# Innovating New Incentive Mechanisms for Energy Transition Projects

Deliverable 2: Analysis of Existing Incentive and Disincentive Regulations for Energy Transition Projects in Indonesia

March 2025

# Disclaimer

This document relies on information made available through 3 March 2025. Accordingly, changes in circumstances after this date could affect the contents of this document including any findings, conclusions or recommendations.

The reader of this report acknowledges that this report was prepared at the direction of the United Nations Office for Project Services ("issuer") and may not include all procedures or content deemed necessary for the purposes of the reader.

The reader agrees that the issuer, its employees, agents, subcontractors, and advisors neither owe nor accept any duty or responsibility to it, whether in contract or in tort (including without limitation, negligence and breach of statutory duty), and shall not be liable in respect of any loss, damage or expense of whatsoever nature which is caused by any use the reader may choose to make of this report, or which is otherwise consequent upon the gaining of access to the report by the reader. Further, the reader agrees that this report is not to be referred to or quoted, in whole or in part, in any prospectus, registration statement, offering circular, public filing, loan, other agreement or document and not to distribute the report without the issuer's prior written consent.

# Table of Contents

# List of Figures



# List of Tables

# Executive Summary

The Southeast Asia Energy Transition Partnership managed by the United Nations Office for Project Services, in collaboration with the Coordinating Ministry of Economic Affairs of the Republic of Indonesia, initiated a project called "Innovating New Incentives Mechanisms for Energy Transition Projects." The Project aims specifically to drive investments in renewable energy and facilitate early retirement of coal-fired power plants in Indonesia by identifying effective incentive and disincentive mechanisms for supporting three types of energy transition projects, namely (i) renewable energy ("RE") development, (ii) coal-fired power plant ("CFPP") early retirement, and (iii) coal phase-down projects. In Indonesia, the government has outlined coal phase-down initiatives through two primary strategies: the reduction of operational hours of and/or the adoption of co-firing in CFPPs.

This report seeks to provide a comprehensive review and analysis of Indonesia's existing renewable energy related incentive and disincentive mechanisms, aims to understand policy objectives, evaluates the effectiveness of the existing regulations through stakeholder consultations and analyses of existing projects, examines regulatory gaps and proposes prioritised changes to incentive and disincentive mechanisms that could have the highest potential impact in supporting Indonesia's energy transition. Accelerating Indonesia's energy transition requires the active participation of key stakeholders. However, some stakeholders are currently disincentivised from participating, creating barriers for project developers. This report primarily focuses on the developer perspective by considering (i) the direct incentives and disincentives and (ii) the roles and behaviours of other key players that impact developers' participation in energy transition projects.

**Regulatory and Stakeholder Landscape Mapping**

As part of Indonesia's Enhanced Nationally Determined Contribution, Indonesia has pledged to reduce its greenhouse gas emissions by 31.89% below business-as-usual levels by 2030, with an enhanced target of 42.30% reduction contingent on international support. However financial and economic barriers, such as high upfront costs, long payback periods, and lack of commercially feasible tariffs, hinder the progress of energy transition. To address these challenges, the report outlines various incentives designed to de-risk investments, promote renewable energy, and encourage private investment. These incentives are classified into fiscal, financial, and risk-reduction mechanisms and business facilitation measures:

- Fiscal incentives include tax holidays and tax allowances, among other mechanisms that aim to reduce the financial burden on investors.
- Financial incentives include support provided through loans, partnerships, government guarantees, green bonds and other mechanisms that aim to mitigate the financial barriers to energy transition projects.
- Risk-reduction mechanisms and business facilitation measures include, among others, streamlined procurement processes, consolidated licensing requirements, exemptions from local content requirements, carbon tax incentives and others that are considered as supporting regulations and mechanisms aimed to reduce the risk of energy transition projects and facilitate business.

While the Government of Indonesia ("GoI") provides incentives to support RE development, coal phase-down and CFPP early retirement, existing regulations may also act as barriers or disincentives. These include the domestic market obligation ("DMO") and domestic price obligation ("DPO") for coal, electricity pricing regulations, specific licensing requirements and mandatory placement of foreign exchange export proceeds. Indirectly limiting coal exports through the requirement to deposit foreign exchange export proceeds may incentivise coal mining companies to increase domestic coal sales. This, in turn, could encourage the continued use of CFPPs and may consequently discourage the early retirement or the

implementation of coal phase-down plans in the short-medium term. However, in the long term, these requirements might disincentivise ongoing CFPP operations by restricting the growth potential of the coal mining industry, thereby prompting a shift in focus towards renewable energy investments. Furthermore, subsidies for non-renewable energy and the lack of standardised power purchase agreements also pose challenges for RE development.

Given the current fragmentation in the regulatory landscape, regulatory reforms could be beneficial to create a more conducive environment for RE investments. For this, the Ministry of Energy and Mineral Resources ("MEMR"), along with the Ministry of Finance ("MOF") and Ministry of State-Owned Enterprises ("MSOE") are seen as central in planning and decision making for Indonesia's power market, balancing supply and demand, state financial capacity, as well as overseeing PT Perusahaan Listrik Negara (Persero) ("PLN"), Indonesia's state-owned utility company.

**Effectiveness of Existing Incentive and Disincentive Mechanisms**

To assess the effectiveness of current energy-related incentives and disincentives in accelerating Indonesia's energy transition, insights from key stakeholders were gathered and considered, including the following:

- Significant challenges in RE development stem from low tariffs, opaque procurement processes, and financing difficulties due to coal-favouring policies artificially lowering the cost to produce electricity from CFPPs, making RE uncompetitive with CFPPs.
- Early CFPP retirement faces obstacles such as uncertainty in compensation of revenue losses, legal complications due to long-term contracts, and ineffective carbon pricing. Current unclear regulations regarding carbon credit claims may discourage IPPs to undergo early retirement or coal phase-down. In practice, PLN asserts that they are entitled to these carbon credit claims, resulting in a lost opportunity for IPPs which may disincentivise IPPs from pursuing early retirement or coal phase-down as they cannot monetise on the avoided emissions and also an adverse impact on project feasibility if PLN does not in practice monetise the carbon offsets.
- For coal phase-down, co-firing is viewed as viable in the short-term but requires government support through mandates to realise implementation. Financial institutions express concerns about deforestation risks from biomass co-firing, highlighting the need for a sustainable biomass supply.

**Impact of Existing Incentive and Disincentive Mechanisms on the Ongoing Energy Transition Projects**

In addition, to understand the impact of the current incentive and disincentive mechanisms, the report seeks to evaluate energy transition projects through two case studies: the Cirata Floating Solar PV Plant, and the CFPP Adipala co-firing project.

- The Cirata Floating Solar PV plant benefits from incentives like the right-to-match scheme, National Strategic Project (*Proyek Strategis Nasional* or "PSN") status, and tax incentives, which aid in project development and financial viability. However, challenges such as low interest from PT PLN and complex tariff negotiations persist.
- The CFPP Adipala project is mandated by PLN to undergo biomass co-firing yet faces technical challenges including biomass's lower calorific value and high moisture content reducing the plant's efficiency, lack of high-quality coal to maintain energy output. They stressed the need for supportive policies to enhance co-firing practices.

**Regulatory Gap Analysis**

The regulatory gap analysis identifies significant challenges in Indonesia's current incentive mechanisms for energy transition projects, focusing on RE development, CFPP early retirement, and coal phase-down projects. This has been summarised below:

- **Renewable energy development**

  a. **Unattractive RE tariff and challenges in financing RE projects:** the ceiling tariffs under PR 112/2022 are lower than is required for commercial feasibility, discouraging developers and financial institutions due to concerns about project viability and return on investment. Financial institutions face challenges in financing RE projects due to high perceived risks, lack of suitable financing instruments and security packages. Indirect subsidies in the form of fiscal incentives are underutilised due to complex conditions and unfamiliarity among developers.

  b. **Challenges in PPA negotiation and risk allocation:** the process of negotiating PPAs, governed by certain MEMR regulations places unmanageable risks on developers, resulting in an unbalanced risk allocation. The lack of standardised PPA templates complicates finance raising and causes delays. Developers face difficulties in securing PPAs due to multiple layers of government approvals and internal corporate approvals of PLN, as well as the need for clear stipulation of projects in PLN's RUPTL.

  c. **Challenges in RE procurement, licensing, and acquiring National Strategic Project ("PSN") status:** the procurement process lacks transparency and accountability, leading to project delays, frequent cancellations and financial losses for participants. Developers face uncertainty in procurement timelines, lack of clarity in its projects' PSN status and lengthy procedures for acquiring necessary permits.

  d. **Absence of right to match mechanism for developer initiated (unsolicited) projects:** the removal of the right-to-match mechanism complicates procurement. Reintroducing this mechanism could incentivise initiators and facilitate a smoother transition to RE projects. This approach could also encourage financial institutions to support developers transitioning from CFPPs to RE projects.

  e. **Lack of comprehensive guidelines for feasibility studies:** there is a need for detailed instructions for feasibility studies to provide certainty and support to prospective business actors. Current provisions lack specificity in feasibility study requirements for business licensing.

  f. **The absence of an implementing regulation for MOF Regulation 103/2023 on the Energy Transition Platform:** the Energy Transition Platform is a platform that provides financial incentives in the form of blended finance facilities and other financing options for energy transition projects. A comprehensive implementing policy would be beneficial to bridge existing gaps and ensure effective, transparent, and accountable operation for the platform. This policy could include procedural guidelines, eligibility criteria, and standardised reporting requirements to facilitate resource allocation and engagement with international investors. Such policy would provide clarity for developers to be able to access the financing options.

  g. **Challenges in the implementation of tax incentives**: existing tax incentives aimed to increase investment in RE projects are often underutilised due to complexities and the risk of penalties from incorrect usage (for instance, if a company attempts to secure exemptions from import duties on machinery and components, there is a risk that the authorities might conclude that the import duties were not properly paid and impose administrative penalties, such as fines, on the RE developer). Regulatory barriers further limit the effectiveness of tax incentives, highlighting the importance of ensuring that tax incentives are complemented by efforts to reduce regulatory hurdles.

- **CFPP early retirement and coal phase-down projects**

  a. **Challenges in implementing carbon pricing mechanism to support CFPP early retirement and coal phase-down**: Indonesia currently lacks an approved methodology to measure emission reductions from initiatives such as CFPP early retirement and coal phase-out actions, preventing the recognition of carbon credits.

  b. **Challenges in early termination**: PR 112/2022 does not specify who bears the costs of early retirements, leading to legal uncertainties about how IPPs can be compensated for the resulting losses, including whether fiscal incentives are sufficient to offset those losses. Furthermore, the MEMR lacks a roadmap for early retirements of CFPPs, creating hesitancy in IPPs or PLN to initiate the process.

  c. **Absence of implementation regulations regarding biomass domestic market obligations**: The government requires biomass suppliers to prioritise domestic needs before exporting, but the MEMR has not determined domestic market obligation figures, which leads to uncertainty for suppliers of feedstock regarding commercial viability of their operations. Co-firing in coal power plants carries risks such as prolonging coal dependency, limiting overall emissions reductions, and creating supply chain challenges for biomass or ammonia, such as the deforestation mentioned. It can also reduce plant efficiency, making it less cost-effective. However, it is being considered an interim step because it offers an immediate reduction in coal use, leverages existing infrastructure, ensures grid stability, and helps develop supply chains for future low-carbon fuels while renewables scale up.

  d. **Favourable coal prices for conventional power plants**: It could be beneficial for Government of Indonesia to explore strategies to maintain affordable electricity for its citizens during the transition to renewable energy sources. This may involve developing renewable energy initiatives while simultaneously reducing incentives for CFPPs, allowing renewable energy to become more competitively priced. By adjusting the incentives for traditional energy sources, the government can encourage investment in renewables and help ensure that the shift to cleaner energy does not lead to increased costs for consumers.

  e. **Ineffective carbon trading system**: there is a need to streamline the process to obtain greenhouse gas emission reduction certificates to encourage trading in carbon credits.

**Proposed Prioritised Mechanisms and Considerations for Further Analysis**

Finally, based on the regulatory and desktop analysis, as well as primary accounts of challenges in energy transition projects in Indonesia, a selection of incentive and disincentive mechanisms that could have the highest potential impact in supporting energy transition projects in Indonesia was proposed. This includes the carbon pricing mechanism and the reform of coal DMO and DPO and RE tariffs as well as streamlining processes in PPA, procurement, licensing and PSN status in RE projects.

Moving forward, it would be helpful to identify the specific policy and regulatory interventions required to implement the prioritised changes. The next report (Deliverable 3) in this project will focus on additional assessment of the successful approaches of other countries in supporting energy transition projects which could provide valuable insights for implementation in Indonesia. This could help to define a cohesive policy framework aimed at enhancing market confidence and accelerating investments in energy transition projects in Indonesia. Further details on the benchmarking analysis will be explained in Deliverable 3.

# List of Abbreviations

| ABBREVIATIONS | |
|---|---|
| ADB | Asian Development Bank |
| ADNOC | Abu Dhabi National Oil Company |
| AMDAL | *Analisis Mengenai Dampak Lingkungan*/Environmental Impact Assessment |
| APBN | *Anggaran Pendapatan Belanja Negara/* State Budget |
| ASEAN | Association of Southeast Asian Nations |
| Bappenas/BAPPENAS | *Badan Perencanaan Pembangunan Nasional*/National Development Planning Agency Board |
| BAU | Business-as-Usual |
| BKPM/MI | *Badan Koordinasi Penanaman Modal*/Ministry of Investment |
| BMPK | *Batas Maksimum Pemberian Kredit*/Bank Lending Limits |
| BOD | Board of Directors |
| BOO | Build-Own-Operate |
| BOOT | Build-Own-Operate-Transfer |
| BPP | *Biaya Pokok Penyediaan/* Basic Production Cost |
| BPKP | *Badan Pengawasan Keuangan dan Pembangunan*/Financial and Development Supervisory Agency |
| BUMD | *Badan Usaha Milik Daerah* |
| BUT | *Bentuk Usaha Tetap* |
| B3m | *Bahan Bakar Biomassa*/Biomass Feedstock |
| CDB | China Development Bank |
| CEA | Indian Central Electricity Authority |
| CFPP | Coal Fired Power Plants |
| CICERO | Center for International Climate and Environmental Research - Oslo |
| CIF-ACT | Climate Investment Fund Accelerating Coal Transition |
| CIPP | Comprehensive Investment and Policy Plan |
| CMEA | Coordinating Ministry of Economic Affairs |
| COP28 | 28th United Nations Climate Change Conference |
| DHE | *Devisa Hasil Export/*Foreign Exchange Export Proceeds |
| DIPA | *Daftar Isian Pelaksanaan Anggaran* |
| DMO | Domestic Market Obligations |

| ABBREVIATIONS | |
|---|---|
| DPO | Domestic Price Obligations |
| DRAM | *Dokumen Rancangan Aksi Mitigasi Perubahan Iklim* |
| EBTKE | *Energi Baru Terbarukan dan Konservasi Energi*/New, Renewable Energy, and Energy Conservation |
| ENDC | Enhanced Nationally Determined Contribution |
| EPC | Engineering, Procurement, and Construction |
| ESG | Environmental, Social, and Governance |
| ETM | Energy Transition Mechanism |
| ETP | Energy Transition Partnership |
| EU | European Union |
| EU ETS | European Union Emission Trading System |
| FGD | Focus Group Discussions |
| FIT | Feed-in Tariffs |
| FTP | Fast Track Program |
| GHG | Greenhouse Gas |
| GoI | Government of Indonesia |
| GPNE | General Plan of National Energy |
| GR | Government Regulation |
| GWh | Gigawatt hour |
| ICBC | Industrial and Commercial Bank of China |
| IEA | International Energy Agency |
| IIGF | *PT Penjaminan Infrastruktur Indonesia*/Indonesian Infrastructure Guarantee Fund |
| INA | Indonesian Investment Authority |
| IPB | *Izin Panas Bumi*/Geothermal Working Area Licences |
| IPPs | Independent Power Producers |
| ITO | Indonesian Tax Office |
| IUPK | *Izin Usaha Pertambangan Khusus*/Special Mining Business Permits |
| IUPTL | *Izin Usaha Penyediaan Tenaga Listrik*/Electricity Supply Business Permit |
| IUPTLU | *Izin Usaha Penyediaan Tenaga Listrik untuk Kepentingan Umum* |
| IUP OP | *Izin Usaha Pertambangan-Operasi Produksi*/Mining Business Permit for Production Operation |

| ABBREVIATIONS | |
|---|---|
| JETP | Indonesia Just Energy Transition Partnership |
| JTF | Just Transition Fund |
| KPA | *Kuasa Pengguna Anggaran* |
| KPPIP | *Komite Percepatan Penyediaan Infrastruktur Prioritas* |
| KUBL | *Kegiatan Usaha Berwawasan Lingkungan*/Environmental-Oriented Business Activities |
| LBH | *Lembaga Bantuan Hukum* |
| LPG | Liquified Petroleum Gas |
| MAASP | Ministry of Agrarian Affairs and Spatial Planning |
| MEMR | Ministry of Energy and Mineral Resources |
| MHA | Ministry of Home Affairs |
| MOE/MF | Ministry of Environment and Ministry of Forestry |
| MOF | Ministry of Finance |
| MOI | Ministry of Industry |
| MOU | Memorandum of Understanding |
| MSOE | Ministry of State-Owned Enterprises |
| MW | Megawatt |
| MWac | Megawatt of alternating current |
| MWp | Megawatt peak |
| NEP | *Kebijakan Energi Nasional* /National Energy Policy |
| NIB | *Nomor Induk Berusaha* |
| NOC | No Objection Certificate |
| NZE | Net Zero Emissions |
| OJK | *Otoritas Jasa Keuangan* |
| OSS | Online Single Submission |
| OSS-RBA | Online Single Submission Risk Based Approach |
| PBI | *Peraturan Bank Indonesia* |
| PDA | Project Development Agreement |
| PEKKA | *Sekretariat Nasional Kepala Keluarga Perempuan*/the National Secretariat of Female Household Heads |

| ABBREVIATIONS | |
|---|---|
| PIB | *Pemberitahuan Impor Barang* |
| PIK | *Pembangunan Infrastruktur Ketenagalistrikan*/Electricity Infrastructure Development |
| PJBI | PT Pembangkit Jawa Bali Investasi |
| PLN | PT *Perusahaan Listrik Negara*/The State-owned electricity company |
| PLN EPI | PT PLN Energi Primer Indonesia |
| PLN IP | PT *Perusahaan Listrik Negara* Indonesia Power |
| PLTA | *Pembangkit Listrik Tenaga Air*/Hydroelectric Power Plants |
| PLTB | *Pembangkit Listrik Tenaga Bayu*/Wind Power Plants |
| PLTBg | *Pembangkit Listrik Tenaga Biogas*/Biogas Power Plants |
| PLT-BBN | *Pembangkit Listrik Tenaga Bahan Bakar Nabati*/Biofuel Power Plants |
| PLTBm | *Pembangkit Listrik Tenaga Biomassa*/Biomass Power Plants |
| PLTP | *Pembangkit Listrik Tenaga Panas Bumi*/Geothermal Power Plants |
| PLTS | *Pembangkit Listrik Tenaga Surya*/Photovoltaic Solar Power Plants |
| PLTSa | *Pembangkit Listrik Tenaga Sampah* |
| PLTU | *Pembangkit Listrik Tenaga Uap* |
| PMK | *Peraturan Menteri Keuangan*/Regulation of Ministry of Finance |
| PMSE | PT Pembangkit Jawa Bali Masdar Solar Energi |
| PPA | Power Purchase Agreement |
| PPE | *Pemberitahuan Pabean Ekspor*/Export Customs Notice |
| PPh | *Pajak Penghasilan*/Income Tax |
| PPP | Public-Private Partnerships |
| PR | Presidential Regulation |
| PSN | *Proyek Strategis Nasional*/National Strategic Projects |
| PSO | Public Service Obligation |
| PSPE | *Penugasan Survei Pendahuluan dan Eksplorasi* |
| RAPBN | *Rancangan Anggaran Pendapatan dan Belanja Negara* |
| RE | Renewable Energy |

| ABBREVIATIONS | |
|---|---|
| REC | Renewable Energy Certificate |
| RES | Renewable Energy Sources |
| RIPIN | *Rencana Induk Pembangunan Industri Nasional*/National Industrial Development Master Plan |
| RPO | Renewable Purchase Obligation |
| RUKD | *Rencana Umum Ketenagalistrikan Daerah*/General Plan of Regional Electricity |
| RUKN | *Rencana Umum Ketenagalistrikan Nasional*/General Plan of National Electricity |
| RUPTL | *Rencana Usaha Penyediaan Tenaga Listrik*/Electricity Supply Business Plan |
| SFC | Specific Fuel Consumption |
| SKB | *Surat Keterangan Barang* |
| SKBPPN | *Surat Keterangan Bebas PPn Impor* |
| SMI | PT Sarana Multi Infrastruktur (Persero) |
| SNI | Indonesian National Standard |
| SOEs | State-owned Enterprises |
| SPC | Special Purpose Company |
| SPE GRK | *Sertifikat Pengurangan Emisi Gas Rumah Kaca* |
| SRN PPI | *Sistem Registri Nasional Pengendalian Perubahan Iklim* |
| TAQA | Abu Dhabi National Energy Company |
| TKDN | *Tingkat Komponen Dalam Negeri*/Local Component Requirement |
| UAE | United Arab Emirates |
| UMKM | *Usaha Mikro, Kecil, dan Menengah*/Micro, Small, and Medium Enterprises |
| UNFCCC | United Nations Framework Convention on Climate Change |
| UNOPS | United Nations Office for Project Services |
| US$ | United States Dollar |
| VAT | Value Added Tax |

# 1. Introduction

## 1.1. Project Background

The Southeast Asia Energy Transition Partnership ("ETP") is a multi-donor partnership comprising government and philanthropic funders, working to accelerate sustainable energy transition in Southeast Asia, in line with the Paris Agreement and Sustainable Development Goals. ETP is managed by United Nations Office for Project Services ("UNOPS") and operates in Southeast Asia, focusing on Indonesia, the Philippines, and Vietnam. ETP's strategy for advancing energy transition is based on four interconnected pillars: (i) policy alignment with climate commitments, (ii) de-risking renewable energy and energy efficiency investments, (iii) sustainable and resilient infrastructure, and (iv) just transition.

As part of Indonesia's Enhanced Nationally Determined Contribution ("ENDC") submitted to the United Nations Framework Convention on Climate Change ("UNFCCC"), the country has committed to reducing its greenhouse gas ("GHG") emissions by 31.89% below business-as-usual ("BAU") levels by 2030, with an enhanced target of 43.20% reduction contingent on international support. In addition to its ENDC, Indonesia has developed a long-term strategy to achieve net-zero emissions by 2060 or sooner. This strategy includes peaking GHG emissions by 2030 and achieving significant reductions in emissions through the deployment of renewable energy, energy efficiency measures, and reforestation initiatives.

Additionally, the Government of Indonesia ("GoI") through the Indonesian Just Energy Transition Partnership ("JETP"), has ambitious aims to increase the share of renewable energy ("RE") generation to 34% by 2030,[1] reducing the reliance on coal-fired power plants ("CFPPs") and capping its on-grid power sector emissions to 290 million tonnes of $CO_2$ by 2030.[2] Financial and economic barriers, such as high upfront and project development costs, high cost of capital, long payback period, low rate of return, lack of cost-reflective pricing, lack of subsidies, and scarcity of adequate financial means, may increase the investment risk and hinder the progress of energy transition in a country.[3] The GoI has laid the legal groundwork for incentives to support RE development and the early retirement of CFPPs. These incentives come in the form of fiscal facilities, financial support, and regulatory policies. However, while these measures aim to address financial and economic barriers by de-risking capital investments and speeding up the deployment of RE technologies and the retirement of CFPPs, the specific implementation details often remain unclear.

However, several existing regulations can also act as barriers or disincentives for energy transition projects. Disincentives for RE development and CFPP early retirement in Indonesia can be found as either any kind of incentives for non-renewable energy (e.g., fossil fuel subsidies, domestic market obligation ("DMO") and domestic price obligation ("DPO") for coal), or any existing regulations that counteract the effects of incentives for RE development and CFPP early retirement. The contradictory incentives and disincentives in renewable energy development are one of the primary reasons why Indonesia's RE penetration lags behind its targets, with RE encompassing a minor 14.58% of the total installed capacity in its power generation energy mix in 2023.[4] Therefore, it is important to evaluate the effectiveness of existing incentives

[1] JETP Indonesia Secretariat (2023). Comprehensive Investment and Policy Plan.
[2] JETP Indonesia Secretariat (2023). Comprehensive Investment and Policy Plan.
[3] Peimani, H. (2018). Financial Barriers to Development of Renewable and Green Energy Projects in Asia. ADBI Working Paper 862. Tokyo: Asian Development Bank Institute; ERIA study team. (2023). 'Key Barriers and Enablers', Saswata Chaudhury, Raktimava Bose, Debanka Samanta, and Venkatachalam Anbumozhi (eds.), Renewable Energy Transition in South Asia: Role of Regional Energy Trade. ERIA Research Project Report FY2023 No. 10, Jakarta: ERIA, pp.35-40.
[4] Ministry of Energy and Mineral Resources Indonesia (MEMR Indonesia). (2024). Handbook of Energy & Economic Statistics of Indonesia 2023.

and analyse the existing disincentives that are hampering the growth of RE and the pace of CFPP early retirement.

## 1.2. Project Objectives, Outcomes and Outputs

### 1.2.1. Project Objectives

The objective of this Project is to drive investment in renewable energy and expedite the early retirement of CFPP in Indonesia. The outcome of the project is to support the GoI in meeting its enhanced ENDC targets, achieving net zero emission ("NZE") by 2060 and meeting its JETP commitments. Hence this objective is aligned with these targets and will be achieved by identifying effective incentive and disincentive mechanisms, while balancing applicability and economic viability.

### 1.2.2. Project Outcomes

The Project aims specifically to formulate suitable incentive and disincentive mechanisms (and/or changes to existing mechanisms) for the following categories:

- Renewable energy development;
- CFPP early retirement (on-grid and off-grid); and
- Coal phase-down projects (on-grid and off-grid).

Coal phase-down is defined as gradually reducing coal use to transition to grid-scale renewable energy sources.[5] The government outlines the coal phase-down initiative through two primary strategies: the reduction of operational hours of and/or the increase of biomass co-firing in CFPPs, where MEMR Regulation No.12 of 2023 defines biomass co-firing as mixing the burning of coal with one or more different types of *Bahan Bakar Biomassa* ("B3m"/biomass feedstock) at a specified ratio. This process aims to partially substitute coal while considering the fuel quality requirements.

The Project focuses on developing innovative incentive and disincentive mechanisms aligned with the government's new energy transition incentives offered through the Ministry of Finance ("MOF").

### 1.2.3. Project Outputs

The primary outputs of this Project are as follows:

a. Comprehensive analysis of existing energy-related incentive and disincentive regulations in Indonesia.
b. Analysis of the suitable incentive and disincentive mechanisms required to accelerate energy transition.

A total of 6 separate reports will be delivered in this Project, including the inception report which details the methodology and approach of the project, along with the final report which integrates all deliverables. The other reports include:

- **Deliverable 2**: Comprehensive Analysis of Existing Incentive and Disincentive Regulations for Energy Transition Projects in Indonesia (this "Report").
- **Deliverable 3**: Incentive and Disincentive Mechanisms based on International Experience, which will conduct an in-depth analysis of the international best practices and draw lessons learned from the selected benchmark countries related to incentives and disincentives for energy transition

[5] ASEAN Centre for Energy. (2024). *Assessment of the role of coal in the ASEAN energy transition and coal phase-out*. https://aseanenergy.org/wp-content/uploads/2024/05/ACE_Assessment-of-the-Role-of-Coal-in-the-ASEAN-Energy-Transition-and-Coal-Phase-out.pdf

projects, namely renewable energy development, coal-fired power plants early retirement, and coal phase-down.

- **Deliverable 4**: Suite of Policy Measures and Options for Designing and Implementing the Most Effective Types of Incentive and Disincentive Mechanisms, which will develop a policy framework for introducing incentive and disincentive schemes to promote large-scale RE development, the early retirement of CFPP, and coal phase-down projects.
- **Deliverable 5**: Impact Analysis of the Proposed Incentive and Disincentive Mechanisms, which involves a comprehensive analysis, including cost-benefit, impact, and sensitivity assessments, of the proposed methods and incentives/disincentives. This includes analysing multiple scenarios with varying levels of incentives and disincentives and identifying any potential trade-offs and synergies among the proposed measures.

## 1.3. About this Report

The purpose of this Report is to provide a comprehensive review and analysis of the existing incentives and disincentives for energy transition projects in Indonesia, namely RE development, the early retirement of CFPPs and coal phase-down projects. This Report will analyse the regulatory landscape, identify fiscal and non-fiscal mechanisms, seek to understand policy objectives, and evaluate the effectiveness of the existing regulations. The analysis will examine specific case studies, including the planned phase down of Adipala Cilacap CFPP and ongoing RE projects like the Cirata floating solar PV project, to assess the sufficiency of existing incentives and disincentives. As accelerating Indonesia's energy transition requires the active participation of key stakeholders, the report will also map the relevant stakeholders and seek to understand the challenges and disincentives some face that hinder their participation, which lead to barriers for RE development, early CFPP retirement and coal phase down. This Report focuses mainly on the developer perspective by considering (i) the direct incentives and disincentives; and (ii) the roles and behaviours of other players which has an impact on developers.

**Section 2** presents the mapping and analysis of Indonesia's energy regulatory landscape — including the definitions of incentives and disincentives, the legal and regulatory framework of Indonesia's energy sector, along with the review of the existing incentives and disincentives for RE development, CFPP early retirement, and coal phase-down.

**Section 3** focuses on the mapping of relevant stakeholders in energy sector and presents insights gathered from engagements with relevant stakeholders regarding the effectiveness of existing incentives and disincentives on attracting RE investments and supporting early retirement of CFPPs.

**Section 4** discusses the impact of existing incentives and disincentives on the effectiveness of current RE and CFPP early retirement projects along with the project-level economic implications in two case studies (Cirata Floating PV Plant, CFPP Adipala Co-firing).

**Section 5** presents the regulatory gap analysis for RE development, CFPP early retirement and phase-down, emphasising the sufficiency of the current incentive and disincentive mechanisms as well as the absence of several supporting regulations that could enhance the effectiveness of existing incentives for accelerating RE investment and expediting coal retirement.

**Section 6** evaluates the effectiveness of both *existing* and *prospective (new)* incentive and disincentive mechanisms on energy transition projects in Indonesia. The evaluation follows a series of steps with the goal of prioritising a selection of incentive and disincentive mechanisms that have the highest urgency and potential impact for supporting energy transition projects in Indonesia.

**Section 7** presents the key findings and considerations for further analysis.

# 2. Regulatory Landscape Mapping and Analysis

## 2.1. Defining Incentives and Disincentives

Investors perceive energy transition projects in a different way compared to conventional projects as they might bear some additional risks due to the nature of clean energy investment, which could affect the investment decisions. The risks can be categorised as capital and labour, macro, market, and technical risks:[6]

- **Capital and labour risks** refer to the difficulties in accessing low-cost finance for energy transition projects, securing a high-quality domestic labour force and acquiring raw materials and related technologies.
- **Macro risks** include concerns regarding legal and regulatory uncertainty, unstable political landscape, and macroeconomic fluctuations of the country where the investment takes place.
- **Market risks** surround credit and counterparty risk (i.e., default risk), liquidity risk (i.e., high upfront capital cost, lack of project pipeline with bankable projects), and offtake risk (i.e., insufficient revenues to break even).
- **Technical risks** encompass adequate electricity infrastructure, project construction delays, cost overruns, and expensive operational expenditure.

Thus, incentives in the context of energy transition projects can be defined as any mechanisms that are developed to **de-risk** investments for energy transition projects, **increase** the penetration of renewable energy, **accelerate** early retirement of CFFPs, and **connect** renewable energy and CFPP early retirement projects with potential private investments. On the other hand, disincentives in the same context refer to the mechanisms that directly or indirectly **increase the risks** of investment in energy transition projects, **hamper** the deployment of renewable energy and CFPP early retirement, and **discourage** private investments and participation in energy transition projects. Any incentive for renewable energy development and CFPP early retirement can be perceived as disincentives for non-renewable investments, whereas disincentives for renewable energy development and CFPP early retirement can be considered incentives for non-renewable investments.

Incentives for energy transition projects can be classified into three main categories:

- Fiscal Incentives, which are funds provided by the state budget (A*nggaran Pendapatan Belanja Negara* or "**APBN**") to regions based on performance criteria (e.g., tax breaks/exemptions/reductions). [7]
- Financial Incentives (e.g., direct subsidies from the government, investment grants, concessional loans, and loan guarantees).
- Risk-reduction Mechanisms and Business Facilitation Measures (e.g., market price support measures and supporting regulations).

Moreover, disincentives for energy transition projects are essentially the opposites of RE incentives, and they can be classified into two categories:

- Fiscal and Financial Disincentives, (e.g., fiscal and financial incentives for non-RE projects).
- Any regulations that can counteract the effectiveness of incentives for RE development and CFPP early retirement.

[6] Blended Finance Taskforce. (2018). Better Finance Better World. London: Business & Sustainable Development Commission; International Energy Agency ("IEA"). (2021). Financing Clean Energy Transitions in Emerging and Developing Economies. Paris: IEA. Licence: CC BY 4.0

[7] Article 2 of MOF Regulation 21/2010.

### 2.1.1. Fiscal Incentives for Energy Transition Projects

Fiscal incentives, primarily in the form of tax incentives, have been used as one of the main investment promotion tools to attract both domestic and foreign investment in energy transition projects, particularly **renewable energy development**. Tax incentives are usually designed and customised to accommodate certain objectives and favour certain types of products, investment, and investors, but the overall goal is **to make renewable energy projects more financially viable by reducing the cost and risk (i.e., overall tax burden) of investment**.[8] Although tax incentives are expected to promote investment in one country, the government's forgone tax revenues are also expected as a consequence.

Aimed at reducing the cost of RE investment, there are **two basic approaches** to tax incentives:[9]

- **Profit-based tax incentives** focus on making an investment more profitable by either exempting firms from income taxes for a certain period of time or reducing the tax rate applicable to taxable income, assuming that the project is already profitable without tax incentives.

  Common types of profit-based tax incentives are as follows:[10]

  - **Tax holidays**. The exemption from the burden of income taxation given to new investors or firms (i.e., not eligible for firms with existing operations) over a period of time. It is designed as a temporary exemption based on the agreed duration of a grace period, and when the holiday ends, income taxes will be levied at the normal or reduced rate. In the case of Indonesia, tax holidays are available for renewable energy projects, which are considered "**Pioneer Industries**." [11] These are industries that have extensive interconnectedness, provide higher added value and external benefits, introduce new technologies, and hold strategic importance for the national economy.[12]
  - **Tax rate reductions**. Different from tax holidays, firms are not exempt from their tax liabilities and still must pay taxes, but at a reduced or preferential rate. Both new and existing firms are usually eligible for tax rate reductions.
- **Cost-based tax incentives** focus on enhancing capital cost recovery (i.e., lower the cost of capital) by targeting the capital investment costs, assuming that the project will not be profitable without tax incentives.

  Common types of cost-based tax incentives are as follows[13]:

  - **Tax allowances and credits**. Allowances can be defined as "a reduction to taxable income of the firm" (e.g., a reduction in net taxable income of 30%), whereas credits are used "to directly reduce the amount of taxes to be paid" (e.g., earning tax credits against the overall tax liability). Tax allowances target specific sectors like renewable energy, offering income tax benefits.[14]

[8] Asian Development Bank ("ADB"). (2024). Tax Incentives and Investment.
[9] World Bank. (2015). Options for low-income countries' effective and efficient use of tax incentives for investment: tools for the assessment of tax incentives (English). Platform for Collaboration on Tax Washington, D.C.: World Bank Group.
[10] Holland, D., & Vann, R. J. (1998). "Chapter 23 Income Tax Incentives for Investment". In Tax Law Design and Drafting, Volume 2. USA: International Monetary Fund.
[11] Appendix 1 BKPM Regulation 7/2020.
[12] Article 1 number (2) MOF Regulation 130/2020.
[13] Holland, D., & Vann, R. J. (1998). "Chapter 23 Income Tax Incentives for Investment". In Tax Law Design and Drafting, Volume 2. USA: International Monetary Fund.
[14] Article 2 paragraph (1) of GR 78/2019.

- **Accelerated depreciation**. It refers to "enhancing the rate at which capital investments may be depreciated, without altering the nominal amount of depreciation beyond the initial cost."[15]
- **Exemptions from indirect taxes**. Essentially, it represents a type of tax incentive whereby specific indirect taxes, typically value-added tax ("VAT") and import duties, will not be levied.

In general, when tax incentives are designed to achieve specific objectives and directed towards specific sectors, investments, and investors, several eligibility criteria will be set and should be met by the potential beneficiaries for claiming tax incentives:[16]

- **Special size and impact**. The "minimum value of investment" and "expected number of new jobs created" are usually predetermined as the primary eligibility criteria for potential beneficiaries to be entitled to tax incentives for their projects.
- **Special sector**. Since countries may desire to focus the economic activities on specific industrial sectors (i.e., the "pioneer industries" according to some countries, including Indonesia), preferential tax treatment can be granted to certain sectors that are expected to bring positive spillover effects.
- **Special regions/zones**. In countries where regional inequality prevails or some regions are planned to serve as "economic zones," tax incentives can be targeted to specific regions to diversify investment distribution across the country and spur economic growth in least developed regions.

