TERMS OF REFERENCE (TOR) FOR

TECHNICAL EXPERTS / CONSULTANT

PROJECT NAME:

“Delivering Training on Battery Energy Storage System for ASEAN Stakeholders’

DEADLINE:

6 May 2025

I. PROJECT NAME

Delivering Capacity Building Workshop on Battery Energy Storage System for ASEAN Stakeholders

II. POST TITLE

Individual/Firm Expert Consultant on Battery Energy Storage System

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. The ACE office is in Jakarta, hosted by Indonesia's Ministry of Energy and Mineral Resources.

As 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 AMS to support the implementation of the ASEAN Plan of Action for Energy Cooperation (APAEC) 2016-2025. APAEC is the blueprint for enhancing energy connectivity and market integration in ASEAN to achieve energy security, accessibility, affordability, and sustainability for all AMS.

Concerning the above and alignment with the ASEAN Plan of Action for Energy Cooperation (APAEC) 2016-2025 Phase 2: 2021-2025[1] to analyse the expansion of ASEAN Power Grid (APG) to consider other flexible resources and emerging technologies in order to integrate the renewable energy into APG.

One of the technologies that could provide flexibility to the grid is Battery Energy Storage System. BESS is a relatively new technology in the region. This capacity-building workshop will support the BESS development in the region, especially 1 GW of BESS under the 5.2 GW Big Lot scheme in Thailand and 300 MW of BESS by 2030 under the PDP8 in Vietnam. There is also a large possibility for behind-the-meter applications, along with solar rooftop PV projects.

For utilities, BESS offers numerous commercial and operational benefits, but to capitalize on them, utilities must grasp key technical and financial considerations. Technically, BESS can improve grid efficiency, mitigate power outages, and enable the integration of intermittent renewable energy sources like wind and solar. From a commercial perspective, utilities must assess the lifecycle costs, return on investment (ROI), and revenue streams associated with BESS, such as arbitrage and ancillary services. Utilities should also understand financing models, including public-private partnerships and performance-based incentives, which can reduce upfront costs and improve project viability. Gaining a comprehensive view of these considerations will allow utilities to strategically incorporate BESS into their energy portfolios and optimize grid performance.

[1] https://aseanenergy.org/asean-plan-of-action-for-energy-cooperation-apaec-phase-ii-2021-2025/

For regulators, understanding BESS is crucial to ensuring grid reliability and fostering renewable energy integration. From a technical perspective, regulators need to learn about the role BESS plays in frequency regulation, load balancing, and peak shaving. On the policy front, BESS raises considerations around setting standards for safety, performance, and interoperability with other grid technologies. This knowledge can help in crafting guidelines that encourage innovation while maintaining grid stability. Moreover, regulators must understand the long-term impacts of BESS deployment, such as its potential to reduce reliance on fossil fuels and create policies that incentivize the deployment of these systems, particularly in regions transitioning to greener energy portfolios.

Therefore, ACE seeks individual/firm consultancy services to support the project activities to deliver Capacity Building Workshop on Battery Energy Storage System for ASEAN Stakeholders.

IV. DURATION OF ENGAGEMENT

The consultant awarded with the assignment will be hired for up to 6 weeks from early May until mid-June, 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 Table 1 of clause VI, which can be continuous or intermittent due to further discussion between ACE and the consultant.

V. TASK TO BE UNDERTAKEN

The consultant is expected to develop the concept, agenda and methodology of the workshop which could provide a holistic approach to capacity building for all BESS development market stakeholders, including technical, policy, incentives, commercial deployment, and financing considerations. The consultant requires to deliver the coursework session together with the active exercises for each session so that participants can practice designing and reviewing the BESS development projects. The subject of each session is as follows:

- Technical: design for each application, standards, safety, and key operation issues
- Policy: laws and regulations, utility considerations, and incentives
- Deployment: commercial contracting, procurement, revenue considerations, and project development
- Financing: understanding risk and key assumptions

Upon the completion of the training, the participants are expected to:

- Develop a solid understanding of BESS technologies, their applications, and relevance in Southeast Asia's energy transition.
- Strengthen their ability to evaluate technical design and integration requirements for grid connected and off-grid BESS solutions.
- Gain awareness of the regulatory, policy, and institutional frameworks that support BESS deployment.
- Understand key business models and financing approaches for energy storage projects, including risk mitigation and revenue streams.
- Learn from regional and global case studies to contextualize best practices and common challenges.

- Apply new knowledge through group-based scenario exercises and problem-solving sessions.
- Engage in peer exchange and build connections with stakeholders from across the energy ecosystem—including policymakers, utilities, financiers, and developers

A post-training survey and participant feedback session will be conducted to evaluate these outcomes and inform future training initiatives.

