

ASEAN Power Grid Advancement Program (APG-AP) (Regional)



Terms of Reference | 28 August 2023

The ASEAN Power Grid Advancement Program (APG-AP) aims to support the Association of Southeast Asian Nations (ASEAN) to realize a low-carbon regional power interconnection with a working multilateral power trading arrangement. In doing so, the APG-AP will advance energy transition agendas in ASEAN through the integration of renewable energy in the grid and reduction of coal and fossil fuels in the region’s energy systems. The Project will generate important knowledge products and presentation material to enhance the confidence of the political decision-makers and the decision-making institutions in the energy sector decarbonization most importantly via establishing a viable, flexible, and digitized transmission network where renewable energy supply can be channelled to support the regional demand.

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I. Introduction

1. The Southeast Asia Energy Transition Partnership (ETP) brings together governments and philanthropies to work with partner countries in the region. ETP supports the transition towards modern energy systems that can simultaneously ensure economic growth, energy security, and environmental sustainability. To contribute to the achievement of the UN's Sustainable Development Goals (SDGs) and the Paris Climate Agreement objectives, ETP works in Southeast Asia, with a focus on three priority countries, namely Indonesia, the Philippines, and Vietnam. ETP's strategy is built around four inter-related pillars of strategic engagement that are squarely aligned to address the barriers to energy transition. These are (i) policy alignment with climate commitments, (ii) de-risking energy efficiency and renewable energy investments, (iii) extending smart grids, and (iv) expanding knowledge and awareness building.

II. Summary

2. The ASEAN Power Grid (APG) is an initiative to establish a regional power interconnection within the member states of the Association of Southeast Asian Nations (ASEAN). The implementation of APG starts from bilateral and sub-regional interconnections before fully establishing a regional interconnection with a working multilateral power trading arrangement. While the planning for APG began in 1986, however, it has been impacted by limited coordination and stop-and-go-progress, and has thus remained in a study stage. The implementation of APG has a significant potential to connect demand for and supply of renewable energy to meet the region's growing energy demand.

III. Project Background

C. Rationale

3. The ASEAN Power Grid Advancement Program (APG-AP) aims to support the implementation of APG that will foster a considerable increase in the share of renewable energy resources and correspondingly reduce fossil fuel energy production across the region through regional interconnections. The APG-AP comprises four outputs: (i) Output 1 - Coordination; (ii) Output 2 - Roadmap; (iii) Output 3 - Analytical Work; and (iv) Output 4 - Multilateral Power Trading Pilot Implementation. Please refer to the APG-AP concept note for details.
4. While APG has been studied over the decades, the final diagnostics, including grid and regulatory harmonization and institutional set up, are needed in addition to a structured timeline that moves the political decision-making to final decision among the participating countries. Against this backdrop, the assignment specified in this ToR will specifically focus on delivering Output 2 of the APG-AP on Roadmap development.

5. The Output 3. of the APG-AP on the Analytical Work, which is identified in the roadmap, embodies ASEAN Interconnection Masterplan Study (AIMS) III Phase 3 scope, and is defined to identify barriers and challenges for the variable renewable energy integration in the cross-border and multilateral electricity trading, among others, but not limited to: pricing formulation and subsidies, regulatory and incentives roadmap and frameworks, reliability (taking attention in the intermittency and advanced RE forecasting) and grid integration, cross-border integrated power operation, third party access and its harmonization, and institutional capacity and financial capacity of the AMS. It will also build on top of the results achieved under AIMS III Phase 1 and 2, which identified 62 potential renewable sites (42 sites for solar and 20 for wind) from the 8,119 GW technical gross capacity of solar and 342 GW of wind that by supporting the expansion of multilateral trading through pilot projects. The scope of Output 3 on Analytical studies are detailed under the TOR AIMS III Phase 3, which will be updated upon the recommendations developed by Output 2.

D. Impact

3. The project will contribute to the achievement of sustainable energy systems in Southeast Asia through the multilateral interconnection infrastructure and power trading arrangement. In addition, the establishment of ASEAN Power Grid will support Southeast Asia's low-carbon development with the increase uptake of renewable energy and less reliance on fossil fuels.

C. Objectives, Outcomes, and Outputs

4. **The primary outputs of this project** is to develop a concrete roadmap required to reinforce the APG initiative with transparency and a monitorable progress-driven plan to advance its functioning intergovernmental and institutional agreement for power trading in the ASEAN region to increase renewable energy into total primary energy supply. The roadmap will foster systematic stepwise progression of the APG from the current study to implementation stage. The rationale for the APG roadmap is derived from longstanding plans for a multicountry power grid to enhance renewable energy and reduce fossil fuels in the region.
5. **The outcome of this project is** to provide a charted pathway for the still pending analytical work that is required to bring the APG to the ASEAN decision-makers e.g., a harmonized grid code, harmonized regulatory framework and identification of the institutional setup for the trading mechanism. The roadmap schedules staged timelines for the required diagnostics for completion and identifies the decision making steps in light of the regular meeting framework of the ASEAN and the relevant agencies. The roadmap constitutes Output 2 within the context of the APG-AP. In addition, the roadmap will outline the technical requirements to deliver Outputs 3 and 4 of the APG-AP on Analytical Work and Pilot Implementation, respectively, that embody the ASEAN Interconnection Masterplan Study (AIMS) III Phase 3 scope to identify barriers and challenges for integrating variable renewable energy in the cross-border and multilateral electricity trading, among others.

6. **The objective of this project is to** accelerate the implementation of the APG initiative from the study stage to implementation through a staged approach laid out in the roadmap.

