Request for Proposal (RFP)

Mapping Renewables Alternative for On-grid Coal-Fired Power Plants in Indonesia

Institute for Essential Services Reform

Tebet Timur Raya 48B

Jakarta Selatan

Indonesia

15 November 2023

OVERVIEW AND BACKGROUND

Institute for Essential Services Reform (IESR), a think tank based in Jakarta, Indonesia, has been working intensively to promote the acceleration of low carbon energy transition in Indonesia, through evidence-based policy advocacy. IESR also has been contributing significantly to promote energy transition discourse in Indonesia and has been working with national and local governments, associations, and civil society organizations. Since 2022, IESR is supporting the Ministry of Energy and Mineral Resources (MEMR) in formulating the early coal retirement roadmap and as mandated by the Presidential Regulation 112/2022 and with the agreement of the Ministry of Finance (MoF), and Ministry of State-Owned Enterprise (MSoE). Now, the draft of the regulation is being finalized and might be stipulated at the end of 2023 or early 2024.

With on-grid CFPP being retired naturally retired or early retired, there are opportunities to utilize existing infrastructures for the CFPP (e.g. the substation and transmission infrastructure to evacuate the electricity, the land) to integrate renewable power plants instead. If the feedstocks allow, the CFPP major component could be retrofitted and utilized as biomass power plants instead. To better understand this opportunity, IESR would like to carry out the mapping out of the renewable alternatives for all the on-grid coal fired power plants in Indonesia.

The renewable alternatives would consist of solar, wind, biomass, and even hydro and geothermal. The biomass potential shall investigate the available feedstock surrounding the plants. The geothermal potential would consider the known geothermal working area near the plants if available. The hydro, solar, and wind should be mapped out using the best practice methodology of using GIS. Lastly, several CFPP units would be selected for cost-benefit analysis (CBA) of integrating renewable energy while optimizing the existing infrastructures for the CFPP.

1. PROJECT SUMMARY

This project will focus on two things:

1. Mapping out all available renewable energy potential for each unit of on-grid CFPP in Indonesia. The resulting output would consist of:
    a. Proposed methodology for identifying and mapping out of renewable potential (solar, wind, hydro, biomass, and geothermal) for each unit of on-grid CFPP.
        i. Geothermal: at the very least map out of the nearest feasible known geothermal working area and its potential
        ii. Biomass: potential of feedstock supply, type of feedstock and its sustainability
        iii. Solar, hydro and wind: GIS analysis-based potential with clear constraints to identify the most feasible potential.
    b. Provide the raw data and resulting analysis to IESR in the format of excel file and GIS file.
2. Cost benefit analysis of integrating the renewable alternatives for three selected case studies of CFPP (could be a group of CFPP such as the Suralaya CFPP):
    a. The case studies would be selected considering the output of point number 1.
    b. At minimum of two scenarios for each case studies could be considered, alternating between different renewable alternatives or even combination of renewable alternatives while making sure to optimize the existing infrastructures of the CFPP that are relevant for the proposed renewable alternative. Case study could also include co-generation of renewables for the selected CFPP.
    c. Cost-benefit analysis of each scenario for each case study.

IESR has conducted technical potential mapping of the solar, wind, small hydro and biomass for the whole Indonesia. The methodology could be used as basis and refined further for the purpose of this exercise.

IESR intends to use the data and study to further support our work to promote energy transition especially in the power sector. All the results of the analysis would be considered as IESR data and would not be shared or utilized for any other purpose.

With this RFP, IESR is soliciting proposals from experts, or institutions with extensive experience and portfolio in power system infrastructure and renewable energy plants. IESR will evaluate all the proposals submitted. Following review of all proposals, IESR will select the experts/institutions that brings suitable expertise, most closely aligns with project objectives, and articulates a clear, achievable research plan to meet those objectives within the required timeframe.

2. PROPOSAL GUIDELINES

Proposals will be accepted until 10:00 p.m. Indonesian Western Standard Time (WIB, GMT+0700) on Thursday, 30 November 2023. Any proposals received after this date and time will be regarded inadmissible. All proposals must be signed by an official agent or representative of the company submitting the proposal.

Main proposals should not be more than 10 pages in length. The annex of proposal should include following item:
1) brief company/institution profile.
2) the latest Curriculum Vitae (CV) of team leader. CV of other team member with relevant experience is optional.

