



TERMS OF REFERENCE (TOR)

EXPERT CONSULTANT

PROJECT NAME:

“Assessment of the ASEAN Energy Database System (AEDS)”

**DEADLINE:
16 JULY 2025**



I. PROJECT NAME

Assessment of the ASEAN Energy Database System (AEDS)

II. POST TITLE

Expert Consultant on Energy Database

III. BACKGROUND

The ASEAN Centre for Energy (ACE) is an intergovernmental organisation representing 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, the ACE office is located in Jakarta.

As part of the efforts to fulfil its function as a regional knowledge hub and centre of excellence that builds a coherent, coordinated, focused and robust energy policy agenda and strategy for ASEAN, ACE hosts the [ASEAN Energy Database System \(AEDS\)](#). AEDS was developed by ACE since 2001 as a web-based system that records the official ASEAN statistical data and related energy news and policies. The system aims to become a regional pool of data for various reliable energy-related data and information of and for ASEAN and the AMS, a platform for AMS to access reliable energy statistic data, news, and policy data across the region, and provides insight into the ASEAN energy landscape. Throughout its history, AEDS has gone through several stages of enhancement, from only providing data and statistics initially to incorporating more content and visual improvement. AEDS should play a pivotal role in supporting ASEAN and the AMS in collaborating and cooperating to facilitate the implementation of the ASEAN Plan of Action and Energy Cooperation (APAEC) programme areas.

AEDS will be enhanced as an integrated platform to accelerate the utilisation of vast renewable energy (RE) resources and develop interconnectivity within the region. In the RE space, for example, AEDS is now expected to accelerate the development of affordable low-carbon electricity resources by addressing the knowledge gaps in between the AMS. Among others, the expectation includes a provision of accurate RE potentials in ASEAN, current energy transition policies among the AMS, existing national-level environmental and sustainability framework for best practices study, and the latest green jobs and gender equity status of ASEAN. In developing the AEDS to meet these growing requirements, it is crucial to conduct market scoping to identify the data types, sources, visualisation, and other relevant information on renewable energy potential, projects, and policies, as well as environmental and social aspects.

In addition, accelerated development of the interconnected power systems under the ASEAN Power Grid (APG) initiative requires the development of a one-stop platform for accessing trade data and conducting relevant investment planning. This platform would facilitate cooperation in the RE sector by enabling the completion of transactions more efficiently than



the current ad-hoc bilateral power purchase agreement negotiations. It would also allow a larger pool of sellers and buyers, expanding liquidity and opportunities for investors in renewables projects. To develop the platform, it is critical to conduct a requirement analysis to collect, aggregate, and present market data to identify the supply and demand trends and opportunities for sellers and buyers. AEDS can host the platform due to its strategic development and history of provisioning accessible data to AMS. Therefore, a revitalisation of the AEDS core systems and infrastructure is needed to meet these latest expectations.

This activity is supported by the World Bank under the Multi-Phase Programmatic Approach on Accelerating Sustainable Energy Transition (MPA ASET) project.

IV. OBJECTIVES

AEDS, as a web portal for ASEAN's energy information, will be the foundation for ACE, AMS, and other stakeholders to conduct analysis and projection studies for the region. By improving the collection and processing of AEDS, ACE could heighten its focus on those studies, fulfilling its role as the regional knowledge hub and think tank.

The Project aims to achieve the following objectives:

1. **An improved and comprehensive AEDS, including its data structure, core infrastructure, and platform**, provides an enhanced ASEAN energy database.
2. **A centralised regional database for RE, EE and related environmental and social topics**. This involves market scoping to identify the data types, sources, and other relevant information related to renewable energy in ASEAN. The activities will also include data collection and visualisation on renewable potential, projects, policies, environmental and social data in relation to the energy sector. In line with ASEAN's commitment to a just and inclusive energy transition, the updated AEDS will also incorporate gender-disaggregated data and indicators related to gender equity in the energy sector. This may include data on women's participation in the energy workforce, access to green jobs, gender-responsive energy policies, and other metrics that can inform gender-inclusive planning and decision-making in the region.
3. **A platform design for system investment planning and power data sharing**. It is a platform for collecting and aggregating system investment planning and data sharing for cross-border interconnection projects. This includes requirement analysis to collect, aggregate, and present market data to support cross-border electricity trade and investment planning to realise the economic benefits of regional power integration.

V. SCOPE OF WORK

In light of these responsibilities, ACE seeks a skilled Consultant Firm/Individual to assist in the scoping study, produce the required outputs, and conduct capacity building. The consulting team will be responsible for the following tasks:

1. Assess the capability and standard compliance of existing AEDS infrastructure in ACE.
2. Assess existing and future initiatives related to energy data in ACE and how it can be related with AEDS or how AEDS can support such initiatives. These include RE Projects



Database, ASEAN Coal Database Information System (ACDIS), ASEAN Power Grid, etc. The assessment process might include interviews with key stakeholders.

