASEAN energy policies, particularly APAEC, is preferred

c. Market Assessment and Economic Analysis



- Experience in conducting market assessments in the energy sector
- Knowledge of life cycle assessment (LCA) methodologies
- Ability to perform cost-benefit analyses and economic evaluations

d. Regional Expertise

- Extensive experience working in the ASEAN region
- Specific knowledge of the energy sector in Indonesia, Thailand, Cambodia, and Vietnam
- Fluency in English; working knowledge of one or more ASEAN languages is desirable

e. Guideline Development and Technical Writing

- Proven track record in developing guidelines or frameworks related to energy efficiency or sustainable procurement
- Excellent writing skills and ability to produce high-quality reports
- Experience in creating user-friendly tools (e.g., Excel-based assessment tools)

f. Additional requirements:

- Expertise of the firm/organisation: an international/regional consulting service provider or technical experts should demonstrate proven records of delivery of at **least three (3) completed projects** on similar tasks/products over the most recent five years.
- Bidders are to attest their expertise by submitting, e.g., reports, studies, analyses, consultancy products, research analyses, and data management related to energy efficiency, cooling technologies, and green public procurement in the ASEAN region.
- Team capabilities:
 - The team should involve a senior consultant/team lead with more than ten years of experience in either:
 - Energy efficiency and cooling technologies, or
 - Green public procurement and policy analysis with the support of an adequately skilled team.
 - One (1) regional (ASEAN) expert with experience in the ASEAN energy landscape and policy-related work in regional project and/or at least three (3) ASEAN countries, especially in Cambodia, Indonesia, Thailand, and Vietnam.
 - Experience in working with ASEAN Centre for Energy, ASEAN-related bodies, and ASEAN Member States Ministries of Energy and Ministries of Public Works, is a plus
 - Excellent command of English and the capacity to write high-quality reports in the language



- Ability to deliver high-quality workshops and discussions in English

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 maximum of USD 51,000 (fifty-one thousand US dollars). Payment will be made to the consultant's nominated bank account.
- 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 disbursement timeline under the proposal and the mechanism will be agreed upon between ACE and the consultant within the contract signing process.
- The consultant must submit a report on the person-days usage and timesheet to ACE for each disbursement.

11. Language

All reports and studies are to be submitted in British English. 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.

12. 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).

1) The Technical component should present the following information (70% weight):

Expertise of the Firm/Organization

- Provide a brief description of the organisation/firm submitting the Proposal, its legal mandates/authorised business activities, the year and country of incorporation, types of activities undertaken, and approximate annual budget. Include reference to reputation or any history of litigation and arbitration in which the organisation/firm has been involved that could adversely affect or impact the performance of services, indicating the status/result of such litigation/arbitration.



- Track record and experiences: Provide the following information regarding project experience within the last five (5) years, which are related or relevant to those required for this Contract.

Approach and Implementation Plan

- Provide a detailed description of the **methodology** for how the organisation/firm will achieve the Project's Terms of Reference, considering the appropriateness to local conditions and the project environment.
- Provide the Proposer's **internal technical and quality assurance** review mechanisms.
- Submit a **Gantt chart or Project schedule** indicating the detailed sequence of activities undertaken and their corresponding timing.
- Describe the **potential risks** for implementing this Project that may impact the achievement and timely completion of expected results and their quality. Describe measures that will be put in place to mitigate these risks.
- Provide a brief description of the mechanisms proposed for this project for reporting to ACE, including a **reporting schedule**.
- A discussion on how measures to ensure the **future sustainability** of the project outcomes will be addressed.

Personnel

- Provide a spreadsheet to show the activities of each staff member and the **time allocated** for their involvement. (Note: This spreadsheet is crucial, and no substitution of personnel will be tolerated once the contract has been awarded except in extreme circumstances. Any substitution shall be made only with ACE's approval of the justification for the substitution and with ACE's approval of the replacement, who shall be of equal or superior credentials to the one being replaced, which shall not involve any additional cost to ACE. No cost increase will be considered as a result of any substitution.)
- Provide the **CVs for key personnel** (team leader, managerial and general staff) that will be provided to support the implementation of this project. CVs should demonstrate qualifications in areas relevant to the Scope of Services. The indication of international and regional experts must also be included.

2) The Financial component should specify the following information (30% weight):

The Financial Proposal must provide a detailed cost breakdown. The format shown on the following pages is suggested as a guide in preparing the Financial Proposal. The format includes specific expenditures, which may or may not be required or applicable but are indicated to serve as examples.



The cost of working meetings and review meeting organisation will be covered by ACE. The consultant will cover consultancy meetings in between. The travel of consultants for workshops and training will not be covered by ACE. The consultant will include the travel cost in the bidding price.

Table 2. Format of Man-days proposed by the Consultant and Cost (Example shown below)

Deliverable (refer to Table 1)	Cost Category (Personnel / Travel / Others, etc)	Role/Description	Rate (USD)	Days	Cost (USD)
Inception Report	Personnel	Senior Consultant	\$ xx	xx	\$ xx
		Junior Consultant	\$ xx	xx	\$ xx
	Travel	Travel for Workshop	\$ xx	xx	\$ xx
	Other Direct Cost		-	-	\$ xx

13. Submission of Application

The proposal should be submitted to procurement@aseanenergy.org and cc cee@aseanenergy.org & cmutia@aseanenergy.org by 8 November 2024 (GMT+7).



Technical and Financial proposals are to be submitted as two (2) separate electronic files. The proposals are to be submitted in pdf format.

Please indicate the subject heading: ***Document for ASEAN Green Public Procurement Consultant.***

14. Selection Process and Timeline

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

Call for Proposals	30 October - 8 November 2024
Shortlisting of Proposals	11-12 November 2024
Interview	14-15 November 2024
Final Evaluation	18-19 November 2024
Winner Announcement	22 November 2024

15. Intellectual Property Rights

All material produced under this assignment will belong to ACE and remain the property of ACE. The consultant will only share copyright claims and intellectual property.

16. 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.

17. Amendment to Terms of Reference

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



18. 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 using the Whistle-Blower Policy to report any identified cases of fraud and/or corruption in ACE operations.

19. Contact person

All communications and queries related to this TOR shall be submitted in writing through email to cee@aseanenergy.org and cc procurement@aseanenergy.org & cmutia@aseanenergy.org