



Study on the Financial Implications of the Early Retirement of Coal-fired Power Plants in Indonesia

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1 BACKGROUND

I. Southeast Asian Energy Transition Partnership

1. The Southeast Asian Energy Transition Partnership (ETP) is a five year, multi-stakeholder platform that aims to accelerate the energy transition in Southeast Asia with objective delivery towards 2025 with a possible extension so that can contribute to the achievement of the UN's Sustainable Development Goals (SDGs) and the Paris Climate goals by bringing together Government Donors, Philanthropies and Partner Governments.
2. ETP aims to empower its partner countries to transition towards an energy system that simultaneously ensures environmental sustainability, economic growth, and energy security. To achieve this goal, ETP will mobilize and coordinate the necessary technical and financial resources to create an enabling environment for renewable energy, energy efficiency, and sustainable infrastructures in the region.
3. ETP delivers joint action, alignment and improved coordination, and dialogue to accelerate the energy transition in the region by addressing impediments to renewable energy, energy efficiency, and sustainable infrastructures. ETP Members have come together to fund ETP to (1) support an improved delivery environment to accelerate the energy transition in Southeast Asia, (2) improve coordination between other relevant initiatives in the region, including capital investments and technical assistance, and (3) where possible and appropriate, to promote communication and knowledge sharing among stakeholders in the region on energy transition.
4. With an initial focus on Indonesia, the Philippines, and Vietnam, ETP has the mandate to mobilize resources and coordinate the necessary technical assistance to create an enabling environment for the energy transition. This includes high-level technical advisory support, grant-making and capital investment programs, capacity, and skills development programs, and convening of cross-sectoral dialogues with decision-makers and broader sets of stakeholders.

II. Indonesian Commitment to Achieve Net-Zero Emission (NZE)

5. The Government of Indonesia pledged to reduce emissions from 2020-2030 by 29% (unconditional) up to 41% (conditional) against the 2030 business as usual scenario, an increased unconditional commitment compared to the 2010 pledge of 26% in its National Determined Contribution (NDC). This target is aligned with the National Energy Policy (KEN) target to increase renewable energy (RE) utilization in energy production to 23% by 2025 and 31% by 2050.
6. Despite these encouraging targets, the dynamics of the urgency depicted by the impacts of climate change, calls for a stronger and clearer ambition to tackle climate change, thus driving countries to adopt net zero emission (NZE) objectives, with a particular focus on delivering energy transition activities. Hence, there is an urgency for Indonesia, as the world's biggest coal exporter¹ and one of the main emitters, to develop a long-term energy transition scenario for guiding the implementation of the energy transition for all stakeholders, including for coal phase out. Rich in endowments of mineral resources, Indonesia holds a high potential to become the leader of this action.

¹ Indonesia exports 455 metric tons (Mt) in 2019 with Australia second biggest exporter by volume at 395 Mt. Source: IEA.

7. At the institutional level, Bappenas is the national development planner and has issued the low carbon development Indonesia (LCDI) pathway to achieving the long-term development strategy for Indonesia 2045 and with targets for RE penetration to reach 30% by 2045. To complement the LCDI 2045, the Ministry of Environment and Forestry (MoEF) issued a Long-Term Strategy on Low Carbon and Climate Resilience 2050 (LTS-LCCR 2050) that sets the Indonesian electricity sector as a prominent driver in achieving NZE and targets 32% of RE in the energy mix by 2050. In addition, the Ministry of Energy and Mineral Resources (MEMR) completed these plans by announcing a Roadmap to NZE 2060 and started the coal-fired power plants (CFPPs) retirement according to its lifetime range (between 25-30 years). Hence, Indonesia is set to achieve the NZE by 2056 forward (see Graph 1).

III. Project background

1. Early Retirement of Coal-Fired Power Plant (CFPP) to Develop a Cleaner Electricity Sector

8. In 2020, coal fuels around 37% of global electricity generation and despite the significant decrease of the Final Investment Decisions (FIDs) compared to 2015, however its FIDs in 2020 still reached 20 GW where most located in Asia (Cambodia, Indonesia, and Pakistan accounted for 5 GW FIDs).² Thus, greater efforts are needed by governments and industry to develop and deploy less polluting and more efficient technologies. The emergence of Environmental, Social and Governance (ESG) initiatives have triggered the leading financial institutions to avoid new investment in coal and move towards coal retirement financing facilities. Such facilities propose solutions to purchase CFPP in developing countries from the existing owners and retire the plants in 10 to 15 years, thus reducing their original life of 30-40 years of operation and be replaced by RE.³
9. During COP26, the Minister of Energy and Mineral Resources stated that Indonesia will start its first stage of early CFPP retirement from 2031-2035. This will be backed up with the increase of RE utilization up to 57% by 2035. The second stage, from 2036-2040, targets an increase in the RE shares to 66% by 2040.⁴ Nonetheless, early CFPP retirement could be conducted before 2030 with the first target to retire 5.5 GW (see Graph 1) of coal-fired power production capacity to accelerate NZE to 2040. The Minister for Finance (MOF), in turn, indicated that such an acceleration would require a comprehensive assessment on the financial impact, including a huge level of investment.⁵