3. Review relevant energy data across the region and international references to assess the data gaps and demand for the current and future areas, including the mature technologies (i.e., hydropower, solar, wind), emerging technologies (i.e. hydrogen, carbon capture utilisation and storage, smart grid, distributed energy resources, energy storage), innovative financial mechanisms (i.e. carbon credit, renewable energy certificates), gender-disaggregated energy data and indicators.
4. Perform gap assessment of ASEAN-wide and international data, including reviewing country data availability and quality, review open-source databases (IEA, IRENA, Bloomberg NEF, World Bank, UN, regional institutions). Assessment results should include a regional data gap map which can form the basis for future project topics/scopes that ASEAN needs. Perform platform benchmarking between AEDS and world-class data platforms. The study must analyse not just features, but their technology stacks, data governance models, user engagement strategies, and API ecosystems, providing actionable recommendations for AEDS.
5. Propose APAEC Policy-to-Data-Point Mapping: Systematically link every strategic area of the APAEC to specific, measurable data points, starting with RE share and Energy Intensity (EI) monitoring. This will ensure the AEDS supports monitoring and assisting ASEAN's official energy goals.
6. Propose an initial list of data sets and fields, and define granularity and expected attributes for data requirement for each topic, especially on RE and Power.
7. Develop data collection templates, update mechanisms, and data consolidation from different sources.
8. Recommend a multi-source strategy with maintenance plan, whether specific datasets are better sourced through direct country input, open source, or commercial databases, and whether they can be collected manually or automatically.
9. Detailed Data Schemes and Dictionaries: provide a comprehensive Data Dictionary that defines each field, its unit of measurement, expected update frequency, and sourcing method for every data topic (RE, EE, Power, Gender, etc.). Develop procedures to ensure traceability and transparency of data sources. The expected standard is that all data records must store metadata on source, methodology, update date, data quality grade.
10. Propose quality assurance (QA) and quality control (QC) mechanisms and workflows: How will data accuracy, completeness, and consistency be verified.
11. Propose a detailed 5-year AEDS sustainability and growth plan:
 - How can ACE develop and maintain the database?
 - What governance process should be set up with AMS?
 - Monetisation plan
 - AEDS features in several scenarios (low, med, high investments)
12. Assist in facilitating two (2) workshops with AMS to gather inputs/needs.

VI. DURATION OF ENGAGEMENT

The main assignment will be hired for five (5) months from July until November 2025 (exact dates will be finalised in the contract). The awarded Consultant will be obliged to work within the required deadlines and be available for a call if needed.



VII. EXPECTED DELIVERABLES

The technical experts are required to deliver the following studies and documents over the duration of engagement:

1. An Assessment Report that includes:
 - Quality audit on the existing AEDS
 - Gap assessment on the existing AEDS and other data-related initiatives in ACE with regional and international benchmarks
 - Proposed workflows for data collection and governance
 - A detailed 5-year AEDS revitalisation, sustainability and growth plan, including TOR for system development
2. List of data templates, sources, data dictionary, and metadata
3. Workshops materials

Expected outputs and deliverables, including timelines for the submission by the technical experts, are:

Table 1 Activities and Milestones of the Consultant

No.	Activities and Milestones	Timeline
1.	Kick-off meeting (first payment)	July 2025
2.	Assessment, research, and scoping study	July – November 2025
3.	Support the 1 st Workshop with AMS on AEDS requirements gathering and submit Workshop materials	August 2025
4.	Submit draft Assessment Report and Data Templates for ACE review (second payment)	September 2025
5.	Support the 2 nd Workshop with AMS on the Assessment results and submit Workshop materials	November 2025
6.	Submit final Assessment Report and Data Templates (final payment)	November 2025

VIII. WORK MECHANISM

- The Consultant team will be required to work closely and report to the responsible team from ACE during the contract period, as well as discuss and seek input for the workshop content, reports, and the study via teleconference or other communication system.
- The Consultant team should be fully dedicated to the tasks and ready for direct discussion with ACE. All communication with other parties should be channeled through the ACE team.
- The Consultant team will be required to facilitate the discussions and produce meeting summaries, and compile comments and feedback received from each consultation/meeting.
- The Consultant team is willing to coordinate with other consultants hired by ACE for other programs under the supervision of ACE.
- The Consultant team's feedback will be welcomed to improve the deliverables further. If

necessary, the duration and dates of the assignment may be adjusted with approval from ACE and the World Bank.

- The Expert Consultant of this Project is expected to collaborate with the awarded Expert Consultant of the ASEAN-Russia Capacity Building on Energy Statistics (AR-CBES).
- All reports and studies are to be submitted in English language.

IX. CONSULTANT QUALIFICATION

The Consultant team should comprise professionals capable of fulfilling the diverse tasks outlined in this ToR, with a deep understanding of the region, its unique challenges, and opportunities.