IV. Project Deliverables

7. In line with the outputs and outcomes expected from this project (see Project Background), this section provides additional information on specific deliverables and activities required.
8. ETP seek services of a professional consulting entity to prepare ***a comprehensive and staged roadmap to pursue the implementation of a multi-country energy trade in Southeast Asia.*** This roadmap will serve as a charted path from the current study stage to the launch of multilateral trading operations in the ASEAN power markets. The roadmap will be such that it can be monitored, updated, and used for guiding decisions and resourcing technical and investment inputs. The roadmap will include a financing framework that can be monitored and used to sufficient technical assistance and investment finance and to ensure accountability and progress throughout the planning, preparation, mobilizing financing, and implementation processes.
9. The roadmap will develop a detailed analysis of past, presently ongoing and planned assistance provided to the APG initiative and identify and provide information on the ways through which the actions within the roadmap will build on, collaborate and capitalize on such external assistance. The roadmap will identify linkages and interfaces and dependencies of the project with external factors to the project as well as the domestic-regional interdependencies and interfaces as well as requirements at domestic level for progressing from the current study stage to the APG implementation by 2025.
10. The specific activities of the consultant entity include:
 - a. **Data and information collection:** A review of the past roadmaps and studies that have brought the APG to its current stage to develop a thorough understanding of the existing analysis on the ASEAN interconnectivity status and the existing AMS multilateral power trading such as Laos-Thailand-Malaysia-Singapore-Power Integration Program (LTMS-PIP)¹ and Brunei-Indonesia-Malaysia-Philippines-Power integration Program (BIMP-PIP)², and the Mekong Subregion power integration progress and plans. Establish a publicly available resource to ensure a comprehensive coverage of past, ongoing, and planned technical work to pursue bilateral and multilateral assessments, arrangements, diagnostics, and consultations and decision-making. Offline and online data gathering activities are expected, in which a total of 4 missions (3-4 days each) is estimated for this assignment that will require the project lead to be present.
 - b. **Technical data requirements:** Develop a comprehensive set of data requirements to accomplish the technical work under Output 2 on the APG Roadmap and Output 3 on the

¹ Lao-Thailand-Malaysia-Singapore Power Integration Project

² Brunei Darussalam-Indonesia-Malaysia-Philippines Power Integration Project

Analytical Work³ from each ASEAN Member State with identification of currently available data and data gaps, and a Data Collection Guidance Note that provides a recommendation to ensure an unobstructed collection process for the required data.

- c. **Identify the required analytical work:** Identify analytical and diagnostic assessments that require updating and remain to be accomplished for moving the ASEAN Power Grid to implementation. The consulting entity will come up with the list of recommended technical criteria required to implement Output 3 and Output 4 of the APG.
- d. **Project communication activities:** Develop communication products in publishable quality and format and present in public knowledge workshops that will facilitate knowledge dissemination and support quality information exchange on findings from the ASEAN Power Grid roadmap among the public audience. This includes development of three (3) policy briefs, one (1) project infosheet, and three (3) short thought leadership articles. The consulting entity will develop and deliver dissemination strategies, including the necessary promotion materials, through events/workshops arranged under the project and participation/presentation in ASEAN and other climate-related events relevant for the ASEAN Power Grid Roadmap. The engaged entity will conduct three (3) events in the workshop and/or seminar format to consult with stakeholders and disseminate the findings. The cost of the three events will be reimbursed against the actual expenses.
- e. **Draft a staged timeline and stepwise plan for the APG:** Establish a staged roadmap, plan for undertaking the pending diagnostic and analysis, data collection among other work, including investments to be accomplished for implementation of the APG. Identify decision making steps, necessary circulations and consultations. Account for the ongoing and regular work plans of energy sector stakeholders, particularly ASEAN and its agencies, their timelines, meeting schedules, in view of the ASEAN plans for the APG.
- f. **Identify investments for physical interconnections for the power grid in the region:** Identify the planned and existing multilateral power projects in the ASEAN region and Interconnections⁴ among other interfaces. Review their interconnectivity status to ensure the sub-regional initiatives are accounted for in the APG Roadmap. Assess the enabling conditions, analyze the risks and opportunities for integration of the initiatives, and develop recommended pathways for integration and harmonization with the existing AMS multilateral power trading of LTMS-PIP and wider APG. Identify opportunities for APG in the context of the wider Asia Region, and recommend steps to capture value addition of the broader power grid consortiums⁵ in Asia and the Pacific.
- g. **Legal steps:** Develop and recommend a carefully sequenced legal pathway to take the analytical work toward the implementation stage of the APG, including identification of required agreements among the various issues that must receive multilateral agreement for enabling a multilateral trading arrangement to be implemented.

³ Focus 1: Minimum Requirements for Multilateral Market Development; Focus 2: Regulatory Framework; and Focus 3: Grid Code and Technical Standard.

⁴ Greater-Mekong-Subregion Power Trade and Interconnection

⁵ Referring to, but not limited to, Green Growth Initiative-One Sun, One World, One Grid