### 2.1.2. Financial Incentives for Energy Transition Projects

Common financial incentives to address the financial and economic barriers of energy transition projects include the following:

- **Grants and subsidies**.[17] Governments, international organisations, or private entities usually provide non-repayable funds to support energy transition projects. The funds can be intended to reduce the initial capital costs of projects or cover the operational costs of projects, making it easier for developers to invest in energy transition projects.
- **Concessional loans**.[18] Aside from grants and subsidies, "soft loans" with below-market interest rates and more favourable terms are offered by government, development banks, and international financial institutions to support energy transition projects. Concessional loans allow developing countries to finance large-scale energy transition projects without incurring unsustainable debt. Key features of concessional loans include:
  - Lower interest rates than those available in the commercial market.
  - Extended grace periods, allowing the project to generate revenue before repayments begin.
  - Longer repayment period than commercial loans, allowing developers to manage their debt.
- **Green bonds**.[19] A type of fixed-income investment instruments designed to raise funds for projects that have positive environmental benefits. Green bonds are issued and sold by various entities, including governments, corporations, and financial institutions. Like traditional bonds, green bonds

[15] ADB. (2024). The Governance Brief: Tax Incentives and Investment.
[16] World Bank. (2015). Options for low-income countries' effective and efficient use of tax incentives for investment: tools for the assessment of tax incentives (English). Platform for Collaboration on Tax Washington, D.C.: World Bank Group.
[17] IEA. (2021). Financing Clean Energy Transitions in Emerging and Developing Economies. Paris: IEA. Licence: CC BY 4.0
[18] International Monetary Fund (IMF). (2014). External debt statistics: guide for compilers and users. Washington, D.C.: IMF
[19] International Finance Corporation (IFC). (2020). The Green Bond Handbook: a step-by-step guide to issuing a green bond. Washington, D.C.: IMF

pay periodic interest (coupon payments) and the principal to investors at the end of the bond term, but green bonds need to be certified by third-party organisations to ensure that the proceeds are used for environmentally beneficial projects, such as energy transition projects. For instance, in the case of Indonesia, Green Bonds and/or Green Sukuk are Debt Securities and/or Sukuk in which the proceeds from the issuance are used for financing or refinancing of environmentally sound business activities.[20] The framework aligns with Indonesia's Sustainable Finance Roadmap issued by the Financial Services Authority and aims to attract more capital to green projects by lowering barriers and increasing investor confidence in sustainability-based investments. Recently, investors have been increasingly willing to buy green bonds with a slightly lower yield than traditional bonds, reducing costs for projects.

- **Carbon pricing to fund energy transition**.[21] Carbon pricing mechanisms, such as carbon taxes or cap-and-trade systems, put a price on carbon emissions, incentivising private sectors to reduce their carbon emissions. The proceeds gained from carbon pricing can be directed towards funding energy transition projects and other environmental projects.

### 2.1.3. Risk-reduction Mechanisms and Business Facilitation Measures for Energy Transition Projects

Risk-reduction Mechanisms and Business Facilitation Measures are considered as supporting regulations and mechanisms apart from fiscal and financial incentives that, in most cases, play a pivotal role in reducing the risk of energy transition projects and facilitate businesses of clean energy technologies:

- **Feed-in Tariff ("FiT")**. [22] A policy mechanism designed to encourage the adoption and development of renewable energy sources by providing renewable energy producers with guaranteed payments (usually given by the government or state-owned utility company) for the electricity they generate and supply to the grid. Key features of FiT are as follows:
    - Above-market electricity price to provide a reasonable return on investment for the energy transition projects.
    - Long term contracts to ensure stability and predictability for investors and reduce the financial risks associated with energy transition projects.
    - Applicable to either large-scale or small-scale renewable energy developers (e.g, through net-metering), depending on the objectives and **the availability of fiscal space** as FiT can be relatively expensive.
    - Usually includes guaranteed access to the grid as well.
- **Renewable Portfolio Standard ("RPS") and Renewable Energy Certificates ("RECs")**.[23] RPS, also known as Renewable Purchase Obligation ("RPO") is a requirement set by the government of a country or state for the liable entities (i.e., energy producers or providers) to supply energy from renewable sources. Energy producers can have two options to meet their RPS and fulfil their

[20] Article 1 point 3 of OJK Regulation No. 18 of 2023.
[21] Tryndina, N., An, J., Varyash, I., Litvishko, O., Khomyakova, L., Barykin, S., & Kalinina, O. (2022). Renewable energy incentives on the road to sustainable development during climate change: A review. *Frontiers in Environmental Science*, *10*, 1016803.
[22] U.S. Energy Information Administration. (2013). Feed-in tariff: A policy tool encouraging deployment of renewable electricity technologies.
[23] National Renewable Energy Laboratory (NREL). (2015). Renewable Electricity: How do you know you are using it?; U.S. Environmental Protection Agency (EPA). (2017). Energy and Environment Guide to Action - Chapter 5: Renewable Portfolio Standards.

renewable energy/climate commitments: (i) generate their own renewable energy and issue RECs (e.g., 1 REC is equivalent to one megawatt-hour of electricity) as market-based instruments that can be purchased by other liable entities, or (ii) purchase RECs from other renewable energy producers without needing to install the renewable energy systems by themselves. As a result, renewable energy producers can gain more revenues/incomes from the sale of RECs and make the renewable energy projects more economically viable, leading to higher adoption of renewable energy in a country or state.

- **Loan guarantees**.[24] Lenders can be encouraged to provide more financing for energy transition project at a reduced risk when a loan guarantee is provided by a guarantor (usually a government or financial institution) such that if a borrower defaults on a loan, the guarantor will repay the borrower's debt as obliged.
- **Reversed Auction**. Reverse renewable energy auctions are a competitive bidding process used to procure electricity from renewable energy sources at the lowest possible price. By fostering competition among developers, reverse auctions drive down the cost of renewable energy. Key features of reversed auction are as follows:
    - The government or a designated entity announces the intention to purchase a certain amount of renewable energy. This announcement includes the quantity of energy needed and the criteria for participation.
    - Renewable energy developers submit bids to supply the specified amount of energy. Unlike traditional auctions where the highest bidder wins, in reverse auctions, the lowest bid wins.
    - The winning bidder is awarded a long-term guarantee/contract in the form of purchase power agreement ("PPA") to supply the renewable energy at the bid price.

  The procurement mechanism for electricity in Indonesia adheres to the provisions outlined in PLN Board of Directors ("BOD") Regulation 18/2023 and PLN Implementing Regulation No. 0012.E/DIR/2023. This mechanism prioritises value for money and can be executed through a tender process stipulated under the PLN regulations.
- **Streamlined and transparent procurement, permitting, and licensing processes.** These processes, if streamlined and transparent, could lower administrative and legal costs as well as shorten project timelines, providing incentives for developers to pursue and invest in energy transition projects. This may involve reducing the number of steps and amount of paperwork required for project approval, for example through the use of standardised forms, online submission portals, and clear guidelines. Improved consistency and certainty in the overall procurement, permitting, and licensing processes, with clearer regulations and timelines can also be beneficial.

### 2.1.4. Fiscal and Non-fiscal Disincentives for Energy Transition Projects

- **Fossil-fuel subsidies.**[25] The government usually provides price support for fossil fuels in the form of subsidies to keep the fossil fuel price affordable for poor household and spur economic development. Gasoline, diesel, Liquified Petroleum Gas ("LPG") and electricity are commonly subsidised by the government through compensation given to the state-owned enterprises ("SOEs") that are responsible for implementing Public Service Obligation ("PSO"). As part of the PSOs, The SOEs are obliged to "deliver goods and services on a non-commercial basis" (i.e.,

[24] IMF. (2014). External debt statistics: guide for compilers and users. Washington, D.C.: IMF
[25] Ihsan, A., Abriningrum, D.E., Suharnoko, B., Rahmawati, A., Giannozzi, S. F. (2024). Indonesia's Fuel Subsidies Reforms. Equitable Growth, Finance and Institutions Insight Washington, D.C.: World Bank Group.

selling fossil fuel at a price below its supply cost), and the compensation given to them is generally sourced from the APBN. Although protecting consumers from high prices, fossil fuel subsidies have hindered the competitiveness of renewable energy sources. Since the overall supply cost of fossil fuel is lower than renewable energy, the additional subsidies have put renewable energy at a disadvantage. Thus, fossil fuel subsidies are the main barriers, or disincentives, for spurring the growth of energy transition projects as the price of renewable energy cannot compete with the subsidies and cheap fossil fuels.

- **DMO and DPO.**[26] DMO is a disincentive for energy transition projects which controls the volume of coal that should be sold domestically by the producers to ensure a stable supply of coal for domestic demand. With DMO, the producers are required to supply coal to the domestic market at a minimum percentage of their annual total coal production determined by the governing authorities. For instance, the Indonesian Ministry of Energy and Mineral Resources ("MEMR") set 25 percent of total coal production as the minimum amount of coal to be supplied by Indonesian coal companies. Furthermore, a benchmark price for domestically sold coal that is set below the international coal price (known as DPO) is also another disincentive for energy transition projects. The governing authorities set this price cap on domestic coal to ensure affordability of energy sources for domestic needs. In the case of Indonesia, the Indonesian MEMR sets the DPO at US$70 per tonne.

## 2.2. Energy Legal and Regulatory Framework in Indonesia

The foundation of energy utilisation in Indonesia is deeply enshrined in the country's constitutional framework, particularly Article 33 of the 1945 Constitution of the Republic of Indonesia. This article mandates that the earth, water, and natural resources within the nation are to be controlled by the state and utilised for the greatest benefit of the Indonesian people. In adherence to this principle, Indonesia has established a comprehensive legal and regulatory framework to govern and promote the efficient and sustainable use of its energy resources.

At the heart of Indonesia's energy regulatory framework is Law Number 30 of 2007 on Energy (the "**Energy Law**"). This pivotal legislation sets forth the fundamental principles and policies for energy management and utilisation. The Energy Law covers a broad range of energy-related matters, including but not limited to fossil fuels, renewable energy sources, and energy conservation. However, the focus of this discussion will be on the legal and regulatory framework related to renewable energy use and development, as well as relevant regulations concerning the transition from coal to renewables, particularly in the context of the early termination of CFPPs and/or their phasedown.

While, up to the date of this report, Indonesia lacks a specific law exclusively governing renewable energy, the utilisation of renewable sources is primarily regulated under Law No. 30 of 2009 (as amended) on Electricity ("**Electricity Law**"), in addition to Law No. 21 of 2014 (as amended) on Geothermal Energy ("**Geothermal Energy Law**"), which specifically governs the use of geothermal as one of the potential renewable sources in Indonesia. The implementation of this Electricity Law is articulated through various government regulations that provide detailed operational guidance and stipulations. These regulations are further supplemented by ministerial regulations and decrees, which address more specific aspects of technical procedures and administrative requirements, as applicable. The law hierarchy system in Indonesia plays a crucial role in ensuring that lower-level regulations are developed based on the mandates provided by higher-level regulations, thereby creating a coherent and consistent regulatory environment.

Table 1 below provides a structured overview of the key regulations governing energy, renewable energy,

[26] Just Energy Transition Partnership (JETP) Indonesia. (2023). Comprehensive Investment and Policy Plan 2023.

and energy transition in Indonesia, categorised according to the regulatory hierarchy from laws to ministerial decrees.

**Table 1. Indonesian Energy Legal and Regulatory Framework related to Energy**

| Legal & Regulatory Framework related to Energy | Key takeaway |
|---|---|
| **Law** | |
| Law No. 30 of 2007 on Energy ("**Energy Law**") | The Energy Law serves as the legal framework for energy management in Indonesia, ensuring energy supply, optimising energy use, and promoting energy sustainability. It emphasises that new and renewable energy sources are regulated by the state to serve the best interests of the people. The formulation of national energy policy is a collaborative effort between the Government of Indonesia and the House of Representatives of Indonesia.<br><br>Pertaining to renewable energy, the Energy Law specifies that:<br><br>a) The Government must increase the provision of new and renewable energy sources.<br><br>b) Businesses or individuals involved in renewable energy provision can receive facilitation and/or incentives from the government for a specified period until they achieve economic viability. These incentives will be detailed in government and/or regional regulations.<br><br>Furthermore, the Government of Indonesia is tasked with facilitating research and development in energy technology to bolster the development of new and renewable energy sources, thereby fostering an independent national energy industry. The development of renewable energy initiatives is funded through state revenues generated from non-renewable energy sources. |
| Law No. 30 of 2009 on Electricity as amended by Law No. 6 of 2023 on Stipulation of Government Regulation in Lieu of Law No. 2 of 2022 on Job Creation to become Law ("**Electricity Law**") | Renewable energy projects in Indonesia are regulated under the Electricity Law. While private business entities, cooperatives, and community organisations are permitted to engage in electricity provision, priority is given to the state-owned enterprise, PT PLN. It is important to note that the provision of electricity is controlled by the state and managed through a licensing regime by both central and regional governments. The Electricity Law mandates that primary energy sources should prioritise new and renewable energy.<br><br>As the primary entity responsible for providing electricity to the public, PLN is obligated to ensure a reliable and high-standard electricity supply. To meet these standards, PLN is also authorised to purchase electricity from private sectors/independent power producers. |
| Law No. 4 of 2009 on Mineral and Coal Mining as amended by Law No. 6 of 2023 on Stipulation of Government Regulation in Lieu of Law No. 2 of 2022 on Job Creation to become Law ("**Mining Law**") | The Mining Law establishes the legal framework for the exploration, extraction, and management of mineral and coal resources in Indonesia. It emphasises sustainable mining practices, environmental protection, and the prioritisation of domestic needs. Furthermore, the law underscores the importance of local community development and mandates value-added processing of extracted resources. It is noteworthy that this report specifically focuses on coal as the primary resource for CFPPs. The regulatory environment and policies governing coal mining play a crucial role in influencing or potentially accelerating the early termination of CFPP operations in Indonesia. |
| Law No. 21 of 2014 as lastly amended by Law No. 6 of 2023 on Stipulation of Government Regulation in Lieu of Law No. 2 of 2022 on Job Creation to | The Geothermal Energy Law outlines the regulatory framework for the exploration, exploitation, and utilisation of geothermal energy in Indonesia. Geothermal energy is recognised as a renewable and environmentally friendly resource that plays a crucial role in supporting sustainable national development and improving public welfare. The law also establishes a regulatory framework, |

| Legal & Regulatory Framework related to Energy | Key takeaway |
|---|---|
| become Law on Geothermal Energy ("**Geothermal Energy Law**") | including the creation of regional regulations, business licensing, supervision, data management, and resource inventory. |
| Law No. 6 of 2023 on Stipulation of Government Regulation in Lieu of Law No. 2 of 2022 on Job Creation to become Law ("**Job Creation Law**") | This regulation is an omnibus law that aims to streamline various regulatory frameworks to boost economic growth and job creation in Indonesia. The Job Creation Law introduces several new provisions into several laws (i.e. Geothermal Energy Law, Electricity Law, and Mining Law), including measures that simplify business licensing, enhance investment opportunities, and support the development of enterprises (including RE). |
| **Government Regulation ("GR")** | |
| GR No. 79 of 2014 on National Energy Policy ("**NEP**") ("**GR 79/2014**") | The NEP, as mandated by the Energy Law, delineates Indonesia's strategy for achieving energy security, independence, and sustainability. It includes several provisions aimed at accelerating the provision and utilisation of renewable energy sources and facilitating the country's energy diversification. The GR sets ambitious targets for the energy mix, aiming for new and renewable energy to comprise 23% of the total energy mix by 2025 and at least 31% by 2050, contingent upon their economic aspects.<br><br>The GR also outlines both primary and supporting policies for energy management. The primary policies focus on the prioritisation of national energy development and the optimal utilisation of national energy resources. This involves adhering to principles that promote the use of renewable energy and the exploitation of various renewable energy sources. |
| GR No. 28 of 2016 on Amounts and Procedures for the Deposit of Geothermal Production Bonuses ("**GR 28/2016**") | This regulation is an implementation regulation for Article 53 paragraph (2) *jo.* Article 83 of the Geothermal Energy Law which mandates the production bonuses payable by parties involved in the geothermal business to the regional government where the business is located. All businesses involved in geothermal activity (including holders of geothermal-business licences, holders of geothermal-utilisation authorisations, holders of geothermal joint-utilisation contracts, and holders of geothermal-utilisation licences) should pay production bonuses to the relevant regional government from the time that they enter into the commercial-production stage. |
| GR No. 7 of 2017 on Geothermal Energy for Indirect Utilisation as partially revoked by GR 25/2021 ("**GR 7/2017**") | GR 7/2017 serves as an implementing regulation under the Geothermal Energy Law in Indonesia. It specifically addresses the indirect utilisation of geothermal resources, which involves converting geothermal heat energy and/or fluids into electrical power.<br><br>In Indonesia, the indirect utilisation of geothermal resources is conducted within designated work areas assigned by the MEMR. These assignments are made in alignment with the national energy policy and the national general plan for electricity.<br><br>The allocation of these work areas can be accomplished through various methods, including auctions, direct appointments, or limited offerings.<br><br>According to GR 7/2017, geothermal exploration activities are permitted for a maximum duration of five years from the date the geothermal permit is issued. This period can be extended twice, with each extension granting an additional year. For exploitation and utilisation activities, the regulation sets a maximum duration of 30 years, starting from the date the feasibility study is approved by the minister. |

| Legal & Regulatory Framework related to Energy | Key takeaway |
|---|---|
| **Presidential Regulation ("PR")** | |
| PR No. 4 of 2010 on the Assignment to PT Perusahaan Listrik Negara (Persero) to Accelerate the Development of Power Plants Using Renewable Energy, Coal, and Gas as lastly amended by PR No. 194 of 2014 ("**PR 4/2010**") | Fast Track Program II ("**FTP II**") is the government's program for accelerating electricity infrastructure development through renewable energy, coal, and gas power plants. |
| PR No. 4 of 2016 as amended by PR No. 14 of 2017 on Acceleration of Electricity Infrastructure Development as amended by PR No. 14 of 2017 ("**PR 4/2016**") | PR 4/2016 is the legal framework designed to expedite the development of electricity infrastructure, ensuring it is effective, efficient, transparent, fair, and accountable. The regulation aims to support the GoI's ambitious goal of establishing 35,000 Megawatts ("MW") of electricity infrastructure and 46,000 kilometres ("km") of transmission lines, a program initiated in 2016.<br><br>Additionally, the framework prioritises electricity infrastructure that utilises new and renewable energy sources. PLN is specifically tasked with realising this acceleration program.<br><br>To support this policy, the central and regional governments may provide various facilities, including:<br><br>(i) Fiscal incentives;<br>(ii) Ease of licensing and non-licensing processes;<br>(iii) Determination of purchase prices for electricity from various types of new and renewable energy sources;<br>(iv) Formation of separate business entities to sell electricity to PLN; and<br>(v) Subsidies;<br><br>Under PR 4/2016, the implementation of electricity infrastructure development ("**PIK**") is carried out by PLN. This can be achieved through cooperative efforts with PLN subsidiaries or Independent Power Producers ("**IPPs**") via purchase agreement mechanisms. Both types of cooperation receive a government guarantee in the form of a business feasibility guarantee for PLN's financial obligations under the electricity purchase agreements.<br><br>For implementation through cooperation with PLN subsidiaries, PLN must hold at least 51% of the shares either directly or indirectly. This cooperation is contingent on PLN partnering with domestic or foreign business entities that offer strategic value.<br><br>The implementation of PIK with IPPs is subject to specific conditions, including:<br><br>• The need for substantial funding;<br>• Significant construction risks, particularly in new locations requiring land acquisition;<br>• High risks associated with fuel supply or uncertainty in gas supply and infrastructure;<br>• Utilisation of new and renewable energy sources;<br>• Expansion of existing IPPs' power plants; and<br>• Development of power plants by multiple IPPs in a specific area. |
| PR No. 22 of 2017 on General Plan of National Energy ("**PR 22/2017**") | Pursuant to the Energy Law, the Government of Indonesia has issued PR 22/2017 on General Plan of National Energy (GPNE). The GPNE outlines the GoI's strategic approach to managing energy resources at the national level, effectively operationalising and detailing the national energy policy across |

| Legal & Regulatory Framework related to Energy | Key takeaway |
|---|---|
| | various sectors. This plan is set to remain effective until 2050 and is subject to review and potential updates every five years, or sooner if necessary. The GPNE serves as a foundational reference for formulating development plans at both central and regional levels, including the preparation of the RUPTL and the allocation of the state budget. |
| PR No. 35 of 2018 on the Accelerated Construction of Waste-to-Energy Plants Based on Environmentally Friendly Technologies ("**PR 35/2018**") | PR 35/2018 serves as the primary legal framework for accelerating the development of Waste-to-Energy Plants (*Pembangkit Listrik Tenaga Sampah* or "**PLTSa**") utilising environmentally friendly technology in Indonesia. This regulation aims to enhance urban resilience by maintaining public health and environmental quality while significantly reducing waste volume, contributing to cleaner and more aesthetically pleasing cities.<br><br>The development of PLTSa can be conducted either by Regional-Owned Enterprises (*Badan Usaha Milik Daerah* or "**BUMD**") through direct assignment or by private parties via a tender process. Both waste managers and PLTSa developers are required to obtain environmental-related licences and an IUPTL. PR 35/2018 mandates that relevant ministries, including the MEMR, support the development of PLTSa by simplifying licensing and non-licensing procedures.<br><br>Additionally, the regulation assigns PLN to purchase the electric power generated by PLTSa at fixed prices contingent upon the plant's capacity. |
| PR No. 112 of 2022 on Acceleration of Renewable Energy Development for Electricity Supply ("**PR 112/2022**") | PR 112/2022 is the latest legal framework issued by the Government of Indonesia with the aim of boosting investment in renewable energy, accelerating the achievement of energy mix targets, and reducing greenhouse gas emissions. This regulation explicitly mandates that PLN draft a RUPTL that incorporates the development of renewable energy sources. Additionally, PLN is required to prioritise the procurement of electricity generated from renewable power plants.<br><br>PR 112/2022 also revises the pricing mechanism for renewable energy, shifting from the previous BPP for electricity generation model to a ceiling price or negotiated prices, which may or may not consider the location of the projects. These ceiling prices are subject to annual reviews based on the average value of PLN's new contracts.<br><br>The regulation outlines two procurement methods for acquiring electricity from renewable power plants: direct appointment and direct selection. Direct appointment can be utilised under specified conditions.<br><br>In the context of the electricity sector's energy transition, the MEMR is tasked with developing a roadmap to expedite the decommissioning of CFPPs, as detailed in sectoral planning documents. Moreover, PR 112/2022 imposes a moratorium on the development of new CFPPs, with exceptions for existing projects planned before the regulation and those meeting certain stringent criteria. As of the date of this report, the GoI is in the process of preparing this roadmap to facilitate the early retirement of CFPPs, and PLN has yet to issue the new RUPTL. |
| **Ministerial Regulation and Decree** | |
| Minister of Energy and Mineral Resources Regulation No. 15/2010 on The List of Development Acceleration Projects of Power Plants Using Renewable Energy, Coal and | MEMR Regulation 15/2010 serves as the implementing regulation for PR 4/2010. It establishes the FTP II, which aims to accelerate the development of power plants utilising renewable energy, coal, and gas. This regulation provides a list of power plant projects that will be undertaken by the PLN, and IPPs. |

| Legal & Regulatory Framework related to Energy | Key takeaway |
|---|---|
| Gas as Well as Related Transmissions as lastly amended by MEMR Regulation 40/2014 ("**MEMR Regulation 15/2010**") | |
| Minister of Energy and Mineral Resources Regulation No. 50 of 2017 on the Utilisation of Renewable Energy Sources for the Provision of Electric Power as lastly amended by MEMR Regulation No. 4 of 2020 ("**MEMR Regulation 50/2017**") | This regulation focuses specifically on the utilisation of renewable energy sources for electricity generation. It outlines policies to promote the use of renewable energy sources in Indonesia's electricity sector. It establishes procurement mechanisms to encourage investments in renewable energy projects and aims to diversify the energy mix, enhance energy security, and reduce greenhouse gas emissions by integrating more renewable energy into the national grid. Additionally, it provides a framework for the development of renewable energy projects, including licensing, grid access, and pricing. |
| Minister of Energy and Mineral Resources Regulation No. 12 of 2023 on the Utilisation of Biomass Fuel as a Fuel Mixture in Steam Power Plants ("**MEMR Regulation 12/2023**") | Focuses on the utilisation of biomass fuel as a fuel mixture in steam power plants in Indonesia. The regulation aims to reduce dependency on fossil fuels and promote cleaner energy sources by mandating the use of biomass in existing and new steam power plants. It sets out specific guidelines for the types of biomasses that can be used, the blending ratios with conventional fuels, and the technical and environmental standards to be met. Additionally, the regulation provides incentives for power plant operators to adopt biomass fuel mixtures and outlines monitoring and reporting compliance procedures. This initiative is part of Indonesia's broader strategy to enhance energy sustainability and reduce greenhouse gas emissions. |
| Minister of Energy and Mineral Resources Regulation No. 11 of 2024 on the Use of Domestic Products in the Development of Electrical Infrastructure ("**MEMR Regulation 11/2024**") | This regulation introduces a broader type of power plants which are subject to the local content threshold. The scope of local content threshold includes wind power plants, biomass power plants, biogas plants, waste to-energy plants, and gas engine power plants. |
| Minister of Energy and Mineral Resources Regulation No. 2 of 2024 on On-Grid Rooftop Solar Panel ("**MEMR Regulation 2/2024**") | This regulation covers the development of on-grid rooftop solar panels and regulates rights over the carbon economic value. |

In addition to the principal laws and regulations, as outlined in Table 1, there are supplementary regulations that offer support in the areas of taxation and fiscal and/or financial incentives. These supporting regulations are detailed in Table 2 below and are essential in reinforcing the overall energy policy framework, aiding in the advancement of renewable energy initiatives.

**Table 2. Indonesian Legal & Regulatory Framework related to Taxation and Fiscal Incentives**

| Legal & Regulatory Framework related to Taxation and Fiscal | Key Takeaway |
|---|---|
| **Law** | |
| Law No. 7 of 2021 on Harmonisation of Tax Regulations ("**Law 7/2021**") | Law 7/2021 has several objectives namely to enhance sustainable economic growth and support the acceleration of economic recovery; to optimise state revenue to independently finance national development towards a just, prosperous, and wealthy Indonesian society; to establish a more equitable and legally certain tax system; to implement administrative reforms and consolidate tax policies while broadening the tax base; and to increase voluntary taxpayer |

| Legal & Regulatory Framework related to Taxation and Fiscal | Key Takeaway |
|---|---|
| | compliance.<br><br>Furthermore, this regulation introduces carbon tax to be implemented in Indonesia, as well as the carbon tax rate, the tax subject, and the timing of the tax payment. |
| **Government Regulation ("GR")** | |
| GR No. 78 of 2019 on Income Tax Facilities for Investments in Specific Business Sectors and/or in Specific Regions ("**GR 78/2019**") | The issuance of GR 78/2019 represents a significant update, aimed at enhancing and simplifying the procedures for granting Income Tax ("PPh") facilities to domestic taxpayers who invest in specific business sectors and regions. This regulation essentially broadens the scope of the tax facilities and delineates the criteria and processes for eligible taxpayers to benefit from these incentives.<br><br>In summary, GR 78/2019 is designed to boost domestic investment by offering substantial tax benefits to qualifying taxpayers. By meeting the specified criteria and following the streamlined application process through the OSS-RBA, investors can take advantage of these incentives.<br><br>This regulation aims to stimulate economic growth and job creation in targeted sectors and regions, reflecting the government's commitment to fostering a favourable investment climate and sustainable economic development. |
| **Ministerial Regulation** | |
| Minister of Finance Regulation No. 21/2010 on the Granting of Tax and Customs Facilities for the Utilisation of Renewable Energy Sources ("**MOF Regulation 21/2010**") | MOF Regulation 21/2010 aims to promote the use of renewable energy sources by reducing reliance on non-renewable energy. It seeks to attract investment and enhance competitiveness in renewable energy utilisation by providing tax and customs incentives for businesses in this sector. MOF Regulation 21/2010 also provides an Article 22 exemption for imports by IPPs involved in renewable energy. |
| Minister of Finance Regulation No. 130/PMK.08/2016 on Guidelines for the Implementation of Providing Government Guarantees for the Acceleration of Electricity Infrastructure Development as lastly amended by MOF Regulation No. 135/PMK.08/2019 ("**MOF Regulation 130/2016**") | MOF Regulation 130/2016 is an implementing regulation of PR 4/2016, which requires further directives regarding procedures for the granting of government guarantees to accelerate the development of electrical-power infrastructure (*Pembangunan Infrastruktur Ketenagalistrikan* or "**PIK**") as organised by PLN.<br><br>In implementing the PIK through a cooperation scheme, the GoI supports PLN by providing Business Viability Guarantees for financial obligations in the form of electricity purchase payment obligations and/or non-electricity purchase payment obligations, such as, among others, political risks or events that cannot be recovered by PLN. |
| Minister of Finance Regulation No. 130/2020 on Provision of Corporate Income Tax Reduction Facilities as amended by MOF Regulation No. 69/2024 ("**MOF Regulation 130/2020**"). | This regulation aims to stimulate investment in key sectors that are vital to the national economy, by offering significant corporate income tax reductions to qualifying businesses. |
| Minister of Finance Regulation No. 103/2023 on Providing Fiscal Support through Funding and Financing Framework to Accelerate Energy Transition in the Electricity Sector ("**MOF** | The Ministry of Finance has formally issued MOF Reg 103/2023, which delineates the fiscal support framework for the funding and financing of the retirement or early decommissioning of coal-fired power plants through the establishment of an energy transition platform designated as the Energy Transition Mechanism ("ETM") platform. In consideration of the financial capacity of the state, it is anticipated that the ETM may be financed through the state budget. In accordance |

| Legal & Regulatory Framework related to Taxation and Fiscal | Key Takeaway |
|---|---|
| **Regulation 103/2023**") | with this regulation, the Ministry of Finance has appointed SMI to oversee the management of the ETM. This platform offers loan facilities and a variety of financing options, including potential collaborations with private enterprises. Furthermore, government support may be extended through guarantees issued by the IIGF, which are intended to mitigate financial risks associated with projects encompassed within this energy transition initiative. |
| Minister of Finance Regulation No. 5/2025 on Procedures for The Provision And Implementation of Government Guarantees and Risk Assumption In The Context of Accelerating The Development of Renewable Energy for Electricity Supply ("**MOF Regulation 5/2025**") | Based on the mandate of PR 112/2022 regarding support in the form of fiscal incentives within its authority, such as financing and/or guarantees through state-owned enterprises assigned by the government, and implementing the provisions of Article 3 paragraph (10) and Article 27 paragraph (5) of PR 112/2022, it is necessary to establish the procedures for providing and implementing government guarantees and risk bearing in the context of accelerating renewable energy development for electricity supply. |

In addition to key energy laws and tax and financial support regulations, PLN has also created specific planning documents for the power sector taking into account the plans set by the GoI. These documents, listed in Table 3 below, provide strategic guidance and frameworks that assist in the overall development of the energy sector.

**Table 3. Planning Documents in Indonesian Power Sector**

| Planning Documents in the Power Sector | Key takeaway of the document |
|---|---|
| General Plan of National Electricity ("**RUKN**") | RUKN is stipulated on Minister of Energy and Mineral Resources Decree No. 314.K/TL.01/MEM.L/2024 which covers the national electricity policy direction, the electricity supply development plan, the current state of the electricity supply, the electricity demand projection, and the electricity supply investment which was prepared by MEMR taking into account the GPNE. In the context of energy transition and renewable energy, RUKN emphasises the importance of increasing the share of renewable energy sources in the national energy mix. The RUKN sets ambitious targets to boost the capacity of power plants derived from renewable sources such as solar, wind, and biomass, and to reduce reliance on CFPPs. RUKN serves as a guideline and reference for local governments in preparing their General Plan of Regional Electricity (RUKD) and for PLN in drafting the RUPTL. |
| General Plan of Regional Electricity ("**RUKD**") | RUKD covers the electricity plans of specific regional areas of Indonesia. RUKD shall be prepared by the Governor based on the RUKN no later than one year after the RUKN is issued. RUKD is ratified by a Governor's Decree. |
| Electricity Supply Business Plan ("**RUPTL**") | The RUPTL is drafted by PLN and covers the business plan of electricity supply of PLN which considers the energy mix targets in the RUKN. The latest edition is applicable until 2030 and was ratified through the Decree of the Minister of Energy and Mineral Resources No. 188.K/HK.02/MEM.L/2021 concerning the ratification of the RUPTL. |
| Board of Directors Regulation of PT PLN (Persero) Number 0018.P/DIR/2023 Year 2023 on the Strategic Policy for | In implementing the electricity supply activity plan based on the RUPTL, PLN internally establishes a guideline for the procurement of goods/services within PLN. The objective of this regulation is to enhance the effectiveness, efficiency, and sustainability of PLN in meeting its goods/services needs. The scope of this |

| Planning Documents in the Power Sector | Key takeaway of the document |
|---|---|
| Procurement of Goods/Services at PLN ("**PLN's BOD Regulation of PLN 18/2023**") | regulation includes, among other things, general provisions on goods/services procurement, goods/services procurement organisation, agreements/contracts, administration and documentation, and control and supervision. |
| Implementation Regulation of PT PLN (Persero) Number 0012.E/DIR/2023 on the Standard Procedure for Procurement of Goods/Services ("**PLN Internal Regulation No. 12 of 2023**") | This regulation is an implementing regulation of PLN's BOD Regulation of PLN 18/2023 which further regulates the mechanism for procurement of goods/services in PLN. |

Indonesia has established a comprehensive legal framework for the utilisation and management of energy resources. Grounded in the Indonesian Constitutional Law and Energy Law, the Government of Indonesia generally recognises the pressing energy challenges it faces, including the depletion of oil and gas resources and the impacts of climate change. Generally, the current laws and regulations provide direction towards renewable energy development and progressively reducing dependency on fossil fuels.

To accelerate renewable energy project development, the Government of Indonesia has issued several regulations aimed at fast-tracking initiatives, including the 35,000 MW electricity infrastructure development program, where PLN plays a crucial role. Notably, PR 112/2022 was enacted to attract more investors to boost renewable energy projects in Indonesia. While both fiscal and non-fiscal incentives are mentioned, their implementation remains dependent on the issuance of detailed guidelines or rules to ensure certainty regarding eligibility. Currently, these incentives are scattered across various regulations, some of which are not directly connected to renewable energy. This inconsistency poses challenges for the effective implementation of renewable energy policies.

Moreover, many implementation provisions mandated by higher-level legislation remain undefined or insufficiently regulated by government institutions, hindering the effectiveness of incentive application and the development of new and renewable energy projects in Indonesia. The energy transition leading to early termination of the existing CFPPs and/or phasing down, primarily governed by PR 112/2022, is still in its nascent stages and far from perfect. Detailed roadmaps and step-by-step guidelines are absent, making it difficult for investors to commit unless there is assurance that their investments can be effectively recouped to compensate for any expected direct and indirect losses.

Therefore, the analysis will focus on the existing regulations, which, although not explicitly framed as incentives, contain provisions that reduce risks and enhance the investment climate for renewable energy in Indonesia. These provisions, while not always labelled as incentives, significantly contribute to making renewable energy projects more attractive to investors. Additionally, the assessment will identify regulations that act as disincentives or highlight potential regulatory gaps that need to be addressed.

The detailed analysis will be further elaborated in Subsection 2.3, where the specific regulations and measures that directly and indirectly support renewable energy investments will be examined.

## 2.3. Review on Existing Energy-related Incentives and Disincentives Regulations in Indonesia

In the context of providing energy from renewable sources, Article 20, paragraph (5) of the Energy Law states that the central and/or regional governments can offer support and/or incentives for a certain period until the energy reaches economic viability. This provision aims to encourage the development and use of new and renewable energy by reducing the initial financial burden on energy providers.

The explanation of Article 20, paragraph (5) further clarifies that the incentives can include capital assistance, tax benefits, and fiscal support. Capital assistance may involve subsidies or low-interest loans to lower the initial investment costs for renewable energy projects. Tax incentives can include tax reductions or exemptions, making investments in this sector more attractive. Facilitation can involve simplifying licensing procedures and business requirements to reduce bureaucratic obstacles and streamline the business process.

Furthermore, Article 22, paragraph (1) of the Energy Law specifies that the support and/or incentives provided by the central and/or regional governments must be regulated by government regulations and/or regional regulations. This highlights the need for a clear and detailed regulatory framework to effectively implement these incentives and support measures. These regulations should outline the specific types, amounts, and durations of the incentives, as well as the procedures for applying for and obtaining them.

In line with the Energy Law, the Investment Law emphasises that investors are required to help protect the environment. According to Article 18, paragraph (3), letter e of the Investment Law, the government should support investors who fulfil specific criteria. One such criterion is investing in pioneer industries that use new technologies and create additional value.

Additionally, PR 4/2016 sets policies to speed up infrastructure development and prioritise the use of new and renewable energy. It allows central and regional governments to offer support through fiscal incentives, easier licensing, setting renewable energy electricity prices, and subsidies. [27] PR 112/2022 expands on PR 4/2016, strengthening the government's commitment to the energy transition by providing fiscal support, including blended finance, to replace CFPPs with renewable energy plants. Article 3, paragraph (9) of PR 112/2022 allows the government to support renewable energy projects to accelerate the energy transition. However, PR 112/2022 does not clearly define the specific forms of fiscal incentives. Instead, these incentives could refer to various other regulations, including those related to taxation and customs.