- Postgraduate degree in data analytics, data science, knowledge management, statistics, engineering or related studies
- At least ten (10) years of work experience in developing and managing energy databases
- Experienced in the energy sector in Southeast Asia
- Knowledgeable of energy issues, global and regional energy trends, data, and developments, and has demonstrated skills in coordinating and implementing projects and programmes
- Familiarity with gender-disaggregated data collection, gender analysis tools and methodologies, and reporting standards is an advantage
- Excellent facilitation skills to support data stakeholder consultations, workshops, and training sessions
- Excellent command of English and capacity to write high-quality reports and presentations

X. CONSULTANT FEE

- This is a Lumpsum contract. The financial proposal will include all expected costs of the assignment. The arrangement of components for working days for every personnel must be specified.
- For the satisfactory performance of the Assignment, the Consultant will be paid a fixed fee of a maximum of USD 20,000 (Twenty Thousand Dollar).
 - **1st payment:** 20% upon signing of the contract.
 - **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.
 - **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.
- Payment will be made to the Consultant's nominated bank account.
- ACE is an intergovernmental organisation and is 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 the income tax laws of your respective country.
- The technical expert consultant is not required to travel to the ACE office or the meeting venue; however, this might change over time.

XI. REQUIRED DOCUMENT

Interested Technical Expert(s) are invited to submit a proposal in response to this TOR (Max. 10 pages).

a. The Technical component should present the following information:

- A brief discussion indicating the bidder's understanding of the needs of the study.
- A brief analysis of key issues as well as a methodological discussion of how the bidder proposes to address those needs, including an assessment of key issues, analytical strategies that will underline the project, specific tools/ methods/ techniques to be utilised, and practical discussion of possible limitations in carrying out the project.
- A detailed work plan that specifies activities to be undertaken, expected outputs and deliverables, resources to be utilised, and timing.
- A discussion on how measures will be taken to ensure the future sustainability of the outcomes of the project.
- CVs of the proposed expert(s) and a brief discussion of the candidate's experience undertaking similar work, and summaries of all projects undertaken.

b. The Financial component should specify the following information:

Please complete and submit the financial proposal, including cost estimates and payment schedule. The financial component should specify all direct and indirect costs, inclusive of applicable taxes, for undertaking the project, including but not limited to:

- Professional fees of expert(s) for completing all deliverables in unit cost and the number of hours/days. Please provide person-days for each deliverable work in the table format below.
- Travel costs, if any.
- Miscellaneous charges, if applicable.
- Justification for the allocation days and/or total days should also be provided if more than the estimation in *Table 1*.

Table 2 Format of Person-days Proposed by Consultant

Deliverables	Planned Activities to comply with the deliverables	Deadline	Proposed Expert(s)	Involved Working Days
1.1				
1.2				

XII. SUBMISSION OF APPLICATION

You may apply by sending your proposal to procurement@aseanenergy.org and mpp@aseanenergy.org on or before 16 July 2025. Please indicate the subject heading: **Application for AEDS Assessment Consultant.**

XIII. CONFIDENTIALITY AGREEMENT

All data and information received by the consulting firm from ASEAN and ACE to support this assignment are to be treated confidentially and are only to be used in connection with the execution of this ToR. The contents of written materials obtained and used in this assignment

may not be disclosed to any third parties without the expressed advance written authorization of the ACE.

All deliverables and intellectual property rights arising from this assignment shall belong exclusively to ACE. The Consultant shall not claim copyright or use the materials beyond this assignment without ACE's written approval. While the Consultant may be acknowledged as a contributor, the copyright and content of the report shall be attributed to ACE.

XIV. ENVIRONMENTAL AND SOCIAL RISK MANAGEMENT FOR TECHNICAL ASSISTANCE

An Environmental and Social Management Framework (ESMF) has been prepared to ensure that the ACE ASET Project addresses environmental and social risks and impacts - associated with technical assistance supported under the Programme - in accordance with the ACE legal requirements and the World Bank's ESF. The ESMF ensures that Programme investments do not create or result in downstream impacts on the environment and society through its technical assistance outputs. As the outputs of this assignment will help to inform deliverables under the ACE ASET Project, the outputs, covering the environmental and social aspects, should be consistent with the Project's ESMF, and this may require coordination with the Environmental and Social specialists of the Project and the World Bank.

The selected firm shall also comply with the World Bank Group's Environmental, Health, and Safety Guidelines (ESHG), specifically regarding Occupational Health and Safety (OHS) and potential downstream risks and impacts emanating from the assignment outputs.

XV. SUSTAINABILITY AND GENDER EQUALITY

The Project is committed to the sustainability of its trainings, studies and knowledge products. A sustainability strategy will be prepared to this end, which will be followed by all Project implementers. It is expected that the activities implemented under this consultancy will take sustainability aspects into account where applicable.

The Project further ensures that gender concerns and women's empowerment strategies are mainstreamed throughout the project activities in order to address gender inequalities and foster women's increased participation in decision-making, including the creation of economic opportunities for women, inclusivity, and the emphasis on gender equality.

The Consultant will ensure that gender equality considerations are mainstreamed in all above listed activities. To this end, the trainings and study tours will ensure the fair participation of women and introduce the plastic management initiatives that are initiated by women.

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.