- h. **Financing Plan:** Develop a financing plan for each requirement and stage of the roadmap that can be used for funding requests and bringing in various sources, including technical assistance, grants and concessional and non-concessional finance, among other resources as appropriate, from public and private sources.
- i. **Donor coordination:** Develop a donor coordination matrix/plan and the related financing options to fill the resource requirements identified under the financing plan, including suggested mobilization timelines. Clearly show possible gaps in the funding levels, for which additional resources are required and timing mismatches, if any, between the required resources and delivery of the inputs.
- j. **Organizational roles for decision-making:** Review organizational issues and undertake an in depth assessment of any possible strengthening requirements related to the institutional roles of entities and coordination bodies relevant to the APG and APG-AP. Point out where overlaps and gaps exist; and provide advice for resolving these overlaps and gaps, with the objective to ensure a smooth progress of the APG-AP toward implementation of the APG.
- k. **Governance arrangements for the Roadmap endorsement:** Review the governance and organizational arrangements of key ASEAN institutions at the decision-making level including, but not limited to ASEAN Ministers on Energy Meeting (AMEM), Senior Officials Meeting on Energy (SOME), HAPUA Council and Technical Working Groups for implementing APG-AP as a support program for the implementation of APG and comment on the organizational arrangements for the APG-AP to ensure optimized arrangements in support of the success of the APG. Prepare a time bound schedule, in the context of the roadmap, for the technical and political decisions for moving the AGP forward to implementation.
- l. **Consultative partners forum:** In light of existing processes and the multiple national, intergovernmental, donor and technical external agencies that constitute the stakeholder community for the APG in the energy sector in Southeast Asia, propose and describe a consultative development partner forum that can interact on the products of the project with the objective to ensure technical and financial success of the APG-AP.
- m. **Monitoring and Evaluation Framework:** The consulting entity will develop a monitoring and evaluation (M&E) framework for the APG as part of the roadmap. The M&E framework will comprise a theory of change and identify the appropriate tools for M&E data gathering and analysis. In addition, the consulting entity for this assignment will be required to report their achievement in accordance with the ETP's Results-based Monitoring Framework (RBMF) for the roadmap with clear review breaks and milestones for decisions, pertaining to the management of the APG-AP and, more substantively and separately, APG implementation project.
- n. **Data collection and project coordination:** The consulting entity will ensure ***at least one team member will be based in Jakarta*** for the duration of the project to manage the project on a full-time basis; and will ensure that its resources are sufficiently represented in the region to enable efficient and effective data collection and representation and project-specific support at the ASEAN Centre for Energy. For which, the consulting entity will identify their personnel in the project team who will be based in Jakarta to assume this

coordination and communication role. The consulting entity will be responsible for coordinating and managing logistics for the counterpart's mission i.e., the ASEAN Centre for Energy, in conducting data collection assignments requiring travel. The logistics for travel arrangements will be discussed before the initiation of the project/ project inception phase.

11. Table 1 outlines the key deliverables and associated activities which are expected in this project. Additional details about each deliverable follow Table 1.

Table 1. Key activities and deliverables

No.	Deliverables	Target Delivery
1	<p><u>Inception Report</u>, includes;</p> <ul style="list-style-type: none"> I. Executive Summary (max. 2 pages) II. Project methodology with timeline, processes, outputs, data collection and implementation framework to accomplish the tasks under paragraphs 10a-10n; III. Monitoring and evaluation framework in accordance with the ETP's Results-based Monitoring Framework (RBMF) for accomplishing the assignment under para 10m; IV. Indicative list of technical requirements to carry analytical work the APG-AP as explained in para 10c; V. Powerpoint presentation of the inception report. <p>This report will be circulated widely to the relevant authorities and coordinating bodies and will receive time-bound comments for correction and augmentation, which the selected entity will incorporate to improve the quality of the outputs.</p>	<p>1 month from contract start date</p>
2	<p><u>First Draft of ASEAN Power Grid Roadmap</u>, includes;</p> <ul style="list-style-type: none"> I. Outline of an Extended Summary Report of the APG Roadmap that includes the key components of the Roadmap and its table of contents; II. Outline of the APG Roadmap for implementation of the APG under a number of scenarios as deemed appropriate by the engaged entity addressing the tasks under para 10a-10c and 10e-10j; III. Progress report that includes a review of the assignments and all of its aspects, including the communications outputs under para 10d and data collection under para 10n; IV. Updated M&E profile in accordance with the ETP's RBMF addressing the task under para 10m; 	<p>3 months of contract start date *1-month review process</p>

No.	Deliverables	Target Delivery
	<p>V. Powerpoint presentation of the 1st Draft Report with Outline of the APG-AP Roadmap</p> <p>This report will be circulated widely to the relevant authorities and coordinating bodies and will receive time-bound comments for correction and augmentation, which the selected entity will incorporate to improve the quality of the outputs.</p>	
3	<p><u>Second Draft of ASEAN Power Grid Roadmap</u>, includes:</p> <ol style="list-style-type: none"> I. First draft of an Extended Summary Report of the APG Roadmap that includes the key components of the Roadmap and its table of contents; II. Draft of the APG Roadmap as well as the financing framework with estimates including the necessary breakdowns and contingencies, for implementation of the APG under a number of scenarios as deemed appropriate by the engaged entity addressing the tasks under para 10a-10c and 10e-10i; III. Progress report that includes a review of the assignments and all of its aspects, including the communications outputs under para 10d and data collection under para 10n; IV. Updated M&E profile in accordance with the ETP's RBMF addressing the task under para 10m; and V. Powerpoint presentation of the 2nd Draft Report with Draft APG Roadmap and Financing Framework. <p>This report will be circulated widely to the relevant authorities and coordinating bodies and will receive time-bound comments for correction and augmentation, which the selected entity will incorporate to improve the quality of the outputs.</p>	<p>6 months of contract start date *1-month review process</p>
4	<p><u>Final ASEAN Power Grid Roadmap</u> that incorporates findings, recommendations, and conclusions. This report will cover all the terms of references, and the detailed discussions as necessary in its appendices, the roadmap for implementation of APG-AP to bring APG to its fruition and the related financing framework. Specifically, it will include;</p> <ol style="list-style-type: none"> I. Final Extended Summary Report of the APG Roadmap that includes the key components of the Roadmap and its table of contents; II. Final APG Roadmap with the financing framework completing the tasks from 10a-10i; III. Final progress report that summarizes all the activities implemented throughout the contract period as per ToR; 	<p>7 months of contract start date</p>

