



Request for Proposal (RFP)
Research Consultant for
Technological and Operational Optimization Study
to Achieve Flexible Coal-fired power generation
within a Flexible Grid System in Indonesia

Institute for Essential Services Reform

Tebet Timur Raya No.48B, Tebet
Jakarta Selatan
Indonesia

April 30, 2025

A. OVERVIEW AND BACKGROUND

Indonesia's energy sector is heavily reliant on coal, with coal-fired power plants (CFPPs) generating more than half of the nation's electricity. As of 2023, coal accounted for about 60% of the country's total power generation capacity, with 86 coal plants producing approximately 40 GW of power. However, despite the government's efforts to transition to renewable energy (RE), progress has been slow. RE currently makes up only around 12% of the national energy mix, far from the 23% target by 2025. This slow adoption of renewables is due to several factors, including economic dependency on coal, regulatory barriers, and insufficient infrastructure to support RE expansion.

The Comprehensive Investment and Policy Plan (CIPP), introduced in 2023, underscores the urgent need for a coal phase-out to accelerate the adoption of renewable energy. The CIPP stresses that phasing out coal is essential for Indonesia to meet its climate commitments under the Paris Agreement and achieve net-zero emissions by 2060. The government has planned to gradually retire certain coal plants by 2030, but the reality is complex as many new coal plants are still under construction. Moreover, a significant number of coal plants serve captive industrial needs, further complicating efforts to reduce coal dependency and integrate renewable energy sources into the grid.

The rise of Variable Renewable Energy (VRE), such as wind and solar, brings additional challenges related to grid stability. VRE is inherently intermittent, with energy production depending on weather conditions, leading to fluctuations in power supply. To accommodate these fluctuations and ensure a stable electricity supply, Indonesia's grid must become more flexible. Grid flexibility refers to the system's ability to respond to rapid changes in supply and demand, whether by adjusting generation levels, storing energy, or shifting loads. This flexibility is key to enabling a higher share of VRE while maintaining grid stability.

As more renewable energy comes online, the role of CFPPs must evolve from being baseload power suppliers to more flexible providers that can ramp up or down depending on demand. Making coal plants more flexible involves reducing their minimum load, increasing ramp-up and ramp-down rates, and improving start-up and shut-down times. The Institute for Essential Services Reform (IESR) through the Green Energy Transition Indonesia (GETI) project, supported by the British Embassy Jakarta, aims to identify technological modifications necessary to enhance the flexibility of Indonesia's coal plants and develop a model to evaluate the impact of these changes on the energy transition.

B. SCOPE OF WORK

The aim of the study is to evaluate the technological and operational optimizations needed to enhance the flexibility of Indonesia's coal-fired power plants. This includes identifying specific technical modifications and upgrades that can improve the plants' ability to ramp up and down more quickly, reduce their minimum load, and shorten start-up and shut-down times. The goal is to enable these plants to better support the integration of variable renewable energy (VRE) sources, ensuring grid stability while transitioning away from coal as a baseload power source. This study will be a part of a more elaborate research to provide a roadmap for making coal plants more adaptable to Indonesia's evolving energy system, facilitating the broader transition to renewable energy.

The objectives of this study are mentioned below:

1. Conduct a technical evaluation of all current coal-fired power plant specifications in

Indonesia.

2. Identify modifications required to improve ramp-up/ramp-down rates, start-up/shut-down times, and reduce minimum load.
3. Propose retrofitting solutions and advanced control systems for optimizing plant flexibility.
4. Analyze economic feasibility and potential costs of implementing these technical modifications across different plant types.
5. Develop a comprehensive technical report outlining necessary modifications and their cost-benefit analysis for coal plant flexibility improvements.

As the study is a part of a bigger research project to assess flexible coal-fired power generation, this study will function as an input insight for a scenario-based power modelling. Therefore, IESR will facilitate coordination between the consultant and the modelling team to streamline the integration of the technical and operational recommendation to the power model.

With this RFP, IESR is soliciting proposals from consultants with extensive experience and portfolios in developing complex and thorough technological assessment. IESR will evaluate all the proposals submitted. After reviewing all proposals, IESR will select the institutions that bring suitable expertise, most closely align with project objectives, and articulate a clear, achievable research plan to meet those objectives within the required timeframe.

C. PROPOSAL GUIDELINES

The potential service provider has to submit a proposal package, which consists of a technical proposal (background, task to be conducted, methodology, schedule), a cost proposal (proposed daily rate), relevant resume, and portfolios. The submitted proposals must be signed by said individual. 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 individual 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.

All required documents are expected to be received to IESR before **17:00 p.m. Indonesian Western Standard Time (WIB, GMT+7) on Wednesday, May 14, 2025**. Any proposals received after this date and time will be regarded as inadmissible. The selection decision for the winning bidder will be made by **Wednesday, May 21, 2025**.

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

D. CONSULTANT QUALIFICATIONS

We are looking for a highly experienced team/individual with the following qualifications:

- Team leader/director should have a minimum of Master's degree or higher in engineering, energy, or other related fields. Doctorate degree is considered an advantage.
- Team members should have a minimum of a Bachelor's degree or higher in engineering, energy, or other related field. Master's degree is considered an advantage.



- Proven track record in coal power plants design, operation, and maintenance. Experience working with PLN or IPPs operating in Indonesia.
- Team leader/director should have a minimum of 8 years of experience in related fields.
- Good organizational skills and diligent attention to detail.
- Excellent time-management skills.
- Ability to manage multiple tasks and deadlines.
- Demonstrated initiative, tact, a high sense of responsibility, discretion, and confidentiality.
- Working proficiency in English and Bahasa Indonesia.

E. TIMELINE FOR DELIVERABLES AND REMUNERATION

The project must commence on **May 23, 2025**, and the results of the project must be finalized no later than **August 8, 2025**.

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

Activity/Deliverables	Suggested Timeline	Payment
<i>Kick off meeting of the project</i>	May 23, 2025	
<i>Technological assessment of flexible coal power generation</i>	May 23 – June 13, 2025	
<i>Catch-up meeting 1</i>	June 13, 2025	
<i>Retrofit assessment to coal-fired power plants in Indonesia</i>	June 13 – July 4, 2025	
<i>Interim report</i>	June 24, 2025	50%
<i>Catch-up meeting 2</i>	July 4, 2025	
<i>Cost and economic feasibility analysis</i>	July 4 – 25, 2025	
<i>Catch-up meeting 3</i>	July 25, 2025	30%
<i>Development of final report</i>	July 25 – August 8, 2025	
<i>Finalization meeting of final report</i>	August 8, 2025	
<i>Final report</i>	August 15, 2025	20%

** IESR team will be involved in supervision of the project and writing of the report, with some revisions and feedback given for the consultant to perform adjustments according to the contract*

F. 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). The budget ceiling for this proposal is **IDR 300,000,000** for all costs required during the study period. A more detailed proposal cost is encouraged to ease the selection process.

Bidders must submit a digital copy of their proposal via email to erina@iesr.or.id and cc to warih@iesr.or.id and alifiadarmayanti@iesr.or.id by **17:00 p.m. Western Indonesian Standard Time (WIB, GMT +07:00) on May 14, 2025**. Please include **“RFP Response – Research Consultant for Coal Flexibility”** in the subject line.