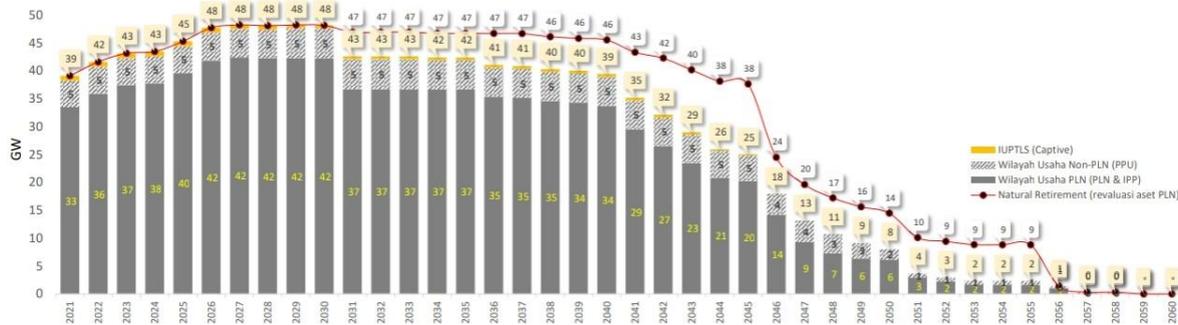
² <https://www.iea.org/reports/coal-fired-power>

³ Maamoun, N., Kennedy, R., Jin, X. and Urpelainen, J., 2020. Identifying coal-fired power plants for early retirement. *Renewable and Sustainable Energy Reviews*, 126, p.109833.

⁴ <https://www.esdm.go.id/en/media-center/news-archives/speaking-at-cop26-energy-minister-gives-indonesias-commitment-to-net-zero-emission>

⁵ <https://www.reuters.com/world/asia-pacific/indonesia-could-phase-out-coal-by-2040-with-financial-help-minister-2021-11-02/>

**Graph 1. Coal Phase-Out Plan 2060
(CFPP will be replaced with NRE PP)**



Source: MEMR, 2021

10. There is strong support from international donors for the energy transition work in Indonesia. The World Bank and the Asian Development Bank (ADB) support early retirement of PLN’s CFPPs. The phasing out of coal became one of key agendas under the Friends of Indonesian Renewable Energy (FIRE) dialogues, while UK-Foreign, Commonwealth and Development Office (FCDO) is preparing support to a study on the early retirement of the Independent Power Producers’ (IPPs) facilities. In a series of discussions with FIRE stakeholders, ETP was approached to deliver a study on the financial implications of the early CFPP retirement with regard to the national fiscal conditions. Simultaneously, PLN also seeks ETP to assess the impacts of such programs on its financial conditions and to build a comprehensive model for selecting the CFPPs for an early retirement. Formulation of such criteria will help PLN prioritize its facilities for early retirement and take action toward implementation of early retirement plans. ETP’s support can furthermore assist the Government and PLN pick appropriate CFPPs for demonstration effects, including those with the lowest capacity factors and/or the highest emitters.
11. The government needs to estimate the costs and benefits stemming from the early retirement of the CFPP on PLN under these alternative arrangements. Such an impact study needs to focus on the financial implications, cash flow and balance sheet impacts of the early retirement program to the government of Indonesia, PLN, and the consumers. While the direct impact affects PLN, the early retirement plans impact also on the MEMR as the regulator, the Ministry of State Owned Enterprises (MSOE) as the owner representative of PLN and MOF representing the national fiscal considerations as well as implications regarding fiscal measures relating to alternatives for the subsidies for public service obligation for electricity, among others.
12. Coal carries significant importance in Indonesian national fiscal revenue formation as well as in economies of certain provinces that heavily rely on the coal industry such as East Kalimantan, South Kalimantan, and South Sumatera. Based on the MEMR Annual Performance Report 2020⁶, mining and coal industry generated IDR 34.6 trillion (around 80% of it coming from the coal) revenue, only from the non-tax revenue, whereas other revenue resulted from land rent, royalties and sales of exported coal that in total contributed to around 2% of total national fiscal revenue. In 2020, a study of the Institute for Essential Services Reform (IESR) indicated that the share of coal industry in the 3

⁶ MEMR Annual Performance Report 2020, <https://www.esdm.go.id/assets/media/content/content-lapoan-kinerja-kesdm-2020.pdf>

coal-dependent provinces accounted for between 7%-34% in 2018.⁷ Hence, the early retirement of CFPP will drive the Government of Indonesia to encounter these economic implications as they will have a significant impact on the national financial performance and economic impact in the coal provinces.