VI. EXPECTED DELIVERABLES

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

Table 1. Activity and Deliverables of the Consultant

Activity	Deliverable	Deadline*
Preparation of Training Content and Materials	Submit Slide preparation, panel discussion planning, workshop design, participant grouping	14 May 2025
Workshop delivery	Successfully complete the delivery of 1.5 (one and a half) day workshop, including lectures, case studies and interactive session	21-22 May 2025
Workshop report	Submit the final report to ACE which include content, participant engagement and recommendation for future program.	10 June 2025
Policy Brief	Submit the Policy Brief on the "Future Outlook and Next Steps for Scaling Up Battery Energy Storage in ASEAN"	28 June 2025

* Actual deadline may be adjusted based on the agreement and approval by ACE.
** The workshop delivery will be in person in Manila, Philippine. The workshop arrangement will be covered by ACE including the logistics, venue, invitation for participant. The travel cost for consultant (airfare and hotel accommodation, but no per diems) will be covered and arranged by ACE to travel to the workshop venue.

VII. WORK MECHANISM

The implementation of the project is arranged as below:

- Led by the Power Generation and Interconnection (PIN) Department, ACE is responsible for the project's full implementation. It will manage and facilitate the work and communication with the APG Stakeholders, including Head of ASEAN Power Utilities/Authorities (HAPUA), ASEAN Energy Regulatory Networks (AERN), ASEAN Power Grid Consulting Committee (APGCC), Renewable Energy Sub-Sector Networks (RE-SSN), and Senior Officer Ministry of Energy (SOME), including with other official parties if needed.
- An Individual/Firm Consultant to provide technical expertise and support as described in this TOR. 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.

VIII. CONSULTANT QUALIFICATION

ACE requires an individual/firm consulting service provider with proven experience and capacity to provide the necessary tasks, outputs/deliverables as described above.

- The expertise of an individual/firm consultant: The consulting service provider should demonstrate proven records of delivery for similar tasks/products over the most recent five years. Bidders are to attest their expertise by submitting, e.g., reports, studies, consultancy products, and data management related to the aim of the consultancy.
- Consultant should demonstrate a proven records of 10 years of experience in either global and/or ASEAN policy experts and Battery Energy Storage System (BESS) best practices
- Individual expert who has international experience on assisting / establishing/ involve in the development of the framework to design and review the BESS development projects, which may include the technical, policy, incentives, commercial deployment, and financing considerations.
- Excellent command of English and the capacity to write high-quality reports in the language; the ability to deliver high-quality workshops and discussions in English is also required.
- Capacity and flexibility to complete the assignment within the required time frame.

IX. SERVICE FEE

The compensation for the entire performance is arranged according to the project budget.

- For the satisfactory performance of the assignment, the individual/firm consultant needs to deliver the work for approximately 7 – 8 man-days.
- For the assignment's satisfactory performance, the expert consultant will be paid a fixed fee of a maximum of USD 15,050. Payment will be made to the consultant's nominated bank account.
- ACE is an intergovernmental organisation and is not liable for any taxes. 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 payment of the consultant will be made after the approval of submission of the all the expected deliverables by ACE. The consultant must submit a report on the person-days usage and timesheet to ACE for each disbursement.

X. REQUIRED DOCUMENT

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

1. The Technical component should present the following information (80% weight):

1.1 Expertise of the Individual/Firm Organization

- Provide a brief description of the Individual Consultant's organisation/firm (if any) which includes 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 the Individual/firm Consultant within the last five (5) years, which are related or relevant to those required for this Contract.

1.2 Approach and Implementation Plan

- Provide a detailed description of the methodology for how the individual/firm consultant 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.

1.3 Personnel

- Provide a spreadsheet to show the activities of Individual/firm Consultant and the time allocated for his/her 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 substation 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 either equal or superior credentials to the one being replaced, and which shall not involve any additional cost to ACE. No cost increase will be considered as a result of any substitution)

- Provide the CV for the team member of the firm/individual Consultant(s) that will be provided to support the implementation of this project. CV should demonstrate qualifications in areas relevant to the Scope of Services.

2. The Financial component should specify the following information (20% weight):

The Financial Proposal must provide a detailed cost breakdown. The format shown on the following pages is suggested for use 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.

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

Description of Deliverable (referring to Table 1)	Cost per person day – per expert as indicated in the ToR	Number of Man-days	Total cost USD

XI. SUBMISSION OF APPLICATION

The proposal should be submitted to procurement@aseanenergy.org and cc pin@aseanenergy.org by 6 May 2025 (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 BESS Workshop Consultant.

XII. AMENDMENT TO TERMS OF REFERENCE

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

XIII. CONFIDENTIALITY AGREEMENT

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

XIV. 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.

XV. 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.

XVI. CONTACT PERSON

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