Therefore, evaluating the incentives for renewable energy requires a thorough understanding of related regulations. This includes rules on tax incentives and other relevant fiscal policies. For example, these incentives might include income tax exemptions for a certain period or reduced import duties for renewable energy equipment.

Further, there are also existing regulations, which, although not explicitly framed as incentives, contain provisions that reduce risks and enhance the investment climate for renewable energy in Indonesia. These provisions, while not always labelled as incentives, play a significant role in making renewable energy projects more appealing to investors.

[27] Article 14 of PR 4/2016.

## 2.3.1. Existing Incentives for Renewable Energy Development

### 2.3.1.1 Financial and Fiscal Incentives

**a. Tax Holiday**

According to Article 2, paragraph (1) of MOF Regulation 130/2020, corporate taxpayers who make new investments in Pioneer Industries are eligible for a corporate income tax reduction. This reduction applies to the income earned or received from their core business operations. The minimum investment value required to qualify for the tax reduction is at least one hundred billion rupiah (approximately US$ 7 million).[28]

Moreover, the tax reduction can be either 100% or 50% of the total payable corporate income tax, depending on specific conditions.[29] MOF Regulation 130/2020, also sets forth the criteria for eligibility:[30]

a. the business must be classified as a Pioneer Industry;
b. the business must be an Indonesian legal entity;
c. constitute a “new” investment where a decision on the granting or refusal of the application for a Tax Holiday has not yet been issued;
d. have a planned investment of at least IDR 100 billion; and
e. meet the requirements regarding the debt-to-equity ratio.

The tax reduction based on this regulation is granted upon proposal/application submission to the Ministry of Finance, within a period not exceeding four (4) years from the effective date of the regulation (which previously ended in 2024).[31] The tax incentives under MOF Regulation 130/2020 have encouraged investment in Indonesia's Pioneer Industries and this has been confirmed by investors. As such, the application period has been extended with MOF Regulation 69/2024 on Amendments to MOF Regulation 130/2020. The positive outcomes suggest a need for detailed evaluation and possibly continuing similar policies. By updating future regulations based on the changing economic landscape and stakeholder feedback, Indonesia can keep attracting vital investments, fostering sustainable economic growth and technological progress.

In addition to MOF Regulation 130/2020, BKPM Regulation 7/2020 updated the classifications eligible for tax incentives, particularly for electricity development in renewable energy sectors. Companies investing in these projects must apply for tax holiday benefits before starting commercial production. They must also meet requirements, including being classified as a Pioneer Industry and complying with the Online Single Submission (“**OSS**”) system.

Pursuant to MOF Regulation 130/2020, a business entity that meets the eligibility criteria for receiving a Tax Holiday and also holds the status of a National Strategic Project (*Proyek Strategis Nasional* or "**PSN**") can apply for tax holiday with certain treatments. For listed PSN projects under the Appendix of PR 3/2016, corporate taxpayers assigned to RE projects may apply corporate income tax deductions without adhering to certain provisions requiring application submission before starting commercial production. Furthermore, these taxpayers can submit their applications during business registration or within one year after receiving a business license.[32] Once the investment plan is fully realised, the corporate income tax deduction can be utilised for the project’s duration. Utilisation of corporate income

[28] Article 2 paragraph (2) MOF Regulation 130/2020.
[29] Article 2 paragraph (3) MOF Regulation 130/2020.
[30] Article 3 paragraph (1) MOF Regulation 130/2020.
[31] Article 21 MOF Regulation 130/2020.
[32] Article 8 paragraphs (1) and (2) MOF Regulation 130/2020.

tax deductions is permitted as long as the taxpayer is in commercial production and has realised all investment plans according to the required documents.[33]

The tax incentives under this framework offer a structured approach to supporting strategic investments in Indonesia. However, the Indonesian Tax Office ("**ITO"**) may conduct audits to ensure compliance. If an audit reveals non-compliance, the ITO can amend or revoke the tax holiday, and unpaid taxes with penalties may become due.

The regulatory framework governing tax holidays in Indonesia, particularly as delineated in MOF Regulation 130/2020 and its subsequent amendment, MOF Regulation 69/2024, possesses the potential to provide incentives for Pioneer Industries, which may encompass renewable energy projects. These regulations stipulate substantial reductions in corporate income tax for qualifying businesses. However, government incentives, including tax holidays, allowances, and exemptions, may lead to a decline in state revenue while concurrently increasing administrative costs and complexity. It is imperative to achieve a judicious balance regarding these incentives to ensure that their benefits substantially exceed the associated costs and to effectively address any regulatory barriers. Tax incentives are considered effective only when the economic benefits arising from investments surpass the financial burdens borne by the government, and when any lost revenues can be recovered through taxes levied on investors' profits over the long term. [34] An illustration of the impact of such incentives on an ongoing renewable energy project is explored in Chapter 4.1.

**b. Tax Allowances**

In addition to the tax holiday, business entities have the option to apply for tax allowances depends on the specific characteristics of the business entity. Tax allowances are particularly relevant for business entities that are not classified as pioneer industries or have an investment value of less than 100 billion rupiah. To be eligible for the various PPh benefits, taxpayers investing in certain business sectors or regions must meet stringent criteria as follows: making high-value or export-oriented investments, creating significant employment, and using a high percentage of local content in their operations. [36]

There are four types of PPh benefits for qualifying taxpayers. These benefits include:[37]

1. A reduction in net income.
2. Faster depreciation of physical assets or faster amortisation of intangible assets.
3. A specific PPh rate for foreign taxpayers who do not have a permanent establishment (*Bentuk Usaha Tetap* or "**BUT**") in Indonesia.
4. Compensation for financial losses.

Regarding the compensation for financial losses, taxpayers are allowed to offset financial losses against their income for up to five years. This period can be extended to ten years under certain conditions. These conditions include:[38]

1. Investing in specified business sectors or regions.
2. Investing in industrial or bonded zones.
3. **Investing in new and renewable energy sectors.**

[33] Article 8 paragraph (2) MOF Regulation 130/2020.
[34] ADB. (2024). Tax Incentives and Investment.
[36] Article 2 paragraph (3) GR 78/2019
[37] Article 3 paragraph (1) GR 78/2019
[38] Article 3 paragraph (1), subparagraph d GR 78/2019

4. Allocating at least Rp10 billion for developing economic or social infrastructure at the business location.
5. Using at least 70% locally produced raw materials or components by the second year of operation.
6. Employing at least 300 Indonesian workers and maintaining this employment level for at least four consecutive years.

To access these PPh benefits, taxpayers must follow the application procedures through the OSS system. New taxpayers submit during registration for the Business Registration Number (*Nomor Induk Berusaha* or "**NIB**") while existing taxpayers expanding their investments must apply within one year of obtaining related permits via the OSS-RBA.[39]

Before the enactment of GR 78/2019, at the ministerial regulation level, the Minister of Finance issued MOF Regulation 21/2010. This regulation provides taxation and customs facilities for activities related to the utilisation of renewable energy sources. These facilities include:[40]

a. PPh facilities;
b. VAT facilities;
c. Import Duty facilities.

Investors can benefit from PPh facilities, such as a 30% net income deduction from the amount of investment spread over six years each at 5% (five percent) per year, accelerated depreciation for fixed assets, and a 10% income tax on dividends to foreign entities with potential reductions. Loss compensation can be extended up to ten years under specific conditions, including investing in certain sectors, employing local workers, contributing to local infrastructure, investing in R&D, and using domestic raw materials.[41] The implementation of PPh facilities must follow the provisions outlined GR 78/2019. Additionally, MOF Regulation 21/2010 provides an PPh Article 22 exemption for imports by IPPs involved in renewable energy, and notably, this exemption does not require a Certificate of Exemption (*Surat Keterangan Barang* or "**SKB**")[42]

Moreover, the VAT facility includes exemptions from the imposition of VAT on the importation of strategic taxable goods in the form of machinery and equipment, whether installed or detached, excluding spare parts, which are required by businesses to use renewable energy sources to produce taxable goods.[43] The procedures for obtaining an exemption from the imposition of VAT facility, as are to be followed in accordance with the provisions stipulated in GR 49/2022. The conditions, procedures, and regulations surrounding import duty facilities will be detailed in Section C.

The regulatory framework for tax allowances in Indonesia, as outlined in various regulations (like MOF Regulation 11/2020 and MOF Regulation 21/2010), provides potential incentives for businesses investing in high-value, export-oriented, and renewable energy sectors. These incentives include net income reductions, accelerated depreciation, special tax rates for foreign investors, and compensation for financial losses. To qualify for these incentives, businesses must meet strict criteria such as using high local content and investing in new and renewable energy sectors. Exemptions from import duties or VAT credits may prove to be more effective than tax holidays, as they are more precisely targeted and can facilitate investments that will yield taxable profits.

While Indonesia's tax incentives for renewable energy represent a progressive initiative, tax holidays

[39]Article 5 paragraphs (1) and (2) GR 78/2019
[40] Article 2 MOF Regulation 21/2010
[41] Article 3 paragraph (1) MOF Regulation 21/2010
[42] Article 4 paragraphs (1) and (2) MOF Regulation 21/2010
[43] Article 5 paragraph (1) of MOF Regulation 21/2010

and allowances may prove insufficient to attract investment if other regulatory barriers, such as tariffs, power purchase agreement negotiations, procurement processes, and permitting requirements, remain prevalent. Consequently, it is imperative to mitigate these regulatory barriers to renewable energy development to ensure that the private sector can fully capitalise on the available tax incentives.

**c. Import Duty Exemptions**

The Import Duty facility mentioned in section b above refers to the exemption facility regulated by MOF Regulation 176/2009 and MOF Regulation 66/2015.[44] Import duty exemptions may be granted to products originating from free port areas, free trade areas, special economic zones, and bonded storage areas.[45] As of the exemption decree issuance date, import duty exemption for machines is valid for two years. The exemption may be extended based on the establishment or development plan period as specified under the business' investment plan approved by the Indonesian Investment Coordinating Board.

As a consequence of acquiring an import duty exemption, the business must realise its importation plan. If the business does not meet the importation target within the awarded period (two years), the business may request a one-year extension (maximum) after the exemption period expires.

It should be noted that to request an extension after an import exemption period ends would result in the extension period being reduced by the days of delay in submitting the request.[46]

To provide legal certainty in the process of organising risk-based business licensing, BKPM Regulation 4/2021 provides the applications for import duty exemption facilities can be submitted and issued in the OSS-RBA. This system also handles amendments and extension requests for these machinery, capital goods, and materials exemptions. Notably, the OSS-RBA will notify businesses three months before the expiration of their exemption. The application will automatically proceed if the technical verification is not completed within this timeframe. Additionally, if a decision on the exemption is not issued within five days after documents are deemed complete, the OSS-RBA System will auto-approve the exemption through a decree granting the import duty exemption facility.[47]

The Masterlist is the decree issued by the MOF on Import Duty Exemption issued by the BKPM. It contains a list of Machinery and Equipment that receive Import Duty exemption facilities.[48] The masterlist format can be seen in the appendix of the BKPM Regulation 4/2021.

The regulatory framework for import duty exemptions in Indonesia, as detailed in MOF Regulation 176/2009 and BKPM Regulation 4/2021, provides incentives for businesses operating in free port areas, free trade areas, special economic zones, and bonded storage areas. These exemptions, valid for two years and extendable based on approved investment plans, aim to support the establishment and development of industries. Businesses must meet their importation targets within the awarded period or request an extension, with the OSS-RBA system facilitating applications and amendments. The system ensures timely processing, with automatic approvals if technical verifications are delayed. This structured approach enhances legal certainty and supports Indonesia's investment climate by simplifying access to import duty exemptions for machinery and equipment essential for industrial growth.

[44] Article 6 MOF Regulation 21/2010
[45] Article 2A of MOF Regulation 176/2009
[46] Article 3 of MOF Regulation176/2009
[47] Article 74 of BKPM Regulation 4/2021
[48] Article 1 point 8 of MOF Regulation 115/2021

**d. Energy Transition Platform**

The Government's fiscal support is regulated under MOF Regulation 103/2023. MOF appoints SMI (Persero) as the Platform Manager to manage the Energy Transition Platform. The main tasks of SMI as the Platform Manager include coordination with stakeholders, assessing facility applications, sourcing funding outside of the State Budget ("APBN"), and providing facilities for projects that meet the criteria. [49] SMI has a secretarial function that supports the operational and administrative aspects of managing the Energy Transition Platform.[50]

The management of the Energy Platform by SMI is carried out based on the principle of accountability, transparency, and well planned which requires that all activities be accountable and openness of information, including the implementation of energy transition, which can be accessed by the public. The types of Energy Transition Platform facilities provided by SMI can include loans or other forms of financing or through public-private partnership schemes.[51] For funding sources outside the State Budget, SMI can obtain funds for energy transition through funding cooperation agreement with international financial institutions and/or other entities. International financial institutions include entities established based on international agreements, institutions founded by countries to support international economic development through development financing, including infrastructure, as well as multilateral, regional, or bilateral cooperation forums that support the objectives of the Energy Transition Platform, such as climate change financing and sustainable development. Other entities include public service agencies managing funds, institutions established under Indonesian law to support sustainable economics, entities from countries with relations to Indonesia, and philanthropic organisations, as well as funds for development financing, infrastructure, and climate change.

While MOF Regulation 103/2023 outlines the mechanism for providing fiscal incentives, there is still a need for implementing regulations (which can be in the form of a Ministerial Decree) to govern the provisions detailing the process of how the fiscal incentives will be administered, including the establishment of a steering committee that will evaluate the policies and management of the Energy Transition Platform based on SMI's reports on the platform's management.

**e. Government Guarantee**

GoI has initiated the acceleration of electricity infrastructure through two fast-track programs. Fast Track Program I ("**FTP I**"), established by PR 71/2006, focuses on coal-fired power plants. In 2010, Fast Track Program II ("**FTP II**") was launched through PR 4/2010. This second program invites private sector participation to build power plants using renewable energy, coal, and gas.

In organising the procurement process for the construction of coal-fired power plants under FTP I, it is essential to adhere to the location guidelines and project operation schedules as specified in the Appendix of PR 71/2006. Additionally, for the implementation of FTP II, the capacity and location of power plants, as well as the transmission infrastructure utilising renewable energy, coal, and gas, should comply with the stipulations set forth in the MEMR Regulation 15/2010.

Both FTP I and FTP II programs was reinforced by PR 4/2016, which requires further arrangements related to the procedures for providing government guarantees in the context of accelerating the development of electricity infrastructure carried out by PLN. In order to support the success of this development, the Ministry of Finance issued the guidelines for providing government guarantees for the development of electricity infrastructure, in order to support the acceleration of electricity infrastructure development carried out through self-management and cooperation with IPP.

[49] Article 17 paragraph (1) MOF Regulation 103/2023
[50] Article 18 paragraphs (1) and (2) MOF Regulation 103/2023
[51] Article 24 paragraph (1) MOF Regulation 103/2023

The MOF Regulation 130/2016 specifies that government guarantees can take the following forms:[52]

a. **Loan guarantees**: These are intended to ensure the repayment of loans based on agreements made between financial institutions (creditors) and PLN to implement electricity infrastructure development projects managed by PLN through a self-management scheme.[53]

b. **Business feasibility guarantees**: These are designed to ensure PLN's ability to meet its financial obligations, which include purchasing electricity and/or non-purchase of electricity based on PPA signed by PLN and IPP. This cooperation scheme aims to accelerate the development of electricity infrastructure projects using geothermal energy and other forms of renewable energy.[54]

Government guarantees are provided by the Ministry of Finance and/or infrastructure guarantee business entities.[55] The business entity responsible for this is the IIGF. Established on December 30, 2009, the IIGF provides guarantees for infrastructure projects under the PPP scheme. The IIGF also acts as a strategic advisor to the government and serves as a transaction manager or lead arranger for these infrastructure projects.

In providing government guarantees, the Ministry of Finance periodically sets a maximum guarantee limit that serves as a benchmark for issuing government guarantees, taking into account Indonesia's financial capacity, fiscal sustainability, and fiscal risk management.[56] In cases where loan guarantees are provided by the IIGF, the maximum government guarantee limit does not apply.[57]

Both types of guarantees can only be provided for electricity infrastructure development projects that are included in the project list. For FTP I, the project list can be found in the Appendix of PR 71/2006. As for FTP II, the project list is available in the appendix of the MEMR Regulation 15/2010 and its amendment. The target for the development of new and renewable energy power plants by 2023 is set at 20,923 MW.[58] Furthermore, following the issuance of MOF Regulation 5/2025 as the implementing regulation of PR 112/2022, the fiscal support provided by the government also includes government guarantees and risk coverage, by considering the principles of: a. the state's financial capability; b. fiscal sustainability; and c. risk management in state financial administration, which will be elaborated further in Section 2.3.2.

**f. Green Bonds**

As defined in Section 2.1, green bonds and sukuks are financing instruments specifically designed to support projects contributing to environmental sustainability. By facilitating financing through these instruments, they indirectly encourage investment in renewable energy. The funds raised through issuing these instruments are allocated for financing or refinancing environmentally friendly activities, such as renewable energy projects and sustainable resource management. Green bonds are regulated under OJK Regulation 18/2023, which revoked OJK Regulation No. 60/POJK.04/2017 on the Issuance and Requirements of Green Bonds. Each issuance of green bonds must meet certain

52 Article 2 paragraph (2) MOF Regulation 130/2016
53 Article 2 paragraph (3) MOF Regulation 130/2016
54 Article 2 paragraph (4) MOF Regulation 130/2016
55 Article 1 point 7 MOF Regulation 130/2016
56 Article 4 paragraph (1) letter a MOF Regulation 130/2016 jo. Article 3 MOF Regulation 130/2016
57 Article 7 paragraph (4) MOF Regulation 130/2016
58 Table 3.2 page III-24 RUPTL

standards related to using funds, evaluation processes, fund management, and transparent reporting.[59]

The funds raised through green bonds are specifically allocated for financing or refinancing Environmental-Oriented Business Activities ("KUBL"), which may involve new, ongoing, or completed projects related to environmental sustainability.[60] Issuers must establish an internal process for evaluating and selecting eligible activities and managing environmental and social risks to ensure transparency and responsible fund allocation.[61]

The funds must be managed separately, typically through a designated bank account. In cases where green bonds are issued in the form of sukuk, a specific account in a Sharia-compliant bank is required.[62] Periodic reporting on the usage and impact of funds is mandated to keep stakeholders informed.[63] Additionally, green bond issuers must obtain an external review confirming that the funded activities provide environmental or social benefits, and that the issuance framework is credible.[64]

In practice, green bonds can be issued by banks or other issuers. For example, SMI can serve as an issuer as SMI has developed a comprehensive Green Bond Framework evaluated by the Center for International Climate and Environmental Research - Oslo ("**CICERO**") and the World Bank Group to ensure environmentally beneficial projects are funded. SMI rigorously applies Indonesia's OJK Green Bond regulations and the Association of Southeast Asian Nations ("**ASEAN**") Green Bond Standards. Eligible projects, which include renewable energy (e.g., wind, solar, hydro, and geothermal under 10 MW), are selected and managed by SMI's internal teams. They ensure each project aligns with environmental and social safeguards and meets green criteria. SMI allocates bond proceeds exclusively to eligible projects, tracks funds to ensure proper allocation, and issues annual reports detailing project impacts and funding allocations. Independent auditors verify compliance and environmental performance, which builds transparency and investor confidence.[65]

Similarly, BNI uses its Green Bond Framework to channel investments into sustainable projects, aligning with OJK regulations and international standards. Prior to its June 2022 issuance of IDR 5 trillion in Green Bonds, BNI engaged Sustainalytics for a Second-Party Opinion, ensuring the framework's alignment with global best practices. BNI allocates proceeds, managed by the Treasury and Corporate Planning divisions, to Environmental, Social, and Governance ("ESG")-qualified projects overseen by an ESG Sub-Committee. Annual reports provide transparency on fund allocation and environmental impacts, particularly in renewable energy and green transportation. As of December 2022, BNI had allocated 87.26% of the proceeds, with the Green Bond receiving strong investor interest, evidenced by a 3.1x oversubscription.[66]

The regulatory framework for green bonds and sukuks in Indonesia supports financing environmentally sustainable projects by ensuring that funds are allocated to renewable energy and sustainable resource management. Issuers must adhere to strict standards for fund usage, evaluation, management, and reporting. This includes managing the funds separately and providing periodic impact reporting. The stringent standards set by these regulations—requiring transparent fund management, periodic reporting, and external reviews—enhance investor confidence and drive capital

[59] Article 5 paragraph (1) of OJK Regulation 18/2023
[60] Article 6 of OJK Regulation 18/2023
[61] Article 10 of OJK Regulation 18/2023
[62] Article 11 of OJK Regulation 18/2023
[63] Article 12 of OJK Regulation 18/2023
[64] Article 12 of OJK Regulation 18/2023
[65] PT Sarana Multi Infrastruktur (Persero). (n.d.). PT SMI Green Bond dan Green Sukuk Framework.
[66] Bank Negara Indonesia (BNI). (2024). BNI Green Bond Report 2024.

towards sustainable projects. These practices demonstrate how green bonds can be effectively structured to meet regulatory standards while supporting environmentally beneficial activities.

Green bond frameworks ensure that funds are allocated to projects meeting ESG criteria, reinforcing the commitment to sustainability. The oversubscription of BNI's green bond issuance indicates a significant demand for such green investments, suggesting that green bonds could serve as a fiscal incentive that aligns economic and environmental priorities.

The assessment in Section 2.3.1.1 indicates that the regulations state the provision of fiscal incentives to accelerate renewable energy projects. The implementation of these incentives is detailed in various MOF regulations, including MOF Regulation 130/2020 for tax holidays, GR 78/2019 and MOF Regulation 21/2010 for tax allowances, BKPM Regulation 4/2021 for import duty exemptions, and MOF Regulation 103/2023 for the Energy Transition Platform managed by SMI and guaranteed by the IIGF. Government guarantees can support the development of new and renewable energy-based electricity infrastructure under FTP I and FTP II, as prioritized in PR 71/2006 and MEMR Regulation 15/2010, respectively. Amendments to the FTP lists are formalized through ministerial regulations. For example, MEMR Regulation No. 1 of 2012 amended MEMR Regulation 15/2010. PR 4/2016 reinforces both FTP programs, stipulating procedures for providing government guarantees to accelerate electricity infrastructure development by PLN. The latest government guarantees introduced after the issuance of PR 122/2022 through MOF 5/2025 include fiscal support provided by the government, which encompasses both government guarantees and risk coverage. Additionally, green bonds and sukuk offer structured financing for environmentally sustainable projects, although their adoption is limited due to insufficient incentives.

Overall, while the existing regulatory framework provides comprehensive fiscal incentives for renewable energy projects, there are no new incentives beyond those already established. This highlights the need for continuous evaluation and potential enhancement of current policies to further stimulate investment in Indonesia’s renewable energy sector.

### 2.3.1.2 Risk-reduction Measures and Business Facilitation Measures

The electricity sector in Indonesia is governed by specific regulations that establish the operational landscape. The state-owned electricity company, PLN, plays a central role in the power sector. IPPs can participate in the provision of electric power in Indonesia by selling the electricity they generate to PLN, which then distributes it to consumers nationwide. This centralised system makes PLN the dominant distributor of electricity, alongside other private entities that have granted working areas, thereby making regulations and policies related to PLN highly relevant.

For investors looking to enter the renewable energy sector, the pathway involves navigating through the involvement of PLN as Indonesia’s state-owned electricity company having the dominant and priority position in terms of electricity supply in Indonesia. PLN plays a crucial role in the initial stages, including direct appointment and selection processes designed to expedite renewable energy projects. This involvement ensures that projects align with national energy goals and regulatory requirements. Consequently, when discussing risk-reduction measures and business facilitation measures for renewable energy projects, it is beneficial to understand the regulatory framework that governs PLN's operations. This understanding is important for comprehending how incentives for renewable energy projects are structured and implemented in Indonesia.

The following are the existing key measures that can be leveraged to support and incentivise the development of renewable energy projects.

## A. Direct Appointment and Direct Selection Mechanism for Power Purchase

As part of the implementation of sustainable electricity provision, PLN is obligated to purchase electricity from power plants that utilise renewable energy sources and the regulation provides guidelines for PLN in purchasing electricity generated from renewable energy sources.[67] The purchase of electricity by PLN is carried out through mechanisms regulated by several rules from different levels of regulations.

Several provisions regulating the procurement mechanism for purchasing electricity are governed by a range of regulations, from government regulations to internal regulations of PLN, as PLN is the primary electricity purchaser. One of the facilities permitted in the procurement process of PLN is the direct appointment or direct selection mechanism. The possibility of using these schemes is theoretically considered positive, as it can expedite the appointment of an IPP for selling the electricity it generates to PLN compared to an open tender, which may prolong the procurement process.

The following are the general provisions related to direct appointment and direct selection of electricity purchases:

GR 14/2012 and MEMR Regulation 50/2017

The regulation stipulates that the purchase of electricity from power plants utilising renewable energy can be conducted through a direct selection mechanism or direct appointment (with certain qualifications).[68] Direct appointment mechanism can be conducted in the event of:

- the local electricity system is in a state of crisis or emergency in terms of electricity provision;
- the purchase of excess power, including the purchase of electricity through cooperation with holders of electricity supply business territories;
- the addition of generation capacity at power generation plants that are already operational at the same location; or
- **the purchase of electricity from power plants using renewable energy in the event that there is only one (1) prospective electricity supplier**.

PR 112/2022

This regulation further stipulates that the purchase of electricity generated from renewable energy sources can be conducted through direct appointment and direct selection.[69] Direct appointment can be carried out in the following cases:

- Hydroelectric Power Plants (“PLTA”) that utilise waterpower from reservoirs/dams or irrigation channels, whose construction is of a multi-purpose nature and is state property managed by the ministry responsible for water resources;[70]
- Geothermal Power Plants (“PLTP”) from holders of Geothermal Working Area Licences (“IPB”),[71] holders of geothermal resource exploitation rights, joint operation contract holders for geothermal resource exploitation, and holders of geothermal resource exploitation permits;

[67] Article 2 paragraph (1) of MEMR Regulation 50/2017
[68] Article 25 of GR 14/2012 and Article 4 of MEMR Regulation 50/2017.
[69] Article 14 paragraph (1) of PR 112/2022.
[70] Direct appointment for this hydropower plant serves as an assignment for the purchase of electricity. Article 14 paragraph (3) of PR 112/2022.
[71] Direct appointment for this power plant serves as an assignment for the purchase of electricity. Article 14 paragraph (3) of PR 112/2022.

- Capacity expansion (expansion) of power plants from PLTP, PLTA, Photovoltaic Solar Power Plants ("PLTS"), Wind Power Plants ("PLTB"), Biomass Power Plants ("PLTBm"), or Biogas Power Plants ("PLTBg"); and
- Excess Electric Power from PLTP, PLTA, PLTBm, or PLTBg, for all power plant capacities.

Direct selection for the purchase of electricity can be conducted for the full capacity of the following power plants:

- Hydroelectric Power Plants ("PLTA");
- Photovoltaic Solar Power Plants ("PLTS") or Wind Power Plants ("PLTB"), whether or not equipped with battery facilities or other electrical energy storage facilities, whether the land is provided by the government or uses their own land;
- Biomass Power Plants ("PLTBm") or Biogas Power Plants ("PLTBg"); and
- Hydroelectric Power Plants ("PLTA") that function as peakers, Biofuel Power Plants ("PLT-BBN"), or Marine Energy Power Plants.

PLN's procurement process for purchasing electricity through direct appointment must be completed within a maximum period of 90 calendar days and for direct selection must be completed within a maximum period of 180 calendar days. However, there are challenges to the overall procurement process, which will be discussed further in the regulatory gap analysis section.

PLN's BOD Regulation 18/2023 and PLN Internal Regulation No. 12/2023

In line with the regulation above, PLN's BOD Regulation of PLN 18/2023 and PLN Internal Regulation No. 12/2023 emphasise that the procurement of goods and services must follow an open principle, allowing all qualified suppliers to participate. This can be done by selecting a single supplier or through a competitive process known as a beauty contest, which includes clarification and negotiation.

Based on PLN Internal Regulation No. 12/2023 the conditions for direct appointment include the need for specialised technology, the presence of only one capable supplier, the need to resolve stalled projects, emergency situations, procurement for corporate social responsibility or disaster relief, state institutions, repeated tender failures, repeat orders, technology development projects, national capacity building, professional considerations by the board of directors, long-term power plant maintenance, continuing procurement that cannot be separated, suppliers that are PLN subsidiaries or affiliates with specific strategic purposes, state-owned enterprises or their affiliates, or suppliers with a minimum shareholding of 90%.

While PLN recognises the possibility of direct appointment, it is crucial to ensure that these actions align with the principles set out in PLN's BOD Regulation 18/2023, PR 112/2022, and PLN internal regulations do not conflict with the provisions for direct appointment in PR 112/2022 and MEMR Regulation 50/2017. However, there are challenges in implementing these provisions, which will be discussed further in the disincentives section.

Specificity for PLTP and PLTSa

Particularly with regard to PLTP in one geothermal working area, there is only one working area manager, namely the holder of the geothermal business license that won the geothermal working area. This license verifies that the area contains proven reserves as determined by exploration activities. PLN may only purchase electricity from IPPs that hold a geothermal working area license. This provides certainty to developers interested in developing a PLTP considering that the developer who has been awarded the geothermal working area is the sole entity licensed to sell the electricity generated from that area. In addition, for PLTSa, PLN is obliged to sign the PPA within a maximum period of 35 working days after the letter of confirmation of the purchase of electricity from MEMR is

received.[72]

The regulatory framework for renewable energy procurement in Indonesia mandates that PLN purchase electricity from renewable sources. This process is governed by various regulations, including GR 14/2012, MEMR Regulation 50/2017, PR 112/2022, and PLN's own internal regulations. These regulations outline mechanisms such as direct appointment and direct selection to facilitate the procurement process.

However, there are still gaps that remain in aligning PLN's internal regulations with national regulations, leading to inconsistencies. While some provisions are implemented, regulatory barriers and practical challenges remain, such as ensuring compliance with open procurement principles and managing the complexities of different regulatory requirements. Overall, the framework provides a structured approach, but addressing these gaps and barriers is important for effective implementation.

## B. Electricity Generation Business Licensing Requirements

In relation to licensing in the electricity sector, the relevant KBLI for electricity supply activities, both RE and conventional, is consolidated under a single KBLI number, namely KBLI No. 35111 for electricity generation activities, with the description: *"includes the business of producing electricity through the generation of electricity using various types of energy sources. Fossil energy sources such as coal, gas, oil, and diesel. Renewable energy sources such as geothermal, wind, bioenergy, solar radiation, water flow and waterfalls, ocean movement and temperature differences. Hybrid energy sources that combine fossil energy with renewable energy, and energy from energy storage technology."*

Based on GR 5/2021, to obtain a business license for electricity generation, business actors must meet two main requirements, namely:

- A power purchase agreement (PPA and its amendments) between the applicant and the prospective electricity buyer in accordance with the provisions of the electricity selling price or having obtained approval of the electricity selling price from the Minister or Governor according to their authority; and
- A feasibility study for the electricity supply business, with the document (in Indonesian) containing: Financial feasibility study, operational feasibility study, network interconnection study, installation location; single line diagram, type and capacity of the business to be conducted, construction schedule, and operation schedule prepared by a certified business entity.

At a glance, GR No. 5/2021 essentially does not provide any specific provisions for the business activities of electricity generation using renewable energy, thus it does not impose more specific requirements compared to coal-fired power plants. Although only two basic requirements need to be met to obtain a business license, namely the PPA and feasibility study, each requirement takes a considerable amount of time and incurs significant costs. Additionally, the legislation does not provide a more detailed explanation regarding the technical and substantive aspects of each point in the feasibility study that must be prepared.

However, in accordance with Article 14 *jo.* Article 18 of PR 4/2016, the implementation of the utilisation of renewable energy in electricity infrastructure development (*Pembangunan Infrastruktur Ketenagalistrikan* or "**PIK"**) is prioritised to achieve the target proportion of new and renewable energy. As part of the support from the government, one of the measures taken is to provide ease in the licensing processes. The permits that can be processed include, among others, the permit for electricity supply business, location determination, environmental permit, forest area utilisation permit,

[72] Article 13 of PR 35/2018.

and/or building permit. This step is designed to facilitate and accelerate the implementation of new and renewable energy projects while considering the feasibility and economic viability of these projects.

The implementation of PR 4/2016 was carried out through the issuance of MEMR Regulation 33/2016. MEMR Regulation 33/2016 provides further regulations regarding the procedures for land acquisition for PIK in forest areas controlled by the community. MEMR Regulation 33/2016 addresses the technical resolution, which involves the process of granting a sum of money to the community that controls the land, buildings, and/or plants in the forest area. The costs for this are borne by the party conducting the land acquisition, in this case, PLN, its subsidiaries, or companies involved in PIK. Furthermore, PR 112/2022 provides support that includes facilitating permits in various sectors through the authority of the relevant stakeholders, including ministries responsible for agrarian/land affairs and spatial planning, to ease the permitting process in these areas to reduce investment costs for the utilisation of renewable energy. Ministry of Environment and Forestry provides permit facilitation within forest areas as well as cost reductions. The Ministry of Public Works and Ministry Housing and Residential Area also provides permit facilitation and cost reductions for the development of renewable energy. Additionally, local governments also provide support through permitting facilitation and guarantees of land availability in accordance with its designated use for the development of renewable energy power plants.

While GR 5/2021 does not outline the specific requirements for obtaining a business license for renewable energy, there is a mandate to support the licensing process prioritisation of renewable energy under PR 4/2016 and PR 112/2022. These regulations have implemented measures to ease the licensing process, aimed at promoting the development of renewable energy infrastructure through streamlined permitting processes and support across different sectors.

The licensing process for electricity generation in Indonesia, as outlined in GR 5/2021, is consolidated under KBLI No. 35111 and applies to both renewable energy RE and conventional energy sources. Business actors must meet two main requirements: a power purchase agreement and a feasibility study. However, GR 5/2021 lacks specific provisions for renewable energy, creating potential gaps in addressing the unique aspects of RE projects. Although PR 4/2016 and PR 112/2022 mandate prioritising renewable energy and facilitating the licensing process, the absence of detailed technical and substantive guidelines for the feasibility study in GR 5/2021 can lead to delays and increased costs.

### C. Exemption to Local Content Requirement and Relaxation

With the issuance of MEMR Regulation 11/2024, several provisions have been introduced to help develop power plant projects in Indonesia. One key provision is the local content requirement, which aims to reduce risks and facilitate business. According to MEMR Regulation 11/2024, power plant projects can be exempt from local content requirements if they are funded by offshore loans or grants from multilateral or bilateral creditors.

Although the minimum local content requirements have been lowered compared to the previous MEMR regulation, each renewable energy project has unique characteristics that must be fulfilled. Therefore, applying a general local content requirement can still be a disincentive, as it does not consider the specific location and features of each project. This issue will be discussed further in the disincentive section.

Below is the detail under MEMR Regulation 11/2024 that provides an exemption from local content requirements as an incentive for renewable energy projects.

To qualify for the exemption, two key conditions must be met:[75]

1. *Offshore Loan or Grant Agreement*

   The agreement must explicitly waive the local content threshold outlined in the regulation and alternatively, the agreement may stipulate a specific local content threshold that the project company must adhere to.

2. *Financing*

   At least 50% of the total project financing must be sourced from multilateral or bilateral creditors, such as development banks or financial institutions. This can be achieved through offshore loans or grants to the government, on-lending of offshore loans or grants to the government, or direct offshore loans or grants to the project company.

The exemption permits internationally funded projects to move forward, while simultaneously contributing to Indonesia's infrastructure development objectives. Additionally, it fosters participation from both local and foreign investors in Indonesia's power sector. Furthermore, the incentives provided under the MEMR Regulation 11/2024 include the relaxation of the local content requirement specifically for solar power plants that is valid until 30 June 2025. To qualify for this relaxation, solar power projects must meet the following criteria:[76]

1. The PPAs must be signed by 31 December 2024.
2. The project must commence commercial operations by 30 June 2026, as outlined in the Electricity Supply Business Plan (*Rencana Usaha Penyediaan Tenaga Listrik* or "RUPTL").
3. The solar modules must be either assembled domestically or imported by a foreign solar module company committed to investing in domestic solar module production and complying with the local content requirements. The production of solar modules must be completed by 31 December 2025.

However, specifically for solar power plants, PPAs that have not been signed by December 31, 2024, will not qualify for this exemption unless the government introduces new regulations to extend the deadline.

Furthermore, there are incentives in the form of price preferences, including adjustments or normalisation of bid prices during the procurement process for goods and/or services in power infrastructure development projects. These incentives are further stipulated by the Director General of New, Renewable Energy, and Energy Conservation ("EBTKE") and the Director General of Electricity infrastructure.[77]

Thus, under MEMR Regulation 11/2024, a wide array of incentives is offered, contingent upon the fulfilment of the specific qualifications outlined within the regulation. These incentives are designed to encourage compliance and foster the successful implementation of projects by ensuring that all stipulated criteria are met.