13. The early retirement initiatives will need to include policy dialogue and assessment of the readiness of early retirement in Indonesia, important to accelerate the energy transition. In addition, the Government will need to build a financial framework and a comprehensive strategy and an implementation roadmap for early retirement of CFPP that considers the overall impacts to the electricity sector, including PLN's balance sheet, tariffs, subsidies, energy sector finance, and state fiscal conditions, and provides a systematic and coherence methodology for addressing these to ensure stable and controlled transition with positive employment, welfare, fiscal and financial impacts. An underpinning assumption is that the government agencies will facilitate the early retirement and collaborate among one another, particularly MEMR and MOF, with the strong support received from other ministries such as MSOE, Bappenas, and Coordinating Ministry of Maritime and Investment Affairs (CMMIA) to ensure the delivery of a realistic transition that will benefit Indonesia and enable Indonesia achieve its NZE target.

2 PROJECT DETAILS

IV. Rationale

14. This study aims to support the Government of Indonesia in analyzing, evaluating and providing suggestions on the current and alternative coal abatement pathways with respect to their financial implications.
15. The study will (i) review the Government's early retirement plans and provide an evaluation of these with suggestions and alternatives for the Government's consideration in view of its NZE target; (ii) it will develop a clear and quantitative analysis of the financial implications of the proposed early retirement roadmap at national financial and fiscal levels as well as identify implications for PLN as well as provide an assessment of the energy sector viability and pathways to enable a secure supply of energy in light of the demand forecast and consumption patterns; and (iii) it will provide a sub-national assessment of the financial implications of the early retirement plans for those regions affected by the transition away from coal-fired power generation.
16. These outputs are envisioned to strengthen resolve and the Government's capacity to implement early retirement actions under the identified optimized path forward and demonstrate the opportunities for concretely moving towards the Government's NZE. The project corresponds to ETP's strategic outcome area one, *policy alignment with climate commitments*, and aims to create a realistic and implementable action program to achieve GHG reductions from the energy sector in Indonesia.

V. Objectives

17. The project will be divided into three phases:

⁷ Ensuring a Just Energy Transition: Lessons learned from Country case studies, 2020,

<https://iesr.or.id/en/pustaka/ensuring-a-just-energy-transition-in-indonesia-lessons-learned-from-country-case-studies-iesr-2020>

- a. Phase 1 will take stock of the current pathways, policy and regulatory frameworks, provide insights into their implications, and an assessment of opportunities and risks. Phase 1 will design a tool for supporting the early retirement decision making process.
 - b. Phase 2 will include a deep-dive analysis of the coal retirement scenarios, map financial and environmental parameters, consider the impacts of current carbon tax and coal fuel subsidies and report on PLN’s and national fiscal implications from such actions, including on tariff and subsidies that are relevant to the early retirement. Phase 2 will deliver a comprehensive analysis on financial implications on national fiscal and financial conditions (i.e. national accounts and balance of payments, fiscal expenditure and revenues, financing options and cost of financing, as well as mobilization considerations) as well as provide a detailed assessment of the energy sector viability, identify measures, alternatives and factors to consider, as well as design specific decisions with scales of tariffs and other variables to account for in making decisions in order to take action toward implementation of the early retirement road maps and implementation of specific early retirement decisions.
 - c. Phase 3 will assess regional variations of the retirement as well as the indirect effects of coal plant retirements on supply chains and their relevance to short- and long-term fiscal flows, wholesale electricity prices and the PLN cash flow. In addition, prospecting and subsequent document preparation for funding and financing will be included at this phase.
18. All of the project deliverables will be submitted in English and Bahasa, and there will be the responsibility from the consultant to attend workshops and meetings to ensure the successful dissemination of the work.