No.	Deliverables	Target Delivery
	<p>IV. Final M&E profile in accordance with the ETP's RBMF addressing the task under para 10k; and</p> <p>V. Powerpoint presentation of the final APG Roadmap with the financing framework</p> <p>This report will be expected to be approved by the region's APG's relevant institutions and decision-making authorities and be vetted and used by all the coordinating entities. This report will be circulated widely to the relevant authorities and coordinating bodies and will receive time-bound comments for correction and augmentation, which the selected entity will incorporate to improve the quality of the outputs.</p>	
5	<p><u>Communications and Disseminations</u></p> <p>Develop communication products in publishable quality and format and present in public knowledge workshops that will facilitate knowledge dissemination and support quality information exchange on findings from the ASEAN Power Grid roadmap among the public audience as explained in para 10d.</p> <p>This includes:</p> <ul style="list-style-type: none"> • development of three (3) policy briefs, • one (1) project infosheet, and • three (3) short thought leadership articles. • three (2) workshops and/or seminar for stakeholder consultations (50 pax) and (1) result dissemination event (100 pax)* <p>In addition, the consulting entity will develop and deliver dissemination strategies, including the necessary promotion materials, through events/workshops arranged under the project and participation/presentation in ASEAN and other climate-related events relevant for the ASEAN Power Grid Roadmap. The dissemination of the consultant's work will be done periodically.</p> <p><i>*The workshops and results dissemination event will be on a reimbursable basis against the actual costs.</i></p>	<p>Continuous effort. Expected frequency: every 2 months. The specific timeline will be determined based on the inception report.</p>

Other key information regarding the deliverables above:

- A public facing, publishable Executive Summary (approximately 2 pages) in professional English must be submitted with each deliverable.

- A public facing, catchy powerpoint presentation highlighting key information must be submitted with each deliverable.
- All project deliverables and presentations must be submitted in English.
- All deliverables are subject to review by ETP, and beneficiary entity(ies) where applicable, before approval. If there are comments and suggestions, the deliverables need to be revised accordingly before payment is released.
- The consultant is required to update the results and achievements of the project in accordance with the agreed project level Results-Based Monitoring Framework, as per the approved template. All results, where applicable, must be gender disaggregated
- The consultant is required to organize and execute all aspects of the workshops, including organization and logistics.
- The consultant must consider and highlight specific gender considerations in their proposal.
- The consultant must be available to attend 1 in person workshop with the ETP secretariat in the region. The costs for this will be covered outside the financial scope of this proposal.
- The consultant, or an active organization within the applying consortium, must have in-country presence.

V. Timeline for the Project

- VI. The project will require 7 months. A tentative timeline for the consultant’s deliverables is provided in Table 2.
- VII. The actual project timeline will be presented by the consultant and agreed upon in the Inception Report.

Table 2. Indicative timeline of the project’s deliverables

DELIVERABLES	1	2	3	4	5	6	7
1. Inception Plan							
2. First draft ASEAN Power Grid Roadmap							
3. Second draft ASEAN Power Grid Roadmap							
4. Final ASEAN Power Grid Roadmap							

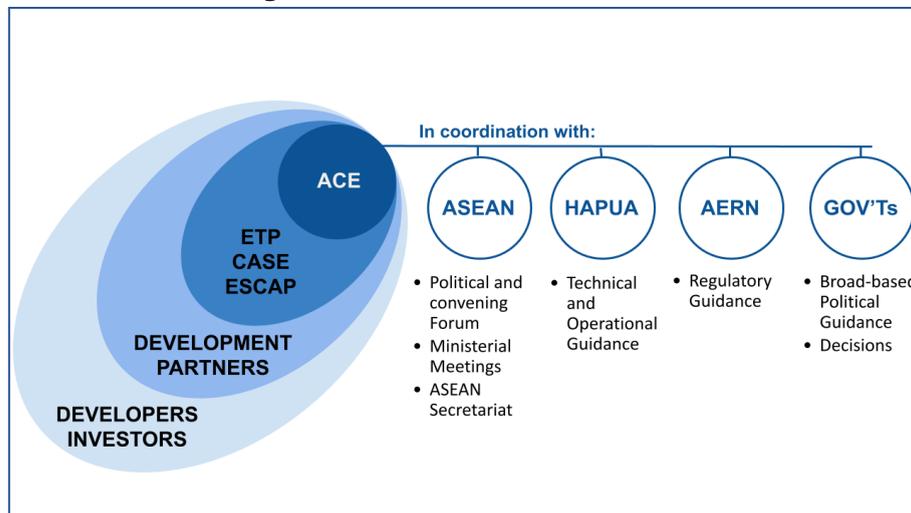
5. Communications and Disseminations							
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VI. Key Stakeholders

