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Kawasan Perindustrian Temasya, 40150 Shah Alam, Selangor, Malaysia
www.tnbfuel.com

Our Reference : TNBF 1.14.47 – FSS RFI

Date : 06 March 2025

To : **WHOM IT MAY CONCERN**

REQUEST FOR INFORMATION (RFI): FEASIBILITY STUDY ON THE BIOMASS SUPPLY CHAIN AND DELIVERY FOR THE UTILIZATION OF BIOMASS AS CO-FIRING FUEL IN COAL-FIRED POWER PLANTS IN MALAYSIA

TNB Fuel Services Sdn. Bhd. ("TNBF"), a wholly owned subsidiary of Tenaga Nasional Berhad ("TNB"), is responsible for the procurement and transportation of fuel to power plants across Malaysia. As part of TNB's long-term decarbonization strategy and commitment to achieving net-zero emissions by 2050, TNBF is exploring the potential of biomass as a sustainable alternative fuel for coal-fired power plants.

In line with this initiative, TNBF is inviting qualified and experienced consultants to submit a **Request for Information (RFI)** regarding the feasibility study on biomass production, value chain, supply chain, logistics, and delivery systems within Malaysia and neighbouring countries ("Study").

The purpose of this RFI is to identify consultants with the necessary expertise, capabilities, and experience to conduct the Study. The Study will focus on assessing feedstock availability, logistical infrastructure, sustainability, technical practicability, and the economic feasibility of biomass utilization for co-firing in power generation.

Through this RFI, TNBF aims to evaluate the availability of capable consultants who can execute such Study and provide valuable insights into biomass integration within the energy sector. The findings from this exercise will help shape TNBF's approach to procurement, sustainability strategies, and long-term decarbonization efforts.

Interested consultants are invited to review the RFI document, which provides detailed information on the objectives, eligibility criteria, scope of work, and submission requirements. The document is available for access at www.tnbfuel.com.

For further inquiries, please contact Mohd Azimuddin bin Yahaya at azimuddin.yahaya@tnb.com.my and/or Naufal Qeis Bin Nah Wan at naufal.wan@tnb.com.my.

Thank you.

"BETTER WORLD. BRIGHTER LIVES."

(JAMAL BIN YUSOFF)
Managing Director
TNB Fuel Services Sdn. Bhd.
(nq)

APPENDIX A: REQUEST FOR INFORMATION (RFI) FOR A FEASIBILITY STUDY ON THE BIOMASS SUPPLY CHAIN AND DELIVERY FOR THE UTILIZATION OF BIOMASS AS CO-FIRING FUEL IN COAL-FIRED POWER PLANTS IN MALAYSIA

REQUEST FOR INFORMATION (RFI) FOR A FEASIBILITY STUDY ON THE BIOMASS SUPPLY CHAIN AND DELIVERY FOR THE UTILIZATION OF BIOMASS AS CO-FIRING FUEL IN COAL-FIRED POWER PLANTS IN MALAYSIA

TNB Fuel Services Sdn. Bhd. ("TNBF"), a wholly owned subsidiary of Tenaga Nasional Berhad ("TNB"), is responsible for fuel procurement and transportation to power plant. TNBF invites interested Consultants (herein after referred to as the "Applicants") to submit Request for Information documents.

A. OBJECTIVE OF THE RFI

The objective of this RFI is to identify and pre-qualify consultants with the requisite expertise, capabilities, and experience to conduct a comprehensive feasibility study on the biomass supply chain and delivery systems within Malaysia and neighbouring countries. This study will assess the feedstock availability, technical, economic, logistical, and regulatory aspects of utilizing biomass as a co-firing fuel in coal-fired power plants in Malaysia. This RFI aims to gather detailed information on potential Applicants' experience, methodologies, and capabilities, to support informed selection and subsequent project planning.

B. ELIGIBILITY

1. Relevant Expertise
   - Experience in conducting feasibility studies within the energy sector, particularly with biomass supply chains and co-firing operations in coal-fired power plants.
   - Proven track record in projects related to renewable energy, biomass utilization, or similar supply chain logistics as specified in the RFI.
2. Industry Experience
   - A minimum of five (5) years of experience in the energy or biomass industry
   - Documented case studies and client references from comparable projects.
3. Technical Competence
   - In-depth understanding of the technical, economic, environmental, and regulatory factors involved in biomass fuel utilization.
   - Capability to assess the complete biomass supply chain, including procurement, processing, storage, and delivery systems.
4. Local Knowledge
   - Familiarity with the Malaysian market, including local regulatory requirements and logistical challenges, or demonstrated experience working in the region.
5. Resource Availability
   - Adequate staffing, technical resources, and project management capabilities to deliver comprehensive outcomes.
   - Evidence of financial stability and the ability to commit the necessary resources for the duration of the Study.