VI. Scope and Description of Specific Activities

19. The selected consultant will produce the following products:

Deliverable	Outline
Inception Report (Feb 14th - Feb 28th)	<ul style="list-style-type: none"> ● Introduction and background ● Work plan and schedule ● Data requirements and collection strategy ● Mapping of key stakeholders, Ministries and Government Institutions by verifying and extending previous mapping efforts ● Reference of existing reference material ● Provide outline of activities mapped against ETP Results Based Monitoring Framework (RBMF) in a project-level monitoring and evaluation framework with indicators and baseline data.
Phase 1: Review, Validation and Commentary of Current Government Early Retirement Roadmap(s) (Mar 1 - May 15)	<p>Considering the current road maps and frameworks as baseline:</p> <ul style="list-style-type: none"> ● Map and identify the past and existing policy and regulatory framework including roadmaps, and financing frameworks for early retirement of coal highlighting gaps in the policy frameworks and roadmap, both

	<p>validating and identifying gaps, limitations and necessary assumptions to be taken;</p> <ul style="list-style-type: none"> ● Review the policy frameworks and roadmap, and financing frameworks and report high level implications with regards to <ul style="list-style-type: none"> (a) PLN's financial conditions; (b) State fiscal conditions (c) Identify specific measures, scales for these measures, and factors, risks and opportunities in decision-making enabling advancement of early retirement actions ● Report the GHG emission reductions from the proposed roadmap and monetize the value in terms of carbon tax and carbon offsetting revenue; ● Propose a CFPP retirement decision framework based on balancing energy security, environmental, financial and societal considerations; ● Report on existing financing opportunities and mechanisms to support in the early retirement of coal; ● Prepare report and powerpoint for dissemination and delivery to relevant stakeholders; ● Participate in roundtables and workshops, delivering presentations and compiling comments and feedback into the final report of Phase 1 and to be taken into consideration for Phase 2; ● Map program updates against ETP Results Based Monitoring Framework (RBMF), providing indicator data depicting project progress.
<p>Phase 2 May 16 - Aug 15</p>	<p>Based on outcomes of Phase 1, strengthen and deepen the studies by:</p> <ul style="list-style-type: none"> ● Deep-dive analysis and implications of policy frameworks and roadmaps, and financing frameworks with regards to <ul style="list-style-type: none"> (a) PLN's financial conditions, (b) State fiscal conditions, (c) Identify specific measures, scales for these measures, and factors, risks and opportunities in decision-making enabling advancement of early retirement actions. ● Develop policy and technical recommendations that will support the establishment of early coal phase out strategy in Indonesia; ● Analysis compatibility of recommendations against current policy, developments and programs; ● Prepare and/or improve project level screening of CFPP retirement implications comparison table with scoring mechanism mapped as per outputs of Phase 1; ● Consider the impacts of current carbon tax, coal fuel subsidy and tariff impacts developing future projections based on varying scenarios and sensitivity analysis; ● Propose financial risk management and risk mitigation measures to be adopted; ● Produce a full report, synthesis report (executive summary) and accompany with effective communication slides for the dialogue with development with stakeholders; ● Map program against ETP Results Based Monitoring Framework

	(RBMF), providing indicator data depicting project progress.
Phase 3 Aug 16 - Dec 10	<ul style="list-style-type: none"> • Roadmap steers and suggestions with regards to policy, fiscal frameworks and resource allocation; • Analysis compatibility of recommendations against current policy, developments and programs; • Regional sensitivities with regards to highly affected areas from the coal phase-out for delivering a just transition; • Suggested donor/development partner interventions and future activities to strengthen PLN, IPPs and fiscal conditions; • Development of coordination tools and strategies for the development partner community; • Prospecting and subsequent document preparation for funding and financing; • Indirect effects of coal plant retirements on supply chains and their relevance to short- and long-term fiscal flows, wholesale electricity prices and PLN's cash flow; • Map program against ETP Results Based Monitoring Framework (RBMF), providing indicator data depicting project progress.
Phase 4 Out of pocket expenditures	Ongoing support with report dissemination; Attendance at stakeholder meetings and workshops; Delivering presentation; Updating communication materials as and when variations to inputs occur.

VII. Expected Outputs and Outcomes

Output	Outcome
Map of the past and existing policy and regulatory framework including roadmaps, and financing frameworks for early CFPP retirement	Short-Term Outcome 1.1 National RE and EE policies, regulations, standards, and energy plans reflect a clear commitment to Energy Transition agenda and integrated into sectoral plans to contribute to the achievement of Paris Agreement
Review result of the high-level implication of early CFPP retirement program to PLN financial and state fiscal conditions	
Calculation of potential carbon tax and carbon offsetting revenue from the emission reduction through the early CFPP retirement	
Review result of deep dive analysis of the early CFPP retirement impact to the PLN financial and state fiscal conditions	Short-Term Outcome 1.2 National Fiscal policies, regulations, and Investment policies have undergone reforms to create an Investment Climate that is conducive to investment flow into RE/EE and improves its energy transition readiness for capital and investments
Identification of measures, factors, risks, and opportunities to deliver the early CFPP retirement program	
Screening tool to determine the CFPP that eligible	

to join the early retirement program	
Sensitivity analysis on the early CFPP retirement program to the electricity subsidy and tariff as well as regional economic impact	
Recommendation in regards to policy, fiscal frameworks, and resource allocation	
Prepared proposal or document to access potential funding or investment to support the early CFPP retirement program	
Strategy of development partner interventions to enhance the PLN and state financial conditions	

