TERMS OF REFERENCE (TOR) FOR

TECHNICAL EXPERTS / CONSULTANT

PROJECT NAME:

“BIOFUEL MARKET POTENTIAL FOR REGIONAL COOPERATION IN ASEAN”

DEADLINE:

9 August 2024

I. PROJECT NAME

Biofuel Market Potential for Regional Cooperation in ASEAN

II. POST TITLE

Expert on Biofuel Market, Technologies and Policy in ASEAN

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 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) Phase 2: 2021-2025[1] Outcome Based Strategy 5, Action Plan 5.2 to analyse the potential of biofuel and bioenergy for energy sector decarbonisation, ACE will develop a report to explore the biofuel market potential in ASEAN, focusing on enhancing regional energy cooperation through policy, trade, and technology. In collaboration with ERIA, this report will address serve as a beacon for the RE-SSN in crafting a nuanced framework for biofuel cooperation between member states.

This report targets include assessing the gap between biofuel demand and the growing economies of ASEAN, emphasizing the need for more ambitious regional goals. The report will examine the blending targets, policy frameworks, and incentives that shape biofuel trade and pricing, and identifies key stakeholders and opportunities for collaboration. Additionally, it will provide an overview of industry production trends, key players, and trade flows, while addressing challenges such as competing feedstock uses and trade frictions. Ultimately, the report aims to lay the groundwork for a comprehensive roadmap to drive ASEAN towards a sustainable and

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

energy-secure future. Therefore, ACE seeks consultancy services to support the project activities to deliver the project's output.

IV. DURATION OF ENGAGEMENT

The consultant awarded with the assignment will be hired for up to nine (9) months from September 2024 to May 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 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 will assist ACE and ERIA in developing a comprehensive report on the biofuel market potential for regional cooperation in ASEAN. The consultant will conduct detailed analyses of policy, trade, and technology dimensions of biofuel, identify challenges and opportunities, and provide policy recommendations to foster a coordinated and impactful biofuel development framework. The final content of the report is subject to change based on the discussions and agreement between ACE, ERIA, and the consultant.

The objective of the assignment is to:

1. **Assess the Biofuel Demand and Economic Growth**: Analyse the gap between biofuel demand driven by renewable energy (RE) targets and the expanding economies of ASEAN nations. Project the biofuel shares according to regional renewable energy targets and economic growth.
2. **Evaluate Policy Frameworks and Blending Targets**: Examine the policy frameworks across ASEAN nations, including blending targets, trade policies, pricing mechanisms, and financing strategies that shape the biofuel market.
3. **Analyze Industry Trends and Key Players**: Provide an in-depth overview of biofuel production trends, key producers, and trade flows within ASEAN and with other regions.
4. **Identify Market Limitations and Challenges**: Highlight limitations such as competing feedstock uses, trade frictions, and geopolitical factors affecting the biofuel market.
5. **Propose Policy Recommendations**: Develop coordinated policy recommendations to enhance biofuel development, facilitate cross-border trade, and leverage technological advancements within ASEAN.

The scope of the assignment for the technical experts are:

1. Collect relevant data from ACE's and ERIA's repositories, national policy documents, past studies, peer-reviewed literature, and other sources.
2. Analyse biofuel demand projections, blending targets, policy frameworks, and industry trends.
3. Deliver a preliminary presentation of the findings at the pre-determined deadline from ACE and ERIA.

4. Structure the report to serve as a comprehensive reference for multiple stakeholders, covering areas in policy, industry trends, and market limitations.
5. Develop a detailed report or study containing the information on fuel demand projection, biofuel policy, industry trends, and market limitations.
6. Prepare the presentation and summary for workshop/knowledge-sharing/focus group discussions (FGD).

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*
Research	Propose study outline improvement for agreement: make adjustments to include relevant research areas and aspects for the report	5 September 2024
Workshop/FGD (online)	Presentation on Preliminary research findings and results	29 October 2024
Research	1st Stage report (Chapter 1-2)	25 October 2024
Research	Interim report (Chapter 1-4)	6 December 2024
Research	First draft of the report (Chapter 1-6)	7 February 2024
Research	Final version of the report	28 March 2024
Dissemination Workshop	Presentation on the findings and results of the study for knowledge-sharing/workshop activity	20 May 2024

* Actual deadline may be adjusted based on the agreement and approval by ACE.

VII. WORK MECHANISM

The implementation of the project is arranged as below:

- The Sustainable Renewable Energy (SRE) Department of ACE and ERIA team will lead and be responsible for the project's full implementation. ACE will manage and facilitate the work and communication with government officials from ASEAN (RE-SSN focal points), SOME, and AMEM. Both ACE and ERIA will also be responsible for engagement with relevant stakeholders (authorities, enterprises, financial institutions, and research institutes) if needed.
- External Consultant to provide the technical expertise and support as described in this TOR. During the work period, the consultant must have regular check-in call meetings with ACE to discuss progress in every step of the work. Any interaction with the external parties to support the project by the consultant must be approved by ACE and ERIA.