6. ETP will engage international and local expertise to implement the activities, under the supervision of the ETP Secretariat and in consultation with ACE and the Heads of ASEAN Power Utilities Association (HAPUA), the Association of the Energy Regulators Network (AERN), the ASEAN Secretariat, UNESCAP, USAID and other development partners engaged in the APG implementation.
 - i. **ACE**, as the designated ASEAN Secretariat implementation and coordination agency for the ASEAN Plan of Action for Energy Cooperation (APAEC) 2016-2025 Phase II that sets ASEAN policies and programs, will lead the project through a dedicated project management unit (PMU). ACE will provide the required linkages to political decision-making and events at Senior Officials' Meeting on Energy (SOME) and ASEAN Ministers of Energy Meeting (AMEM) level to ensure the endorsements of APG-AP and its outputs, and coordination with ASEAN (HAPUA, the Renewable Energy Sub-Sector Network, the Regional Energy Policy and Planning Sub-Sector Network, the Association of the Energy Regulators Network, among others) and ASEAN Secretariat to drive and coordinate a progressive and forward-moving implementation to achieve the objectives of the Project. ACE will also be in charge of the data collection process and provide the technical capacity for the analytical works.
 - ii. **ETP** will provide funding and engage international and local expertise to deliver outputs 2 (Analytical work), 3 (Roadmap) and 4 (Implementation of the Multilateral Power Trade Pilot Project - in part, subject to the availability of other funders) as approved on a component by component basis. ETP will also support and lead, as necessary, convening of the parties to marshal and aid decision-making with the aim to achieve the project outputs and objectives.
 - iii. **CASE** will provide technical advisory and coordination services under the component 1, supporting ACE with the implementation of the AIMS III phase 3 and the overall APG planning process with two objectives of (i) ensuring the consistency and alignment of the studies with ASEAN strategy and the long-term objective of ASEAN's energy transition; and (ii) ensure consistent, regular, and systematic coordination of the planning and decision-making processes, convening of parties, and engaging political processes to drive and achieve the objectives of the Project.
 - iv. **HAPUA** will convene the appropriate and relevant parties at the country level in the process, engaging utility stakeholders at appropriate levels, sectors, and national ministries when and where their decision-making is required to make concerted and timely progress to achieve the objectives of the Project.
 - v. **AERN** will conduct dialogue on the regulatory aspect of the APG-AP ensuring dissemination of information to its membership.

- vi. **ASEAN Secretariat** will support APG-AP with guidance and suggestions to ensure inclusive consultations and information sharing with the ASEAN institutions relevant to APG-AP.
- vii. **ESCAP** will provide complementary advisory and coordination services for the project, utilizing in particular its intergovernmental processes to connect the activities beyond ASEAN Member States with the Asia region more broadly. APG-AP will be able to leverage additional advisory and coordination services and possible further funding from the Green Grids Initiative (GGI)'s wider ecosystem of partners, including the Regulatory Energy Transition Accelerator (RETA) through ESCAP's role as the lead of GGI Asia-Pacific Working Group.
- viii. **Development Partners** will offer technical assistance and investment finance and will continue to finance the analytical and other needs of the APG project.

Figure 1. Coordination for APG-AP



- 7. ACE is the implementing agency for the AIMS III and all of related studies and activities, in collaboration with the HAPUA Secretariat, the HAPUA Working Group 2: Transmission/APG, HAPUA Working Group 4: Policy Study and Commercial Development, and the APGCC. ACE will coordinate the work under APG-AP with the involvement and support of the AIMS III Working Group members from 10 ASEAN Countries, represented by experts from utilities (HAPUA Members) and policymakers and regulatory bodies (ministries/or other regulatory bodies).
- 8. Other HAPUA Working Groups (HAPUA Working Group No. 1 – the Generation & Renewable Energy, HAPUA Working Group No. 3 – the Distribution and Power Reliability & Quality, HAPUA Working Group No. 4 – Policy Studies & Commercial Development, and HAPUA Working Group No. 5 – Human Resources) are also foreseen to be involved and provide the input and guidelines, including review and support from ASEAN Power Grid Consultative Committee (APGCC) and ASEAN Energy Regulators Network (AERN) to progress proposals under APG-AP to decisions.
- 9. A Technical Review Group (TRG) will provide the inputs and feedback, bringing the expertise and knowledge from various regional and international institutions that are relevant to the

study. This group will consist of the existing TRG Members: U.S. National Renewable Energy Laboratory (NREL), Hawai'i Natural Energy Institute (HNEI), International Energy Agency (IEA), and International Renewable Energy Agency (IRENA), as well as the potential new TRG Members, such as, but not limited to Asian Development Bank (ADB), the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP), the Agency for the Cooperation of Energy Regulators, the UK Foreign Commonwealth Development Office (FCDO), among others. External partner(s) is expected to be engaged to provide technical and financial support in the development of the study, based on the designated scope of work to fulfill the objectives.

a. Coordination and Implementation

10. The preparation of the roadmap will be implemented in a multilateral context under the coordination of the parties involved in APG-AP as defined in the Concept Note for APG-AP. The project manager remains ETP through its Secretariat and the selected entity will have a contract and reporting responsibilities directly to ETP as the client of the assignment.
11. The roadmap preparation will be implemented in coordination with the Asean Secretariat, the Heads of Power Utilities Association (HAPUA) and the Senior Officials Meeting on Energy (SOME), the ASEAN Energy Regulatory Network (AERN) and multilateral forums arranged by the ASEAN Centre for Energy, supported by the CASE project and by ESCAP, and the Asian Development Bank, as well as in the broader development partner coordination mechanism established in the context of the project.
12. APG terms of reference (AIMS III Phase 3) have been approved by HAPUA. APG-AP also has been submitted to and been endorsed by the Senior Officials Meeting on Energy (SOME) through coordination by ACE, as the operating arm of ASEAN Ministers on Energy Meeting (AMEM), and circulated to the ASEAN Secretariat (Energy Division) for comments.
13. Upon confirmation and coordination with ACE and ETP, the milestones of the engaged entity's work will be presented in high-level events in ASEAN, such as SOME, ASEAN Ministers on Energy Meeting (AMEM), and HAPUA Council Meeting. The engaged entity will also organize and participate in relevant events beyond ASEAN's high-level meetings.

