Request for Proposal (RFP)
Technical and Economic Potential Mapping of Renewable Energy

Institute for Essential Services Reform
Jl. Tebet Timur Raya No. 48B
Jakarta Selatan
Indonesia

March 27th 2025

1. Background

Based on the report of the Ministry of Energy and Mineral Resources (KESDM) in 2024, the total installed capacity of renewable energy generation in Indonesia is still around 15.1 GW. Meanwhile, the installed capacity of fossil power plants has reached 86 GW. Throughout 2017-2024, the growth of renewable energy generation in Indonesia was relatively slow, averaging around 854.57 MW/year.

The issuance of Presidential Regulation No. 112/2022 on the Acceleration of Renewable Energy Development is expected to increase investor interest in developing renewable energy. Unfortunately, the existence of the Presidential Regulation has not been able to encourage the development of renewable energy in Indonesia. Thus, the target of renewable energy in the national energy mix in 2025 is difficult to achieve.

On the other hand, the renewable energy potential in Indonesia is very large, reaching 3,687 GW spread throughout the region. The value is still a technical potential that needs to be studied in detail by developers so that it can be proposed as a renewable energy project that can operate in Indonesia. Several stages must be carried out by developers to ensure that the potential can become a renewable energy project that is worthy of receiving funding from fund providers and obtaining a power purchase agreement (PPA) with PT PLN (Persero).

Therefore, to support the acceleration of renewable energy development, IESR took the initiative to conduct further renewable energy mapping by emphasizing technical aspects based on spatial conditions and economy. Mapping is carried out using geospatial methodology, considering several constraints, to obtain a definitive location of potential renewable energy. Then, the initial capital expenditure and operational expenditure of the renewable energy potential at each definitive location will be estimated.

2. Objective

IESR is looking for partners with extensive experience and portfolios, capable of carrying out a study on **“Technical and Economic Potential Mapping of Renewable Energy”,** with aims as follows:

1. Mapping renewable energy potential, specifically for geothermal, floating solar PV, large-scale hydropower, and offshore wind turbines based on a geospatial approach.
2. Identifying preliminary logistic cost, land/site cost, and interconnection cost related to renewable energy potential mapping.
3. Estimating the indicative capital and operational expenditure of the renewable energy potential.

3. Scope of Work

1. Conduct data collection on renewable energy potential in all regions in Indonesia, including geothermal, floating solar PV on the water body and/or off-shore, large-scale hydropower, and off-shore wind turbines.
2. Conduct spatial analysis to obtain definitive locations of renewable energy potential by considering several constraints, but not limited to, energy sources, land cover, land use and infrastructure, topography, hazard restrictions, and distance to near

substation or transmission line, by using geospatial software such as ArcGIS, QGIS, etc.

3. Conduct a data-based spatial conditions collection, such as land cost (including *nilai jual objek pajak* / NJOP, if any) or capacity factor from national or international data sources.
4. Identify the logistics facilities, such as the jetty, port, and airport and estimate the distance to each potential site for each type of renewable energy.
5. Estimate renewable energy potential capacity using appropriate methodology and best practices approach in engineering design. The methodology or approach to estimate the potential capacity should be described in the proposal.
6. Estimate logistic cost and interconnection cost for each potential site of renewable energy based on the geospatial approach.
7. Estimate indicative capital and operating expenditures for each potential location for each type of renewable energy.
8. For geothermal, the capital and operating expenditures estimation should consider the exploration stage and type of technology that will be used, such as dry steam, flash steam, and binary cycle. The methodology for determining the type of geothermal technology must be described by the consultant in the bid proposal.

4. Deliverables

1. Comprehensive spatial data on renewable energy technical potential must be able to be translated into GIS visualization, in Excel spreadsheet format, with the following minimum information:
    a. Name site
    b. Capacity
    c. Latitude, longitude
    d. Area
    e. Capacity factor
    f. Land status
2. Indicative economic assessment on renewable energy potential in Excel spreadsheet format with the following minimum information:
    a. Name site
    b. Capacity
    c. Land cost
    d. Interconnection cost
    e. Type of technology
    f. Capital expenditure
    g. Operational expenditure

5. Timeline

The project is planned to start on **May 1, 2025,** and end on **July 31, 2025**, with a duration of 65 work days in 3 months.

Deliverables	Due date
Deliverable-1: Comprehensive Spatial Data on RE Technical Potential	13 June 2025
Deliverable-2: Indicative Economic Assessment on RE Potential	31 July 2025

6. Proposal Guideline

Proposals will be accepted until 12:00 p.m. Indonesian Western Standard Time (WIB, GMT+07) on April 18, 2025. Any submissions received after this date and time will be regarded as inadmissible. Kindly submit the proposal to the IESR Energy Transformation Project Manager at deon@iesr.or.id and the Research Manager at raditya@iesr.or.id and cc: dwicahya@iesr.or. and reananda@iesr.or.id. Please include "**RFP Response – RE Mapping [Company/Individual Name]**" in the subject line.

All proposals must be signed by an official agent or representative of the company submitting the proposal. Please itemize all costs and include a description of associated services. Contract terms and conditions will be negotiated upon selecting the winning bidder for this RFP. If the organization submitting a proposal must outsource or contract any work to meet the requirements, this must be clearly stated in the proposal. Additionally, costs included in proposals must consist of any outsourced or contracted work. Any outsourcing or contracting organization must be named and described in the proposal.

IESR will evaluate all the proposals submitted. Following a review of all submissions, IESR will select the firms/institutions/individuals that present the most suitable expertise according to the qualifications outlined above, that most closely align with project objectives, and articulate a detailed, clear, and achievable plan to meet those objectives within the required timeframe.

7. RfP Timeline

Evaluation of proposals will be conducted from April 21-25, 2025. Top qualified partners from the proposed document and quotation will be shortlisted, and a follow-up session might be undertaken in this time window to obtain any necessary clarification on items described in the proposals. The selection decision for the winning bidder will be made by April 28, 2025. Upon notification, the contract negotiation with the winning bidder will begin immediately and must proceed extra quickly to meet the project timeline. The timeline and payment schedule can be negotiated.

8. Budget

All proposals must include proposed costs (in Indonesian Rupiah/IDR) to complete the tasks described in the project scope. Costs should be stated as on-time or non-recurring costs (NRC).

Expected cost to be included in the proposal:

- Man-hours or man-day to cover the scope of work.

- Services charges and taxes.

Any additional cost (survey, FGD) required to complete the work can be identified and estimated in the budget. This information would be treated as additional information for IESR to evaluate the robustness of methodologies. However, these additional costs would be covered by IESR directly and would be excluded from the final contract value.

9. Bidder Qualification

The Provider should provide the following items as part of their proposal:

1. Bachelor's degree with 3 years experience, or master's degree, in renewable energy, geoscience, geography, transport/logistics, sustainable energy engineering, or relevant studies
2. 2 years of working experience in geospatial analysis using a range of GIS software (e.g. ArcGIS, QGIS, etc.)
3. Understanding renewable energy projects and/or economic estimation is an advantage
4. Familiarity with spatial modelling under Python programming language is an advantage
5. Knowledge of the use of Machine Learning for geospatial analysis is an advantage
6. Excellent communication and the ability to work in teams
7. Excellent attention to detail, and a strong willingness to learn about the energy sector/issues
8. Excellent time-management skills