Short-Term Outcome 1.3
Energy transition agenda is centrally led and coordinated effectively at a National-level agency/institution that is tasked to champion the cause with right level of authority

VIII. Existing Support and Programs

20. There are various development partners conducting activities related to energy transition including early CFPP retirement to support the government of Indonesia in achieving its Paris Agreement objectives and SDG Goals. Amongst others, the list below are some examples of the development partners activities:
21. **The World Bank** is currently preparing the development of a power sector results-based loan (RBL) valued at USD 1 to 2 billion linked to reforms by the government and PLN. In addition the World Bank is delivering several themes (improved planning, incentives, remove disincentives, differentiate main and secondary systems, *coordination, regulation*) related to the energy transition.
22. **Asian Development Bank (ADB)** has a number of initiatives for the energy sector which include project investment, project preparation and technical assistance, e.g. Energy Transition Mechanism (ETM) to support the early CFPP retirement program, Sustainable and Universal Electricity Access for eastern part of Indonesia, Sustainable and Reliable Energy Access Program (SREAP) to improve service reliability and grid automation in Jamali system, Grid-connected solar park / farm procurement and prefeasibility, etc.
23. **Japan International Cooperation Agency (JICA)** delivers several TA related to renewable energy investment particularly for the geothermal energy development. They are currently conducting Reviewing Geothermal Promotion Policies, Master Plan and Capacity Building of MoF, DGNREEC-MEMR, MoSOEs, and energy related SOEs (Pertamina, PLN).
24. **The Government of Denmark** delivers the Indonesia-Denmark Energy Partnership Programme (INDODEPP) that focuses on aiming to support Indonesia reaching the 23% RE target in 2025. They provide resident advisors in MEMR and PLN to strengthen the energy transition with three outcomes: (i) scenario-based long-term energy plans and regulation, comprises modelling capacity, energy policy and planning, and regulation; (ii) integration of renewable energy, comprises wind power pilot

tender, system operation, and lease cost grid integration strategies and planning; (iii) enhanced national strategy for EE, comprises EE in buildings, industry and power plants.

25. **The Germany BMU and GIZ**, as identified potential partner for ETP, deliver their supports to Indonesia over five pillars, i.e. (i) policy advice and stakeholder engagement; (ii) access to finance; (iii) skill development; (iv) power system planning and operation; and (v) private sector and technology cooperation/start-ups. Doing so, they deliver five projects: (i) renewable energy for electrification program (REEP); (ii) ASEAN-German Energy Program (AGEP); (iii) Strategic exploration for economic mitigation potential through renewables (ExploRE), (iv) Clean, Affordable & Secure Energy for SEA (CASE), and (v) International Climate Initiative-Just Energy Transition (IKI-JET).
26. **The UK Embassy** is implementing the MENTARI programme (Menuju Transisi Energi Rendah Karbon Indonesia/Towards Indonesia's Low Carbon Energy Transition)⁸. It is a cooperation program with MEMR to develop low-carbon energy in Indonesia through four strands, i.e., (i) policies, by improving and enabling business environment in the low carbon energy sector; (ii) brokerage, by bridging the gap between available funding and viable projects and supporting the development of low carbon financing mechanisms and de-risking tools; (iii) demonstration project, by setting up two small-scale low carbon energy pilot projects in eastern Indonesia; (iv) collaborating & networking, by creating business and academic partnerships, organising workshops and events, and coordinating donor activity. The program also has a cross-cutting strand, it is gender and inclusion (G&I).
27. **USAID** is currently implementing the Sustainable Energy for Indonesia's Advancing Resilience (SINAR). This project is looking at for 5 years technical assistance to Indonesia in advancing Indonesia's development goals in expanding reliable and equitable energy services necessary for sustainable development and inclusive economic growth. This project has four specific objectives, i.e., (i) accelerating deployment of advanced energy; (ii) improving performance of energy utility; (iii) adopting transparent and best value procurement; and (iv) strengthening institutional framework and capacity for sector transformation.
28. **The International Energy Agency (IEA)** provides support for the energy transition. The Government of Indonesia and IEA recently built new partnerships and launched new workstreams to support Indonesia's international energy leadership⁹ and established the IEA-Indonesia Energy Transition Alliance. This alliance aims to provide a platform for both parties to enhance collaboration in developing energy policy, mobilising high-level political engagement, and accelerating the energy transition.¹⁰ Further, the Alliance will underpin the IEA's ongoing support for Indonesia's energy transition and economic modernization, including power system enhancement, renewables deployment, energy efficiency implementation, and energy investment strengthening.