While these incentives are implemented, there may be potential gaps due to the unique characteristics of each project and the need to comply with specific criteria. Furthermore, this exemption could be extended to specific areas where meeting the local content threshold may be challenging. The success

[75] Article 17 of MEMR Regulation 11/2024.
[76] Article 19 of MEMR Regulation 11/2024.
[77] Article 7 of MEMR Regulation 11/2024.

of these incentives, particularly for solar power plants, depends on the commitment of foreign investors and adherence to established timelines.

## D. Carbon Tax/Credit

Under MEMR Regulation 16/2022, Indonesia's renewable energy sector can benefit from incentives through carbon credits. The regulation outlines the implementation of carbon trading in the power plant sub-sector, setting emissions caps and baselines for the power plant business actors. Specifically, Article 16 paragraph (3) of MEMR Regulation 16/2022 regulates that renewable energy projects can earn carbon credits by reducing greenhouse gas emissions below these caps, which can then be traded in the carbon market.

Furthermore, Indonesia has also issued a regulation on carbon tax under Law 7/2021. The carbon tax is imposed on carbon emissions that have a negative impact on the environment. In this case, the mechanism used is "cap and tax", where an emissions cap is established, and emissions exceeding this cap are taxed. Indonesia is implementing emission limits for power plants in three progressive phases from 2023 to 2030. During the first phase, spanning from 2023 to 2024, these emission limits will only apply to CFPPs that are connected to the PLN electricity grid. According to the MEMR Regulation 16/2022, the second phase shall start in 2025, and the emission limits should be given to non-grid power plants on 31 December 2024. However, the regulatory update regarding this matter is not publicly available at the moment.

Below is the emission cap for each category of coal-fired power plants according to MEMR Decree 14/2023:

**Table 4. Emission Caps for Coal-Fired Power Plant Categories according to MEMR Decree 14/2023**

| Types of CFPPs | Installed Capacity | Emission Cap for 2024 (tonCO2e/MWh) |
|---|---|---|
| Non-mine mouth and mine mouth CFPPs | 25 MW ≤ x < 100 MW | 1,297 |
| Non-mine mouth CFPPs | 100 MW ≤ x ≤ 400 MW | 1,011 |
| Non-mine mouth CFPPs | x > 400 MW | 0,911 |
| Mine mouth CFPPs | x ≥ 100 MW | 1,089 |

In this case, the CFPPs that exceed the cap can purchase carbon credits in the carbon market to reduce their carbon tax obligations. However, the CFPPs can only purchase carbon credits from the energy sector, which includes the renewable energy, transportation sub-sector, and other activities in the energy sector. Consequently, the renewable energy projects that sell their carbon credits can benefit from this mechanism.

The renewable energy power plants can generate carbon credits or the Greenhouse Gas Emission Reduction Certificate (*Sertifikat Pengurangan Emisi Gas Rumah Kaca* or "**SPE GRK**"), as renewable energy is acknowledged as one of the climate change mitigation actions. Based on the MOE/MF Regulation 21/2022, in order to obtain SPE GRK from the renewable energy power plants, the business actor shall go through the process below:

a. Draft a Document of Draft Action Plan on Climate Change Mitigation (*Dokumen Rancangan Aksi Mitigasi Perubahan Iklim* or "**DRAM**");

b. DRAM validation and recording of the DRAM in the National Registry System for Climate Change Control (*Sistem Registri Nasional Pengendalian Perubahan Iklim* or "**SRN PPI**");
c. Drafting of report on the results of the implementation of climate change mitigation action;
d. Verification of the report on the results of the implementation of climate change mitigation action and recording of the report in the SRN PPI;
e. Measurement, reporting, and verification process, to ensure that data and/or information on the climate change mitigation action has been implemented in accordance with procedures and/or standards that have been determined and guaranteed its correctness; and
f. Issuance of SPE GRK.

Other than renewable energy power plants, the initiatives such as early retirement of CFPPs and coal phase-out may also generate carbon credits if they are acknowledged as climate change mitigation actions that can reduce GHG emissions under the MOE/MF Regulation 21/2022. By retiring the CFPPs earlier than planned or by transitioning to cleaner energy sources, significant carbon emissions can be reduced. These emission reductions can be verified and recognised as carbon credits, which can then be sold to companies or countries that need them to meet their emission reduction targets.

However, the process of obtaining SPE GRK from early retirement and coal phase-out must also follow the procedures outlined in MOE/MF Regulation 21/2022 mentioned above. The methodology used to measure GHG emission reductions from early retirement and coal phase-out must meet one of the following criteria: (1) established by the Director General of Climate Change; (2) established by the National Standardisation Agency; or (3) approved by the UNFCCC. Unfortunately, there is currently no methodology from the Director General, the National Standardisation Agency, or the UNFCCC that can measure emission reductions from early retirement and coal phase-out.

Renewable energy projects can earn carbon credits by reducing greenhouse gas emissions below set caps, which can be traded in the carbon market. The carbon tax mechanism imposes taxes on emissions exceeding established caps, with emission limits for power plants being phased in from 2023 to 2030. Specific emission caps are set for different categories of CFPPs, and these plants can purchase carbon credits to offset excess emissions. Renewable energy projects can generate SPE GRK by following a detailed process outlined in MOE/MF Regulation 21/2022. Initiatives for early retirement of CFPPs and coal phase-out can also generate carbon credits if recognised as climate change mitigation actions, though current methodologies for measuring these reductions are lacking. While these incentives are implemented, there are gaps and challenges related to the complexity of the carbon trading process, the need for clear methodologies, and the enforcement of emission caps. The success of these incentives depends on effective implementation, availability of carbon credits, and stakeholder commitment to adhere to the stipulated processes and timelines.

Indonesia recently initiated international carbon trading on 20 January 2025, which may strengthen the Indonesian carbon market by generating additional demand from foreign buyers. Several power plants are participating in this launch, including a micro-hydro power plant (*Pembangkit Listrik Tenaga Mikrohidro*) and a combined cycle gas turbine power plant (*Pembangkit Listrik Tenaga Gas dan Uap*). It is important to note that carbon credits from a power plant must be authorised by the Minister of Environment ("**MOE**") if they can be sold and transferred internationally.

In order to obtain the authorisation from the MOE, the carbon project proponent shall submit an application to the MOE enclosing the SPE GRK that has been issued by the MOE. Based on the application, the MOE will conduct a review within a maximum period of 14 (fourteen) business days. In the event that the results of the review are deemed not satisfactory by the MOE, the MOE will return the application to be completed within a maximum of 14 (fourteen) business days. The authorisation

will be issued once the MOE deems the review to be appropriate.

Foreign entities may purchase the carbon credits by registering themselves as a user in the IDXCarbon or through an Indonesian broker. A foreign country or a foreign entity may also claim or retire carbon credits purchased from Indonesia, resulting in a transfer of carbon credits from Indonesia to the foreign country. To avoid double counting between Indonesia's ENDC target and the buyer country's target, a corresponding adjustment needs to be made by the carbon project proponent in the SRN PPI and the international registry system under UNFCCC.

To enhance the effectiveness of carbon trading, the government could demonstrate a stronger commitment to advancing renewable energy by removing disincentives as defined in Section 2.3.3. Apart from focusing on developing specific regulations and implementation in relation to carbon trading and carbon tax, the government shall harmonise the policies in order for the renewable energy industry to advance and generate carbon credits.

In addition, to increase incentives and encourage renewable energy power plant operators to generate carbon credits, it is necessary to regulate the allocation of carbon credits between IPPs and PLN to achieve legal certainty. So far, the IPPs have no legal basis to obtain carbon credits for their RE projects; securing such credits depends solely on negotiations with PLN under the PPA. Moreover, PLN had previously stipulated that all carbon credits generated by IPPs were fully allocated to PLN according to the Board of Directors of PLN Regulation No. 0062.P/DIR/2020 of 2020 on the Purchase of Electric Power from New and Renewable Energy Generators ("**PLN Director Regulation 62/2020**"). The uncertainty is caused by the revocation of PLN Director Regulation 62/2020, given there is no new regulation established to address the allocation of carbon credits.

### E. Build, Own, and Operate ("BOO") Scheme

The recognised scheme in Indonesia for the sale and purchase of electricity under MEMR Regulation 50/2017 was the Build, Own, Operate, and Transfer ("BOOT") model. This rule limits the private sector's ability to gain additional capital and technical expertise during the project, raising concerns about the project's financial viability, particularly regarding funding. Banks, as lenders, worry that IPPs might not repay the loan because the project assets are handed over to PLN.

Subsequently, MEMR Regulation 50/2017 was amended in 2020, adopting the BOO model for electricity trading[78]. This amendment is expected to provide relief and address concerns regarding the bankability of power plant projects, as it allows IPPs to provide collateral to banks when obtaining loans. Moreover, the amendment also allows renewable energy projects that have entered a PPA with PLN under the BOOT scheme to be converted into the BOO.[79] The BOO scheme supports the development of new and renewable energy in Indonesia by potentially attracting investors with permanent ownership. However, the main disadvantage of the BOO model is the uncertainty about whether the IPP will increase tariffs and gain excess returns after the PPA ends. If PLN does not have alternative sources available, PLN has a risk of being forced to pay a higher post-PPA tariff. Conversely, if PLN can source energy competitively from elsewhere, the risk of being locked into potentially higher post-PPA tariffs is mitigated, ensuring that the market remains balanced and competitive.

[78] Article 26 A MEMR Regulation 50/2017
[79] Article 27B MEMR Regulation 50/2017.

## F. Positive Investment List

Foreign investment was previously regulated in Presidential Regulation No. 76 of 2007 on the Criteria and Establishment of Closed Business Lines and Open Business with Conditions for Capital Investments ("**PR 76/2007**") and Presidential Regulation No. 44 of 2016 on Lists of Business Fields that are Closed and Business Fields that are Open with Conditions of Investment ("**PR 44/2016**"). Under PR 44/2016, the maximum foreign ownership in power plants was regulated (this includes small-scale power plants, power plants with a capacity exceeding 10 MW, geothermal power plants with a capacity of less than 10 MW, and so on). This regulation sets the maximum limit for foreign ownership to ensure control and participation by domestic parties in the power generation sector. However, the provisions on foreign ownership limitations do not apply to power plants with a capacity of less than 1 MW, which are required to be 100% owned by domestic capital.

PR 76/2007 and PR 44/2016 were subsequently replaced by PR 10/2021. Previously commonly referred to as the negative investment list (*Daftar Negatif Investasi*), which contained a list of business sectors in which foreign investment is either prohibited, permitted, or conditionally permitted, with the introduction of PR 10/2021 it has now become the "positive investment list". This change means that business sectors are now 100% open to foreign investment unless subject to specific requirements. This new approach is expected to increase investment in Indonesia. As in the power generation sector, everything is now open to foreign investment, including new and renewable energy power plants. The exception to this is the provision of electricity for power plants with a capacity of less than 1 MW, which according to PR 10/2021 is allocated for cooperatives and Micro, Small, and Medium Enterprises ("UMKM"). PR 10/2021 can be considered one of the legal instruments to support the development of new and renewable energy in Indonesia as it creates greater opportunities for foreign investment in Indonesia.

## G. National Strategic Projects ("PSN")

PSN refer to projects and/or programs implemented by the Government, Regional Governments, and/or business entities that possess strategic significance for enhancing growth and equitable development, thereby improving community welfare and regional development.[80] PSN may be funded by government budgets and/or non-governmental sources.[81] For PSN funded from non-governmental sources, coordination is managed by the Ministry of National Development Planning/Head of the National Development Planning Agency.[82]

The initial list of PSN was established by a Presidential Regulation. Ministers, institutional heads, regional leaders, and business entities may propose projects for inclusion as PSN by submitting them to the Minister in compliance with relevant legal and regulatory requirements.[83] Currently, PR 3/2016 has established a list of national strategic projects.[84]

If there are any amendments to this list, based on the PR 3/2016, such changes can be made following a review conducted by the Committee for the Acceleration of Priority Infrastructure Provision.[85] For PSN sourced from non-governmental funding, any proposed amendments are submitted by the Ministry of National Development Planning/Head of the National Development Planning Agency to the

[80] Article 1 paragraph (1) PR 3/2016.
[81] Article 2 paragraph (1) PR 3/2016.
[82] Article 2 paragraph (4) PR 3/2016.
[83] Article 3 paragraphs (1) and (2) GR 42/2021.
[84] Annex of PR 3/2016.
[85] Article 2 paragraph (3) PR 3/2016.

Committee for the Acceleration of Priority Infrastructure Provision.[86] The Coordinating Ministry for Economic Affairs ("CMEA") , acting as the Chair of this Committee, then determines the amendments to the National Strategic Projects list upon receiving the President's approval.[87]

As previously explained, any amendments to the list of PSN are formalised by the CMEA through the issuance of a ministerial regulation. For instance, the CMEA issued Ministerial Regulation No. 9 of 2022, which amends Ministerial Regulation No. 7 of 2021 concerning Changes to the List of National Strategic Projects.

If a Renewable Energy project is designated as a PSN, it becomes eligible for various facilitation benefits across several stages, including planning, preparation, transaction, construction, operation, and maintenance.[88] These benefits encompass both licensing and non-licensing aspects necessary for the execution of PSN, in accordance with relevant authority.[89]

One significant benefit is the exemption or application of a 0% rate for the Land and Building Acquisition Duty on PSN.[90] Furthermore, the business entity responsible for the PSN must apply for a principal license for the project's execution through the Head of the Investment Coordinating Board through the Central One-Stop Integrated Service.[91]

Upon obtaining the principal license, the business entity is required to pursue the necessary licensing and non-licensing approvals to commence the project. These may include location permits, environmental permits, forest area utilisation permits, building permits, and/or both fiscal and non-fiscal facilities, all coordinated through the Central One-Stop Integrated Service.[92]

An additional facilitation benefit for PSN involves land acquisition. The Ministry responsible for land affairs identifies the land required to expedite the implementation of these projects.[93] Concurrently, the Ministry of Finance allocates funds for land acquisition based on the proposed list of National Strategic Projects submitted by the Minister.[94] Moreover, support provided to business entities involved in PSN may include prioritisation in the provision of land and/or the use of land owned by the central or regional governments, in accordance with relevant laws and regulations.[95]

In terms of goods and services procurement, ministers, heads of institutions, governors, and regents/mayors are tasked with accelerating the procurement process. This acceleration is achieved through methods such as direct procurement and direct appointment.[96]

[86] Article 2 paragraph (5) PR 3/2016.
[87] Article 2 paragraph (6) PR 3/2016.
[88] Article 2 paragraphs (2) and (3) GR 42/2021.
[89] Article 3 paragraph (1) PR 3/2016.
[90] Article 3 paragraph (3) PR 3/2016.
[91] Article 6 paragraph (1) PR 3/2016.
[92] Article 6 paragraph (4) PR 3/2016.
[93] Article 9 paragraph (1) GR 42/2021.
[94] Article 9 paragraph (3) GR 42/2021.
[95] Article 22 paragraphs (1) and (2) PR 3/2016.
[96] Article 39 paragraphs (1) and (2) GR 42/2021.

### 2.3.2. Existing Incentives for Coal-fired Power Plant Early Retirement and Phase Down

The current incentive instruments for early retirement of CFPPs in Indonesia are still limited. The primary regulation addressing this issue is Presidential Regulation PR 112/2022. However, the scope of incentives under PR 112/2022 is relatively narrow, focusing mainly on the procedural aspects and initial steps for early retirement without providing comprehensive risk-reduction measures or extensive business facilitation incentives. Given the limited scope of PR 112/2022, there is a significant gap in the regulatory framework for supporting the early retirement of CFPPs. This gap highlights the need for more robust and detailed incentive mechanisms to address the financial and operational risks associated with early retirement.

#### 2.3.2.1 Fiscal Incentives for Coal-fired Power Plan Early Retirement

PR 112/2022 is currently the legal instrument aimed at developing renewable energy in Indonesia as targeted in GR 79/2014.[97] To put it briefly, PR 112/2022 regulates the steps taken by the GoI to increase renewable energy consist of banning the development of new coal power plants, reducing the number of coal power plants, setting a ceiling price for renewable energy tariffs based on the type of energy sources and locations, stipulating the procurement process of renewable energy projects through direct appointment and direct selection, and provide incentives for geothermal energy power plant.

In PR 112/2022, the MEMR plays a significant role in ensuring the implementation of PR 112/2022, as it is responsible for issuing and/or establishing several guiding instruments. Such responsibilities include establishing PLN's electricity development plan ("**RUPTL**"),[98] to develop a roadmap which serves as a practical guide outlining strategies for accelerating the end of the operational period of CFPP, which is outlined in sectoral planning documents,[99] and determine which of the CFPP operational period will be accelerated for termination.[100] As of now, neither the RUPTL nor the roadmap, is still yet to be published by the MEMR.[101] This delay raises uncertainty in implementation, as the implementing regulations/sectoral documents are not yet available to guide early termination implementation by both PLN and CFPPs. As the writing of this report, there remain concerns regarding the form of the roadmap or binding regulations that provide a strong legal foundation for the retirement plan's implementation. Without clear and strong legal basis, the legitimacy of its execution will be questioned.

PR 112/2022 stipulates that the implementation of early retirement for PLN-owned CFPPs and IPP CFPPs shall be determined by the MEMR, with prior written approval from MOF and MSOE. However, to proceed with the early retirement of CFPPs, the MEMR must consider the balance between electricity supply and demand, and may need to ensure that RE generation can provide the necessary replacement generating capacity to satisfy electricity demand.[102] Further, PR 112/2022 also stipulates a ban on the development of new CFPPs, except for those integrated with industries built to enhance the value addition of natural resources or those listed as national strategic projects. This exception also applied to CFPPs already included in the RUPTL, those committed to lowering greenhouse gases by at least 35% within 10 years of operation, and those that will not operate beyond the year 2050.[103]

When CFPPs are retired earlier than the agreed contract terms, they can be replaced with renewable

[97] Article 9 letter (f) point 1 GR 79/2014
[98] Article 2 paragraph (2) PR 112/2022
[99] Article 3 paragraph (1) PR 112/2022
[100] Article 3 paragraph (8) PR 112/2022, *the designation of these coal-fired power plants must be included in the RUPTL*.
[101] Article 3 paragraph (3) PR 112/2022
[102] Article 3 paragraphs (8) PR 112/2022
[103] Article 3 paragraph (4) PR 112/2022

energy plants, balancing supply-demand and system conditions. However, PR 112/2022 does not provide further details on the transition mechanism from coal-fired power plants to renewable energy plants. Specifically, it lacks guidelines on the procurement process if these plants are to be converted to renewable energy facilities.

During this process, it is important for PLN to consider economic factors, including capacity, emissions, and technological support. The government may provide fiscal support, such as blended finance from the state budget and other legal sources, to accelerate the energy transition which is further regulated in the regulation of the Ministry of Finance and non-fiscal support, provided by the central government and/or local governments in accordance with the provisions of the legislation.[104]

The Government's fiscal support is regulated under MOF Regulation 103/2023. Based on MOF Regulation 103/2023, fiscal support is provided through the Energy Transition Platform, which is funded by the State Budget ("**APBN**") and/or other legitimate sources as stipulated by regulations. The types of facilities provided by the Energy Transition Platform can include: (a) loan facilities or other forms of financing; and/or (b) facilities through a PPP scheme. The MOF also sets the criteria for CFPPs that are eligible for fiscal support. For instance, CFPP projects that are early terminated must meet specific criteria, such as being owned by PLN, subsidiaries of PLN, or private enterprises, and must align with the roadmap prepared by the MEMR and other policies set forth by the MEMR.[105]

To operationalise this framework, the management of the Energy Transition Platform is entrusted to SMI, whose role is guided by principles of accountability as detailed in section 2.3.1.1. To support and facilitate the tasks of SMI, the MOF must establish a steering committee consisting of senior officials within the MOF who perform duties in the areas of fiscal management, financing management, and other relevant sectors. The steering committee has the authority to provide direction, input, considerations, and approvals required by SMI as the Platform Manager. Additionally, it is tasked with evaluating the management of the Energy Transition Platform by SMI.

The stipulations under PR 112/2022 and MOF Regulation 103/2023 serve to provide incentives for the early termination of CFPPs and the role of SMI. However, the provision of the Energy Transition Platform facilities requires the support of a steering committee to review and discuss the assessment results and recommendations from SMI. This review is crucial as it provides recommendations on projects that will receive facilities to the Head of the Fiscal Policy Agency, who will forward them to the Minister of Finance for a decision. However, based on publicly available documents, there is not yet a Minister of Finance decree regarding the structure and operation of the steering committee (including the technical team and secretariat). Therefore, there is still a need for implementing regulations (which can be in the form of a Ministerial Decree) to govern the provisions detailing the process of how the fiscal incentives will be administered and the establishment of a steering committee.

Furthermore, in practice the implementation of CFPPs projects often depends on contractual agreements with private sector entities. Hence, in the event of early CFPP termination, it is beneficial to address matters relating to the compensation that might have to be provided as outlined in the relevant PPA.

Following the issuance of MOF Regulation 5/2025, the fiscal support provided by the government also includes: a. **government guarantees**; and b. **risk coverage**. The fiscal support provided by the government must consider the principles of a. the state's financial capability; b. fiscal sustainability; and c. risk management in state financial administration.[106]

The implementation of government guarantees is carried out by IIGF based on an assignment by the

104 Article 22 paragraphs (1), (2), and (3) PR 112/2022
105 Article 4 paragraph (1) letter a and Article 5 of PR 112/2022
[106] Article 2 paragraph (2) *jo.* Article 3 MOF Regulation 5/2025

Minister of Finance. However, in cases where IIGF's guarantee capacity is insufficient and cannot be increased, government guarantees can be jointly issued by the Minister of Finance and IIGF.[107]

The government guarantees include:[108]

a. Government Guarantees for the risk of default by PT PLN (Persero) to guarantee recipient based on PPA that utilises Renewable Energy; and
b. Government Guarantees for the risk of default:
    1) SOEs to financiers or bond/sukuk holders; or
    2) Platform Managers to energy transition fund providers or bond/sukuk holders in the context of energy transition funding.

Risk coverage encompasses the provision of cost reimbursement offered by the MOF to address specific risks associated with the implementation of exploration support or exploration financing assigned to PT SMI for the development of geothermal projects. The reimbursable risks include exploration risks, political risks, and any excess compensation costs incurred by PT SMI in delivering such exploration support or financing to geothermal projects. Furthermore, the MOF may also extend guarantees to facilitate the recovery of allocated funding.[110] The MOF is responsible for the implementation of risk coverage and MOF can assign IIGF to provide guarantees of the risk coverages.[111]

Furthermore, in addition to the points mentioned above, as is well-known, early termination will inevitably lead to financial implications for both IPPs and their financiers. These financial implications mainly concern changes, particularly in the commercial terms and the IPP's loan agreements with the financiers. However, IPPs might still be interested in pursuing early termination if the existing commercial terms and loan agreements remain unchanged, meaning they stay the same as they were before the termination. The only change would be the duration terms of the PPA.

#### 2.3.2.2 Risk-reduction Measures and Business Facilitation Measures for Coal-fired Power Plant Phase Down

The existing incentive instruments for risk-reduction measures and business facilitation associated with the early retirement of CFPPs in Indonesia remain markedly limited. This section focuses on the utilisation of biomass fuel as an additive in CFPPs, which represents a complementary strategy for reducing emissions and facilitating the energy transition.

To expedite and support business entities in this energy transition, the GoI encourages the provision of biomass and its utilisation as fuel in CFPPs. In this regard, the GoI has issued the RUKN as a blueprint to realise the gradual phase-out of CFPPs, alongside the issuance of MEMR Regulation 12/2023 as the implementing regulation. The government's plan is to implement biomass cofiring in CFPPs owned by PLN progressively, provided that it does not result in an increase in the average basic cost of electricity supply. Conversely, for CFPPs owned by IPPs, participation in this initiative is voluntary. The RUKN further delineates that the proportion of cofiring may vary according to the type of boiler utilised in the CFPP.

An incentive manifested in the form of legal certainty, as stipulated in MEMR Regulation 12/2023, ensures that in the event of modifications to the electricity supply business plan, the implementation of biomass cofiring will continue to reference the biomass utilisation targets established within MEMR Regulation 12/2023. This provision affords the MEMR greater flexibility to adjust the integration of cofiring in

[107] Article 4 MOF Regulation 5/2025
[108] Article 2 paragraph (2) MOF Regulation 5/2025
[110] Article 2 paragraph (3) MOF Regulation 5/2025
[111] Article 5 MOF Regulation 5/2025.

accordance with stakeholder requirements.

The utilisation of biomass in steam power plants is executed through biomass cofiring by designated biomass cofiring operators. These operators are comprised of holders of business licences for the provision of electricity for public interest, which may be integrated for general electricity generation or for their own use. In practice, the implementation of biomass cofiring proceeds in a phased manner.[113]

**Table 5. Biomass Cofiring Stages based on Annexure 1 of MEMR Regulation 12/2023**

| Year | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
|---|---|---|---|---|---|---|---|---|
| Amount of Biomass Fuel (Million Tons/Year) | 1,05 | 2,83 | 10,20 | 10,11 | 9,08 | 9,11 | 9,14 | 8,91 |

The aforementioned stages outline the targets for the utilisation of B3m (Biomass and Bioenergy) within the framework of national biomass cofiring initiatives. Article 18 of MEMR Regulation 12/2023 further stipulates that PLN and electricity supply business licence holders collaborating with PLN must utilise the highest benchmark price in biomass purchases as a ceiling during negotiations. In contrast, other licence holders are permitted to negotiate biomass pricing independently.

To ensure the availability of domestic biomass stock, the government mandates that biomass suppliers prioritise domestic supply. [114] However, the MEMR, which is tasked with overseeing the prioritisation of domestic biomass supply, has yet to establish specific quotas for the domestic market obligation.

In support of the implementation of biomass cofiring, MEMR Regulation 12/2023 permits biomass cofiring operators and biomass suppliers to receive incentives, including certificates of appreciation, announcements in mass media, and recommendations to the Ministry of Environment and Forestry aimed at enhancing their ranking in the Company's performance rating programme for environmental management.[115]

The materials sanctioned for biomass cofiring are delineated in MEMR Regulation 12/2023 and include biomass pellets, wood powder or chips, coconut shells, forestry or agricultural waste, and other organic materials. Given the relationship of these materials to forestry, Article 3 of MEMR Regulation 12/2023 emphasises that their utilisation must consider principles of sustainability and environmental preservation. Therefore, the GoI could establish standards and norms to ensure that the biomass utilisation aligns with the environmental and forestry sustainability aspects.

In addition to efforts to phase down coal through cofiring, reducing the capacity factor of CFPPs presents an alternative approach. However, as per PR 112/2022 and the most recent RUKN, there are currently no plans or arrangements pertaining to capacity reduction in electricity production at CFPPs within the context of the phase-down strategy.

MEMR Regulation 12/2023 establishes a comprehensive framework for the utilisation of biomass as a fuel mixture in CFPPs in Indonesia. It provides legal certainty by ensuring that biomass cofiring targets remain consistent, even in the event of alterations to the electricity supply business plan, and delineates clear implementation stages extending from 2023 to 2030 with specific annual targets for biomass fuel utilisation. The regulation mandates that PLN and cooperating licence holders utilise the highest benchmark price for

[113] Article 6 paragraphs (1) and (2) MEMR Regulation 12/2023.
[114] Article 17 paragraphs (1) MEMR Regulation 12/2023.
[115] Article 23 paragraphs (1) and (2) MEMR Regulation 12/2023.

biomass purchases, while allowing other licence holders to negotiate prices. It also requires biomass suppliers to prioritise domestic supply, although specific figures for the domestic market obligation have yet to be determined. To encourage compliance, the regulation offers incentives such as recognition certificates, media announcements, and endorsements for improved environmental performance ratings. However, the absence of specific domestic market obligation figures, along with the insufficient depth of provisions concerning environmental and forestry preservation in MEMR Regulation 13/2023, highlights existing gaps within the framework.

### 2.3.3. Existing Disincentives for Energy Transition Projects

This chapter examines the regulatory disincentives hindering the progress of energy transition projects in Indonesia (renewable energy, CFPP early retirement, and CFPP phase-down). Despite governmental efforts to promote RE projects, several regulations pose significant challenges for investors. These regulations, either directly or indirectly, create reluctance among investors to engage in RE projects. Furthermore, certain provisions still favour CFPPs, complicating the shift towards cleaner energy sources. Examining these regulatory barriers highlights the areas requiring reform to foster a more conducive environment for renewable energy investments.

#### 2.3.3.1 Cofiring

Article 18 of MEMR Regulation 12/2023 further stipulates that PLN and holders of electricity supply business licences cooperating with PLN must use the highest benchmark price in biomass purchases. This provision may hinder the implementation of mixed energy use in steam power plants, considering that PLN is required to purchase biomass at this highest benchmark price. As the holder of an integrated public electricity supply business licence and a holder of an electricity supply business licence for generation cooperating with PLN, PLN plays a significant role in the energy transition.

Currently the only regulation governing biomass cofiring is MEMR Regulation 12/2023. However, in its implementation, biomass cofiring raises some concerns regarding sustainability, such as worsening deforestation due to land-use changes for biomass cultivation,[116] availability of local demand in certain provinces, such as Maluku, Papua, and East Nusa Tenggara,[117] and the uncompetitive pricing of biomass within the domestic market, which is also said to be the main obstacle in fulfilling the target.[118] To date, there is no policy guiding biomass incorporation from transport to its implementation in CFPPs.

#### 2.3.3.2 Domestic Market Obligation and Domestic Price Obligation Coal Subsidy

To support sustainable national development, one of the objectives of mineral and coal management is to ensure the availability of minerals and coal as raw materials and/or energy sources for domestic needs.[119] Fundamentally, the government's authority to formulate this policy is based on Article 33 (3) of the 1945 Constitution of the Republic of Indonesia, which asserts that the earth, water, and natural resources are controlled by the state and used for the greatest prosperity of the people.

[116] Lou, J., Squire, C., & Hilde, T. (2024). Evaluating the Viability of Co-Firing Biomass Waste to Mitigate Coal Plant Emissions in Indonesia.
[117] Ibid.
[118] Indonesia's energy transition outlook
[119] Article 3 letter (c) Mining Law.

### A. Domestic Market Obligation ("DMO")

The policy on DMO is a government effort to ensure the security of coal supply domestically in a sustainable manner and also to optimise state revenue.[120] Article 31 (1) and (2) of the MEMR Regulation 25/2018 stipulates that the MEMR may determine the amount of national mineral and coal production for national interests as part of controlling mineral and coal production. This provision further involves sales control. According to Article 32 (1) letter a of MEMR 25/2018, the MEMR also regulates the sale of minerals and coal to ensure domestic supply. The Minister determines the quantity and type of minerals and coal needed to fulfil the DMO.[121]

The quantity of the DMO requirements is stipulated in MEMR Decree 267/2022. The determination of a special price for coal used for electricity provision and the obligation to provide coal at 25% of the planned coal production amount provide incentives to power plants that use coal; this applies to supply of electricity for public interest and self-interest.

In relation to the DMO established by the GoI, the development of renewable energy projects in Indonesia may lead to a reduction in coal demand designated for coal-fired power plants due to the shift towards renewable energy sources. It would be prudent for the GoI to actively maintain a careful balance between coal demand for CFPPs and the ongoing and future development of renewable energy projects.

The GoI should consider conducting periodic reviews of the DMO to ensure alignment with the progress of renewable energy development. As the DMO figure is adjusted downward in response to diminished demand for CFPPs, prospective power plant developers may find renewable energy projects increasingly bankable due to the resulting decrease in competition from low-cost coal sources.

### B. Domestic Price Obligation

Pursuant to Article 32, paragraph (1) of MEMR Regulation 25/2018, the regulation allows the MEMR to control mineral and coal prices in order to effectively regulate these resources. Consequently, holders of Special Mining Business Permits (IUPK) and Mining Business Permits for Production Operation (IUP OP) are required to comply with the coal reference price established by the MEMR in all sales transactions.[122] Non-compliance results in administrative sanctions, including written warnings, temporary suspension of all or part of business activities, and/or permit revocation.[123]

The formula for determining the coal selling price is established by the MEMR.[124] In setting the selling price, it is based on the quality of the coal and takes national interests into account.[125] Currently, the determination of coal sales prices in Indonesia is regulated by the MEMR Regulation 7/2017. Based on this regulation, the determination of the benchmark coal price is established by considering market mechanisms and/or the prevailing international market prices, the enhancement of the added value of domestic minerals or coal, and/or the implementation of good mining practices.[126]

[120] Kementerian Energi dan Sumber Daya Mineral Republik Indonesia. (n.d.). DMO dan ICPR untuk Keamanan Pasokan Batubara Domestik dan Optimasi Penerimaan Negara
[121] Article 32 paragraph (2) letter a MEMR Regulation 25/2018
[122] Article 33 paragraphs (1) and (3) MEMR Regulation 25/2018
[123] Article 40 paragraphs (1) and (2) MEMR Regulation 25/2018
[124] Article 35 (1) MEMR Regulation 25/2018
[125] Article 36 paragraphs (1) and (2) MEMR Regulation 25/2018
[126] Article 2 paragraph (3) MEMR Regulation 7/2017

According to the MEMR Decree 267/2022, the selling price of coal for the provision of electricity for the public interest is set at US$ 70 per metric ton FOB Vessel. This price applies specifically to coal used for the provision of electricity for the public interest, which in this case is organised by PLN. Meanwhile, the benchmark coal price based (which is used as a reference for the selling price of coal for other purposes than the provision of electricity for the public interest in power plants), on the MEMR website was US$ 115.29 per ton in August 2024, US$ 125.14 per ton in September 2024, and US$ 131.17 per ton in October 2024. These figures are significantly higher compared to the coal price set for electricity generation.[127] This provision essentially provides a strong incentive for electricity generation businesses using coal due to lower coal prices.

In line with DMO concerns, it would be beneficial for the GoI to consider aligning DPO more closely with the market price of coal. Such adjustments should reflect the growth of RE projects in Indonesia and coal demand from CFPPs. By aligning DMO and DPO with the development target of RE projects in Indonesia, it is anticipated that the incentive to develop new CFPPs will diminish, creating an opportunity for RE projects to become a more attractive option for investors.

#### 2.3.3.3 Mandatory Placement of Foreign Exchange Export Proceeds from Natural Resources (*Devisa Hasil Ekspor Sumber Daya Alam* – "DHE")

As a significant global market player, in accordance with GR No. 36/2023 and its derivatives, Indonesia's mining sector is subject to DHE requirements.[128] Under GR No. 36/2023, all mining exporters receiving foreign exchange with a FOB export value of at least US$250,000 (or its equivalent) are required to deposit their DHE proceeds into eligible financial instruments set up in a designated DHE account in Indonesia, with the amount of placement matching its respective values as stated in the PPE.[129] Additionally, at least 30% of the deposited DHE amount must be retained from the placement date within a three-month tenor.

In compliance with the above DHE requirements, the Indonesian mining exporters can benefit from receiving fiscal and non-fiscal incentives. The fiscal incentive includes a discounted income tax on deposit interest, while non-fiscal incentives may be in the form of a reputable recognition awarded by the Government. Failure to comply with the DHE requirements, however, may result in administrative sanctions related to export services based on rules and regulations in custom sector,[130] which ultimately could lead to potential blockage access to the export customs service system in Indonesia.[131]

GR No. 36/2023 has been amended by GR No. 8/2025. One of the significant changes include an increase of the required amount of DHE proceeds that must be placed in the designated DHE account. Effective March 1, 2025,[132] the amount of DHE proceeds must be fully deposited (100%) for a minimum duration of twelve months from the date of placement.[133] This requirement applies to all mining activities, with the exception of the oil and gas sector, which continues to be subject to a mandatory placement of 30% for a period of three months from the date of placement in the designated DHE account.[134] The DHE proceeds deposited in the designed DHE account may still be utilised for several purposes, i.e., 1) export duties and other levies in the export sector; 2) loan repayments; 3) imports; 4) profits/dividends distribution; and/or 5) other uses as outlined in Art. 8 of Indonesian Investment Law, such as working capital.

[127] The latest reference price for coal is established in MEMR Decree 277/2024
[128] Article 5 paragraph (2) GR 36/2023 jo. Article 2 paragraph (2) MOF Regulation 73/2023 jo. PBI Regulation 7/2023.
[129] Article 6 paragraph (1) GR 36/2023 jo. MOF Regulation 73/2023 jo. PBI Regulation 7/2023.
[130] Article 16 paragraph (1) GR 36/2023.
[131] Article 5 paragraph (1) MOF Regulation 73/2023 jo. Article 2 paragraph (4) PBI Regulation 7/2023.
[132] Article II.3 GR 8/2025.
[133] Article. I.1 GR 8/2025.
[134] Ibid.

Compared to the previous regulation, the new DHE requirements may seem strict and aim to further increase foreign exchange reserves and national economic stability as higher penalties could be imposed for non-compliance compared to the previous regime. Considering these new requirements, exporters are given some flexibility to manage the domestically stored DHE proceeds for purposes such as paying dividends and importing raw materials in foreign currency. This flexibility, along with the availability of the fiscal and non-fiscal incentives for coal mining exporters, could proportionally reward Indonesian mining exporters for continuing their established mining projects. In addition, the new regulation, which requires exporters to fully deposit the DHE amount within a year, might disrupt the coal mining operating cash flow. As a result, this may incentivise coal mining companies to increase domestic coal sales compared to export sales, potentially supporting continued reliance on CFPPs and may discourage early retirement or phase-down plans of CFPPs in the short-medium term.