VIII. CONSULTANT QUALIFICATION

ACE and ERIA require a consulting service provider or technical experts with proven experience and capacity to execute the necessary tasks and deliverables for this study on biofuel market potential in ASEAN as described above.

1. **The expertise of the firm/organisation**:
    - The consulting service provider or technical experts should demonstrate proven records of delivery for similar tasks/products over the past five years. Bidders must attest to their expertise by submitting examples of relevant reports, studies, analyses, consultancy products, and research related to biofuel market analysis, policy frameworks, and regional cooperation.
    - Specific experience in biofuel market analysis, renewable energy policy, and regional energy cooperation within ASEAN is essential.
2. **Team capabilities**:
    - The team should include a senior consultant or technical staff member with more than ten years of experience in renewable energy and biofuel sectors, particularly within ASEAN.
    - The senior consultant should be supported by a team with adequate skills and experience in biofuel production, policy analysis, and trade dynamics.
3. **Expertise and knowledge**:
    - Expertise in existing national governmental policies related to biofuels, renewable energy, and trade within ASEAN.
    - Knowledge in biofuel technologies, production & consumption trends, biofuel feedstock options & trends, market dynamics, and financing options in ASEAN.
    - Understanding of regulatory frameworks, trade policies, and pricing mechanisms affecting the biofuel market in ASEAN.
4. **Language and Communication Skill**:
    - 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.
5. **Capacity and Flexibility**:
    - The consulting service provider must demonstrate the capacity and flexibility to complete the assignment within the required time frame, ensuring adherence to deadlines and project milestones.

IX. SERVICE FEE

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

- For the satisfactory performance of the assignment, the consultant will be paid a fixed fee of a maximum of USD 20,000 (Twenty Thousand US dollars), divided in different stages based on actual work progress
    - 30% of USD 20,000 equivalent to USD 6,000 (Six Thousand US dollars), upon meeting the deliverable planned on 25 October 2024.
    - 30% of USD 20,000 equivalent to USD 6,000 (Six Thousand US dollars), upon meeting the deliverable planned on 6 December 2024.
    - 40% of USD 20,000 equivalent to USD 8,000 (Eight Thousand US dollars), upon meeting the deliverable planned on 28 March 2024.
- 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 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 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 corporate experience 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 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.

1.3 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 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 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:

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 zahrah.zafira@aseanenergy.org and sre@aseanenergy.org by **9 August 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 Biofuel Market Potential Study in ASEAN Region

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 sre@aseanenergy.org and cc procurement@aseanenergy.org.

ANNEX A – OUTLINE OF IN-DEPTH POWER ASSESSMENT TO SCALE UP RENEWABLE ENERGY DEPLOYMENT IN ASEAN

Chapter 1. Introduction

1.1. Background

This background section outlines the historical context that motivates the formulation of this report's objectives as described in this concept note.

1.2. Objectives

This section succinctly outlines the study's goals described in this concept note.

1.3. Methodology

This section expands the study's methodology, which must correspond to the achievement of objectives and research questions, as reflected by the research questions of the chapters and sub-chapters.

Chapter 2. Fuel Demand Projection

2.1. Projected Biofuel Share according to Regional Renewable Energy Target

2.1.1. Status of biofuel share towards the achievement of renewable energy in ASEAN as of 2022

2.1.1.1. What is the current proportion of biofuel in the overall RE mix within ASEAN?

2.1.1.2. How does the current biofuel share align with the national RE targets?

2.1.2. Expected contribution of biofuel in transport, electricity, and industrial sectors for achieving the RE target by 2025

2.1.2.1. What is the anticipated contribution of biofuel (in terms of litre or feedstock) in the transport sector towards achieving the regional RE target by 2025?

2.1.2.2. How will biofuel contribute to the RE goals in the electricity and industrial sectors by 2025?

2.2. Projected Fuel Demand according to Economic Growth

2.2.1. According to the projection of economic growth, e.g., GDP, what is the anticipated fuel demand?

2.2.2. What is the potential role of biofuel (in terms of litre or feedstock) in decarbonising fuel use in meeting the growth of demand?

2.2.3. What types of feedstocks are projected to be crucial for supporting the expected biofuel contribution in meeting the RE target by 2025?

2.3. Gap Analysis of Biofuel Contribution: Regional Target vs Demand growth

2.3.1. What is the identified gap between the expected biofuel contribution needed to achieve the regional RE target and the projected growth in demand?

2.3.2. How do economic factors, such as GDP growth, impact the widening or narrowing of the gap between biofuel contribution and demand growth?

Chapter 3. Biofuel Policy

3.1. Blending Targets

3.1.1. What are the specific blending targets set by each ASEAN member country for biofuels in their respective transportation fuel mixes?