⁸ <https://mentari.info/who-we-are/>

⁹ [The landmark IEA-Indonesia Energy Transition Alliance will build a path to a sustainable energy future - News - IEA](#)

¹⁰ Fajri (2021), The IEA-Indonesia Energy Transition Alliance: Towards Indonesia's Leadership in Global Energy Governance?, IR-UI Commentaries, University of Indonesia, Jakarta

IX. Beneficiaries & Impact

29. TA implementation will require a consultant with experience and notable background in financial analysis of coal retirement plans and specific implications on entities and national revenues. The consultant will also need to have a strong understanding of the Indonesian energy sector, development and future opportunities to accelerate energy transition. The TA will be anchored to frequent dialogue with the MOF, MEMR and PLN and benefit from coordination through the coal phase out working group under the Friends of Indonesian Renewable Energy to reach the broader development community as well as regular interaction and sharing of documents with the key development partners involved in energy transition and particularly early retirement and coal phaseout activities. Finally, ETP Secretariat will oversee and guide the progress of the TA. All deliverables to be submitted in English and Bahasa. At each reporting stage, the presentations will be prepared to deliver the information in a succinct, understandable and engaging manner. The following implementation arrangements are in place for the TA:
30. **MoF** is the direct/lead beneficiary of the study as they would get more information and assessment tools which further could help to establish more scenarios from the impact of early CFPP retirement to the state fiscal conditions. The study will also provide assessment towards the economic impacts in the coal related regions.
31. **MEMR** would receive the benefit of the study as it could assist and complement the Roadmap of NZE 2060 in quantifying the investment needs of the early CFPP program as well as the technical capacities in determining the CFPP to join the early retirement program. It will also provide the potential investment sources and the proposal to access it.
32. **PLN** will benefit from the expected result of the study in assessing its financial conditions to be ready to implement the early retirement program that can lead them to transform its business model in the energy transition era.
33. **Bappenas** would get the benefit in terms of knowing the impact of the early retirement program towards the national development planning for the energy (electricity) sector and the country's economy.
34. **MoSOE** can draw the experience of PLN's transformation towards energy transition to be replicated by other SOEs under its management including the supply chains and SOEs business model.

Beneficiaries	Type of Benefit	Impact
MoF	Lead	<ul style="list-style-type: none"> - Get more information and tools to assess the early CFPP program - Could establish more scenarios to address the financial implications of early retirement program to the state fiscal - Would have an overview of the economic impacts in the coal related regions
MEMR	Direct	<ul style="list-style-type: none"> - Would get a comprehensive picture of the investment needs to run the early CFPP program

		<ul style="list-style-type: none"> - Would get the potential investment sources and the proposal to access it - Could have a transparent technical capacities in determining the CFPP to join the early retirement program
PLN	Direct	<ul style="list-style-type: none"> - Would receive an assessment to its financial performance in conducting the early CFPP retirement program - Could have the input in transforming its business model to adapt with the energy transition era
Bappenas	Indirect	<ul style="list-style-type: none"> - Would have the economic overview as the input to design the long-term national development strategy to support the NZE target
MoSOE	Indirect	<ul style="list-style-type: none"> - Would have the showcase of the business transformation that could be replicated to other SOEs towards NZE target achievement.

3 IMPLEMENTATION & TIMELINE

X. Implementation Modality & Arrangement

35. In the case of ETP Steering Committee approval of this project, this initiative will be subject to a UNOPS procurement process, given that the purpose of these activities is related to the provision of services by the selected entity. Any type of entity, including not-for-profit entities are eligible to bid for this assignment.
36. The expected costs associated with this study will exceed USD 50,000. Therefore, the procurement method of Request for Proposals (RFP) will be employed. This RFQ will be published on the UN Global Marketplace website (UNGM) for a duration of ... days, upon which an evaluation panel, including the required expertise, will review and select the related bids. After internal approval by the UNOPS contracts committee, the result of this process will be a contract for services to the selected bidder.
37. The consultant will deliver the outputs of this consultancy in line with the schedule below:

Task	Timeline
Inception Plan	2 weeks of the contract start date
Phase 1 Report	3 months after the contract start date
Phase 2 Report	6 months after the contract start date