If the individual/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 include any outsourced or contracted work. Any outsourcing or contracting organization must be named and described in the proposal.

Please describe the limitations and assumptions that would potentially be used in the study as well as software/tool to be used. The use of open-source software/tool is preferable.

Please itemize all costs and include a description of associated services. Contract terms and conditions will be negotiated upon selection of the winning bidder for this RFP.

3. PROJECT PURPOSE AND DESCRIPTION

IESR would like to map out potential renewable alternatives for all on-grid CFPP. The established mapping of renewables would be the basis of the second objective of this RFP. The chosen partner will conduct the mapping analysis, complete it within project timeframe, and then pass over the ownership to the IESR team.

The two main outputs of these exercises are described below:

1. Mapping out all available renewable energy potential for each unit of on-grid CFPP in Indonesia consisting of the solar, wind, hydro, biomass and geothermal potential whichever is available for each CFPP unit.

Minimum information to be included in the mapping report are:

- Methodology, assumptions, and tools used for mapping each of the renewable potential.
- For geothermal: information of potential capacity, generation, the location and land requirements, and status of the potential (whether it is still indicative, or has been explored etc)
- For biomass: feedstock supply, type of feedstock, estimated cost of the feedstock including the distances to the plants.
- For solar, wind and hydro: methodology for GIS analysis, constraint used to identify potential capacity, location and land requirements.
- Prepare the mapping output in the form of excel and GIS based data.

2. Cost-benefit analysis for three selected case studies

Minimum information to be included in the cost benefit analysis are:

- Methodology, assumption, and tools used for the cost-benefit analysis.
- Scenario building for each case studies (consisting of different renewable alternatives for the case studies)
- Reasoning for the scenarios
- Cost benefit analysis, consisting of:
    - Economic benefits: savings in CAPEX from utilizing CFPP infrastructure (LCOE analysis using cash flow methodology)
    - Constraints for implementing the options: regulation, permit, condition of infrastructure etc.
    - Potential additional costs from integrating the renewables due to reduced utilization of the co-located CFPP
    - Other benefits identified.

The study results will be used to support IESR's advocacy work with relevant power sector stakeholders, including the national government, utility, and local government.

4. REQUEST FOR PROPOSAL AND PROJECT TIMELINE

Proposal Timeline:

Proposals will be accepted until 10:00 p.m. Indonesian Western Standard Time (WIB, GMT+0700), Thursday, 30 November 2023. Kindly address Program Manager Energy Transformation IESR at deon@iesr.or.id and Program Officer Energy Transformation at rahmat@iesr.or.id for inquiries.

Evaluation of proposals will be conducted from 1 December through 5 December 2023. Follow up with the top three candidates will be conducted within this window to obtain any necessary clarification on items described within proposals.

The selection decision for the winning bidder will be made by 6 December 2023.

Upon notification, the contract negotiation with the winning bidder will begin immediately and must proceed extremely quickly to meet the project timeline.

Project Timeline:

The project must commence before 08 December 2023 and results of the project must be finalized no later than 01 March 2024.

A draft timeline is presented below. Internal changes may be made if mutually agreed.

Milestone	
Kickoff meeting	8 December 2023
Methodology of the RE mapping	8-15 December 2023
Mapping of RE and resulting analysis	18 December 2023 – 19 January 2024
Case study selection and scenario buildings	15 – 19 January 2024
Cost Benefit Analysis	22 January – 23 February 2024
Final results presented to IESR	25 February 2024

Unless otherwise noted, work will be completed by the end of month identified above.

5. 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 one-time or non-recurring costs (NRC).

NOTE: All costs and fees must be clearly described in each proposal.

6. BIDDER QUALIFICATIONS

Bidders should provide the following items as part of their proposal:

- Description of experience in power system planning and grid integration research,
- Examples of three or more similar projects conducted by you/your organization
- Anticipated resources you will assign to this project (total number, role, title, experience)
- Confirmation of timeframe for completion of the project
- Brief description on methodology, tools (preferably open-source tool), and assumptions used

Bidders must submit a digital copy of their proposal via email to Program Manager Energy Transformation IESR at deon@iesr.or.id and Program Officer Energy Transformation at rahmat@iesr.or.id by 10:00 p.m. Indonesian Western Standard Time (WIB, GMT +0700) on 30 November 2023. Please include “RFP Response – RE mapping for CFPP” in the subject line.