6. Certifications and Accreditations
    - Possess relevant professional certifications or qualifications in renewable energy, biomass technology, or supply chain management.
7. Innovative Approach
    - A demonstrated ability to propose innovative, sustainable, and cost-effective solutions tailored to the biomass co-firing context.

Applicants meeting these eligibility criteria are encouraged to submit their detailed responses to participate in the feasibility study.

C. DEFINITIONS

"Biomass" means any biomass product that is applicable for use in a combustion furnace, including but not limited to Empty Fruit Bunch (EFB) pellets, wood pellets, Palm Kernel Shell (PKS), bamboo pellets, and Napier grass pellets.

D. SCOPE OF WORK

The scope of work includes, but is not limited to, the following areas. Applicants may propose additional scope items that are relevant and add value to the assessment.

1. **Biomass Feedstock Analysis:**
    - Availability and Quality
        - Assess the availability, quality, and sustainability of biomass feedstock in Malaysia and neighbouring countries such as Indonesia, Thailand, and Vietnam.
    - Reliability and Scalability
        - Identify key factors influencing feedstock reliability (e.g., seasonality, market competition) and potential for scaling up supply.
2. **Supply Chain & Logistics:**
    - Supply Chain Evaluation
        - Conduct a comprehensive evaluation of the biomass supply chain, covering collection, processing, storage, transportation, and delivery to power plants.
    - Infrastructure and Bottlenecks
        - Assessment of logistical infrastructure and supply chain bottlenecks, including existing and potential storage facilities, ports, and transportation networks.
    - Transportation modes
        - Analysis of various transportation modes (e.g., road, seaborne, etc.), in terms of cost, efficiency, and viability.
    - Risk Assessment and Mitigation.
        - Identify risks such as supply disruptions, geopolitical factors, and weather-related impacts, and propose mitigation strategies.
3. **Technical Feasibility:**
    - Compatibility
        - Evaluation of biomass quality specifications in relation to the existing coal-fired power plant requirements.
        - Technical analysis including combustion capabilities of different type of biomass with existing coal-fired power plant systems and operations.

- Blending Parameters
  - Assessment on blending parameters, ratios, limits and their impacts on plant efficiency and emissions under current operational regime.
- Standards and Specifications
  - Review relevant quality standards for determining biomass specifications and other relevant standards governing biomass production and utilization.

4. **Environmental and Safety Considerations:**
   - Regulatory Compliance
     - Evaluate adherence to environmental regulations, emissions standards, and best practices for sustainable resource management.
   - Safety Protocols
     - Identify safety risks associated with biomass handling, storage, and transportation, and recommend appropriate safety measures.
5. **Sustainability Evaluation:**
   - Long-Term Feedstock Strategy
     - Recommend strategies to ensure long-term sustainability and availability of biomass resources, such as reforestation, responsible sourcing, etc.
   - Carbon Footprint
     - Evaluate net carbon emissions and overall environmental impact associated with biomass transportation, handling, and processing.
6. **Commercial and Market Update**
   - Market Outlook
     - Examine current and projected biomass supply-demand trends, both regionally and globally, to determine market viability.
   - Pricing and Contracts
     - Propose suitable pricing indices and contract mechanisms (e.g., spot vs. term contracts), including commercial strategies.
   - Supplier Evaluation Criteria
     - Establish criteria for selecting reputable biomass suppliers (e.g., financial stability, operational capacity, certifications, compliance with international standards).
   - Supplier Recommendations
     - Provide a curated list of potential, reliable biomass suppliers with a proven track record.

E. INFORMATION

Kindly contact the person in charge from TNBF for any information required:

Mohd Azimuddin bin Yahaya

E-mail: azimuddin.yahaya@tnb.com.my

Telephone: +60192232433

or

Naufal Qeis Bin Nah Wan

E-mail: naufal.wan@tnb.com.my

Telephone: +6016-6898395

F. PENALTY

TNBF reserves the right to reject any RFI that is incomplete, either in part or in full. No penalties will be imposed on applicants in such case. Applicants are encouraged to provide comprehensive and detailed information to help us better understand their capabilities and capacity.