Phase 3 (Final) Report	10 months of the contract start date
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XI. Risks and Mitigations

38. Sensitivity of the information with regards to:
 - a. Affected communities
 - b. Workforce of CFFP
 - c. Supply Chain to CFFP
 - d. IPPs

39. Findings could potentially slow the coal phase out if unearthed implications have a large negative impact on the financial sector
40. Paper has time constraints potentially limiting the depth and scope

XII. Assumptions

41. The proposal will be delivered by an implementing entity that has current experience with modelling and forecasting, and carrying out financial implication scenarios for the retirement of coal fired power generation plans or similar power assets.
42. The proposal will include resources for suitable powerpoint presentation, graphical and infographic skills to present the resultant information in a way that is easily accessible to all levels of understanding and eye-catching.
43. The implementing organization will incorporate global best practices and latest technological inputs and concepts based on a highly developed, detailed and analytical assessment of the current data.
44. The Project assumes cost-free, easy and unobstructed access to existing roadmaps and data sets from relevant government departments, availability of the pertinent staff for discussion on the data and analysis to the Project purposes, and where possible, availability of the Government and its agencies involved in energy sector scenario planning. Where this is not possible, the analysis aims to identify the underlying assumptions based on the publicly available results. The Project will make use of ETP’s convening capacity and partnerships with its aligned programs and engage with the stakeholders economy-wide, particularly in the local context and based on the specific factors.
45. ETP Secretariat manages the selection of the experts and implementation of the Project. ETP Secretariat will help coordinate engagement with the Government parties and country authorities on the implementation of and process of this study.
46. The Project will capitalize on the latest information of the recent technological and energy related developments available globally and developments in fossil fuels abatement policy, as well as reflect their impact on prices and tariffs, among others efficiency improvements. The Project works in the context of Indonesia but will draw on global trends and examples
47. The Project will work under the overall guidance of ETP Steering Committee, its Secretariat and Advisory Committee. The implementing entity will prepare the reports with the relevant materials in publishable quality, through ETP Secretariat, Interim Report, and Final Reports. All reports will be reviewed and accepted by the ETP Secretariat upon the incorporation of its comments with the objective to improve the comprehensiveness and quality of the final Review. The Implementing

organization will develop effective methods for collecting comments and suggestions in a speedy fashion and incorporate these into the proposal, as deemed quality improving.

48. The Project will ensure that it accounts for environmental and social impacts in the context of the terms of reference and identifies environmental and social costs and benefits within the Project. Furthermore, the Project shall provide a response that demonstrates its commitment to support gender equality and women’s empowerment through its operations.

XIII. Communication and Dissemination Plan

Task	Review	Distribution
Inception Plan	ETP Secretariat	MoF, MEMR, PLN, Bappenas, MoSOE
First draft report	ETP Secretariat, MoF, MEMR, PLN	MoF, MEMR, PLN, Bappenas, MoSOE
Second draft report	ETP Secretariat, MoF, MEMR, PLN	MoF, MEMR, PLN, Bappenas, MoSOE
Final report	MoF, MEMR, PLN, Bappenas, MoSOE Peer Review: Reviewers selected by ETP	MoF, MEMR, PLN, Bappenas, MoSOE, Selected ETP partners with MoF consent.

XIV. Sustainability & Gender Diversity

49. The Project will adopt sustainability measures and mechanisms to extend the Project’s objectives beyond the present administration. These will require stakeholder support, budget allocation from the involved agencies, and adoption of policies to institutionalize the design of the reserve market. The involvement of DOE and ERC officials from the start of the Project is essential to carry over the Project into the next administration. In addition, information and communication of the Project to constituents and beneficiaries shall also secure the commitment of the stakeholders.
50. The Project is committed to the promotion, enhancement and development of gender sensitivity of its implementation activities. For cause-oriented groups, the Project shall be inclusive of the invited stakeholders during the consultation, more particularly women’s groups. The Project shall also ensure gender balance among the officials designated into the inter-departmental committee. Emphasis shall be given to policy measures that shall not discriminate or marginalize any personalities and groups based on gender.

4 CONCLUSION

51. This Study on the Financial Implications of the Early Retirement of Coal-fired Power Plants in Indonesia responds to the Government of Indonesia’s request for technical assistance in this area. The project will provide impartial inputs which will aid the decision making process for the future development of the Indonesian energy sector, supporting the goal of meeting GHG emission targets whilst strengthening the fiscal environment of the country. The project will run for an initial ten months, whereupon the dissemination and stakeholder inputs will continue, to ensure the study has its intended output and reach.