3.1.2. How have these blending targets evolved over time, and what factors have influenced their formulation?

3.2. Policy Drivers of Trade, Pricing, and Financing

3.2.1. What national policies influence the trade dynamics of biofuels within each ASEAN member country?

3.2.2. How do pricing mechanisms for biofuels vary across countries, and what policy drivers underpin these variations?

3.2.3. What financing policies are in place to support the biofuel industry in each country, and how do they contribute to market development?

3.3. Institutional Capacity and Coordination

3.3.1. What are the related institutions of each ASEAN member country that implement and regulate biofuel policies on the aspect of trading, pricing, and financing?

3.3.2. How is coordination among different government agencies and stakeholders within each country to ensure coherent implementation of biofuel policies on the aspect of trading, pricing, and financing?

3.4. Regional Biofuel Trade Policy and Cooperation

3.4.1. What is the existing regional framework for biofuel trade policies or biomass feedstock (such as ASEAN Strategy on Sustainable Biomass Energy for Agriculture Communities and Rural Development) or other relevant topics among ASEAN member countries?

3.4.2. How do regional cooperation mechanisms contribute to the harmonisation of biofuel policies and facilitate cross-border trade?

3.4.3. What challenges and opportunities exist in fostering stronger regional cooperation in the biofuel sector?

Chapter 4. Biofuel Industry

4.1. Production Trends

4.1.1. What are the current production trends of different biofuel products (e.g., ethanol, biodiesel, sustainable aviation fuel/ SAF) within the ASEAN region, and how have they evolved over the past decade?

4.1.2. What factors contribute to fluctuations in biofuel production, and how do they align with the RE targets of individual ASEAN member countries?

4.2. Key Producers

4.2.1. Who are the primary countries in biofuel production amongst ASEAN according to biofuel product categorisation in section 4.1 (e.g., ethanol, biodiesel, SAF)?

4.2.2. Who are the primary producers of biofuels in each ASEAN member country, and what is the scale of their operations, according to categorisation in section 4.1 (e.g., ethanol, biodiesel, SAF)?

4.2.3. How do key producers contribute to shaping the biofuel industry, and what role do they play in influencing market dynamics?

4.3. Trade between ASEAN Member Country

4.3.1. What is biofuel and its respective feedstock trade's current volume and nature between ASEAN member countries?

4.3.2. How do trade agreements, policies, and geographical factors impact the flow of biofuels between nations within the ASEAN community?

4.4. Technology Readiness

4.4.1. How can the technological readiness of biofuel initiatives be assessed in both the commercial and R&D stages within ASEAN?

4.4.2. What role do technological advancements and innovation play in shaping the competitiveness and sustainability of the biofuel industry in the region?

Chapter 5. Biofuel Market Limitations

5.1. Gap between Resource Availability and Policy Aspirations

5.1.1. What is the extent of the gap between the available biofuel resources and the ambitious policy aspirations set by ASEAN member countries?

5.1.2. How do variations in resource availability across member nations contribute to the identified gap, and what implications does this have for achieving regional biofuel targets?

5.2. Competing Use of Feedstock by Different Sectors

5.2.1. Which sectors within ASEAN exhibit the most significant competition for the same feedstock resources, and how does this competition impact biofuel production?

5.2.2. What policy measures can be implemented to address and alleviate challenges arising from competing uses of feedstock by various sectors?

5.3. Geopolitical Factors

5.3.1. How do geopolitical factors, such as the European ban on palm oil, influence the ASEAN biofuel market?

5.3.2. What proactive measures can be adopted to navigate and mitigate the impacts of external geopolitical decisions on the regional biofuel industry?

5.4. Limitations on Intra-Biofuel Trade in ASEAN

5.4.1. Are there existing limitations or barriers hindering the intra-biofuel trade among ASEAN member countries?

5.4.2. How do regional policies, trade agreements, and logistical challenges impact the movement of biofuels within the ASEAN community?

Chapter 6. Policy Recommendations: Regional Platforms for Biofuel Development

6.1. Coordinated Policy Approach

6.1.1. What regional platforms or mechanisms can be recommended to foster a more coordinated policy approach for biofuel development within ASEAN?

6.1.2. How can such platforms address challenges related to policy harmonisation, information exchange, and collaborative decision-making among member countries?

6.2. Trade of Feedstock and Biofuel

6.2.1. What policy recommendations can be proposed to facilitate the seamless trade of feedstock and biofuel within the ASEAN region?

6.2.2. How can regional cooperation agreements and trade policies be optimised to enhance the efficiency and sustainability of feedstock and biofuel trade?

6.3. Technological Readiness

6.3.1. What criteria should be employed to assess the technological readiness of biofuel initiatives in both commercial and research and development stages within ASEAN?

6.3.2. How can ASEAN countries leverage technological advancements in biofuel development from other nations, and what policy measures can be recommended to facilitate technology transfer and adoption?