VII. Results Based Monitoring Framework and Risks

a. Results Based Monitoring Framework

14. The Results of the Project are monitored through the following Framework in Table 3. All reports will update the achievement of the indicators.

Table 3. Results Based Monitoring Framework Outline

Indicator(s)	Baseline	Target	Means of verification	Attribution to ETP Direct / Indirect
Overall Programme				
Impact <i>Partner countries' transition towards modern energy systems that simultaneously ensure economic growth, energy security and environmental sustainability</i>				
Strategic Outcome 2 - De-Risking EE and RE Investments				
Output (By 2025)	2.2 De-risked project finance is accessible via financial institutions generating a pipeline of large-scale EE/RE projects			
IN 2.2-01 - No. of new and existing, national and international, financing options / instruments de-risked and opened for private and blended financing	Not Available	1 comprehensive and staged roadmap to pursue the implementation of a multi-country energy trade in Southeast Asia.	Through the adopted investment/financing plan for ASEAN Power Grid	Direct
Strategic Outcome 4 - Knowledge and Awareness Building				
Output (By 2025)	4.1. Stakeholders (relevant Government entities, Public sector companies, Financial institutions, Private entities, Academia, and Consumers) involved in the EE/RE value chain, are knowledgeable and better informed to advance the energy transition agenda			
IN 4.1-01 – No. of studies, research, new evidence gathered and published, for raising awareness, improving knowledge base, driving decisions, and dissemination	Not Available	1 roadmap that will foster systematic stepwise progression of the APG from the current study to implementation stage. The roadmap will include: Regulatory review and recommendations; Coordination plan; Financing plan 3 Policy briefs to share findings from the ASEAN Power Grid roadmap 1 Project infosheet to findings from the ASEAN Power Grid roadmap	The submitted ASEAN Power Grid Roadmap to ACE and published communications products	Direct
IN 4.1-02 - No. of trainings, knowledge sharing events, and/or awareness workshops organised at national and regional levels building institutional capacity and knowledge networks	Not Available	3 events in the workshop and/or seminar format to consult with stakeholders and disseminate the findings	Collect implementation reports on project activities and collate data with evidence	Direct

Indicator(s)	Baseline	Target	Means of verification	Attribution to ETP Direct / Indirect
IN 4.1-02A - Total no. of attendees	Not Available	More than 150 participants (50 people per event) attending the workshops and dissemination session	Registrations and attendance information	Direct
IN 4.1-02B - Total no. of female attendees	Not Available	50% of workshops and dissemination sessions attendees are women	Registrations and attendance information	Direct
IN 4.1-03 - No. of articles, press-releases on social-media, and mass-media, for outreach	Not Available	3 short thought leadership articles that will facilitate knowledge dissemination and support quality information exchange on findings from the ASEAN Power Grid roadmap among the public audience	Repository of relevant links and media archives with analytics on number of views	Direct
IN 4.1-04 - Total no. of entities supported through Technical Assistance	Not Available	7 entities: ASEAN Centre for Energy (ACE), Clean Affordable Secure Energy Program (CASE), Heads of Power Utilities Association (HAPUA), ASEAN Energy Regulatory Network (AERN), ASEAN Secretariat, United Nations Economic and Social Commission for Asia and the Pacific (ESCAP), Development Partners	Entities as identified in the project concept note	Direct

15. The results are reported with additional supporting information and evidence where applicable and necessary.

b. Risks and Mitigation Measures

16. ETP has identified some potential risks that could affect the implementation of the project and their mitigation measures to ensure as laid out in Table 4. The engaged entity shall enhance the risk matrix as the work progresses and add it to the inception report.

Table 4. Risks and Mitigation Measures

Risk	Likelihood	Mitigation Measures
Project delay due to the coordination challenges with the ASEAN counterparts.	Medium	Having the consultant to be based in Jakarta for easier coordination with ACE and other development partners.

Difficulty to obtain data from the relevant stakeholders, particularly the ASEAN Member States.	Medium	List out the data requirements during the inception stage and get early support from ACE and ASEAN Secretariat.
Push back from ASEAN Member States to approve the publication of the roadmap due to sensitive data.	Low	The published version of the roadmap will be in the form of a Summary Report or redacted report which will not have sensitive information.

VIII. Qualification and experience of the service provider and evaluation criteria

A. Qualification and Experience of the Service Provider

17. The consultant's project team should demonstrate the capacity to execute the works and should include all essential roles filled with personnel with relevant experience. CV's of the personnel proposed should be used to verify this information.
18. The consulting entity to implement the project on behalf of ETP should fulfill the following requirements:
 - a. The company should have a minimum five (5) years of experience in working in similar capacities of regional power market and system modeling/energy transmission and integration/relevant similar fields, particularly in ASEAN.
 - b. Offeror must provide a minimum of two (2) customer references from which similar services such as, but not limited to, regional/ bilateral power market initiatives, have been successfully provided, within any of the last 8 years.
19. The consulting entity to implement the project on behalf of ETP should fulfill the following requirements:
 - a. Extensive experience in power sector policy and regulation, power systems, transmission planning, operation, expansion, and regulation, and power market development and transmission is required. Experience from the ASEAN region is an advantage.
 - b. Experience in policy and regulatory analysis, energy modelling, economic/financial analysis, data collection, compilation and validation on both regional and national levels to establish the roadmap is desired.
 - c. In-depth understanding of the ASEAN initiatives of the ASEAN Power Grid, ASEAN Plan of Action for Energy Cooperation (APAEC), ASEAN Interconnection Masterplan Study (AIMS) and relevant policies is required.