Conversely, these new DHE requirements may deter new exporters from entering the Indonesian market due to potential financial constraints and reduced capital mobility, which may limit the long-term growth of the coal mining industry. This may act as a disincentive for sustaining long-term CFPP operations, thereby indirectly supporting RE development. Overall, the new DHE requirements influence mining business ecosystems' dynamics and may impact energy transition investments but further evaluation will be necessary to fully understand their implications.

#### 2.3.3.4 Electricity Pricing

According to MEMR Regulation 50/2017, the pricing calculation for renewable energy is capped at a certain percentage of PLN's. The BPP is determined by the Minister based on proposals from PLN. In principle, if the BPP is equal to or below the national average generation BPP, the pricing of renewable energy electricity is determined based on mutual agreement between the parties, thus no cap applies.

For the determination of electricity purchase prices for conventional power plants, it is based on MEMR Regulation 19/2017, which stipulates that the purchase of electricity for power plants using coal is conducted based on PPA with the following provisions:

a. In the event that the BPP in the local electricity system is equal to or below the national average Generation BPP, the highest benchmark price is set at the BPP of the local electricity system; or
b. In the event that the Generation BPP in the local electricity system is above the national average Generation BPP, the highest benchmark price is set at the national Generation BPP.

On the other hand, PR 112/2022 stipulates that the purchase price of electricity by PLN from power plants utilising renewable energy is determined in two ways: based on the highest benchmark price (ceiling price) listed in PR 112/2022 or through mutual agreement. Furthermore, PR 112/2022 has established the highest benchmark prices for the purchase of electricity from various types of renewable energy sources.[135]

Prior to the pricing regulations set forth by PR 112/2022, Indonesia had implemented a feed-in tariff scheme. This scheme established a set price for electricity generated from renewable energy sources based on production cost components. Because the pricing was determined by production cost components rather than mutual agreements, it provided a standard for price determination and minimized opportunities for

[135] Hydroelectric Power Plant (PLTA) utilising river flow/waterfall energy; Hydroelectric Power Plant (PLTA) utilising water from reservoirs or irrigation channels; Expansion of Hydroelectric Power Plant (PLTA); Excess power from Hydroelectric Power Plant (PLTA); Photovoltaic Solar Power Plant (PLTS); Expansion of Photovoltaic Solar Power Plant (PLTS); Photovoltaic Solar Power Plant (PLTS) with land provided by the government; Wind Power Plant (PLTB); Expansion of Wind Power Plant (PLTB); Biomass Power Plant (PLTBm); Expansion of Biomass Power Plant (PLTBm); Biogas Power Plant (PLTBg); Expansion of Biogas Power Plant (PLTBg); Excess power from Biomass and Biogas Power Plants (PLTBm and PLTBg); Geothermal Power Plant (PLTP).

negotiation at lower rates.

The feed-in tariff scheme applied to the purchase of electricity from hydroelectric power plants with a maximum capacity of up to 10 megawatts, as outlined in MEMR No. 19 of 2015 regarding the Purchase of Electricity From Hydroelectric Power Plants With a Capacity of up to 10 Megawatts by PLN. Under this regulation, the purchase price for electricity generated by a hydroelectric power plant with a capacity of up to 10 megawatts is determined by taking into account the voltage level of the PLN power grid and the plant's location or area-specific factor (F), as detailed in the appendix. This price encompasses all costs related to the installation of the connection network from the plant to the PLN power grid. It is the fixed price used in the electricity sale and purchase agreement, without room for negotiation or price escalation. This pricing structure becomes effective when the plant is officially declared to have reached its commercial operation date (COD), in accordance with the schedule outlined in the agreement. For other RE power plants such as PLTB, PLTBm, PLTBg, and PLTP, GoI also once implemented a feed-in tariff scheme through MeMR No. 12/2017. Both MEMR No. 19/2015 and MEMR No. 12/2017 does not regulate the procedure for determining the purchase price of electricity by mutual agreement, with or without taking into account the location factor, as regulated in PR No. 112/2022.

Both MEMR No. 19/2015 and MEMR No. 12/2017 were revoked, which means that the method of determining the purchase price of electricity is regulated by PR No. 112/2022. PR 112/2022 has not reinstated the feed-in tariff scheme. This could potentially hinder the growth of renewable energy, as it allows for price determination through negotiations, which gives less certainty to investors.

#### 2.3.3.5 Renewable Energy Power Plant Business Licensing Specific Requirements

As discussed in Section 2.3.1.2.B, the business licensing for power plants using conventional and renewable energy based on GR 5/2021 has the same requirements and obligations. However, some renewable energy sources used for power plants are required to obtain more specific permits, regardless of the basic business licensing that needs to be held. The following are some of these specific permits:

**A. Water Utilisation Permit and Approval for the Use of Water Resources**

Regardless of whether implemented by public or privately owned entities, specifically for hydroelectric power plants, in addition to obtaining business licences, business actors are required to obtain approval for the use of water resources. Article 46 of Law No. 17 of 2019 stipulates that the granting of permits for the use of water resources for private business needs can be carried out under certain and strict conditions and can only be implemented if the water for daily basic needs and community agriculture has been fulfilled first. Furthermore, the use of water resources must prioritise several principles before it can finally be utilised by private parties, namely:

- does not interfere with, override, or nullify the people’s right to water;
- state protection of the people’s right to water;
- environmental sustainability as a human right;
- absolute state supervision and control over water;
- the primary priority for the use of water resources for business activities is given to state-owned enterprises, regional-owned enterprises, or village-owned enterprises;

Since this activity is placed as the last priority, this provision becomes a disincentive for investors, potentially causing uncertainty in obtaining approval for the use of water resources. In this context, considering that electricity generation is an activity aimed at public interest, Law No. 17 of 2019 could provide special provisions or exceptions for public interest activities that require water resources.

### B. Specific Requirements in Business Licensing for Water Utilisation in Power Plants

Article 49, paragraph (3) of Law No. 17 of 2019 places the use of water resources for the needs of private enterprises as the lowest priority in the granting of business licences. This implies that, for the generation of electricity using hydro energy, business licences can only be issued once higher-priority activities have been satisfactorily completed and provided that water resources remain available. Additionally, there are conditions that business actors must meet to obtain a business license for the use of water resources, namely:

- in accordance with the Water Resources Management Pattern and Water Resources Management Plan;
- fulfilling administrative technical requirements;
- obtaining approval from stakeholders in the Water Resources area;
- fulfilling the obligation of Water Resources Conservation costs, which are components in BJPSDA, and other financial obligations in accordance with statutory regulations.

These requirements are additional conditions imposed on prospective business actors to obtain business licences.

### C. Standards and Quality of Biomass for Co-firing in Steam Power Plants

Article 4 of MEMR Regulation 12/2023 stipulates that biomass used as a fuel mixture in steam power plants must meet certain standards and quality as specified in the Indonesian National Standard ("SNI"). if such standards are not available, the Ministry of Energy and Mineral Resources may establish the necessary standards and quality of the biomass to be used. These standards ensure that the biomass used is suitable for its intended purpose.

Furthermore, due to changes in technical specifications, raw materials, and auxiliary materials from the electricity generation activities, business actors conducting cofiring are also required to amend their Environmental Approval and Environmental Impact Assessment ("AMDAL") as referred to in Articles 89 and 90 of Government Regulation No. 22/2021. This is also in line with MEMR Regulation 12/2023, which mandates that the implementation of cofiring must adhere to the principles and provisions of environmental protection and management as outlined in the AMDAL documents. As stipulated in Government Regulation No. 22/2021, the time frame to obtain environmental approval for the new AMDAL amendment is 50-60 working days. While the process to obtain environmental approval based on the new AMDAL amendment is stipulated to take 50-60 working days, which is a reasonable timeframe, it would be beneficial to ensure that this timeline is consistently adhered to. This is due to the fact that in practice the process of preparing AMDAL documents and obtaining environmental approvals from authorized agencies requires a considerably longer time than stipulated. Although this timeframe could potentially be seen as a disincentive for some business actors, it is important to recognize that these measures are in place to uphold necessary standards.

### D. Geothermal Energy Utilisation Permit

Geothermal power plant projects not only require general business licensing but also must obtain geothermal working area assignments and a Geothermal Permit (*Izin Panas Bumi* or "**IPB**"). Before commencing the exploration process, developers need to submit an application to the MEMR to obtain Preliminary Survey and Exploration Assignment (*Penugasan Survei Pendahuluan dan Eksplorasi or PSPE*). After obtaining the assignment, developers must conduct preliminary surveys and exploration to determine the geothermal potential in the area.

To utilise geothermal energy as a source of electricity, developers are required to have an IPB, which is granted after winning the geothermal working area auction or receiving an assignment from the government.[136] This IPB allows developers to conduct exploration (if not already conducted) for a certain period and during the exploration phase developers also need to prepare a feasibility study that includes technical, economic, and environmental analyses of the project.[137] This feasibility study is an important part of the licensing process and must be approved by the Ministry of Energy and Mineral Resources before developers can proceed to the exploitation stage.[138] The lengthy and complex licensing process can be a disincentive for the development of renewable energy projects, as it extends the time and increases the costs required to reach the operational stage.

In conclusion, while the business licensing requirements for renewable energy power plants in Indonesia under GR 5/2021 are largely aligned with those for conventional energy, specific renewable energy projects face additional regulatory challenges. This creates uncertainty for investors, who may find the regulatory environment a disincentive. Biomass cofiring projects must meet specific quality standards and navigate potentially lengthy environmental approval processes, which could deter investment due to the required amendments in Environmental Impact Assessments.

## E. Land Acquisition for Development in the Public Interest

Law No. 2/2012 provides a comprehensive framework for land acquisition aimed at development in the public interest. This includes infrastructure projects such as the construction of power plants, transmission lines, substations, networks, and the distribution of electricity. The government and/or regional government ensure the availability of land for these public purposes.

According to Article 11 of Law No. 2/2012, land acquisition for public purposes must be conducted by the government. Once acquired, the land becomes the property of the government, regional government, or can also be owned by state-owned enterprises. However, the actual development for public purposes must be carried out by the government, which may collaborate with state-owned enterprises, regionally-owned enterprises, or private enterprises.

Furthermore, as stipulated in Article 40 of GR No. 19 of 2021, if the land designated for acquisition is a forest area intended for a priority project by the central government to be executed by private entities, the status of the area may be changed through a borrowing-use mechanism. Private entities in this context refer to enterprises authorized by agreement with state institutions, ministries, non-ministerial government agencies, provincial governments, regency/city governments, or state-owned legal entities and enterprises assigned a special task by the central government for infrastructure provision in the public interest.

In the context of renewable energy projects, these laws and regulations present significant opportunities to leverage the advantages of land acquisition by collaborating with the government. By participating in government-initiated programmes, renewable energy projects can effectively utilise this framework to secure land for their initiatives, aligning with national strategic goals and contributing to sustainable development. However, as of now the facilities are available only to the developers who form a public-private partnership with the government. Conversely, developers who do not engage in

[136] Article 64 of GR 7/2017
[137] Article 8 of GR 25/2021.
[138] Article 10 of GR 25/2021.

this type of partnership will need to acquire land on their own and won't be eligible for the benefits outlined in Law No. 2/2012 or GR No. 19/2021.

### 2.3.3.6 Subsidies for Non-Renewable Energy

According to the Energy Law, energy subsidies are considered a right for underprivileged individuals.[139] PR 191/2014, as last amended by PR 17/2021, governs the provision, distribution, and retail selling price of fuel oil, detailing the subsidies provided for specific types of fossil fuels. PR 191/2014 specifies the retail prices for subsidised fuel types, like kerosene and gas oil, at designated points of sale. For kerosene, the retail price includes a fixed subsidy per litre. Gas oil prices include a calculated formula comprising the base price, added taxes, and a subsidy deduction. Article 16 further clarifies that subsidies are determined annually in the state budget and adjusted as necessary to reflect government policies on subsidy levels.[140]

Through PLN, the Indonesian government also provides electricity tariff subsidies for poor and underprivileged households. These subsidies are allocated through the APBN or Revised APBN ("APBN *Perubahan"*). PLN considers Specific Fuel Consumption ("**SFC**"), the amount of fuel required by an electric power generation unit to produce 1 kWh of gross electrical energy, as part of the subsidy parameters. Subsidy calculations take into account factors such as crude oil prices, exchange rates, inflation, and parameters including SFC, sales volume, and energy mix[141]

The allocation is recorded in the Document of Budget Implementation (*Daftar Isian Pelaksanaan Anggaran* or *"***DIPA***"),* which serves as the basis for subsidy payments. Should the allocated DIPA be anticipated to fall short or exceed the required amount during the fiscal year, the DIPA may be revised with the approval of the MOF.[142]

Each month, the directors of PT PLN submit two documents to facilitate the subsidy payment:

1. A payment request to the Budget User Authority (*Kuasa Pengguna Anggaran* – "**KPA**"); and
2. A data verification request to the Director of Electricity Business Development at the Directorate General of Electricity.

These requests, submitted by the first day of the following month, must include comprehensive supporting data, such as realised electricity sales per tariff group, the cost of providing electricity ("BPP") for each voltage level, and the subsidy calculation based on these data. The BPP data must reflect either the figures determined by the APBN or audited BPP data and must be the latest version published. PT PLN is responsible for ensuring the accuracy and completeness of all supporting data. [143]

In the Draft State Budget (*Rancangan Anggaran Pendapatan dan Belanja Negara – "RAPBN")* for the 2025 fiscal year, energy subsidies are planned at IDR 204,532.4 billion. This includes subsidies for specific fuel types and 3-kg LPG cylinders amounting to IDR 114,312.6 billion, and electricity subsidies of IDR 90,219.8 billion. The 2025 RAPBN continues to allocate commodity-based subsidies for 3-kg LPG cylinders and household electricity. The government aims to gradually shift energy subsidies to a beneficiary-based model, taking into account the readiness of data, infrastructure, and the economic and social conditions of

[139] Article 7 paragraph (2) of Energy Law.
[140] Article 14 of PR 191/2014.
[141] Article 8 of MEMR Regulation 174/2019.
[142] Article 3 MOF Regulation 174/2019.
[143] Article 12 of MEMR Regulation 174/2019.

the community. Detailed expenditure on subsidies in the 2025 RAPBN is available in the provided in Table 6 below.[144]

**Table 6. Energy Subsidy Expenditure in the 2025 Draft State Budget**

| Description | Outlook 2024 | RAPBN 2025 |
|---|---|---|
| **Energy** | **192.8** | **204.5** |
| 1. Specific Fuel Type and 3 kg LPC Cylinder Subsidies | 112.0 | 114.3 |
| a. Specific Fuel Type | 26.5 | 26.7 |
| b. 3 kg LPG Cylinder | 85.6 | 87.6 |
| 2. Electricity | 80.7 | 90.2 |

The data in Table 6 indicate that the use of the APBN for non-renewable energy subsidies remains significant. Fossil fuel and electricity tariff subsidies, while supporting low-income communities, disincentivise the development of renewable energy. By artificially lowering the prices of fossil-based energy and electricity, these subsidies make renewable energy sources less competitive, thereby discouraging investment in cleaner alternatives. Furthermore, by maintaining high levels of fossil fuel consumption, these subsidies counteract efforts to reduce greenhouse gas emissions and transition towards a sustainable energy mix. Reducing or redirecting these subsidies could significantly enhance Indonesia's ability to meet its renewable energy targets and foster a more sustainable energy future.

### 2.3.3.7 Renewable Energy Power Plant Power Purchase Agreement Standards

In Indonesian legislation, the minimum content of PPAs is regulated by the MEMR regulation, which was last amended by MEMR Regulation 10/2017. MEMR Regulation 10/2017 is intended for all types of power plants, including geothermal power plants, hydroelectric power plants, and biomass power plants. Meanwhile, power plants utilising new and renewable energy sources that are intermittent in nature, hydroelectric power plants under 10 MW, biogas power plants, and municipal waste-based power plants are regulated under separate ministerial regulations. However, the ministerial regulation mentioned is not yet available at this time. Consequently, there is no established standard that businesses can refer to when drafting their renewable energy PPAs.

Currently, the provisions stipulated in MEMR Regulation 10/2017 are not ideal to be used as a reference in drafting renewable energy PPAs. This is because the clauses stipulated by the regulation have limited applicability to CFPPs. For example, Article 5 (2) of MEMR Regulation 10/2017 stipulates that one of the obligations of the seller is to maintain the continuity of the electricity supply during the PPA period. This obligation is not ideal to be applied in renewable energy PPAs as they utilise natural resources such as sunlight, wind, water, and geothermal heat, which cannot be controlled by the seller themselves, thus creating an imbalance in the allocation of risks between the parties.

The absence of standard PPA regulation leads to lengthy, complex, and unpredictable negotiations. If the GoI wants to advance the development of renewable energy in Indonesia, a well-balanced PPA that

[144] Ministry of Finance. (2025). Buku II Nota Keuangan 2025.

also considers the technicalities of renewable energy power plants as well as the allocation of risks by both parties needs to be established.

#### 2.3.3.8 Direct Appointment and Selection for Power Purchasing

As stipulated in PR 112/2022, in the event that the acceleration of the termination of CFPPs requires a replacement of electrical power, it can be substituted with renewable energy generation.[145] In return, the government will provide fiscal support through a funding and financing framework to PLN.[146] However, the current laws and regulations do not specifically regulate the early retirement mechanism for CFPPs, either those owned by PLN or IPP.

Pursuant to the above, in conducting procurement for renewable energy power plants, PLN must consider both sectoral regulations and PLN's internal regulation. As for direct appointment, it is only carried out if only one business entity participant is available.[147] Essentially, MEMR Regulation 50/2017 stipulates that the purchase of electricity derived from renewable energy must go through a direct selection mechanism. However, MEMR Regulation 50/2017 also mandates that the direct selection process (which includes the qualification process, submission and evaluation of bids, and signing of the PPA) must be completed within a maximum period of 180 calendar days. Moreover, the direct appointment process must be completed within a much shorter timeframe, namely a maximum of 90 calendar days. As of now, PLN has yet to provide any guidelines or a specific PPA template for renewable energy power plants, which can certainly hinder and pose a challenge for investors to meet the stipulated deadlines even if they have been directly appointed by PLN.

The permissibility of the bundling practice under PR 112/2022 remains uncertain. While PR 112/2022 appears to support the concept by permitting the direct appointment of renewable energy power plant projects following the early termination of PLN-owned CFPPs, it lacks specific guidelines for PLN's transition from CFPPs to renewable energy projects. Despite the absence of a clear transition mechanism, PLN is obligated to continue its development of renewable energy power plants. It would be beneficial to consider several factors in this context, including potential profit losses that would be compensated to Independent Power Producers (IPPs), PLN's limited internal budget, and possible changes in the capacity of electric power installations that may necessitate amendments to PLN's Electricity Supply Business License for Public Interest. Additionally, the construction of renewable energy power plants may require a significant amount of time, as would negotiations with IPPs regarding the early termination of specific CFPPs. These complexities underscore the need for a structured approach to facilitate this transition effectively.

Another barrier in the power purchase procurement process is due to the fact that PLN BOD Regulation 12/2023 states that one of the conditions to allow direct appointment in order to procure electricity is if the seller of electricity is a subsidiary or an affiliated company of PLN. In the event that the developer is a joint venture between PLN and a private party, the developer can be categorised as a subsidiary of PLN as referred to in PLN BOD Regulation 12/2023. Therefore, if the RE project is carried out under such a scheme, there are circumstances where the RE project developer will experience obstacles and limitations in the process of applying for financing from SOE banks. OJK Regulation 32/2018 on Bank Lending Limits (*Batas Maksimum Pemberian Kredit*-BMPK) stipulates that SOE banks are limited to providing loans to SOEs and SOE subsidiaries at a maximum of 30% of the capital[148] of the SOE bank. Thus, developers who establish

[145] Article 3 paragraph (6) PR 112/2022
[146] Article 3 paragraph (9) PR 112/2022 *jo.* Article 2 paragraph (1) MOF Regulation 103/2023
[147] Article 14 paragraph (5) PR 112/2022
[148] Article 1 point 5 of OJK Regulation 32/2018 stipulates that capital means: a. core capital (tier 1) and supplementary capital (tier 2) for banks headquartered in Indonesia; or b. operating funds, retained earnings, last year's profit, current year's profit, general reserve,

joint ventures with PLN will face challenges in obtaining financing from state-owned banks, as there might be possible reluctance from PLN, considering it impacts PLN's financing threshold limit with the SOE banks.

### 2.3.3.9 Minimum Threshold for Local Requirement

In an effort to accelerate the development of electricity infrastructure while prioritising the use of domestic products, the MEMR has implemented the TKDN for electricity infrastructure development projects. Based on the previous explanation in the risk reduction section, according to the type of project that will be developed, essentially hinders incoming investments because there are value differences depending on the type of power infrastructure and its installed capacity.

The new regime of TKDN requirements has been introduced through MEMR Decree 191/2024. Previously, the TKDN is stipulated under the Ministry of Industry ("MOI") Regulation 54/2012.

In contrast to MOI Regulation 54/2012, the determination of minimum TKDN requirements under MEMR Regulation 11/2024 can be seen in Table 7:

**Table 7. Determination of Minimum TKDN Requirements Under MEMR Regulation 11/2024**

| Category | MEMR Regulation 11/2024 | MOI Regulation 54/2012 |
|---|---|---|
| Goods | Determined by the MOI, for industrial components. | Determined by the MOI. |
| Services | Determined by the MOI, for industrial components. | Determined by the MOI. |
| Combinations of Goods and Services | Determined by the MEMR. | Determined by the MOI. |

Generally, the minimum local content thresholds under the MEMR Decree 191/2024 are lower compared to those stipulated in the MOI Regulation 54/2012. The current and previous minimum local content thresholds for each power plant is provided in Table 8:

**Table 8. The Minimum Local Content Thresholds Comparison**

| Type of Power Plants | MEMR Regulation 11/2024 | MOI Regulation 54/2012 |
|---|---|---|
| Steam Power Plants (*Pembangkit Listrik Tenaga Uap* or PLTU) | 1. Installed capacity up to 600 MW: 27.18%<br>2. Installed capacity more than 600 MW: 18.83% | 1. Installed capacity up to 15 MW per unit: 70.79%<br>2. 15-25 MW: 49.09%<br>3. 25-100 MW: 44.14%<br>4. 100-600 MW: 40.00%<br>5. More than 600 MW: 38.21% |
| Gas Power Plants (*Pembangkit Listrik Tenaga Gas* or PLTG) | 10.39% | Installed capacity up to 100 MW: 48.96% |
| Combined Cycle Power Plants | 21.93% | 1. Installed capacity up to 50 |

surplus balance of fixed asset revaluation, other comprehensive income, general reserve for Provision for Asset Losses (PPA) on productive assets, and others based on the approval of the Financial Services Authority, for branch offices of banks domiciled abroad; by taking into account the capital deduction factors as referred to in the OJK Regulation governing the minimum capital adequacy of commercial banks.

| Type of Power Plants | MEMR Regulation 11/2024 | MOI Regulation 54/2012 |
|---|---|---|
| (*Pembangkit Listrik Tenaga Gas Uap* or PLTGU) | | MW: 47.88%<br>2. 50-100 MW: 40%<br>3. 100-300 MW: 34.76%<br>4. More than 300 MW: 30.22% |
| Gas Engine Power Plants (*Pembangkit Listrik Tenaga Mesin Gas* or PLTMG) | 23.96% | Not regulated |
| Solar Power Plants (*Pembangkit Listrik Tenaga Surya* or PLTS) | 20% | 1. Distributed solar power plants: 45.90%<br>2. Standalone centralised solar power plants: 43.72%<br>3. Connected centralised solar power plants: 40.68% |
| Geothermal Power Plants (*Pembangkit Listrik Tenaga Panas Bumi* or PLTP) | 1. Installed capacity up tp 60 MW: 24%<br>2. Installed capacity more than 60 MW: 29%<br>3. Separate geothermal business activity (Partial project): 20% | 1. Installed capacity up to 5MW: 42.00%<br>2. 5-10 MW: 40.45%<br>3. 10-60 MW: 33.24%<br>4. 60-110 MW: 29.21%<br>5. More than 110 MW: 28.95% |
| Hydroelectric Power Plants (*Pembangkit Listrik Tenaga Air* or PLTA) | 1. Installed capacity up to 10 MW: 45%<br>2. Installed capacity more than 10 MW up tp 50 MW: 35%<br>3. Installed capacity more than 50 MW: 23% | 1. Installed capacity up to 15 MW: 70.76%<br>2. 15-50 MW: 51.60%<br>3. 50-150 MW: 49.00%<br>4. More than 150 MW: 47.60% |
| Wind Power Plants (*Pembangkit Listrik Tenaga Bayu* or PLTB) | 15% | Not regulated |
| Biomass Power Plants (*Pembangkit Listrik Tenaga Biomassa* or PLTBm) | 21% | Not regulated |
| Biogas Power Plants (*Pembangkit Listrik Tenaga Biogas* or PLTBg) | 25.19% | Not regulated |
| Waste to Energy Power Plants (*Pembangkit Listrik Tenaga Sampah* or PLTSa) | 16.53% | Not regulated |

As described above, MEMR Regulation 11/2024 stipulated the minimum local content requirements for combined goods and services for power projects, while the individual local content for goods and services within the industry scope will be governed by respective industrial regulations. Based on Government Regulation No. 14/2015 concerning the National Industrial Development Master Plan for the years 2015 – 2035 ("**RIPIN 2015-2035**"), there is an enhancement in the use of domestic products that serves as the implementation of industry empowerment established by the MOI. In this RIPIN, the MOI is vested with the authority to devise industrial empowerment policies aimed at increasing the use of domestic products. The targets include, among others, the enhancement of the achievement value of TKDN and the number of domestic products utilised by ministries/state institutions, state-owned enterprises, regional government-owned enterprises, private enterprises, and the general public. MEMR Regulation 11/2024 eliminates the need to comply with separate rules for goods and services set by the MOI for power plant projects. However, for MEMR Regulation 11/2024 and MEMR Decree 191/2024 do not yet stipulate specific procedures for the calculation of TKDN value for the combination of goods and services in electricity infrastructure projects, including designated weightages. This poses a challenge for renewable energy development.

# 3. Key Stakeholder Mapping and Discussion

## 3.1. Stakeholder Mapping

The development of energy transition in Indonesia is a multifaceted process involving many stakeholders, including governments/ministries, SOEs (e.g., PLN), private sectors (e.g., IPPs, developers, financial institutions, associations, and research institutes). Each stakeholder has distinct roles and interests in Indonesia's energy transition. This section explains the interaction mapping between each stakeholder. Subsequently, this section discusses each stakeholder's perspective on the current incentives and disincentives regulations in Indonesia, along with the associated challenges. Figure 1 outlines the authority of various ministries and government agencies as set out in PR 112/2022 and its connection with private sectors in supporting Indonesia's energy transition.

MEMR plays a central role in planning and decision-making for electricity supply and demand by preparing the RUPTL. MEMR coordinates with MOF and Ministry of State-Owned Enterprises ("MSOE") to ensure the RUPTL aligns with the supply-demand balance, the readiness of the power system, and state financial capacity.[149] MEMR is also tasked to develop a roadmap for phasing out coal plants as part of Indonesia's energy transition, which requires coordination with MOF and MSOE, especially for financial considerations.[150] However, the roadmap for phasing out coal plants has not yet been released.

MOF evaluates and approves financial aspects such as fiscal incentives for renewable energy development and oversees decisions regarding the early retirement of coal plants.[151] In terms of execution, the subsidies given to PLN are also determined by the MOF. Meanwhile, MSOE ensures alignment with state-owned enterprise objectives by setting renewable energy targets in PT PLN's Key Performance Indicators and supporting RUPTL formulation.[152] In practice, the MSOE also determines PT PLN's president director. Additionally, PT PLN (Persero), operates under direct oversight from MEMR. MEMR assigns PT PLN to procure electricity from power plants, often through direct appointment. MEMR also regulates electricity prices and provides guidelines for PPAs between PT PLN and energy producers.[153] As described above, PT PLN is significantly influenced by three ministries: MOF, MSOE, and MEMR.

Renewable energy development involves contributions from multiple ministries. For example, the roles of the Ministry of Environment and Forestry, Ministry of Agrarian Affairs and Spatial Planning ("**MAASP**"), Ministry of Home Affairs ("**MHA**"), Ministry of Industry ("**MOI**"), and *Badan Koordinasi Penanaman Modal* /Ministry of Investment ("**BKPM**/**MI**") are elaborated in Figure 1. These ministries facilitate permitting, land use, and investment processes, provide fiscal and industrial incentives, and prioritise the use of local products in renewable energy projects. In addition, regional governments are also tasked with supporting renewable energy development through streamlined permitting, land-use planning, and providing incentives. These efforts align with national goals and help bridge the gap between central policies and local execution.[154]

Private sector players, including developers, financial institutions, renewable energy associations, and research institutions, also play a crucial role in the renewable energy sector. Developers, such as IPPs, are key stakeholders in the energy transition landscape as incentive and disincentive instruments directly impact their investment decisions towards renewable energy or CFPP projects. CFPP developers in

[149] Article 2 paragraph (2) of PR 112/2022.
[150] Article 3 of PR 112/2022.
[151] Article 23 paragraph (3) of PR 112/2022.
[152] Article 23 paragraph (8) of PR 112/2022.
[153] Article 21 paragraph (4) of PR 112/2022.
[154] Article 23 of PR 112/2022.

particular may be at risk for early contract termination with PT PLN if selected for early retirement.[155]

Financial institutions provide the necessary capital and utilise financial instruments and incentives to attract private investment, including supporting innovation in the RE sector by funding research and development initiatives. Renewable energy associations influence government policies and regulations to create a more favourable environment for renewable energy development. Research institutions conduct cutting-edge research to enhance the efficiency, cost-effectiveness, and scalability of renewable energy sources, helping to shape policies and regulations that promote the accelerated adoption of renewable energy..

[155] Article 3 paragraph (5) of PR 112/2022

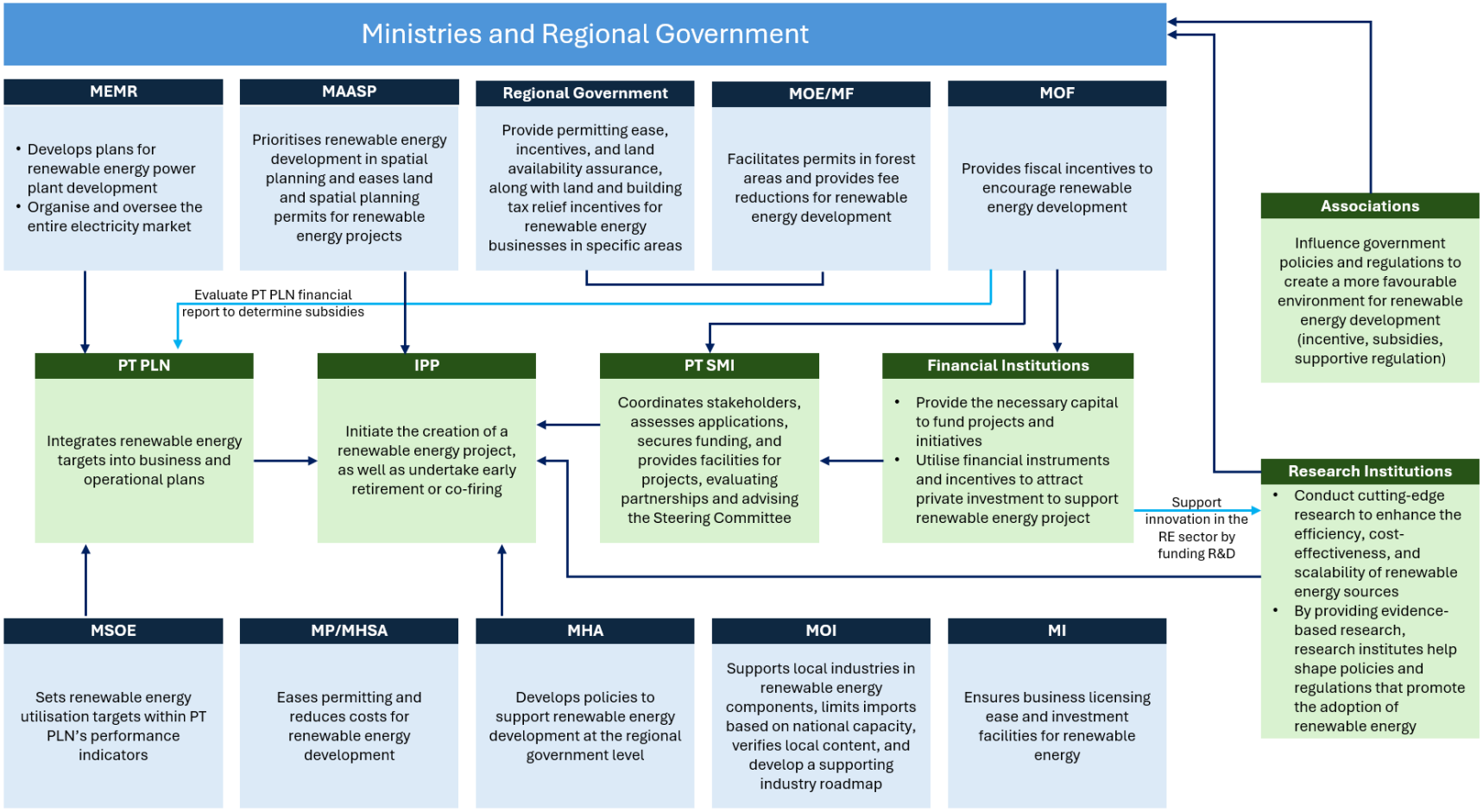


**Figure 1. Stakeholders relations mapping in Indonesia's Energy Transition**

**Legend:**

| | | |
|---|---|---|
| IPP | : | Independent Power Producer |
| MAASP | : | Ministry of Agrarian Affairs and Spatial Planning/National Land Agency |
| MEMR | : | Ministry of Energy and Mineral Resources. |
| MHA | : | Ministry of Home Affairs |
| MI | : | Ministry of Investment and Downstreaming/Investment Coordinating Board |
| MOE/MF*) | : | Ministry of Environment and Ministry of Forestry |
| MOF | : | Ministry of Finance |
| MOI | : | Ministry of Industry |
| MSOE | : | Ministry of State-Owned Enterprises |
| MP/MH*) | : | Ministry of Public Works and Ministry of Housing and Residential Areas |
| SMI | : | PT Sarana Multi Infrastruktur (Persero) |

**) Stakeholders who were consolidated at the time of the issuance of PR 112/2022 but have since been separated pursuant to the PR No. 139 of 2024 concerning the Organisation of Duties and Functions of State Ministries in the Merah Putih Cabinet for the Period 2024-2029.*

## 3.2. Effectiveness of Existing Incentive and Disincentive Regulations

### 3.2.1. Methodology and Approach

To evaluate the effectiveness of current energy-related incentives and disincentives in accelerating Indonesia's energy transition, insights from surveys and structured in-depth interviews with key stakeholders were considered. A workshop was also conducted prior to finalising this Report in order to facilitate a discussion on the preliminary findings, confirm stakeholders' perspectives in the challenges in the current energy transition landscape and identify any additional factors or issues overlooked from the first round of stakeholder consultations.

The survey and interviews aimed to gather the perspectives of stakeholders involved in the Indonesian energy transition regarding the effectiveness of the current policy framework, particularly the existing incentives and disincentives for accelerating three types of energy transition projects: (i) RE development, (ii) CFPP early retirement, and (iii) coal phase-down (i.e., the capacity factor reduction and the adoption of co-firing). Stakeholders were also inquired for any proposed policy amendments/additions they may have that could result in the acceleration of Indonesia's energy transition.

The survey and interviews targeted a variety of stakeholders which included:

- Government authorities/regulators involved in energy transition including the Ministry of Finance, *Badan Perencanaan Pembangunan Nasional* ("BAPPENAS") and the Ministry of Energy and Mineral Resources
- Special mission vehicles of the government involved in financing energy transition including, Badan Pengelola Dana Lingkungan Hidup and PT Sarana Multi Infrastruktur (Persero)
- State-owned enterprises, private project developers and associations in the energy and power sector, both renewable energy and/or CFPP developers
- International and national financial institutions with investments in the energy sectors, those that have NZE or green investment targets, and/or those interested to invest in the energy/power sector
- Research institutions and think tanks that have a focus in the energy/power sector

The survey questions distributed were specific to each stakeholder group based on their roles, responsibilities and applicability to benefit from current incentives, as well as those who might be negatively affected by current disincentives in energy transition such as DMO and DPO. The consultation questions involved around the following categories, as applicable:

1. Knowledge/familiarity of the current incentives and popularity of use
2. Key challenges/bottlenecks in not utilising and/or not being able to utilise and/or access the incentive mechanisms
3. Key challenges/bottlenecks that hinder the development of RE projects, CFPP early retirement and/or coal phase-down, which may be due to current disincentives in place, bottlenecks in bureaucracy, licensing and permitting processes, procurement processes, etc.
4. Change/improvement suggestions to enhance the effectiveness and/or accessibility of current incentives, or decrease the impact of bottlenecks and/or disincentives
5. Any initiatives in supporting the government to plan/issue/improve regulations to promote RE development, CFPP early retirement and/or coal phase-down, if applicable

Given the stakeholder consultation objective focused on gathering inputs from industry actors and to ensure the robustness of the analysis, the focus was on gathering at least 10 responses from developers and financial institutions, separately. Engaging in consultations with developers/IPPs can yield critical insights into the obstacles encountered during both the development and operational phases of energy projects. Similarly, dialogues with financial institutions may illuminate the difficulties associated with securing the

necessary capital and financing for energy transition initiatives. These discussions are anticipated to uncover challenges and gather valuable perspectives on the effectiveness of existing incentives and disincentives impacting their operations within Indonesia. Such insights are expected to inform and guide future improvements by policymakers and other pertinent stakeholders.