5 ANNEXES

Annex 1: Results Framework Template for Project Implementation

ETP Results	Project Output(s)	Indicator	Target	Data Source and Means of Verification
Impact: Summary based on RBMF indicators				
Long-Term Outcome: Summary based on RBMF indicators				
Intermediate Outcome 1. Strengthened RE and EE policy enabling environment				
Short-Term Outcome 1.1 National RE and EE policies, regulations, standards, and energy plans reflect a clear commitment to Energy Transition agenda and integrated into sectoral plans to contribute to the achievement of Paris Agreement	Map of the past and existing policy and regulatory framework including roadmaps, and financing frameworks for early CFPP retirement	Number of database (4 database)	<ul style="list-style-type: none"> - Database of stakeholders conducting the activity related to early CFPP retirement - Database of past and existing policy and regulatory related to early CFPP retirement - Database of financing frameworks early CFPP retirement - Database of long-term planning and roadmap related to early CFPP retirement 	
	Review result of the high-level implication of early CFPP retirement program to PLN financial and state fiscal conditions	Number of report and powerpoint presentation (1 report and 1 ppt presentation)	Report and ppt presentation on the high-level implication of early CFPP retirement program to PLN financial and state fiscal conditions	
	Calculation of potential carbon tax and carbon offsetting revenue from the emission reduction through the early CFPP retirement	Number of table (1 table)	Table on the potential carbon tax and carbon offsetting revenue calculation	
Short-Term Outcome 1.2 National Fiscal policies, regulations, and Investment policies have undergone reforms to	Review result of deep dive analysis of the early CFPP retirement impact to the PLN	Number of report and powerpoint presentation (2 reports and 1 ppt presentation)	Full report and summary report, and ppt presentation on deep dive analysis of	

create an Investment Climate that is conducive to investment flow into RE/EE and improves its energy transition readiness for capital and investments	financial and state fiscal conditions		the early CFPP retirement impact to PLN financial and state fiscal conditions	
	Identification of measures, factors, risks, and opportunities to deliver the early CFPP retirement program	Number of table (2 tables)	Table of measurement and table of key success factors of the early CFPP retirement program	
	Screening tool to determine the CFPP that eligible to join the early retirement program	Number of table (1 table)	Table of measurement or screening to assess the eligibility of CFPP to join the early retirement program	
	Sensitivity analysis on the early CFPP retirement program to the electricity subsidy and tariff as well as regional economic impact	Number of table (1 table)	Table of sensitivity analysis of the early CFPP retirement program to the electricity subsidy and tariff	
Short-Term Outcome 1.3 Energy transition agenda is centrally led and coordinated effectively at a National-level agency/institution that is tasked to champion the cause with right level of authority	Recommendation in regards to policy, fiscal frameworks, and resource allocation	Number of		
	Strategy of development partner interventions to enhance the PLN and state financial conditions	Number of		
	Prepared proposal or document to access potential funding or investment to support the early CFPP retirement program	Number of proposal or document (2 proposals/documents)	Proposal/document to access the potential funding/investment (GEAPP, etc)	
Intermediate Outcome 2. Increased flow of public and private investments to RE and EE projects in the power and end-user sectors				
Short-Term Outcome 2.1 National budgets indicate a resolve to maximize RE/EE capacity by allocating increased amount of public funds and attracting FDI in the RE/EE sector	<Output 1>	Indicator 1, Indicator n		
	<Output 2>	Indicator 1, Indicator n		
	<Output n>	Indicator 1, Indicator n		
Short-Term Outcome 2.2 De-risked project finance is accessible via financial institutions generating a pipeline of large-scale RE/EE projects	<Output 1>	Indicator 1, Indicator n		
	<Output 2>	Indicator 1, Indicator n		
	<Output n>	Indicator 1, Indicator n		
Intermediate Outcome 3. Increasing the amount of RE integrated in smarter grids				
Short-Term Outcome 3.1 National energy strategy and sectoral plans involve evidence-based planning for an improved national-smart-grid	<Output 1>	Indicator 1, Indicator n		
	<Output 2>	Indicator 1, Indicator n		

system along with related infrastructure and innovative technologies	<Output n>	Indicator 1, Indicator n		
4. Increased development of and accessibility to RE/EE knowledge				
Short-Term Outcome 4.1 Stakeholders (relevant Government entities, Public sector companies, Financial institutions, Private entities, Academia, and Consumers) involved in the RE/EE value chain, are knowledgeable and better informed to advance the energy transition agenda	<Output 1>	Indicator 1, Indicator n		
	<Output 2>	Indicator 1, Indicator n		
	<Output n>	Indicator 1, Indicator n		