- d. In-depth understanding of the key ASEAN governing institutions and stakeholders of Heads of ASEAN Power Utilities Authorities (HAPUA), Renewable Energy Sub-sector Network (RE-SSN), Regional Energy Policy and Planning Sub-sector Network (REPP-SSN), ASEAN Energy Regulators Network (AERN), ASEAN Power Grid Consultative Committee (APGCC), ASEAN Ministers of Energy Meeting (AMEM), Senior Officials Meeting on Energy (SOME), and relative stakeholders in the context of energy is an advantage.
 - a. Proven work experience with governmental authorities, international donors/development partners, and utilities in Southeast Asia is a preference.
 - b. Considering the importance of close coordination with stakeholders in ASEAN, it is expected that the team proposed consists of consultant(s) who understands the regional context of Southeast Asia.
20. The following are the minimum positions that should be included on the team. Bidders should make an assessment of the additional positions needed (if any) to complete the assignment as per Terms of Reference, including identifying at least one personnel to be based in Jakarta on a full-time basis to carry out coordination and communication functions. Bidders should include a table containing the key personnel, location throughout the project, and the total person days involved in the project.

Table 5. Minimum Team Composition and Qualifications

Position Assumed in the Project	Minimum Requirements
1. Project Team Lead	Education: Master's Degree or higher education in Energy, Energy Markets, Finance, Economics, Environment, Climate Change, Development Policies, Engineering, or related fields is required. Work Experience <ul style="list-style-type: none"> • A minimum of 15-year experience in energy and/or climate change policies, development policies, program and project planning, energy trading and/or finance and economics of energy, energy sector market mechanisms; • 10 years of professional experience in leading energy sector, clean energy; energy sector market mechanisms projects is required; • Strong knowledge of the energy and climate landscape, energy transition, political, economic, and social situation in the ASEAN context is required. • Previous successful involvement with, and good knowledge of, donor, government, private sector, and civil society in the ASEAN context is desired.
2. International Power Sector Policy Expert	Master's degree in energy/environmental policy, climate change or relevant subject with additional 10 years of experience in energy and power sector policies and regulation, economics, finance, legal and/or technical areas, energy trading, multilateral power trading. Experience of working in the ASEAN context is highly desirable.

Position Assumed in the Project	Minimum Requirements
3. International Transmission Expert	Master's degree in electrical engineering, energy systems or related field with an additional 10 years of experience in transmission planning, operation and expansion, transmission planning software, power system operation. Experience of working in the ASEAN context is desirable.
4. Energy Economics and Finance Expert	Master's degree in economics and/or finance in energy or related fields with additional 10 years of experiences in economics impact assessment for policy development. Experience of working in the ASEAN context is desirable.
5. Energy Modeling Expert	Master's degree in energy systems planning or a related field with an additional 10 years of experience in actual model building for power systems and renewable energy integration. Experience of working in the ASEAN context is desirable.

B. Evaluation Criteria

Eligibility and Formal Criteria

21. The criteria contained in the table below will be evaluated on Pass/Fail basis and checked during Preliminary Examination of the proposals.

Table 6. Eligibility and Formal Criteria

Criteria	Documents to establish compliance with the criteria
1. Offeror is eligible as defined in Instructions to Offerors, Article 4. In case of a Joint Venture (JV), all JV members should fulfill this requirement	<ul style="list-style-type: none"> Form A: Joint Venture Partner Information Form, all documents as required in the Form, in the event that the Proposal is submitted by a Joint Venture. Form B: Proposal Submission Form
2. Completeness of the Proposal. All required Questionnaires (if any), Returnable Bidding Forms, and other documentation requested under the Document Checklist section have been provided and are complete	<ul style="list-style-type: none"> All documentation as requested under Instructions to Offerors Article 10, Documents Comprising the Proposals
3. Offeror accepts UNOPS General Conditions of Contract as specified in Section IV: Contract Forms	<ul style="list-style-type: none"> Form B: Proposal Submission Form

Qualification Criteria

22. The criteria contained in table below will be evaluated on Pass/Fail basis and checked during Qualification Evaluation of the proposals.

Criteria	Documents to establish compliance with the criteria
1. The company should have a minimum of 5 years of continuous experience in delivering similar projects in the past with a track-record of success.	<ul style="list-style-type: none"> • Certification of incorporation of the Offeror • Form F: Performance Statement Form
2. Offeror must provide a minimum of two (2) customer references from which similar services have been successfully provided, within any of the last 5 years	<ul style="list-style-type: none"> • Form F: Performance Statement Form

Technical Criteria

23. Technical Criteria: Technical evaluation will be carried out to bids that pass the eligibility, formal and the qualification criteria, with requirements as follows:

- a. The maximum number of points that a bidder may obtain for the Technical proposal is 80. To be technically compliant, Bidders must obtain a minimum of 56 points
- b. Minimum pass score: 70% of maximum 80 points = 56 points

Technical proposal points allocation

Section number/description		Points Obtainable
1.	<i>Offeror's qualification, capacity and expertise</i>	25
2.	<i>Proposed Methodology, Approach and Implementation Plan</i>	30
3.	<i>Key Personnel proposed and Sustainability Criteria</i>	25
<i>Total Technical Proposal Points</i>		80