The survey questionnaire was distributed to over 80 government agencies, IPP owners and investors, power developers, PLN, SMI, energy associations, public and private financial institutions, research institutions and think tanks. Together with the interviews conducted, 28 unique institution responses were collected.

The second stage of stakeholder consultations was facilitated through a dissemination workshop. The workshop prioritised the engagement of government ministries, state-owned enterprises and special mission vehicles involved in developing and investing in power projects, private power project developers, energy associations and local and international financial institutions. The workshop was attended by 72 people, 51 of whom attended in person and the rest online.

Throughout the first (survey and interview) and second stage (dissemination workshop) of stakeholder consultations, 45 unique institutions contributed to the stakeholder consultation processes. A breakdown of the institution categories is shown in the figure below.

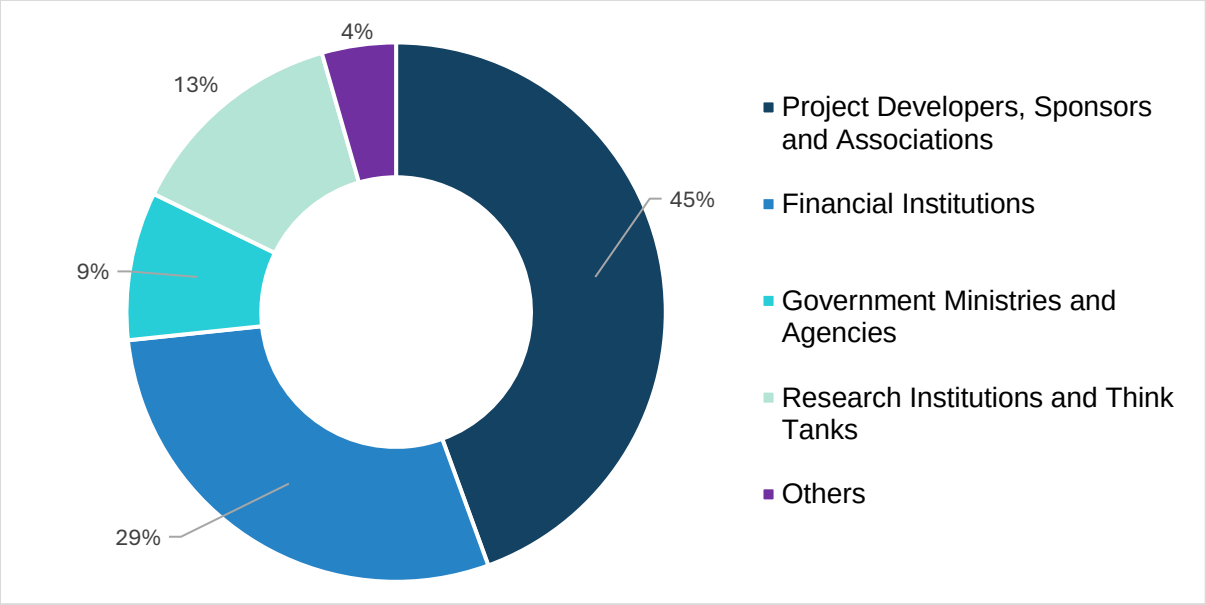


**Figure 2 Stakeholder Responses**

The key insights gathered from the surveys, interviews and FGD have been compiled and summarised in the section below.

## 3.3. Key Insights on the Effectiveness of Existing Incentive and Disincentive Regulations

Important insights from the stakeholder consultations can be categorised into the 3 focus areas of this report (i) RE development, (ii) CFPP early retirement, and (iii) coal phase-down (i.e., the capacity factor reduction and the adoption of co-firing). The key and common insights gathered from the stakeholder consultations have been summarised below.

**i. RE development**

The biggest challenges in accelerating RE development in Indonesia revolve around tariffs, procurement and access to cheap financing. Developers and financial institutions had slightly varying key challenges noting their differing roles in energy transition.

Developers relayed that their main concern revolved around the fact that current RE tariffs are too low and unappealing, due to (i) the current pricing mechanism under PR 112/2022; and (ii) the presence of coal favouring policies such as DMO and DPO that artificially lower the cost of electricity produced from coal, which RE developers cannot compete with.

Aside from unattractive tariffs, RE developers also relayed that the current procurement processes lack certainty, transparency and accountability. Such processes cause project delays, lengthy PPA negotiations and even developers' reluctance to join future tenders. Given that there is already a difficulty in securing RE projects from PLN, there hence exists a conditionality in being able to utilise fiscal and financial incentives that the GoI offers.

There is mixed consensus amongst the developers, wherein some are unfamiliar with utilising available tax incentives and others have instead been penalised in their attempts to utilise the incentives. A renewable energy project company faced challenges in its attempt to secure exemptions from import duties on machinery and components imported for its renewable energy project in Indonesia. During a customs audit, discrepancies were identified between the declared quantities and types of goods in the goods import notification (*Pemberitahuan Impor Barang*, or "PIB"). Consequently, the authorities concluded that import duties had not been properly paid and imposed administrative penalties in the form of fines. In response, the project company filed a formal objection, contending that: 1) the project company had obtained the required import duty exemption facility (masterlist), and 2) the discrepancies in the PIB were administrative in nature and asserting that the goods were accurately documented in the accompanying packing list and bill of lading. However, the authorities dismissed the objection. Instead of receiving the import duty exemption, the project company was subjected to both the imposition of import duties and a substantial fine of up to 1,000%, despite the absence of any fraudulent activity or intent to secure an undue advantage (as per the project company's assertion).

Procurement challenges are echoed by financial institutions, noting that developers may not be able to utilise financing facilities unless they are able to secure a bankable PPA in a timely manner and/or meet ESG standards, particularly for public/bilateral financial institutions.

On the other hand, financial institutions that have not yet managed to enter the industry note that this is because certain projects remain financially unviable, and whilst they express great interest in financing RE development projects, they are unable to provide below-market lending rates given that there is a lack of incentives available to financial institutions. These include cheaper sources

of funding for blended financing such as grants and concessional financing from public sources, philanthropic sources, de-risking such as guarantees and/or credit enhancement mechanisms.

From another perspective, state-owned banks struggle with the bank lending limits imposed on the amount they can lend to state-owned enterprises, including PLN. Given that PLN often participates in renewable energy consortiums and is the off-taker for all on-grid projects, state-owned banks with an already extensive financing portfolio in PLN, struggle to finance new and renewable energy projects due to the Bank Lending Limits, complicating and further restricting financing efforts.

Other challenges include a lack of socialisation on how to acquire PSN status for renewable energy projects as well as delays and bottlenecks in the administrative processes when PSN requests. Complicated permitting and licensing processes were also cited as challenges. Streamlining in such processes, including those for PSN requests, could reduce administrative and legal costs, shorten project timelines and simplify the overall procurement and permitting procedures.

Finally, the majority of respondents, developers, financial and research institutions alike were also of the view that there is a lack of renewable energy project pipeline. On top of the uncertainty that comes in the tender process due to delays and/or cancellations in tendered projects, they are of the view that PLN does not announce enough renewable energy tenders for developers to participate, partly due to a lack of infrastructure readiness (smart grid) for high variable renewable energy penetration in the grid.

A summary of the bottlenecks in the renewable energy procurement life cycle is depicted below.

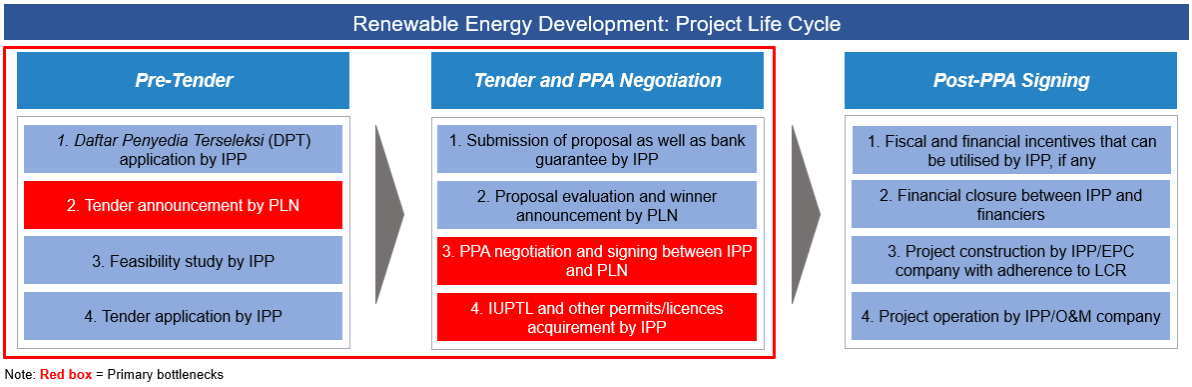


**Figure 3 RE Project Procurement Life Cycle**

### ii. Early CFPP retirement

Whilst many developers did not have any experience to provide inputs on early CFPP retirement, financial institutions, research institutions and think tanks shared that the biggest challenges in early retirement of CFPPs revolve around loss coverage, legal complications and ineffective carbon pricing.

Stakeholder consultations revealed that there was a lack of clarity in who could be responsible to compensate the CFPP owners for the revenue losses resulting from the early retirement and cover the remaining debt obligations. Specifically for Indonesia's early retirement pilot project, one respondent expressed moral hazard concerns about using public funding to compensate a privately owned CFPP.

Additionally, there are legal complications that arise from legally binding long-term contracts that are difficult to terminate unilaterally for contracts the CFPP owners signed between with PLN (if IPP), the Engineering, Procurement, and Construction ("EPC") company, the coal suppliers, and the O&M companies. The lengthy bureaucracy also complicates the CFPP early retirement closure as coordination and approvals are needed from multiple stakeholders (i.e., relevant ministries).

Outside of the mechanics of early retirement, stakeholders are of the view that there is a lack of incentives to early retire CFPPs, and a lack of disincentive to continue CFPP operations. The current regulations allow only the off-taker, namely PLN, to claim carbon credits from carbon avoidance, which does not provide an incentive for IPPs to early retire their CFPPs. In the same issue, the current carbon tax and trading system are not effectively applied to polluting assets, leading to no disincentive to the continued operations of CFPPs. Implementing a carbon tax or established trading systems could penalise or add costs for CFPP operators to keep operating, which may incentivise them to early retire due to loss in profitability.

From a different perspective, a government ministry representative expressed concerns on the potentially negative social impact that early CFPP retirement and coal phase down may have on the coal supply chain, particularly noting that the coal mining sector employs a significant number of workers. Furthermore, while in this case domestic coal producers may benefit from increased coal exports as it is typically priced higher per tonne than the USD 70/ton DPO price, they would still be restricted by the DMO regulation and be negatively impacted if it were not revised or other measures implemented to mitigate such impacts.

**iii. Coal phase-down**

Coal phase-down discussions with stakeholders mainly focused on the adoption of co-firing in CFPPs rather than capacity factor reduction. While stakeholders generally agreed that while co-firing is a viable short-term method, it is evident that very few CFPPs are currently co-firing. To increase co-firing in CFPPs, stakeholder turned to two distinct methods: (i) market mechanisms, specifically the development of Indonesia's carbon market mechanisms and allowing developers to claim carbon credit and reap benefits from carbon reduction/avoidance, as currently, said credits can only be claimed by the off-taker, as aforementioned; and (ii) government support through implementing a co-firing mandate for all CFPPs, as currently the mandate comes from PLN for selected CFPPs. The need to incentivise CFPPs is especially prominent given there is a need for additional capital to retrofit existing CFPPs to implement a greater co-firing percentage.

A few financial institutions shared concerns on the complication of biomass co-firing and the possible linkage to deforestation, especially in the Indonesian context. Respondents hence highlighted the importance of ensuring a sustainable and affordable biomass supply to attract co-firing initiatives.

Specifically, for the CFPP that is already mandated by PLN to undergo cofiring, they felt more support was needed from PLN or the government to increase efficiency and incentives in co-firing, including: prioritisation in quality coal supply to ensure energy output quality, and competitive pricing for biomass which are unable to match tariffs from coal due to the DPO support that coal receives. Given that biomass is not yet able to match the pricing for coal as a fuel source, there needs to be guarantees from the off-taker to purchase electricity generated from co-firing to incentivise IPPs and support co-firing initiatives. Additionally, cofiring can present technical challenges for power plants as biomass has a lower calorific value and high moisture content

compared to coal, which can reduce overall plant's efficiency. To mitigate this, it is important to supply coal with sufficient quality to minimise inefficiencies and maintain the energy output.

Other challenges to consider include the need for increased PPA flexibility to enable co-firing and capacity factor reduction, given that PPAs for coal and RE are under different regulations, and CFPPs are typically subject to a penalty if they operate below a certain CF, hence posing a regulatory barrier to implement phase down initiatives.

In response to capacity factor reduction, a financial institution noted the current difficulty in financing this is the inability of CFPPs to guarantee emission reduction due to the inefficiencies that result from the decrease in utilisation, hence the inability for CFPPs to reduce utilisation yet also reap consistent benefits through carbon credits from carbon reduction.

The table below summarises the key insights raised categorised into factors across all three focus areas on the challenges faced in stakeholders' efforts to accelerate energy transition in Indonesia.

**Table 9 Key Stakeholder Challenges**

| Factor | Key Challenges | GoI | PLN | Dev[156] | FI[157] | RI[158] |
|---|---|---|---|---|---|---|
| **Renewable Energy Development** | | | | | | |
| **Electricity Tariff** | **RE tariff**: The tariff for RE has not been attractive enough to drive the investors and developers to participate in RE development. | | ✓ | ✓ | ✓ | ✓ |
| | **Coal DMO and DPO**: The current RE tariff is not competitive due to government support for coal-based electricity in the form of domestic sales mandate and coal price cap. | | | ✓ | | ✓ |
| **Procurement** | **RE demand**: Lack of pipeline available for project financing as PLN does not open enough RE tenders. | | | | ✓ | ✓ |
| | **Transparency and accountability**: Lack of transparency and accountability in procurement process and commercial terms, particularly on how PLN may participate in eventual project's consortium. | | | ✓ | ✓ | |
| | **Timeline uncertainty:** Poor communication on tendering processes, postponed submission deadline, long PPA negotiation process and approval waiting time, causing delays. | | | ✓ | ✓ | |
| **Supporting Infrastructure** | **Smart grids**: Indonesia lacks a smart grid for high variable RE penetration in the grid. | | ✓ | ✓ | ✓ | |
| **Permitting and Licensing** | **Streamlining of processes**: Difficulties in acquiring license/permit after securing the project. | ✓ | | | | ✓ |
| **PSN Status** | **Clarity in PSN processes:** RE Developers are unsure whether their projects are counted as PSN, how to apply to be a PSN and the benefits gained from the PSN status. | | | ✓ | | |
| **Fiscal Incentives** | **Complicated process**: Developers have no clear information on how to apply for tax facilities and face difficulties during the application process | | | ✓ | | |
| | **Conditionality**: Developers may not be able to utilise tax facilities | | | ✓ | | |

[156] Power project developers, sponsors and energy associations
[157] Financial institutions
[158] Research institutions and think tanks

| Factor | Key Challenges | GoI | PLN | Dev[156] | FI[157] | RI[158] |
|---|---|---|---|---|---|---|
| | unless they are able to secure the project. | | | | | |
| **Financial Incentives** | **Accessibility and clarity**: Developers are not clear on how to access financial schemes such as ETM or JETP funding. | | | ✓ | | ✓ |
| | **Conditionality**: Developers may not be able to utilise financing facilities unless they are (i) may to secure a PPA in a timely manner, (ii) offered a reasonable electricity tariff. | | | | ✓ | |
| | **No incentives for FIs**: As the source of funding for FIs (deposits) is at a constant rate, FIs generally cannot offer more favourable terms for RE projects compared to other projects. | | | | ✓ | |
| | **Bank lending limit:** state-owned banks are restricted in the amount they can lend to SOEs, limiting the financing they can provide to PLN's RE projects as financing for other non-RE assets are also counted. | | | | ✓ | |
| **CFPP Early Retirement** | | | | | | |
| **Compensation Scheme** | **Loss coverage**: CFPP owners may be willing to early retire so long as it remains at least financially neutral for them, but there is no clarity in who would cover the actual loss. | | | ✓ | ✓ | |
| | **State loss**: If early retirement projects result in state losses, stakeholders involved may be criminalised, hence closure of early retirement projects is slow. | | | ✓ | ✓ | ✓ |
| | **Legal complication**: Contracts signed between the IPP and PLN, EPC company, coal suppliers, and O&M companies are legally binding and difficult to terminate one-sidedly. | | | ✓ | ✓ | |
| | **Bureaucracy**: The need for coordination among multiple stakeholders and gain approval from many ministries delays early retirement closure. | | | ✓ | | |
| **CFPP Phase Down** | | | | | | |
| **Capital** | **Capital expenditure**: Support is needed as retrofits are needed to upgrade the CFPP's coal boiler capacity to increase co-firing capability. | | | ✓ | | |
| **Electricity Purchase** | **Purchase merit order**: Co-firing CFPPs offer less competitive electricity price compared to IPPs, resulting in lower electricity purchase by PLN. | | | ✓ | | |
| **Coal Quality** | **Access to high quality coal**: Co-firing CFPPs need sufficiently high-quality coal to compensate for the lower calorific value and higher moisture content of feedstock during co-firing. | | | ✓ | | |
| **Biomass Feedstock** | **Sustainable feedstock:** Ensuring a reliable and environmentally responsible supply of biomass would be beneficial for the success of co-firing initiatives. | | | ✓ | ✓ | |
| **PPA** | **Flexibility**: The PPA structure penalises IPPs when CFPPs operate below a certain capacity factor, hence not allowing flexible operations of CFPPs. | | | | ✓ | ✓ |
| **Emission Reduction Guarantee** | **Financing CF reduction**: Reducing the utilisation rate of CFPPs can lead to operational inefficiencies. This makes it challenging for developers to guarantee emission reductions, complicating financing for carbon footprint reduction initiatives by financial institutions. | | | | ✓ | |
| **CFPP Early Retirement and Phase Down** | | | | | | |

| Factor | Key Challenges | GoI | PLN | Dev[156] | FI[157] | RI[158] |
|---|---|---|---|---|---|---|
| **Mandated Actions** | **Mandates in early retirement/co-firing**: There has not been a roadmap to mandate which CFPPs could be subject to early retirement that considers system stability and reliability, nor those mandated for co-firing outside of PLN EPI's cofiring initiative. | | | ✓ | ✓ | ✓ |
| **Carbon Pricing** | **Emission charge**: Currently, carbon tax and trading system are not effectively applied to entities that are not reducing their emissions. | | | ✓ | ✓ | ✓ |
| | **Credit rights**: Developers cannot claim benefits from carbon credit sales. Currently any carbon credits from carbon avoidance can only be claimed by the off-taker, PLN. | | | | ✓ | ✓ |
| **Social Impacts** | **Impact on the coal supply chain:** actions to mitigate the potential negative social impacts of coal phase down and early CFPP retirement need to be considered. | ✓ | | | | |

# 4. Impact of Existing Incentive and Disincentive Mechanisms on the Ongoing Energy Transition Projects

This section seeks to evaluate the effectiveness of existing incentives and disincentives by examining their impact on the ongoing energy transition projects. A selection of two ongoing energy transition projects has been chosen as the primary case studies, namely (i) the Cirata Floating Solar PV Project; and (ii) the Adipala CFPP co-firing project. The impact assessment of existing incentive and disincentive mechanisms that are relevant to the selected energy transition projects is based on the input and feedback from the relevant stakeholder consultations that have been conducted as part of this Study.

## 4.1. Case Study 1: Cirata Floating Solar PV Plant

### 4.1.1. Project Description

*Pembangkit Listrik Tenaga Surya* ("PLTS") Cirata, a floating solar photovoltaic power plant, is located in West Java, Indonesia. The Cirata Floating Solar PV Plant boasts a capacity of 145 Megawatts of alternating current ("MWac") and a peak capacity of 192 Megawatts ("MWp"), with a total project cost of US$145 million. Construction commenced in the second quarter of 2021 and concluded in the third quarter of 2023. The plant was officially inaugurated by President Joko Widodo on 9 November 2023. The Cirata Floating Solar PV Project is projected to create up to 1,800 jobs during its construction and operational phases, generate 250-300 Gigawatt hours ("GWh") of electricity annually, and achieve an annual reduction of up to 214,000 tonnes of CO2 emissions.

**Table 10. Cirata Floating Solar PV Plant Information**

| | | | |
|---|---|---|---|
| **Plant Capacity** | 145 MWac | **Total Project Cost** | US$ 145 million |
| **Peak Capacity** | 192 MWp | **Construction Period** | Q2 2021 – Q3 2023 |
| **Annual Electricity Generation** | 250-300 GWh | **Plant Inauguration** | 9 November 2023 |
| **Annual $CO_2$ Avoidance** | Up to 214 $ktCO_2e$ | **Jobs created** | Up to 1,800 |

The Cirata Floating Solar PV Project emerged from a bilateral collaboration between Indonesia and the United Arab Emirates ("UAE"). Both nations-maintained ownership by forming a consortium named PT Pembangkit Jawa Bali Masdar Solar Energi ("PMSE"). This joint venture involves PT Pembangkit Jawa Bali Investasi ("PJBI") and Abu Dhabi Future Energy Company, known as Masdar. PT PJBI operates as a subsidiary of PT Perusahaan Listrik Negara (Persero), an Indonesian state-owned enterprise, while Masdar is a subsidiary of the Abu Dhabi National Oil Company ("ADNOC"), Abu Dhabi National Energy Company ("TAQA"), and Mubadala Investment Company ("Mubadala"), all owned by the Government of Abu Dhabi. Figure 4 illustrates the detailed ownership structure.

As a Special Purpose Company ("SPC"), PT Pembangkit Jawa Bali Masdar Solar Energi ("PMSE") oversees the development, construction, operation, and maintenance of the Cirata Floating Solar PV Plant. PT PLN (Persero) serves as the primary electricity off-taker for PT PMSE. On 12 January 2020, PT PMSE entered into a Power Purchase Agreement (PPA) with PT PLN (Persero), establishing a 25-year contract with a tariff of 5.82 US cents per kWh. In addition to equity contributions from the sponsors, PT Pembangkit Jawa Bali Investasi ("PJBI") and Masdar, the project receives funding from a consortium of international commercial banks, including Standard Chartered Bank, UAE branch; Sumitomo Mitsui Banking Corporation,

Singapore Branch; and Societe Generale, Singapore Branch. Figure 5 provides further details on the project structure.

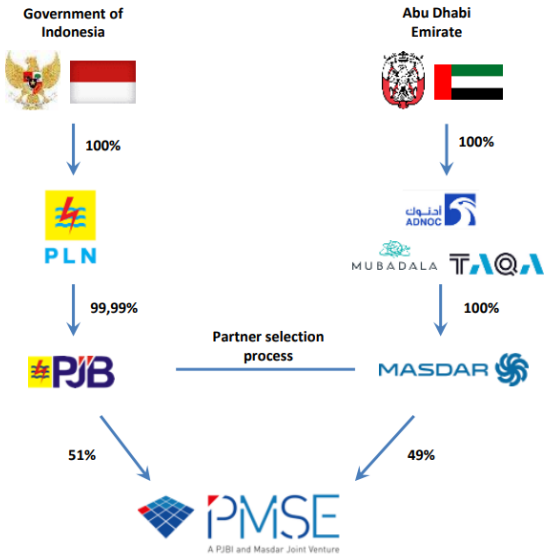


**Figure 4. Ownership Structure of PT PMSE**

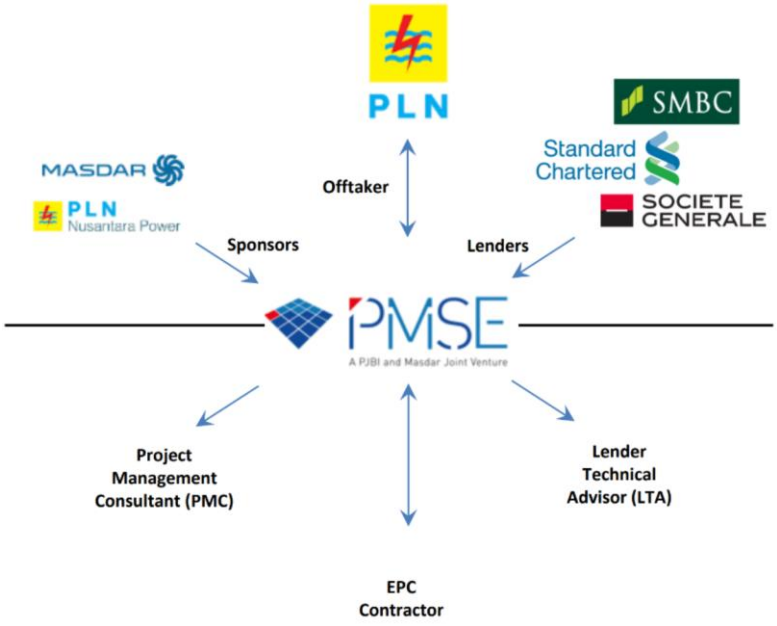


**Figure 5. Cirata Floating Solar PV Project Structure**

### 4.1.2. Impact of Relevant Incentives on the Project and Lessons Learnt

In the context of the Cirata Floating Solar PV Project, the project owners have leveraged several incentive mechanisms to facilitate the development process. These include the right-to-match scheme, which allows the project to align with competitive pricing; the designation as a National Strategic Project (PSN), which streamlines procurement and permitting; tax incentives that offer significant financial relief; and optimisation of the Local Content Requirement ("TKDN"), which have been modified to support compliance with regulatory standards.

- **The right-to-match scheme**

  Masdar assumed responsibility and risk for conducting the necessary feasibility studies. In exchange, Masdar received a special privilege known as the "right-to-match," allowing it to match the best price offered by tender participants during the project tendering process, thereby prioritizing its chances of winning the project. This right-to-match scheme, alongside the government-to-government collaboration, provided Masdar with an additional incentive to participate in the development of the Cirata Floating Solar PV project as a renewable energy developer.

- **The status of PSN**

  Renewable energy projects that obtain PSN status benefit from comprehensive government support throughout the development phase, significantly enhancing the efficiency of procurement and permitting processes. The Cirata Floating Solar PV Project secured PSN status from the Government of Indonesia by obtaining a PSN letter from the Komite Percepatan Penyediaan Infrastruktur Prioritas ("KPPIP"). PT PMSE utilized this letter as evidence of government backing, facilitating smoother processes related to procurement, licensing, and permitting. According to PT PMSE, the PSN status has effectively mitigated business risks associated with project development, construction, and operation, such as delays and challenges in obtaining permits.

- **Tax Incentives**

  As a benefit of attaining PSN status, the Cirata Floating Solar PV Project received governmental support in securing tax incentives. Consequently, PT PMSE qualified for tax facilities as stipulated under the Ministry of Finance Regulation 130/2020 and the Investment Coordinating Board Regulation 7/2020. Specifically, PT PMSE was granted a 100% tax holiday for seven years, followed by a 50% tax holiday for an additional two years, alongside other tax benefits such as reductions in corporate income tax, exemptions from import taxes and duties, and the issuance of *Surat Keterangan Bebas PPn Impor* ("SKBPPN"). PT PMSE reported that these tax incentives have been instrumental in bolstering the project's cash flow, allowing funds initially earmarked for tax payments to be redirected towards managing construction delays and covering operational costs.

- **Optimisation of TKDN**

  The TKDN for the Cirata Floating Solar PV Project was adjusted below the standard requirement, and this was considered an "optimization" rather than a waiver of the TKDN for the project. Although the default TKDN during the project's development and construction phase was approximately 40%, it was adjusted to 23% for Cirata. PT PMSE indicated that this adjustment from 40% to 23% enabled the project to proceed in compliance with the regulations.

In addition to the insights and feedback provided by PT PMSE regarding the effectiveness and impact of the incentives utilized throughout the project development, several key insights and lessons learned have been identified from PT PMSE's experience in developing the Cirata Floating Solar PV Project:

- **While regulations exist to guide the mechanism for setting renewable energy tariffs, the final pricing remains open to negotiation between the off-taker and the developer.**

  At the time of the PPA signing between PT PMSE and PT PLN, the tariff-setting procedure adhered to the BPP guidelines outlined in the MEMR Regulation 50/2017, as amended by Regulations 53/2018 and 4/2020. According to these regulations, if the BPP for the region where a solar PV plant is to be constructed is lower than the national average BPP, the tariff would align with the regional BPP at a 100% rate. This was applicable to the Cirata Floating Solar PV Project, as the West Java BPP was below the national average at that time. However, during negotiations, PT PLN adjusted the tariff to 85% of the West Java BPP instead of the full 100%. PT PMSE's calculations indicated that the project would still achieve an acceptable return, but this was contingent on the availability of tax incentives. Without these incentives, the project would require the tariff to be set at 100% of the West Java BPP to ensure a satisfactory investment return.

- **The procurement process for renewable energy development in Indonesia varies significantly depending on the specific circumstances of each project.**

  Private developers may encounter more challenges than local or state-owned developers during the procurement process. PT PLN tends to be selective when engaging with potential developers, and occasionally, the procurement process may be expedited due to pressure from higher authorities. To foster greater participation and investment in Indonesia's renewable energy sector, it would be beneficial to streamline the procurement process and enhance transparency and accountability, thereby encouraging more developers to engage.

## 4.2. Case Study 2: PT Perusahaan Listrik Negara Indonesia Power ("PLN IP"), CFPP Adipala Co-firing

### 4.2.1. Project Description

The PLTU Jateng 2 Adipala, commonly referred to as Adipala, is a CFPP located in Cilacap Regency, Central Java. This facility, fully owned and operated by PT Perusahaan Listrik Negara Indonesia Power, commenced commercial operations on 13 September 2016 and boasts an installed capacity of 660 MW. Strategically positioned to supply electricity to the 500 kV Kesugihan Substation, CFPP Adipala plays a crucial role in ensuring a stable electricity supply in Central Java and its neighboring areas. The project's estimated cost was approximately US$876 million, with financial support secured through a loan of about US$625 million from the China Development Bank ("CDB") and the Industrial and Commercial Bank of China ("ICBC").[178]

**Table 11. Adipala Coal-fired Power Plant Information**

| | | | |
|---|---|---|---|
| **Plant Capacity** | 660 MW | **Total Project Cost** | Approx. US$876.5 million |
| **Construction Period** | 2011-2016 | **Amount of Loan** | Approx. US$625 million |
| **Commercial Operation Date** | September 2016 | **Owner** | PT *Perusahaan Listrik Negara* Indonesia Power ("PLN IP") |

The supercritical technology implemented at CFPP Adipala enhances the plant's efficiency, leading to lower greenhouse gas emissions. This advancement has facilitated PT PLN's introduction of co-firing at the plant. Since 2021, CFPP Adipala has been conducting a biomass co-firing initiative, supported by PT PLN Energi Primer Indonesia (PLN EPI) for biomass sourcing and pricing. By 2024, the plant aims to produce 83,037 MWh of electricity using 70,106 tonnes of biomass, which would represent approximately 3.68% of its total electricity output. According to the CFPP Adipala Co-firing Roadmap, the commercial co-firing percentage is projected to increase to 8% by 2027. Further details on the co-firing roadmap can be found in Table 13.

**Table 12. CFPP Adipala Co-firing Roadmap 2024-2027**

| Year | Target Percentage | Target Biomass Volume | Target Generation from Biomass |
|---|---|---|---|
| 2024 | 4.5% | 90,000 tonnes | 95,000 MWh |
| 2025 | 6% | 120,000 tonnes | 135,000 MWh |
| 2026 | 7% | 145,000 tonnes | 155,000 MWh |
| 2027 | 8% | 165,000 tonnes | 165,000 MWh |

The quality of the coal (i.e., calorific value) significantly affects the co-firing percentage at CFPP Adipala. The standard calorific value of coal is around 4,200 kcal/kg, while high-quality coal exceeds 4,500 kcal/kg, and low-quality coal falls below 3,800 kcal/kg. According to CFPP Adipala's data, the biomass currently used for co-firing has a calorific value of approximately 3,000 kcal/kg. If high-quality coal is available, CFPP Adipala can increase the co-firing rate to up to 7%. Conversely, the co-firing rate would only reach 2-3% if low-calorific-value coal is used, which is the current average co-firing percentage that CFPP Adipala

[178] AidData. (n.d.). CDB and ICBC provide $625.2 million loan for 660MW Adipala Power Plant Construction Project.; Power Technology. (2024). Power plant profile: Adipala Coal Fired Power Plant, Indonesia.

manages to achieve.

In terms of the biomass feedstock situation at CFPP Adipala, the current supply of biomass exceeds demand, particularly in Cilacap, where CFPP Adipala is located. According to CFPP Adipala's data, approximately 96,000 hectares and 366,000 hectares of land are available for growing biomass within 50 km and 100 km radius of the CFPP, respectively. To achieve 5% biomass co-firing, CFPP Adipala only needs to utilise about 10,000 hectares for growing biomass feedstock. Currently, CFPP Adipala utilises sawdust, a by-product of woodworking operations, as the primary biomass feedstock for co-firing. The current sawdust supply in Cilacap has been sufficient to meet CFPP Adipala's requirements without needing to cultivate dedicated feedstock. However, CFPP Adipala faces specific challenges related to co-firing implementation, such as additional operational costs, limited access to high-calorific-value coal, and the need for capital expenditure on pulveriser upgrades.

### 4.2.2. Impact of Relevant Incentives on the Project and Lessons Learnt

It is important to note that neither the Government of Indonesia nor PLN currently provides specific incentives to support co-firing practices in Indonesia. However, several lessons have been learned from CFPP Adipala's experience with biomass co-firing, offering insights into potential future incentives that could be developed.

- **Additional capital is required for CFPP Adipala to enhance the capacity of its pulverised coal boiler, in order to facilitate increased biomass combustion.**

  The Adipala Coal-Fired Power Plant (CFPP) in Cilacap Regency, Central Java, employs a pulverised coal boiler with supercritical technology, which enhances combustion efficiency and facilitates the use of both coal and biomass as fuel sources. However, the existing technology restricts biomass co-firing to a maximum of 5% due to the lower calorific value of biomass compared to coal. Increasing the biomass proportion necessitates technological upgrades and modifications to the pulverised coal boiler. As biomass is added, more fuel is required to produce the same electricity output as coal-only generation, demanding additional pulveriser capacity. Expanding the boiler's capacity involves significant capital investment, and CFPP Adipala depends heavily on budget allocations from PLN IP, the central authority, to fund these enhancements.

- **Despite the increased operational expenditures associated with co-firing at CFPP Adipala, it does not benefit from prioritisation in the merit order for electricity purchase.**

  The implementation of co-firing at CFPP Adipala has resulted in reduced efficiency due to the lower calorific value of biomass compared to coal. This inefficiency leads to an increase in the BPP to cover the additional operational costs associated with co-firing. CFPPs that engage in co-firing, such as Adipala, are less competitive than non-co-firing CFPPs. However, PLN does not offer preferential treatment to CFPPs that practice co-firing. As a result, PLN generally purchases only 50-70% of CFPP Adipala's total electricity generation capacity, opting instead for lower-cost electricity from IPPs that do not engage in co-firing.

- **Despite the mandate to increase the co-firing percentage, CFPP Adipala faces difficulties in accessing high-quality coal to support co-firing implementation.**

  To enhance biomass combustion and elevate the co-firing rate while sustaining equivalent energy output, CFPP Adipala requires utilising coal with a high calorific value. However, CFPP Adipala is currently experiencing challenges in accessing high-quality coal, which hinders its ability to increase its percentage of co-firing. To date, the coal supply contracts for the plant are overseen by the plant owner, PLN IP, in collaboration with PLN EPI. Unfortunately, CFPP Adipala does not possess the independent authority to select its preferred suppliers and procure high-quality coal

necessary for co-firing practices. In contrast, Independent Power Producers (IPPs) enjoy more flexibility in sourcing high-quality coal for their operations, as they are not restricted in their choice of suppliers. This flexibility provides IPPs with greater leverage to implement co-firing practices compared to PLN-owned CFPPs like Adipala due to more access to high quality coal.

- **There are no regulatory requirement compelling independent power producers (IPPs) to engage in co-firing implementation, notwithstanding the plentiful supply of biomass feedstock**

  The current biomass feedstock supply in Cilacap exceeds the demand for co-firing. However, there is no governmental directive encouraging IPPs in the region to utilise this abundant biomass supply and implement co-firing in their CFPPs. IPPs have the autonomy to choose their coal supply sources, granting them access to coal with higher calorific value. This access enables them to burn more biomass and achieve greater efficiency in co-firing compared to state-owned CFPPs like Adipala.

# 5. Regulatory Gap Analysis

This section provides a list of issues and gaps in, and suggestions for improvement of, the existing incentive mechanisms for supporting energy transition projects in Indonesia, particularly for large scale renewable energy development projects, CFPP early retirement projects, and coal phase down projects.

All policy proposals made in this report are based on desk study, literature review, as well as consultations with stakeholders and should be subject to further analysis prior to deciding whether to adopt or implement them. The effectiveness of any policy measure is subject to a wide range of factors, including effectiveness of implementation, and the combination of measures adopted. The authors of this report therefore cannot be responsible for the ultimate outcome of such measures.