G. CONFIDENTIALITY AND PERSONAL DATA PROTECTION

The Applicant shall treat this document and everything within it as private and confidential. The Applicant shall not publish or release information or drawings relating to this document except with prior written consent of TNBF.

TNBF and the Applicant agree to always comply with provisions and obligations contained in all applicable laws and regulations in Malaysia, including but not limited to the Personal Data Protection Act 2010.

For information and notification, TNB's Personal Data Protection Policy can be accessed at https://www.tnb.com.my/pdpa

H. DISCLAIMER

All information provided in response to this RFI will be treated as confidential and used solely for the purpose of data gathering. The RFI is issued solely for information-gathering and planning purposes and does not constitute a solicitation or offer to enter into any binding contractual arrangement. Responses to this RFI shall not bind TNBF to any contractual commitment, nor shall TNBF be obligated to select or

award any contract to the respondent. TNBF also reserves the right to amend, withdraw this RFI at any time without incurring any liability. All costs associated with the preparation and submission of responses to this RFI shall be borne solely by the respondent.

TNB FUEL SERVICES SDN. BHD.

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A. GENERAL INFORMATION

1.	Company:	
2.	Office Address:	Registered Address:
3.	Tel No.:	Fax No.:
4.	Date of incorporation:	
5.	Principal activities:	
6.	Authorized Capital:	Paid-Up Capital:
7.	Vendor Registration Number MOF/ TNB (if any):	
8.	Contact Person (1)	
	Name:	Designation:
	Tel No. (Office):	Fax No.:
	Mobile No.:	Email:
	Contact Person (2)	
	Name:	Designation:
	Tel No. (Office):	Fax No.:
	Mobile No.:	Email:

B. PROPOSAL

Applicants are required to submit a comprehensive proposal detailing the following:

A detailed feasibility study plan, including methodology, approach, and deliverables aligned with the scope of work. Please provide supporting evidence e.g. curriculum vitae of key personnel, company profile, audited Financial Report etc.

C. PRICE DISCOVERY & PROPOSE TIMELINE

To facilitate budgetary planning, applicants are requested to provide **indicative pricing** for the proposed study along with the **estimated timeline (in weeks)** required for completion. Applicants should complete the table below:

Indicative Cost and Timeline Table

No	Item	Estimated Cost (USD/MYR)	Estimated timeline (weeks)
1	Biomass Feedstock Analysis		
2	Supply Chain & Logistics		
3	Technical Feasibility		
4	Environmental and Safety Considerations		
5	Sustainability Evaluation		
6	Commercial and Market Update		
	Applicants may propose additional scope items relevant to the above areas.		
	Total		

Additionally, applicants are requested to provide:

- **Key cost drivers and assumptions** influencing the pricing.
- **Potential cost variations** based on scope adjustments.
- **Benchmarking insights**, if available, comparing costs with similar studies.
- **Market insights** on prevailing consultancy fees for biomass and ammonia supply chain assessments.

Applicants may propose alternative pricing structures or methodologies if deemed more suitable and may also add additional pages to supplement the given table in Appendix C. Any modifications or additions should align with the proposed approach and commercial considerations.

DECLARATION

I, _____ID No._____ Hereby certify that all the information/data given to this applicant are correct and up to date. If there are any changes in the information/data supplied, I shall undertake to notify you in writing as soon as possible.

I also declare that all the information given in this application is true and correct.

SIGNATURE **COMPANY'S STAMP**

NAME :
DESIGNATION :
DATE :

RFI Form The form is available for download at our official websites:

- www.tnbfuel.com > Procurement > Tender Advertisement

CHECKLIST

The applicant is advised to submit the following documents in this RFI to enable TNBF to fairly assess their overall capacity and capability.

No.	Document	Confirm Submission *Applicant please tick (√)*	TNBF *(Office use)*
1.	RFI Form		
	A. GENERAL INFORMATION		
	B. PROPOSAL		
	C. PRICE DISCOVERY & PROPOSE TIMELINE		
2.	Company Profile		
3.	Latest audited financial report		
4.	Curriculum vitae of key personnel		