Section 1: Offeror’s qualification, capacity and expertise

Section 1: Offeror’s qualification, capacity and expertise		Points	Sub-points
1.1	Brief description of the organization, including the year and country of incorporation, and types of activities undertaken, including relevance of specialized knowledge and experience on similar engagements done in the past. (Max 4 pages written text plus 1 Matrix)	20	
	<i>1.1.1 Experience in projects of comparable size, type, complexity and technical specialty</i>		10
	<i>1.1.2 Experience in providing similar services in the region</i>		5
	<i>1.1.3 Understanding of ASEAN stakeholder institutions and policies/regulations in the context of energy</i>		5
1.2	General organizational capability which is likely to affect implementation: management structure, and project management controls. (Max 4 pages written text)	5	
	<i>1.2.1 Management structure, management controls, and extent to which any part would be subcontracted</i>		3
	<i>1.2.2 Financial Capacity/financial stability: Bidder should have minimum annual turnover of 500,000 USD in any of the past 2 years Liquidity / quick ratio should be minimum 1, in any of the past 2 years . In case of a joint venture, annual turnover is calculated based on the total annual turnover of the JV members. In case of a joint-venture, at least one of the JV members should have 1 liquidity/quick ratio in any of the past 2 years.</i>		2
Total points for section		25	

Section 2: Proposed Methodology, Approach and Implementation Plan

Section 2: Proposed Methodology, Approach and Implementation Plan		Points	Sub-points
2.1	Description of the Offeror’s approach and methodology for meeting or exceeding the requirements of the Terms of Reference	20	

Section 2: Proposed Methodology, Approach and Implementation Plan		Points	Sub-points
	2.1.1 Description of the offeror's approach to developing the ASEAN Power Grid Roadmap in the context of the current challenge of progressing APG from study to implementation		10
	2.1.2 Description of the offeror's approach to developing the financing framework that can be monitored and used to ensure accountability and progress throughout the planning, preparation, and implementation processes.		5
	2.1.3 Description of offeror's plan to coordinate with the relevant actors involved under ASEAN Power Grid Advancement Program (APG-AP)		5
2.2	Quality Assurance Plan A plan outlining how the bidder intends to ensure oversight and quality assurance throughout the assignment. Quality Assurance plan should include discussion on risk-assessment and its mitigation plan	5	
2.3	Implementation Timeline Bidder submits a detailed implementation timeline which includes detailed activities to be undertaken during this assignment, and is completed with gantt chart	5	
Total points for section		30	

Section 3: Key personnel proposed and Sustainability Criteria

Section 3: Key personnel proposed and Sustainability Criteria		Points	sub-points
	Qualifications of key personnel proposed aligned with the Terms of Reference	20	
3.1	1. Project Team lead* a. Master's Degree or higher education in Energy, Energy Markets, Finance, Economics, Environment, Climate Change, Development Policies, Engineering, or related fields is required. b. A minimum of 15-year experience in energy and/or climate change policies, development policies, program and project planning, energy trading and/or finance and economics of energy, energy sector market mechanisms;		6

	<ul style="list-style-type: none"> c. 10 years of professional experience in leading energy sector, clean energy; energy sector market mechanisms projects is required; d. Strong knowledge of the energy and climate landscape, energy transition, political, economic, and social situation in the ASEAN context is required. e. Previous successful involvement with, and good knowledge of, donor, government, private sector, and civil society in the ASEAN context is desired. 		
	<p>2. International Power Sector Policy Expert:</p> <p>Master’s degree in energy/environmental policy, climate change or relevant subject with additional 10 years of experience in energy and power sector policies and regulation, economics, finance, legal and/or technical areas, energy trading, multilateral power trading. Experience of working in the ASEAN context is highly desirable.</p>		3.5
	<p>3. International Transmission Expert</p> <p>Master’s degree in electrical engineering, energy systems or related field with an additional 10 years of experience in transmission planning, operation and expansion, transmission planning software, power system operation. Experience of working in the ASEAN context is desirable.</p>		3.5
	<p>4. Energy Economics and Finance Expert</p> <p>Master’s degree in economics and/or finance in energy or related fields with additional 10 years of experiences in economics impact assessment for policy development. Experience of working in the ASEAN context is desirable.</p>		3.5
	<p>5. Energy Modeling Expert</p> <p>Master’s degree in energy systems planning or a related field with an additional 10 years of experience in actual model building for power systems and renewable energy integration. Experience of working in the ASEAN context is desirable.</p>		3.5
3.2	The bidder shall provide a response that demonstrates its commitment to support gender equality through its operations	5	

Total points for section	25	
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Financial Criteria (20 maximum points)

The financial part of those proposals that are found to be technically compliant will be evaluated as follows.

The maximum number of points that a bidder may obtain for the Financial Proposal is **20**. The maximum number of points will be allocated to the lowest evaluated price bid. All other prices will receive points in reverse proportion according to the following formula:

Points for the Financial Proposal of a bid being evaluated =

$$\frac{\text{[Maximum number of points for the Financial Proposal]} \times \text{[Lowest price]}}{\text{[Price of proposal being evaluated]}}$$

Financial proposals will be evaluated following completion of the technical evaluation. The bidder with the lowest evaluated cost will be awarded (20) points. Financial proposals from other bidders will receive prorated points based on the relationship of the bidder's prices to that of the lowest evaluated cost.

Formula for computing points: Example

Points = (A/B) Financial Points
Bidder A's price is the lowest at \$20.00. Bidder A receives 20 points
Bidder B's price is \$40.00. Bidder B receives (\$20.00/\$40.00) X 20 points = 10 points

The total score obtained in both Technical and Financial proposals will be the final score for the proposal, with 80% allocated to the Technical proposal and 20% to the Financial proposal. The proposal obtaining the overall highest score will be considered as the winning proposal. This proposal will be considered to be the most responsive to the needs of UNOPS in terms of value for money.

The selection of the preferred bidder will be based on a cumulative analysis, analyzing all relevant costs, risks and benefits of each proposal throughout the whole life cycle of the services and in the context of the project as a whole. The lowest priced proposal will not necessarily be accepted.