## 5.1. Renewable Energy Development

### A. Unattractive RE Tariff and Challenges in Financing RE Projects

The latest ceiling tariff mechanism introduced by the GoI through PR 112/2022 as the new incentive for RE development is not effective in attracting more investments to the Indonesian RE sector. According to the stakeholder consultation results, around 88% of renewable energy developers and 50% of financial institutions surveyed/interviewed consider the current RE tariff too low to attract more RE investment in Indonesia. Furthermore, the ceiling tariff is also designed to decline by 50% after 10 years of plant operation without accounting for potential increases in operational costs due to inflation. As a result, RE developers are concerned that the ceiling tariff would not allow the project to break even and achieve its desired return on investments.

The unappealing RE tariff also poses significant challenges for developers in securing funding for the project. Indonesia's financial institutions are already struggling to expand their renewable energy portfolios. Commercial banks prefer offering commercial lending rates with short tenures due to a lack of familiarity with RE projects, high perceived risks of RE's long project lifetime, lack of suitable financing instruments and cheaper sources of funds, and limited access to green finance.[179] Several financial institutions interviewed tend to be more reluctant to finance RE project in Indonesia when the tariff is unattractive as it would also affect the project's ability to repay loans. The low RE tariff is perceived as a significant risk for financial institutions, especially those that have less experience in financing RE projects.

On the other hand, state-owned banks struggle from further participating in financing RE projects due to the Bank Lending Limits imposed on state-owned banks to state-owned enterprises, as regulated under the OJK Regulation 32/2018 on Bank Lending Limits or *Batas Maksimum Pemberian Kredit* ("BMPK"). Lending is counted toward an entity's Bank Lending Limit in three scenarios: (i) share ownership: If PLN holds more than a 25% equity stake in a renewable energy joint venture, the associated lending counts toward its limit; (ii) project operation and management: lending for projects operated and managed by PLN is included in its limit; and (iii) project offtaker: if PLN is the offtaker for a project, even without direct involvement, the lending is considered part of its limit.

The GoI could reconsider the sufficiency of its current ceiling tariff mechanism in attracting investments into Indonesian renewable energy sector. As the tariff is highly regulated and determined by the regulators, the GoI can start with reassessing the suitability of the current pricing approach that is used to set the ceiling tariff and ensure that the tariff reflects the actual cost of supplying electricity. Other pricing approach such

[179] Organisation for Economic Co-operation and Development. 2021. Clean Energy Finance and Investment Policy Review of Indonesia. Green Finance and Investment. OECD Publishing. Paris.

as feed-in tariff for large scale RE projects, which provides above-market price for electricity supplied from renewable energy sources, can also be an option as long as the tariff is carefully designed and periodically updated according to the RE market condition and the GoI's fiscal capacity.

Given state-owned banks' significant role in financing PLN projects historically, and their continued interest to finance, it may be beneficial to explore allowing flexibility in the Bank Lending Limits to provide state-owned banks the opportunity to participate in financing RE projects which may have PLN's involvement.

### B. Challenges in PPA Negotiation and Risk Allocation

The current PPA negotiation process and key terms that are regulated under MEMR Regulation 10/2017 (as amended by MEMR Regulation 49/2017 and 10/2018) have several negative impacts on the progress of renewable energy development in Indonesia.

The recent PPA clauses on new RE projects have introduced challenges for future developers as more risks are shifted to developers and eventually financiers, resulting in a risk allocation between IPPs and PLN, which the IPPs regard as unbalanced.[181]

For example, a new clause known as "annual contracted energy" imposes a minimum output requirement on the amount of alternating current ("AC") generation that must be supplied by the RE plant each year. However, given the intermittent nature of solar and wind, there is a possibility that solar plants or wind farms may not consistently meet these annual minimum output requirement. If the power plant fails to meet this annual AC generation target, the project owner faces financial penalties. Conversely, if the plant exceeds the target, the project owner does not receive compensation for the surplus generation.

Additionally, while previous PPAs allowed developers to generate and claim ownership of carbon credits based on reduced emissions, recent agreements require the transfer of carbon credit ownership to the offtaker. This change has diminished developers' interest, as the opportunity for additional revenue from carbon credit sales is no longer available.

There is currently no standardised form of PPA with consistent key terms as the PPAs for RE projects are mostly negotiated on a case-by-case basis. Several financial institutions mentioned during the interviews that unstandardised PPA templates result in long PPA negotiation processes and approval time, causing delays and negatively affecting their lending practices and agreements between developers and financiers, especially if the risk allocation terms in the PPA burden developers more than PLN. The standard template would need to address the best practices of the financial institution which would at least provide assurance at the outset of the negotiation for the financial institution and in line with the standard risk allocation profile of the financial institution. Since it is a standard set by the regulator together with PLN, the negotiation process would always be guided by these established standards which might be favorable for PLN and GoI. Therefore, the standards may need to offer a consistent framework for developers to adhere to, while also taking into account the interests of the developers and financial institutions.

Furthermore, about 75% of renewable energy developers and 63% of financial institutions surveyed/interviewed said that the process of PPA negotiation between renewable energy developers (i.e., IPPs) and PLN are time-consuming, causing delays and uncertainty in the overall project timeline. Typically signing a PPA is a condition precedent to achieving financial closure for a power project between the developers and financiers. However, developers face difficulties in securing PPA from PLN because multiple layers of approvals need to be obtained from the government ministries. Such obstacles related to PPA negotiation process and key terms have made RE projects unattractive for developer and financiers, causing the current PPA mechanism to be ineffective in incentivising RE development in Indonesia.

In light of the aforementioned findings, it is advisable for the GoI, through the MEMR could develop a

[181] JETP Secretariat. 2023. Just Energy Transition Partnership Indonesia Comprehensive Investment Policy Plan 2023.

standardised PPA template specifically tailored for RE projects. This template could aim to establish a balanced framework that fairly addresses the interests of both PLN and developers. For instance, if minimum output requirement for generation is deemed necessary, they could be stretched over a longer timeframe, such as a five-year contract, to better accommodate the inherent variability in renewable energy generation. Regarding the clause on carbon credit ownerships, the distribution of carbon credits could be shared between the off-taker and the developers rather than 100% exclusively for the off-taker.

While acknowledging that negotiations would still occur based on the specific characteristics of each project, having a standard template could facilitate early risk allocation planning for developers and financial institutions. This is an important provision so that developers and financial institutions can estimate timelines and encourage both PLN and developers to finalize PPAs within the stipulated timeframe.

### C. Challenges in RE Procurement, Licensing, and Acquiring PSN Status

The current procurement and licensing procedures for RE projects have been suboptimal in incentivising renewable energy developers to participate in RE tenders. Developers often face uncertainty regarding when the tendering authority will announce a new tender. There is a lot of uncertainty associated with the procurement timeline as the process is frequently delayed and rarely adheres to the original schedule.

As regulated under PR 112/2022, there are two types of RE procurement options: direct appointment and direct selection, which have procurement lead times of 90 days and 180 days, respectively. However, there is no guarantee that the overall procurement process will adhere to the stipulated duration as most procurements take longer than 180 days.

Furthermore, there is also a possibility that the tender can be cancelled by PLN even after the bidders have submitted their proposals. 75% of renewable energy developers surveyed/interviewed mentioned that the current processes are considered lacking transparency, uncertainty, and accountability, causing either project delays or even financial losses due to tender termination. As a result, developers become hesitant to engage in RE tenders due to the uncertainty in the procurement process.

Some developers have demonstrated considerable commitment and dedication to engaging with renewable energy projects, investing significant time and resources during the development stages. The lack of transparency in the procurement process can create significant risks for developers, potentially jeopardising their already incurred expenses. Therefore, ensuring transparency in both tendering plans and adherence to the committed schedules is highly valued by developers and could be considered an integral factor of the renewable energy procurement process. This transparency would provide greater incentives for developers to participate in such projects.

Developers are also expected to acquire the required permits and licences in order to develop an RE plant and supply electricity to the grid. These include IUPTL (which requires feasibility study and PPA), land use permit, environmental impact assessment, and grid connection permit. However, the lengthy procedure for acquiring permits, especially for land acquisition, has been one of the main hurdles for developers in ensuring timely project execution that is consistent with the planned timeline. Additionally, the legislation does not provide a more detailed explanation regarding the technical and substantive aspects of each point in the feasibility study that would be mandated to be prepared to obtain IUPTL.

PSN status has helped several project owners, in the RE sector, in expediting the project procurement and licensing process. However, several project developers interviewed/surveyed claimed that there is a lack of socialisation on how their renewable energy projects can be included in the PSN list. Difficulties in applying for PSN status prevent developers to tap into the benefits of accelerated permitting processes that PSN status can offer.

The GoI could include more RE projects into its PSN portfolio by providing more opportunities for RE

developers to obtain PSN status. The GoI could issue a guideline on how to apply for PSN status for RE projects. It is important that the information related to the essential criteria for a project to receive a PSN status be clearly communicated to the potential RE developers, such as requirement to be aligned with the GoI's National/Regional Medium Term Development Plan, explanation of the project's potential strategic role in improving national/regional economy, and some operational criteria (e.g., having a pre-feasibility study report, having an investment value above IDR100 billion or around US$6.1 million).

### D. Absence of Right to Match Mechanism for Developer Initiated RE Power Plant Projects

In the procurement process for power plant construction organised by PLN, whether for coal-based or renewable energy, adherence to the procurement guidelines of PR 112/2022 and PLN BOD's regulations is required. According to PR 112/2022, two procurement options exist for RE projects: direct appointment and direct selection. However, since PLN conducts the procurement, it must also align with PLN BOD's internal regulations.

For unsolicited RE project developments, an initiator—who has conducted preliminary exploration, surveys, and research at a potential site—typically submits their findings to PLN. This information aids PLN in offering the project location to interested developers. Historically, PLN provided initiators with a right-to-match privilege, allowing them to adjust their bids to match the best offer after tender evaluations. This was facilitated by PLN's BOD Regulation No. 0022.P/DIR/2020, which prioritised initiators in the tender process. However, this regulation has been revoked, and the current PLN Implementing Regulation No. 0012.E/DIR/2023, which replaced it, no longer includes the right-to-match provision.

Given this change, it would be beneficial if PLN re-evaluate and reintegrate the right-to-match mechanism in its internal regulations. This could incentivise and offer certainty to initiators who have invested significant effort from the initial stage, especially for projects involving new technology adoption. The reintroduction of right-to-match may also provide a disincentive for prospective developers who were not involved in the initial initiation process as an initiator, due to the right of the initiator to match the offer of other bidders. Therefore, in reintroducing the right-to-match, PLN is encouraged to establish a balanced approach that attracts interest from initiators while still providing a fair opportunity among bidders.

Additionally, in the context of CFPP early retirements, new RE projects could serve as substitutes for the CFPPs that will be early terminated, provided the transitional process is well synchronized. However, from procurement perspective, direct appointments are not legally feasible since the standard procurement process for new projects does not set prioritisation to the retiring CFPP developers from securing new RE projects. Further, the lengthy and complex procurement process could also lead to energy shortfalls if the procurement of RE projects is not completed when early retirement becomes effective. Therefore, specific procedures governing the transition process and the prioritisation of developers who agree to retire CFPP can be developed at the level of PLN's internal procurement regulations.

To address these challenges, PLN might consider an innovative approach. PLN could grant a right-to-match privilege to IPPs agreeing to early CFPP retirements. This right-to-match privilege would allow these IPPs to match the tariff rates of electricity for new RE projects while still having to participate in the standard bidding process. This approach could attract CFPP developers to opt for early retirement by providing this privilege and potentially influencing financial institutions to support developers transitioning from CFPPs to developing RE projects. However, as explained above, this privilege might discourage other new developers who are not CFPP early retirement developers. Regardless, this could be an initial measure provided by PLN, but this measure may not be the most ideal approach to take as it does not provide a fair opportunity among bidders.

In this context, PLN holds a pivotal role in offering privilege through its internal regulations to developers, including the one required to undertake early CFPP retirements. Despite the absence of explicit legislative

provisions, PLN would be permitted to draft internal regulations which would grant CFPP developers who agree to early retirement to a right-to-match privilege for the replacement electricity generation from RE sources. PLN can leverage this space to develop more effective measures, thereby facilitating a smoother transition. However, it would still need to be closely followed by a set of comprehensive regulations designed to facilitate the transition and provide incentives effectively while still adhering to procurement principles that ensure value for money and safeguard PLN's interests.

### E. Lack of Comprehensive Guidelines for Feasibility Studies

GR 5/2021 lacks detailed specifications regarding the technical and substantive elements required in a feasibility study for obtaining business permits for electricity generation. Although the Directorate General of Electricity under the MEMR has issued a Business Licensing Guide for Electricity Supply, it also does not provide detailed guidance on feasibility studies. Furthermore, the RUKN 2024-2060 does not outline plans for developing technical guidelines for these studies.

In light of the absence of technical guidelines, it falls upon the Minister of Investment and Downstream Industry/Head of the Investment Coordinating Board to offer support, ensuring certainty and ease in business licensing as mandated by PR 112/2022. Current provisions apply uniformly to both conventional electricity and new renewable energy sectors and lack specificity in feasibility study requirements for business licensing. Therefore, it would be beneficial if the Minister of Investment and Downstream Industry/Head of the Investment Coordinating Board, in collaboration with the MEMR would develop comprehensive technical instructions for preparing feasibility studies in the electricity supply sector. This initiative would provide certainty and support to prospective business actors.

### F. The Absence of an Implementing Regulation for MOF Regulation 103/2023 on the Energy Transition Platform

While the MOF Regulation 103/2023 outlines the mechanism for providing fiscal incentives, there is still a need for implementing regulations (which can be in the form of a Ministerial Decree) to govern the provisions detailing the process of how the fiscal incentives will be administered. Specifically, this includes the establishment of a steering committee that will evaluate the policies and management of the Energy Transition Platform based on SMI's reports.

Furthermore, the implementing regulation could establish standardised reporting requirements for transparency. It could also detail the process for preparing and signing cooperation funding agreements with international financial institutions or other relevant bodies. Additionally, it could outline the preparation and signing of related agreements or documents by SMI to facilitate supervision by the steering committee and ensure compliance with SMI's reporting obligations under MOF Regulation 103/2023.

### G. Challenges in the Implementation of Tax Incentives

The GoI has implemented indirect subsidies such as multiple fiscal incentives in the form of tax holidays, tax allowance and import duty exemptions as highlighted in Section 2.3.1, which aim to stimulate domestic and foreign investment through making RE projects more financially viable by reducing the cost and risk of investment.

However, it was found through stakeholder consultations that these incentive mechanisms have been difficult to utilise. According to several renewable energy developers, some are unfamiliar with utilising available tax incentives while others have instead been penalised in their attempts to utilise the incentives (elaborated in Section 3.3). Furthermore, there are multiple conditions that need to be met before developers can utilise the fiscal incentives, including that it can only be secured after the PPA has been signed and after approval of PSN status, both of which the gaps have been further elaborated in Sections 5.1.C and 5.1.D above, respectively. Consequently, these difficulties might pose certain risks when

investors are evaluating opportunities for energy transition projects and have the option to choose between two countries, they may prefer to invest in the country with lower tax obligations. Despite these difficulties in utilising the tax incentives, several stakeholders state that tax incentives are impactful in supporting the cashflows for their projects, an example of which has been detailed in Section 4.1.2.

However, it should be noted that Government incentives, such as tax holidays, allowances, and exemptions, are intended to reduce investors' tax burdens but can lead to a decrease in state revenue, increase administrative cost and complexity.[182] Further, it is necessary to find the balance in using tax incentives to ensure that their benefits exceed the costs and to address regulatory barriers that may hinder their effectiveness. Tax incentives can be beneficial if the economic benefits derived from the investment exceed the government's cost of the incentives (i.e., the reduction in tax revenues), and if the foregone revenues are ultimately recovered through investors' taxes on their profits from their investments in the longer term.

Exemptions from import taxes or credits for VAT could be more effective than tax holidays, as they are more targeted and can facilitate investments that will eventually generate taxable profits. In contrast, tax holidays and allowances may fail to attract investment if other regulatory barriers persist, such as obstacles related to tariffs, PPA negotiation, procurement and permitting, among others. Therefore, it is important to ensure reducing the regulatory barriers for renewable energy development prior to ensure private sectors able to utilise the tax incentives.

[182] ADB. (2024). Tax Incentives and Investment.

## 5.2. CFPP Early Retirement and Phase Down

### A. Challenges in Implementing Carbon Pricing Mechanism to Support CFPP Early Retirement and Coal Phase-down

The initiatives such as early retirement of CFPPs and coal phase out may generate carbon credits if they are acknowledged as climate change mitigation actions that can reduce GHG emissions under the MOE/MF Regulation 21/2022. By retiring the CFPPs earlier than planned or by transitioning to cleaner energy sources, significant carbon emissions can be reduced significantly. These emission reductions can be verified and recognised as carbon credits, which can then be sold to entities that need them to meet their emission reduction targets.

However, currently, no approved methodology in Indonesia can measure emission reductions from early retirement and coal phase-out. Furthermore, there are no carbon projects specifically aimed at reducing emissions from these activities. As a result, no carbon credits from the early retirements and coal phase-outs are registered in the SRN PPI. On another note, global carbon certification platforms such as VERRA[183] and Gold Standard[184] are currently developing and finalising the methodology of CFPP Early Retirement and Coal Phase-down which could be applied by Indonesia in the future.

### B. The Challenges in Early Termination

PR 112/2022 generally mandate PLN to pursue early CFPP retirements of PLN-owned CFPPs and CFPPs of IPPs which still need to take into account the conditions of electricity supply and demand, capacity, economic added value, and the availability of domestic and foreign funding support. The CFPPs early retirement of PPAs presents challenges concerning compensation for IPPs involved with these plants. Since the relationship between PLN and IPPs is governed by PPAs, any early termination requires appropriate compensation due to ongoing contractual obligations. It is advisable that the negotiation process between PLN and IPPs be carefully structured, as it could result in amendments to the PPA duration or even complete termination, including a need for suitable compensation for IPPs.

Consequently, negotiations for early retirement within the PPA framework rely on existing contractual agreements. According to Article 1338, paragraph (1) of the Indonesian Civil Code, agreements made in compliance with applicable laws carry the force of law for the parties involved, and consent cannot be withdrawn except by mutual agreement or for legally specified reasons. Additionally, negotiations between IPPs and their financiers and contractors may be necessary if the PPA concludes earlier than anticipated. In the event of PPA termination, PLN may need to compensate IPPs or write off assets if they own the retiring CFPPs. PR 112/2022 does not specify who bears the costs arising from these early retirements, particularly if they exceed the costs of continued operations, raising questions about whether PLN's actions constitute a government mandate or routine business.

There is uncertainty about whether the fiscal incentives offered by the GoI would adequately offset potential losses for IPPs due to early PPA termination, thus enabling PLN to provide compensation. Currently, the government offers fiscal support for CFPPs retiring early, as detailed in MOF Regulation 103/2023, which outlines the mechanism for managing the Energy Transition Platform providing this support and MOF 5/2025 outlines the fiscal support provided by the government as mandated by PR 112/2022. However, as the MOF 5/2025 is newly released, the effectiveness of its implementation remain uncertain, as further developments need to be observed.

[183] https://verra.org/methodologies/methodology-for-accelerated-coal-fired-power-plant-retirement-using-just-transition/
[184] https://globalgoals.goldstandard.org/in-development/

Regarding PLN-owned CFPPs, potential losses from early retirements, particularly concerning asset impairment or write-offs may arise. Although PR 112/2022 provides a legal framework for PLN to undertake early retirements, it does not appear to offer a clear mandate for such actions, especially pending the roadmap and updated RUPTL as required by PR 112/2022. [185] As indicated by PR 112/2022, the roadmap might be formalised through a Ministry Regulation as a sectoral document with legal certainty.

In the case that the early retirement of said PLN-owned CFPPs cause a write-off or disposal of state-owned PLN assets below their book value, this could be perceived to be prima facie presumptive of corruption under the Indonesian State Finance Law 17/2003, State Treasury Law 1/2004 and Law on Guidelines on Proceedings of Restitution of State Losses Against Non-Treasury State Official or Other Official 38/2016. Hence, PLN needs to prepare for the revaluation and remaining useful life of its CFPP assets accordingly to GoI's NZE by 2060 target.

The lack of certainty poses a significant challenge to implementing early retirements. If classified as government mandates, PR 112/2022 may not provide a robust legal foundation. Conversely, if seen as routine business, actions that could lead to state losses may be deemed unlawful. However, declaring state losses is complex, involving legal advice from the Audit Board of the Republic of Indonesia or the prosecutor's office, specifically the Deputy Attorney General for Civil and State Administrative Affairs. To avoid holding PLN liable for losses associated with early CFPP retirements, additional legal instruments beyond PR 112/2022 appear to be beneficial to guide decision-making. In the case that write-offs be required, PLN must ensure compliance with applicable laws, prudential principles, good corporate governance, business judgment rules, and best practices.

PLN may consider PR 112/2022 as a basis for early retirements, as it mandates a roadmap for CFPP decommissioning and requires updating the RUPTL to include selected CFPPs. This framework could argue that early retirements are lawful. However, without a specific mandate, PLN might be hesitant to initiate the early termination process. The lack of such documents like a roadmap or updated RUPTL mandated by PR 112/2022, add to the uncertainty regarding legal certainty.

Beyond these concerns, pursuant to PR 112/2022, the acceleration of CFPP early retirements requires a decision from the MEMR, with written approval from the Ministers of Finance and State-Owned Enterprises,[186] and inclusion in the RUPTL.[187] However, in practice, ambiguity surrounds the justification for early retirement, lacking clear categories, information, and transparency for IPPs, as the CFPP early retirement roadmap in PR 112/2022 has not yet published. Article 3 of PR 112/2022 outlines basic criteria for the roadmap, but challenges arise from differing expert views on additional criteria, weighting, and thresholds for selection.[188]

The roadmap could address factors such as replacement energy costs, impacts on BPP and APBN, repurposing or dismantling costs, grid strengthening, and system stability. [189] High costs could disrupt state budget allocations for other programs. These complexities underscore the challenges in finalising the roadmap.

As of now, several sectoral regulations sometimes contradict with PR 112/2022. In relation to that matter, the development of a roadmap as governed by PR 112/2022 aims to align with other policies, serving as

[185] Article 1 number 22 of Law No. 1 of 2004 on National Treasury as lastly amended by Government Regulation in Lieu of Law Law No. 1/2020, "State loss means any deficiency of money, securities, and goods that is real and certain in amount as a result of unlawful acts, whether intentional or negligent."

[186] Article 3 paragraph (8) PR 112/2022.
[187] Article 3 paragraph (11) PR 112/2022.
[188] Article 3 paragraph (7) PR 112/2022.
[189] Notes from MEMR's Workshop on Weighting Criteria for the Implementation of CFPP Early Retirement held 9 January 2025

a practical guide and outlining strategies for accelerating CFPP termination. These strategies could guide PLN and IPPs in executing terminations. However, PR 112/2022, which further detailed in MOF 103/2023, provides the foundation for the implementation of the Energy Transition Platform. SMI, as the entity appointed by the government to manage this platform, collaborates on funding with international financial institutions. This approach is seen as offering limited incentives beyond project bankability due to lender support, such as from the ADB, with implementation largely as usual, except for PPA term changes. There's an ethical dimension supporting government programs.

A regulatory gap persists regarding the transition from CFPPs to renewable energy, particularly in procurement if replacing with renewables. The procurement process is time-consuming, risking energy shortfalls if CFPPs retire before renewables are secured. Ideally, retirement and renewable acquisition coincides during procurement, but the absence of a regulating mechanism creates a legal gap.

### C. Absence of implementation regulations regarding biomass domestic market obligations

As discussed in the previous chapter, in relation to maintaining the availability of biomass stock domestically, the government has regulated that biomass suppliers for co-firing purposes are essentially required to prioritise the fulfilment of domestic biomass needs before exporting.[190] Co-firing in coal power plants carries risks such as prolonging coal dependency, limiting overall emissions reductions, and creating supply chain challenges for biomass or ammonia, such as the deforestation mentioned. It can also reduce plant efficiency, making it less cost-effective. However, it is being considered an interim step because it offers an immediate reduction in coal use, leverages existing infrastructure, ensures grid stability, and helps develop supply chains for future low-carbon fuels while renewables scale up. However, the Minister of Energy and Mineral Resources, as the policy executor for prioritising domestic biomass supply, has not yet determined the domestic market obligation figures. Without defined DMO figures, it is challenging to ensure a consistent and reliable supply of biomass for domestic use, as the export market may be more attractive for biomass feedstock suppliers, potentially impacting the overall success of Indonesia's energy transition efforts if all feedstocks are exported.

### D. Favourable Coal Prices to Conventional Power Plants

Electricity is deemed a public good in Indonesia and it is important for the government to ensure affordability for consumers. In order to reduce incentives for conventional power plants (which receive coal prices lower than the benchmark price), the MEMR could initiate the development plan for renewable energy power plants and simultaneously revoke the incentives given for electricity pricing for conventional power plants (such as DMO and DPO regulations to reduce coal price).

### E. Ineffective Carbon Trading System

Currently, the biggest obstacle in implementing carbon trading in the energy sector lies in the lengthy process of issuing SPE GRK. A carbon project in the energy sector must go through various stages, from registering the mitigation action plan with the SRN PPI, validation, verification, and obtaining the SPE GRK. However, as previously explained in Section A above, the mitigation action plans that can be registered and obtain the SPE GRK need to be acknowledged as climate change mitigation actions that can reduce emissions based on specific methodologies.

In this context, it is highly likely that the issuance of SPE GRK for mitigation actions such as CFPP Early Retirement and Coal Phase Out would face obstacles in the registration process with SRN PPI, as there is currently no methodology to calculate emission reductions from CFPP Early Retirement and Coal Phase Out. Nevertheless, carbon trading with an emission trading mechanism in the power plant sub-sector has been operational since 2023. In this mechanism, power plant units trade the emission quotas allocated by

[190] Article 17 paragraphs (1) MEMR Regulation 12/2023.

the government. In 2023, there were 99 power plant units connected to the PLN grid with a capacity of 100 MW or more participated in carbon trading. For 2024, the number of carbon trading participants has increased to 146, with the addition of CFPPs with a capacity of 25 MW or more.

# 6. Prioritisation of Incentive and Disincentive Mechanisms for Energy Transition Projects in Indonesia

This chapter intends to evaluate the level of urgency and impact of both *existing* and *prospective (new)* incentive and disincentive mechanisms for energy transition projects in Indonesia. This suggestion builds upon the groundwork established in earlier chapters, which outline the context and framework necessary for such an evaluation. The evaluation proposes to follow a series of steps with the goal of suggesting a priority for a selection of incentive and disincentive mechanisms that have the highest urgency and potential impact in supporting energy transition projects in Indonesia.

This evaluation utilises Chapter 2's list of mechanisms that are relevant to support energy transition projects for the purpose of prioritisation and is intended to address the issues listed in Chapter 5. The list is expanded to include both the *existing* ones that are already implemented in Indonesia and the *prospective/new* ones that either have been mentioned by the survey respondents and interviewees during the stakeholder discussion from Chapter 3, or analyses from desktop study, which potentially have high impact in supporting Indonesian energy transition projects. The listed incentive and disincentive mechanisms are also classified according to their potential coverage of energy transition projects since there would be several mechanisms that are applicable to more than one project type (e.g., relevant for both RE development and CFPP early retirement).

Furthermore, the existing and prospective incentive and disincentive mechanisms that have been listed were evaluated according to their *urgency* and *potential impact* to determine the mechanisms that could be prioritised for supporting energy transition projects in Indonesia, as outlined in the scoring matrix defined in Appendix A.1. The evaluation combines the main points raised by key stakeholders in Chapter 3, the lessons learned from case studies in Chapter 4 and the gaps identified and analysed in Chapter 5. A mechanism that is considered important by the survey respondents and/or interviewees and expected to pose challenges to Indonesian energy transition progress if not carefully addressed, designed, and implemented was classified as "urgent to be prioritised." Moreover, a mechanism that has the potential to significantly accelerate RE development, CFPP early retirement, and coal phase-down in Indonesia according to evidence from research studies and other countries' experience was classified as "potentially impactful". The detailed assessment of each prioritised mechanism is available in Appendix A.2.

The prioritisation process has been summarised in the figure below.

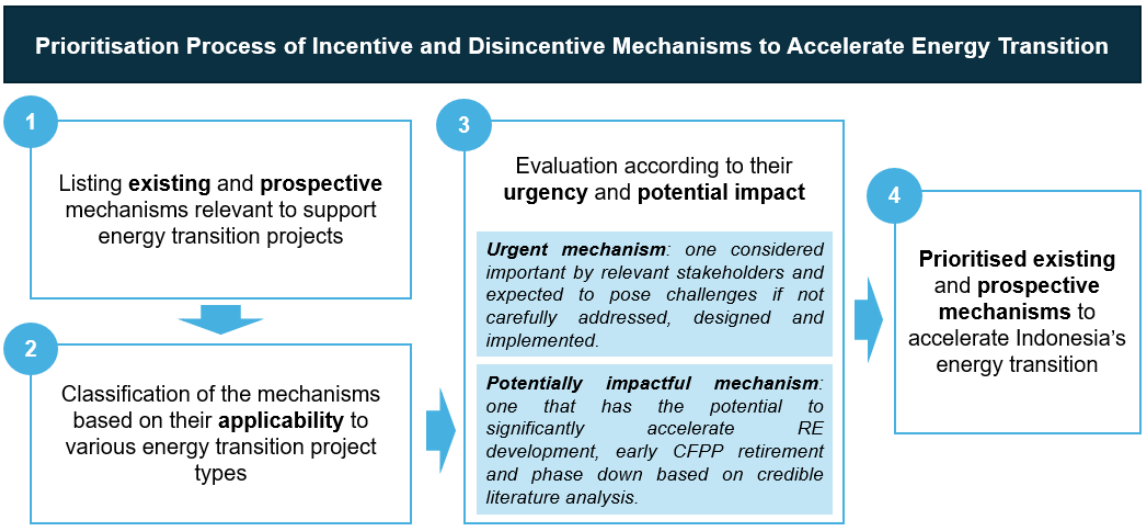


**Figure 6 Prioritisation Process of Incentive and Disincentive Mechanisms**

Based on the incentive and disincentive mechanisms analysed within this report through relevant stakeholder inputs, literature review, desk study, and classification based on their applicability to various energy transition project types, thirteen mechanisms have been shortlisted to be evaluated for prioritisation according to their urgency and potential impact and are listed and defined in the table below.

**Table 13 List of Incentive/Disincentive Mechanisms for Prioritisation Evaluation**

| No. | Incentive/Disincentive Mechanism | Category | Definition |
|---|---|---|---|
| 1 | **Blended finance** | RE development, CFPP early retirement and coal phase down | The **mobilisation of development funds to help catalyse private/commercial finance** for energy transition projects by combining public with private funds coupled with various de-risking instruments such as guarantees, co-investments and subordination among others. Blended finance requires **collaboration** between governments, development banks, commercial banks and other relevant stakeholders to **reduce the risk** associated with energy transition projects. |
| 2 | **Carbon pricing mechanism** | CFPP early retirement and coal phase down | The implementation of an **economic tool** designed to **incentivise individuals** and **firms** to **adopt cleaner energy sources** and reduce GHGs by assigning a monetary cost/price to the GHGs. There are two general types of carbon pricing mechanisms:<br>• Carbon tax: setting **a fixed price on carbon** and requiring businesses and individuals to pay the price of emission in the form of taxes a**ccording to the amount of emission they generate**.<br>• Carbon/Emission trading: providing **emission allowances** for individuals and firms by **setting a cap** on the **allowed total** amount of **emission** and **creating a market** for them to **trade** emission **allowances** with a price determined by the **market** through supply and demand for the allowances. |
| 3 | **Coal DMO and DPO** | RE development, CFPP early | The revision of **disincentive mechanisms specifically** the DMO and DPO to **increase the competitiveness of renewable energy** and **accelerate CFPP early retirement and coal phase** |

| No. | Incentive/Disincentive Mechanism | Category | Definition |
|---|---|---|---|
| | | retirement and coal phase down | **down**<br>• DMO: a **disincentive** for energy transition projects which **controls** the **volume** of **coal** that should be **sold domestically** by coal producers to supply the domestic coal demand<br>• DPO: a **disincentive** for energy transition projects which sets a **fixed price** for coal that should be sold domestically and is typically below international market price. |
| **4** | **Domestic manufacturing incentives** | RE development | The allocation of **subsidies** or provision of **financial incentives** to **local RE equipment manufacturers** to **reduce the production cost** and assist them in **scaling** up the domestic **manufacturing capacity**. |
| **5** | **Mandated co-firing for IPPs** | Coal phase down | The **requiring for non-PLN CFPPs** (i.e., IPP-owned CFPPs) to **practice co-firing** to increase the application of co-firing across CFPPs in Indonesian power sector. |
| **6** | **Power Purchase Agreement (PPA) for RE** | RE development | The streamlining of the PPA negotiation and process. A PPA is an electricity power agreement between the off-taker and the IPP and usually goes through several **negotiation processes**; agreeing on the terms and conditions in relation to pricing, contract duration, rights and obligation of principal parties, delivery schedules, penalties, share transfer, risk allocation between the off-taker and RE generators/IPPs, and others. |
| **7** | **PPA flexibility for IPPs** | CFPP early retirement and coal phase down | The implementation of **PPA flexibility** for **reduction** in **CFPP utilisation rate** to operate below a certain capacity factor, as well as **dual-technology** electricity sales in the same PPA. |
| **8** | **RE procurement, licensing, and PSN status** | RE development | The streamlining of:<br>• RE procurement: the process of **sourcing** and **acquiring electricity generation** from **renewable energy sources** through either direct installations or contracts/agreements with the tender winners (i.e., IPPs).<br>• Permitting/licensing: the process of obtaining necessary **legal** and **regulatory approvals** from the authorities to develop and operate an RE plant, such as the IUPTL, land use permit, environmental impact assessment, and grid connection permit.<br>• PSN status: A **status** given to infrastructure projects that are considered **strategic** and **urgent** by the Government of Indonesia to accelerate economic growth and development as well as improve the people's wellbeing. |
| **9** | **RE tariff** | RE development | The refining of a **pricing mechanism** that determines the **cost of electricity generation** (i.e., $ per kWh) **from renewable energy sources** that would be paid by the off-taker to the generating entities (i.e., IPPs), usually under a contractual agreement (i.e., PPAs). |
| **10** | **RPO and REC** | RE development | The implementation of:<br>• RPO: also known as RPS, is a **mechanism** that requires electricity distributors, captive power producers, and energy consumers to generate RE or **annually purchase a certain minimum amount** of renewable energy. |

| No. | Incentive/Disincentive Mechanism | Category | Definition |
|---|---|---|---|
| | | | • REC: a **financial product** that can be **purchased** by the obliged entities **to meet their RPOs** and become additional revenue streams for RE producers. |
| **11** | **Supporting infrastructure** | RE development | The development of **necessary infrastructure** and assistance for supporting the **development**, **construction**, and **operation** of **energy transition projects**, such as transmission and distribution upgrades (i.e., smart grid), access to land for an RE project, transportation access to the project location, and government assistance for geothermal exploration. |
| **12** | **Sustainable biomass feedstock** | Coal phase down | The establishment of a **sustainable**, **environmentally friendly biomass supply chain** to ensure the availability of feedstock supply at a fair price for co-firing IPPs by avoiding any biomass sourcing practice that may induce negative environmental impacts, such as deforestation. |
| **13** | **Tax incentives** | RE development | The provision of **fiscal facilities** for RE developers in the form of tax holiday, allowance/reduction, and/or exemption to support RE development. |

Furthermore, to effectively evaluate the *urgency* and *potential impact* of existing and prospective mechanisms on Indonesia's energy transition, a structured scoring method was developed. This approach transforms qualitative assessments gathered from secondary desktop research and primary stakeholder inputs into a quantitative format, enhancing transparency and clarity in the prioritisation process.

For each *urgency* and *impact* criterion, a scoring scale was developed and defined, ranging from 1 to 4, with 1 indicating low urgency or impact, and 4 indicating high urgency or impact. The scoring matrix is depicted in Appendix 9.1.

Each mechanism defined in Table 14 was evaluated against the criteria as defined in the scoring matrix, and the total score is the product of each individual criterion score. The detailed results with their supporting arguments are depicted in Appendix 9.2. The results have been summarised and mapped into a matrix categorised into 4 sections:

- High urgency, high impact
- High urgency, low impact
- Low urgency, high impact
- Low urgency, low impact

which visually represents each mechanism's position based on its quantified scores, depicted below.

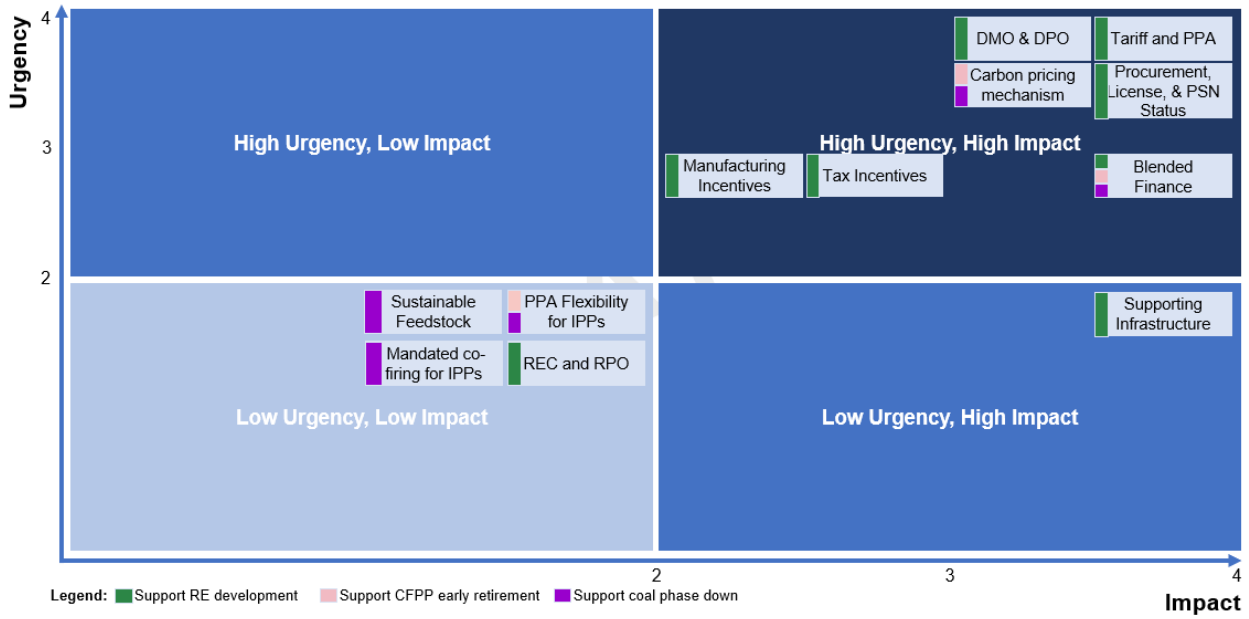


**Figure 7 Urgency-Impact Prioritisation Matrix**

Based on the assessment scoring, the most urgent and potentially most impactful incentives are carbon pricing mechanism, coal DMO & DPO, PPA for RE, RE tariffs, RE procurement, licensing and PSN status. In addition to these 5 mechanisms being seen as important mechanisms from various stakeholders interviewed and surveyed, they also have substantial literary backing from credible studies. There is robust evidence that guaranteed above-market tariffs can substantially boost RE investment in Indonesia[191] as well as the popular view that current RE tariffs are not attractive enough[192]. The competitive pricing of coal backed by DMO and DPO have led to multiple stakeholders and literature criticise and recommend the reformation of said mechanisms[193]. The need to reduce complexities from the lack of standardisation and transparency of PPAs, streamlining of procurement and licensing processes are also advocated[194]. Lastly, critiques in the current carbon pricing mechanisms and its ineffectiveness to increase the economic viability of early retirement transactions are also highlighted[195].

[191] Lin, B. and Xie, Y., 2024. How feed-in-tariff subsidies affect renewable energy investments in China? New evidence from firm-level data. Energy, 294, p.130853. Azhgaliyeva, D., Le, H., Olivares, R.O. and Tian, S., 2024. Renewable energy investments and feed-in tariffs: firm-level evidence from Southeast Asia. Applied Energy, 374, p.123986.

[192] IEEFA (2024), Unlocking Indonesia's Renewable Energy Investment Potential. PwC (2018), Indonesian Power Industry Survey 2018. Mentari (2021), UK Energy Transition Lessons Learnt and Opportunities for Indonesia.

[193] IISD (2017), Fossil Fuel Subsidy Reform and the Just Transition: Integrating approaches for complementary outcomes. IEA (2023), Scaling Up Private Finance for Clean Energy in Emerging and Developing Economies, IEA, Paris, Licence: CC BY 4.0. JETP Indonesia (2023), Comprehensive Investment and Policy Plan 2023.

[194] JETP Indonesia (2023), Comprehensive Investment and Policy Plan 2023.

[195] Monetary Authority of Singapore and McKinsey & Company (2023). Accelerating the Early Retirement of Coal-Fired Power Plants through Carbon Credits.

# 7. Conclusions

All policy proposals made in this report are based on desk study, literature review, as well as consultations with stakeholders and should be subject to further analysis prior to deciding whether to adopt or implement them. Some of the findings are changes to existing mechanisms and not completely new. The effectiveness of any policy measure is subject to a wide range of factors, including effectiveness of implementation, and the combination of measures adopted. The authors of this report therefore cannot be responsible for the ultimate outcome of such measures.

## 7.1. Key Findings

The regulatory analysis of Indonesia's energy transition incentives highlights a complex landscape with both opportunities and challenges. The existing regulatory framework offers various fiscal incentives, such as tax holidays and reduced import duties, aimed at promoting renewable energy development. However, stakeholder feedback and case study analyses indicate that these incentives often lack clarity and consistency, deterring potential investors who seek a stable and predictable regulatory environment. Key challenges for project developers include unattractive renewable energy tariffs, and cumbersome procurement, licensing and permitting processes. Further, the currently available financing incentive as detailed in the MOF Regulation 103/2023 on the ETM is hindered by the absence of an implementing regulation, leaving stakeholders unable to utilise the incentive due to unclear application processes and eligibility criteria. On the other hand, financial institutions in Indonesia are also struggling to expand their renewable energy portfolios due to the lack of incentives aimed at reducing their cost of financing and Bank Lending Limits regulations restricting state-owned banks from optimal participation in on-grid power projects.

The gap analysis further highlights significant shortcomings in the current incentive mechanisms, particularly for the early retirement of CFPPs. While PR 112/2022 serves as an umbrella regulation to accelerate renewable energy development in Indonesia, stakeholders still await the implementing regulations that would provide clearer guidance and direction such as PLN’s updated RUPTL and early retirement roadmap tasked to MEMR. The lack of clarity complicates the transition process, especially regarding compensation and contractual adjustments for IPPs in the case of early CFPP retirement projects.

Moreover, the regulatory framework for biomass co-firing lacks specific incentives such as domestic market obligations or certainty in compensation through an effective carbon trading system. Indonesia’s challenge in implementing an effective carbon trading and an extensive carbon tax system further complicate the landscape and prevent incentives to transition to lower-carbon technologies. The case studies of Cirata and Adipala in particular have provided valuable insights into the successes which the current mechanisms have been able to achieve, as well as the practical challenges faced that underscore the need to align top-down incentives with project-level needs.

In terms of prioritisation, based on the incentive and disincentive mechanisms analysed within this report through relevant stakeholder inputs, literature review, and classification based on their applicability to various energy transition project types, the most impactful mechanisms that are suggested for further analysis include the carbon pricing mechanism and the reform of coal DMO and DPO, RE tariffs and streamlining processes in PPA, procurement, licensing and PSN in RE projects. These are seen as beneficial for accelerating renewable energy development and CFPP early retirement. Conversely, the least impactful mechanisms are those that lack stakeholder support, and those perceived as conditional such as fiscal or financial incentives, as developers can only utilise such incentives after securing a project. Overall, while the existing incentives identified within this report are well-intentioned, further detailed analysis is required to explore potential pathways of the mechanisms that could optimise the support needed to achieve Indonesia's energy transition goals.

## 7.2. Considerations for Further Analysis

A well-defined and stable policy environment that promotes transparency and accountability in processes is expected to boost market confidence and accelerate investments in energy transition projects. Establishing a cohesive policy framework is a key enabler for driving investment in renewable energy and expediting the early retirement of CFPPs in Indonesia. Task 4 of the Project will focus on this aspect, aiming to establish a landscape that supports energy transition through strategic policy development from incentive and disincentive mechanisms.

To effectively undertake Task 4: Proposed Suite of Policy Measures and Recommendations, it is important to build on the analyses already completed, such as the regulatory mapping in Chapter 2, lessons learned from case studies in Chapter 4 and gap analysis in Chapter 5, to provide pathways of the prioritised incentives identified in Chapter 6.

There is hence a need to study the successful approaches of other countries in supporting energy transition projects that have the potential to be implemented in Indonesia. The study of international best practices depicted in Task 3: Incentive and Disincentive Mechanisms based on International Experience aims to provide alternative viewpoints of how different countries perceive the challenge of energy transition and act in their own ways in responding to climate change by deploying a different set of strategies and mechanisms to support energy transition projects. While not all incentive and disincentive mechanisms may be suitable to be implemented in Indonesia, there might be several mechanisms for accelerating energy transition projects in those countries that are worth considering due to the degree of the policies' success. By synthesising the key enabling factors of the successful policies, a set of insights can also be gained for Indonesia on the potential pathways to resolve the gaps highlighted from the prioritised incentives defined in Chapter 6.

Following this, the potential pathways of the prioritised incentives defined in Chapter 6 have been analysed at a high-level for their urgency and potential impact. However, they require further detailed analysis to determine their ease of implementation, scalability, risk of failure and stakeholder acceptance before steps are taken to implement them.

**Ease of implementation** involves evaluating how straightforward it is to put a policy into practice, considering factors such as infrastructure availability, simplicity of regulatory requirements, and the level of administrative support needed. **Scalability** assesses a policy's potential for expansion or replication on a larger scale, considering the flexibility of the policy framework, resource availability, and the ability to maintain efficiency and effectiveness as the scale grows. **Risk of failure** examines the likelihood that a policy may not achieve its intended outcomes, considering financial risks, macroeconomic and political instability, technological challenges, market volatility, and capacity for monitoring and evaluation, among other factors.

Once any proposed policy measure has been drafted, **stakeholder engagement** becomes a critical next step. This involves evaluating the degree of support from various stakeholders, including the public, industry players, and government entities. The analysis also seeks to identify areas requiring changes to align with policy goals and broader government objectives and help to validate any assessment of potential impact. This refined shortlist of incentives would then undergo further analysis in Task 5: Impact Analysis.

By effectively addressing the identified gaps and prioritising impactful mechanisms, Indonesia can enhance its investment climate and more effectively achieve its NDC emission reduction targets. Alignment of contradicting incentive and disincentive mechanisms hopes to ensure that policies are not only coherent but also supportive of the broader energy transition goals. These strategic actions seek to create a more conducive environment for renewable energy investments and accelerate Indonesia's transition to a sustainable energy future.

# Appendix

## A.1. Prioritisation Urgency and Impact Scoring Matrix

**Table 14 Prioritisation Urgency and Impact Scoring Matrix**

| Urgency | | Impact | |
|---|---|---|---|
| **Scale** | **Definition** | **Scale** | **Definition** |
| **1** | The mechanism is **not considered important** by the survey respondents and/or interviewees. Its existence is **trivial**, and its **absence would not challenge** energy transition projects in Indonesia. | **1** | The existence of this mechanism **would not impact** the acceleration of renewable energy development, CFPP early retirement, and coal phase down in Indonesia. |
| **2** | The mechanism is considered important by **a small group** of survey respondents and/or interviewees:<br>• RE development: if at least 2 to 3 RE developers and/or RE financiers are concerned with the mechanism.<br>• CFPP early retirement: if at least 2 to 3 respondents that discuss CFPP early retirement are concerned with the mechanism.<br>• Coal phase down: if at least 2 to 3 respondents that discuss coal phase down are concerned with the mechanism.<br><br>The mechanism is **unlikely to pose challenges** for energy transition projects in Indonesia if not carefully addressed, designed, and implemented. | **2** | The mechanism is **unlikely to accelerate** renewable energy development/CFPP early retirement/coal phase-down in Indonesia.<br>For mechanisms related to RE development:<br>• The mechanism is **unlikely** to **increase** the **attractiveness** of renewable energy investments in Indonesia.<br>• The mechanism is **unlikely** to **reduce** the **risks** and **costs** associated with project preparation, financing, construction, and/or operation.<br>For mechanisms related to CFPP early retirement and phase-down:<br>• The mechanism is unlikely to expedite the early retirement of CFPP/coal phase-down.<br>• The mechanism is **unlikely** to **contribute** to Indonesia's **ENDC target** to reduce emission by 31.89% (without international support) and 43.2% (with international support) by 2030. |
| **3** | The mechanism is **considered important by a moderate group** survey respondents and/or interviewee.<br>• RE development: if at least 4 to 5 RE developers and/or 4 RE financiers are concerned with the mechanism.<br>• CFPP early retirement: if at least 4 to 5 respondents that discuss CFPP early retirement are concerned with the mechanism.<br>• Coal phase down: if at least 4 to 5 respondents that discuss coal phase down are concerned with the mechanism.<br><br>The mechanism can pose **moderate-level challenges** for energy transition projects in Indonesia if not carefully addressed, designed, | **3** | The mechanism can **moderately accelerate** renewable energy development/CFPP early retirement/coal phase-down in Indonesia.<br>For mechanism related to RE development:<br>• The mechanism can **moderately increase** the **attractiveness** of renewable energy investments in Indonesia.<br>• The mechanism can **moderately reduce** the **risks** and **costs** associated with project preparation, financing, construction, and/or operation.<br>For mechanism related to CFPP early retirement and coal phase-down:<br>• The mechanism can **moderately expedite** the early retirement of CFPP/coal phase-down. |

| Urgency | | Impact | |
|---|---|---|---|
| **Scale** | **Definition** | **Scale** | **Definition** |
| | and implemented:<br>RE development<br>• **Moderately hindering** renewable energy investments in Indonesia.<br>• **Moderately increasing risks** and **costs** associated with project preparation, financing, construction, and/or operation.<br>CFPP early retirement and coal phase-down<br>• **Moderately hindering** CFPP early retirement/phase down projects.<br>• **Moderately hindering** Indonesia's **progress** in achieving its emission reduction target as stipulated in Indonesia's **ENDC**. | | • The mechanism can **moderately contribute** to Indonesia's **ENDC target** to reduce emission by 31,89% (without international support) and 43,2% (with international support) by 2030. |
| **4** | The mechanism is **considered important by most** of survey respondents and/or interviewees:<br>• RE development: if at least 6 RE developers and/or 6 RE financiers are concerned with the mechanism.<br>• CFPP early retirement: if at least 6 respondents that discuss CFPP early retirement are concerned with the mechanism.<br>• Coal phase down: if at least 6 respondents that discuss coal phase down are concerned with the mechanism.<br><br>The mechanism can pose **significant** challenges for renewable energy development/CFPP early retirement/coal phase-down in Indonesia if not carefully addressed, designed, and implemented:<br>RE development<br>• **Significantly hindering** renewable energy investments in Indonesia.<br>• **Significantly increasing risks** and **costs** associated with project preparation, financing, construction, and/or operation.<br>CFPP early retirement and coal phase-down<br>• **Significantly hindering** CFPP early retirement/phase down projects.<br>• **Significantly hindering** Indonesia's progress in **achieving** its emission reduction target as stipulated in Indonesia's **ENDC**. | **4** | The mechanism can **significantly** accelerate renewable energy development/CFPP early retirement/coal phase-down in Indonesia.<br>For mechanisms related to RE development:<br>• The mechanism can **significantly increase** the **attractiveness** of renewable energy investments in Indonesia.<br>• The mechanism can **significantly reduce** the **risks** and **costs** associated with project preparation, financing, construction, and/or operation.<br><br>For mechanisms related to CFPP early retirement and coal phase-down:<br>• The mechanism can **significantly expedite** the early retirement of CFPP/coal phase-down.<br>• The mechanism can **significantly contribute** to Indonesia's **ENDC target** to reduce emission by 31,89% (without international support) and 43,2% (with international support) by 2030. |

## A.2. Detailed Assessment for Urgency and Impact Incentive/Disincentive Mechanisms Prioritisation

**Table 15 Assessment of Urgency and Impact of Incentive/Disincentive Mechanisms**

| Incentive/ Disincentive Mechanism | Urgency Score | Supporting Arguments for Urgency | Impact Score | Supporting Arguments for Impact | Total Score |
|---|---|---|---|---|---|
| **RE tariff** | **4** | • Survey & Interview: 7 out of 8 renewable energy developers stated that the current RE tariff are too low and unattractive, mainly due to coal DMO and DPO that make coal supply costs cheaper than RE.<br>• The current ceiling tariffs introduced by the GoI, which are designed to decline by 50% after 10 years of operation, are not high enough for developers and financiers to reach their desired IRRs[196].<br>• RE tariffs that are too low and do not reflect the actual development costs make RE projects less commercially viable[197].<br>• Challenges in RE financing include low tariffs that deter investment and high loan interest rates that reduce return on capital[198]. | **4** | • There is substantial evidence that guaranteed above-market renewable energy tariffs (i.e., feed-in tariffs) can substantially boost firms' RE investment[199].<br>• The introduction of an RE FIT in Southeast Asia increased firm investments in RE projects by 38.8%[200].<br>• UK has demonstrated success with a Renewable Energy Roadmap that includes strategic policy actions such as stronger support for tariff schemes (e.g. FiT in 2010)[201]. | **16** |
| **PPA for RE** | **4** | • Survey & Interview: 6 out of 8 renewable energy developers reported that the current PPA negotiation process lacks certainty, transparency, and accountability, leading | **4** | • Fair risk allocation between the private and public stakeholders, reflected in clear contractual arrangements within the PPA, enables governments to reduce | **16** |

[196] IEEFA (2024), Unlocking Indonesia's Renewable Energy Investment Potential.
[197] PwC (2018), Indonesian Power Industry Survey 2018.
[198] Mentari (2021), UK Energy Transition Lessons Learnt and Opportunities for Indonesia.
[199] Lin, B. and Xie, Y., 2024. How feed-in-tariff subsidies affect renewable energy investments in China? New evidence from firm-level data. Energy, 294, p.130853.; Azhgaliyeva, D., Le, H., Olivares, R.O. and Tian, S., 2024. Renewable energy investments and feed-in tariffs: firm-level evidence from Southeast Asia. Applied Energy, 374, p.123986.
[200] Azhgaliyeva, D., Le, H., Olivares, R.O. and Tian, S., 2024. Renewable energy investments and feed-in tariffs: firm-level evidence from Southeast Asia. Applied Energy, 374, p.123986.
[201] Mentari (2021), UK Energy Transition Lessons Learnt and Opportunities for Indonesia.

| Incentive/ Disincentive Mechanism | Urgency Score | Supporting Arguments for Urgency | Impact Score | Supporting Arguments for Impact | Total Score |
|---|---|---|---|---|---|
| | | to project delays and reluctance among developers' to participate in tenders.<br>• Survey & Interview: 6 out of 8 financial institutions indicated that developers cannot utilise financing facilities without securing a PPA promptly with a reasonable/bankable electricity tariff.<br>• There is no standard PPA form for renewables, as each is negotiated individually. Recent PPA templates show a shift of various risks from the offtaker (PLN) to IPPs and financiers[202].<br>• Unfair risk allocation in PPAs and restrictions on share transfers have negatively impacted firms' future investment plans in Indonesia's RE sector[203]. | | the costs of energy services[204].<br>• It is important for PPAs to be fair, accountable, equitable, stable and mutually agreed upon to ensure reliable, high-quality services and bankable contracts[205]. | |
| **RE procurement, licensing, and PSN status** | **4** | • Survey & Interview: 6 out of 8 renewable energy developers reported that the current RE procurement and permitting processes lack certainty, transparency, and accountability, leading to project delays and reluctance among developers to participate in tenders.<br>• Survey & Interview: There is a lack of information on how to obtain PSN status for RE projects, which can simplify the overall procurement and permitting processes. | **4** | • Transparent, competitive, and predictable procurement processes can help attract more private investment for renewable energy development[208].<br>• Introducing transparent and well-defined procedures in renewable energy procurement, supported by fairer and more commercially balanced PPA terms and conditions, seek to provide assurance, certainty, and | **16** |

[202] JETP Indonesia Secretariat (2023). Comprehensive Investment and Policy Plan.
[203] PwC (2018), Indonesian Power Industry Survey 2018.
[204] World Bank (2023). "Scaling Up to Phase Down: Financing Energy Transitions in the Power Sector". Washington, DC: World Bank.
[205] Mentari (2022). Policy Analysis: Power Purchase Agreements in Indonesia - Case Study: Solar Photovoltaic Hybrid Systems.
[208] World Bank (2023). "Scaling Up to Phase Down: Financing Energy Transitions in the Power Sector". Washington, DC: World Bank.

| Incentive/ Disincentive Mechanism | Urgency Score | Supporting Arguments for Urgency | Impact Score | Supporting Arguments for Impact | Total Score |
|---|---|---|---|---|---|
| | | • Inconsistent procurement applications not only create an impression of unfair and/or risky investment conditions but also reduces competition in the market[206]<br>• Unpredictable procurement practices, lengthy licensing procedures and unclear land rights are some of the main obstacles that deter private investments in renewable energy[207]. | | encouragement for potential investors[209]. | |
| **Carbon pricing mechanism** | **4** | • Survey & Interview: 7 out of 10 respondents that discuss CFPP early retirement indicated that there is no clarity in the stakeholders responsible to compensate the CFPP owners for the actual losses due to the early retirement and cover the remaining debt obligations.<br>• Survey & Interview: 7 out of 10 respondents that discuss CFPP early retirement noted that the current carbon tax and trading system is not effectively applied to the polluting industries.<br>• Survey & Interview: 5 out of 10 respondents that discuss CFPP early retirement stated that CFPP owners cannot claim benefits from carbon credit sales as the current regulation dictates that any | **4** | • Carbon credits can provide additional revenue streams for CFPP owners to compensate them for the income losses from the plant early retirement, increasing the economic viability of early retirement transactions[210] .<br>• The EU Emission Trading System (“EU ETS”) has reduced emissions from EU power sector and energy-intensive industries by around 47% as of 2023 compared to the 2005 level when the system was first launched[211].<br>In particular, emissions from EU power sector decreased by an impressive 24% between 2022 and 2023[212].<br>• According to Bulgarian Energy and Water Regulatory Commission, | **16** |

[206] Organisation for Economic Co-operation and Development. 2021. Clean Energy Finance and Investment Policy Review of Indonesia. Green Finance and Investment. OECD Publishing. Paris.
[207] IEA (2023), Scaling Up Private Finance for Clean Energy in Emerging and Developing Economies, IEA, Paris, Licence: CC BY 4.0.
[209] IEEFA (2024), Unlocking Indonesia’s Renewable Energy Investment Potential.
[210] Monetary Authority of Singapore and McKinsey & Company (2023). Accelerating the Early Retirement of Coal-Fired Power Plants through Carbon Credits.
[211] European Commission (2024). Record reduction of 2023 ETS emissions due largely to boost in renewable energy.
[212] Ibid.

| Incentive/ Disincentive Mechanism | Urgency Score | Supporting Arguments for Urgency | Impact Score | Supporting Arguments for Impact | Total Score |
|---|---|---|---|---|---|
| | | carbon credits from carbon avoidance can only be claimed by the off-taker, PLN. | | electricity production from coal has dropped by 50% between 2023 and 2024 due to the high cost of carbon allowances within EU ETS and strict pollution protection rules[213]. | |
| **Coal DMO and DPO** | **4** | • Survey & Interview: 7 out of 8 renewable energy developers reported that the current RE tariff are too low and unappealing, mainly due to the presence of coal DMO and DPO that make coal cost of supply cheaper than RE.<br>• DPO has made the cost of electricity produced by CFPPs artificially lower than renewable energy, incentivising the use of coal over renewable sources[214].<br>• Subsidies that "*tilt the playing field against clean energy investments*" by making fossil-fuel energy cheaper (i.e., Coal DMO and DPO) deter the interest of RE investors[215]. | **4** | • Reforming fossil fuel subsidies by removing or reducing supports for fossil fuel sectors would create an opportunity for the subsidies to be reallocated towards policies, programs, and infrastructure that are required to support energy transition[216].<br>• Fossil fuel subsidies reduction/removal can also create a level playing field by increasing the competitiveness of renewable energy compared to non-subsidised fossil fuel[217]. | **16** |
| **Blended finance** | **3** | • Survey & Interview: 4 out of 8 financial institutions indicated that they are unable to provide below-market lending rates if cheaper sources of fund, de-risking (guarantees), credit enhancement mechanisms, or blended financing are not available. | **4** | • Blended finance, which allows for mitigation and better allocation of risk, can encourage the participation of private investors in financing energy transition projects[219].<br>• Blending finance from public and private sources to reduce the cost of | **12** |

[213] Balkan Green Energy News (2024). Coal power plants in Bulgaria cutting production amid losses, pollution breaches.
[214] JETP Indonesia Secretariat (2023). Comprehensive Investment and Policy Plan.
[215] IEA (2023), Scaling Up Private Finance for Clean Energy in Emerging and Developing Economies, IEA, Paris, Licence: CC BY 4.0.
[216] IISD (2017), Fossil Fuel Subsidy Reform and the Just Transition: Integrating approaches for complementary outcomes.
[217] Ibid.
[219] Organisation for Economic Co-operation and Development. 2021. Clean Energy Finance and Investment Policy Review of Indonesia. Green Finance and Investment. OECD Publishing. Paris.

| Incentive/ Disincentive Mechanism | Urgency Score | Supporting Arguments for Urgency | Impact Score | Supporting Arguments for Impact | Total Score |
|---|---|---|---|---|---|
| | | • Survey & Interview: One commercial bank attempted to work with Development Financial Institutions (DFIs) to develop a blended financing scheme but the DFIs were uncertain whether the Indonesian developers are able to meet their conditionality, such as environmental safeguard and sustainability standards.<br>• Indonesia's financial institutions are struggling to expand their renewable energy portfolios and prefer offering commercial lending rates with short tenures due to lack of familiarity with RE projects; high perceived risks of RE's long project lifetime; lack of suitable financing instruments and cheaper source of fund; and limited access to green finance[218] | | capital can accelerate coal phase-out, shortening the payback period of a power station and attracting CFPP owners to retire their coal assets early[220]. | |
| **Domestic manufacturing incentives** | **3** | • Investment in domestic RE equipment manufacturing for countries lacking expertise or knowledge in component manufacture is important to reduce the domestic cost of production for RE technologies, especially if importing RE equipment from other countries makes the technology more expensive[221]. | **3** | • Subsidies for domestic PV manufacturers in India have reduced the production costs to around $0.20-$0.21 per Wp, enough to be competitive with China's PV production cost of $0.24 Wp, which includes 40% import tariff imposed by the Government of India[222]. | **9** |

[218] Organisation for Economic Co-operation and Development. 2021. Clean Energy Finance and Investment Policy Review of Indonesia. Green Finance and Investment. OECD Publishing. Paris.
[220] PwC (2024), Tapping into the power of blended finance.

[221] Zhao, Z.Y., Chen, Y.L., Chang, R.D., 2016. How to stimulate renewable energy power generation effectively? - China's incentive approaches and lessons. Renew. Energy 92, 147–156.

[222] Sudheer Singh and Aarushi Koundal, "Historic dip in Chinese solar module prices set to boost India's solar capacity addition," Energyworld.com, July 11, 2023; "India may cut solar panel import tax to make up domestic shortfall," Reuters, May 30, 2023.

| Incentive/ Disincentive Mechanism | Urgency Score | Supporting Arguments for Urgency | Impact Score | Supporting Arguments for Impact | Total Score |
|---|---|---|---|---|---|
| **Tax incentives** | **3** | • 4 out of 8 developers lack clear information on how to apply for tax facilities and faced difficulties during the application process.<br>• Since RE projects' initial capital costs are high, tax incentives, such as tax holidays, allowances, and exemptions, given to RE projects can reduce the overall project cost and encourage renewable energy investment[223].<br>• According to the Cirata Case Study, the project would not be bankable without all the incentives given, incl. tax incentives. | **3** | • Successfully applying tax holidays and allowance for solar PV projects in Indonesia can reduce the average electricity price by up to 14.3%[224]. | **9** |
| **Supporting infrastructure** | **2** | • 3 out of 8 developers mentioned that government support in the form of smart grid, land and transportation access, and risk-sharing mechanism for geothermal exploration is needed for supporting renewable energy development.<br>• Land acquisition remains one of the main causes of delays in RE project development, due to lack of clarity in Indonesia's land registry and borders[225]. | **4** | • Securing tracts of land prior to project tenders is deemed critical to reduce project lead time and accelerate investment[226].<br>• India's solar park scheme, where thew government actively support the land acquisition process for Indian RE developers, has been influential in accelerating RE investment in the country, with the share of solar park projects rising from over 38% in 2015 to around 55% of total capacity awarded in 2017 (almost a 3 GW increase)[227]. | **8** |

[223] Qadir, S.A., Al-Motairi, H., Tahir, F. and Al-Fagih, L., 2021. Incentives and strategies for financing the renewable energy transition: A review. Energy Reports, 7, pp.3590-3606.
[224] Halimatussadiah, A., Kurniawan, R., Farah Mita, A., Amanda Siregar, A., Al Kautsar Anky, W., Farah Maulia, R. and Hartono, D., 2023. The Impact of Fiscal Incentives on the Feasibility of Solar Photovoltaic and Wind Electricity Generation Projects: The Case of Indonesia. Journal of Sustainable Development of Energy, Water and Environment Systems, 11(1), pp.1-16.
[225] Organisation for Economic Co-operation and Development. 2021. Clean Energy Finance and Investment Policy Review of Indonesia. Green Finance and Investment. OECD Publishing. Paris.
[226] Organisation for Economic Co-operation and Development. 2021. Clean Energy Finance and Investment Policy Review of Indonesia. Green Finance and Investment. OECD Publishing. Paris.
[227] Ibid.

| Incentive/ Disincentive Mechanism | Urgency Score | Supporting Arguments for Urgency | Impact Score | Supporting Arguments for Impact | Total Score |
|---|---|---|---|---|---|
| **Sustainable biomass feedstock** | **3** | • Survey & Interview: 6 out of 8 respondents discussing biomass co-firing highlighted the need to ensure a sustainable and affordable biomass supply to attract co-firing initiatives. | **2** | • Biomass co-firing is unlikely to significantly contribute to Indonesia's ENDC emission reduction target by 2030 due to its relatively minor emission reduction compared to CFPP early retirement. | **6** |
| **RPO and REC** | **2** | • Survey and Interview: RPO and REC are not the primary incentives desired by developers and financiers as most of them emphasise tariff and procurement issues.<br>• RPO is applicable in an electricity market where the electricity distributors are separated from the generators (i.e., retail electricity market), which is not the case in Indonesia's currently vertically integrated market structure. | **2** | • RPS and REC trading may not suffice to accelerate renewable energy investment or achieve renewable energy targets, especially given high capital costs for RE development, unless combined with feed-in tariffs[228].<br>• According to a study on FIT and REC in South Korea, feed-in tariff is a more efficient RE incentive from the perspective of solar energy producers in promoting RE development than renewable energy certificates[229]. | **4** |
| **PPA flexibility for IPPs** | **2** | • Survey and Interview: 2 out of 8 respondents discussing biomass co-firing emphasised the need for increased PPA flexibility to enable co-firing and CF reduction. PPAs for coal and RE are under different regulations, and CFPPs would be subject to a penalty if they operate below a certain CF, creating a regulatory barrier to phase down initiatives. | **2** | • Biomass co-firing is unlikely to significantly contribute to Indonesia's ENDC emission reduction target by 2030 due to its relatively minor emission reduction compared to CFPP early retirement. | **4** |
| **Mandated co-firing for IPPs** | **2** | • Survey & Interview: 3 out of 8 respondents | **2** | • Biomass co-firing is unlikely to significantly | **4** |

[228] Zhang, Q., Wang, G., Li, Y., Li, H., McLellan, B. and Chen, S., 2018. Substitution effect of renewable portfolio standards and renewable energy certificate trading for feed-in tariff. Applied Energy, 227, pp.426-435.
[229] Choi, G., Huh, S.Y., Heo, E. and Lee, C.Y., 2018. Prices versus quantities: Comparing economic efficiency of feed-in tariff and renewable portfolio standard in promoting renewable electricity generation. Energy Policy, 113, pp.239-248.

| Incentive/ Disincentive Mechanism | Urgency Score | Supporting Arguments for Urgency | Impact Score | Supporting Arguments for Impact | Total Score |
|---|---|---|---|---|---|
| | | suggested that the government could enact a stronger co-firing mandate for all CFPPs (currently, the mandate comes from PLN for selected CFPPs). | | contribute to Indonesia's ENDC emission reduction target by 2030 due to its relatively minor emission reduction compared to CFPP early retirement. | |

## A.3. Supplementary Legal and Regulatory Framework

In addition to the regulations detailed in Section 2.2 of the Energy Legal and Regulatory Framework in Indonesia, the following regulations are also of significant relevance to this report that are also essential in reinforcing the overall energy policy framework, aiding in the advancement of renewable energy initiatives.

**Table 16 Supplementary Legal and Regulatory Framework**

| Supplementary Legal & Regulatory Framework | Key takeaway |
|---|---|
| **Law** | |
| Law No. 25 of 2007 on Investment as amended by Law No. 6 of 2023 on Stipulation of Government Regulation in Lieu of Law No. 2 of 2022 on Job Creation to become Law ("**Investment Law**") | The Investment Law regulates various aspects of investment, including the types of business entities, the rights and obligations of investors, as well as the facilities and incentives provided to encourage investment. In the context of energy transition, this law provides an important legal basis to attract investment across all sectors and is not specifically directed towards the renewable energy sector. Although there are provisions regarding facilities that provide incentives to investors, only business activities with certain qualifications are covered, and the specific forms of these facilities are not detailed in the Investment Law. |
| Law No. 2 of 2012 on Land Acquisition for Development in the Public Interest as amended by Law No. 6 of 2023 ("**Law No. 2/2012**") | provides a comprehensive framework for land acquisition aimed at development in the public interest. This includes infrastructure projects such as the construction of power plants, transmission lines, substations, networks, and the distribution of electrical energy. the government and/or regional government ensure the availability of land for these public purposes. |
| **Government Regulation ("GR")** | |
| GR No. 5 of 2021 on Implementation of Risk-Based Business Licensing as partially revoked by GR No. 11 of 2023 on Measured Fishing ("**GR 5/2021**") | GR 5/2021 is a legal instrument of Indonesia's broader initiative to simplify and streamline business licensing processes, including those pertaining to the energy sector. The regulation aims to reduce bureaucracy and expedite the business licensing process through the implementation of an electronic licensing system named Online Single Submission Risk Based Approach ("**OSS-RBA**"). By classifying licenses based on risk levels and applying proportional supervision, GR 5/2021 seeks to attract more investments by providing legal certainty and enhancing efficiency and transparency.<br><br>Moreover, the regulation aims to harmonise various existing regulations to prevent overlaps and improve the quality of public services, thereby fostering a more conducive and competitive business environment.<br><br>GR 5/2021 specifically acknowledges the importance of renewable energy and includes provisions that regulate the types of business licenses necessary to support activities in the new and renewable energy and energy conservation subsectors. Additionally, the regulation provides the possibility of obtaining incentives and/or investment facilities, such as tax holidays and tax allowances, for business actors operating in priority and specified business sectors. |
| GR No. 42 of 2021 on Facilities for Nationally Strategic Projects ("**GR 42/2021**") | The regulation governs the facilitation of the implementation of national strategic projects, both in the form of permits and non-permits, provided to accelerate the process of planning, preparation, transactions, construction, and smooth operational control, including the financing mechanism for National Strategic Projects. |
| GR No. 12/2023 on the Granting of Business Licences, Ease of Doing Business, and Investment Facilities for Business Actors in the Capital City of the Nusantara, | GR 12/2023 regulates incentives, tax reduction facilities, and ease of taxation if a business undertakes the development of public service infrastructure in the form of new and renewable energy power plants. However, this regulation is specifically aimed at business operators conducting activities exclusively in the Capital City of the Nusantara to promote accelerated development. |

| Supplementary Legal & Regulatory Framework | Key takeaway |
|---|---|
| as amended by GR No. 29/2024 ("**GR 12/2023**") | |
| GR No. 14/2012 as amended by Government Regulation 23/2014 on Electricity Supply Business ("**GR 14/2012**") | GR 14/2012 was enacted to serve as the implementing regulation for the Electricity Law in Indonesia. This regulation establishes the framework governing business activities related to the supply of electricity within the country. It includes detailed provisions on various aspects such as the types of business activities permitted, designated areas of operation, involved entities, licensing requirements, rights and obligations of license holders, compensation for land use, pricing structures, safety standards, and the supervision and guidance of electricity supply activities.<br><br>A key aspect to highlight is that holders of business licences for electricity supply (*Izin Usaha Penyediaan Tenaga Listrik*, or "**IUPTL**") are mandated to continuously supply electric power that meets established quality and reliability standards. To fulfil this obligation, license holders are permitted to purchase electricity, rent electricity networks, and interconnect electricity networks, all in accordance with the Electricity Supply Business Plan (*Rencana Usaha Penyediaan Tenaga Listrik*, or "**RUPTL**"). |
| GR No. 25 of 2021 on Implementation of the Energy and Mineral Resources Sector ("**GR 25/2021**") | To implement the Job Creation Law, specifically within the Energy and Mineral Resources Business Sectors, GR 25/2021 was issued. This regulation provides detailed guidelines on governance, licensing, and operational standards for business activities in Indonesia's energy and mineral resources sectors. The primary objective of GR 25/2021 is to improve the management and utilisation of these resources in a sustainable and efficient manner, ensuring that the sector contributes positively to national development and energy security. |
| GR No. 19 of 2021 on Implementation of Land Acquisition for Development in the Public Interest as amended by GR No. 39 of 2023 ("**GR No. 19/2021**") | This regulation has been issued to enhance the investment ecosystem and facilitate national strategic projects by addressing various amendments related to land acquisition as stipulated in Law No. 2 of 2012. |
| GR 49/2022 on Exempted Value-added Tax and Value-added Tax or Non-collection of Value-added Tax and Luxury Goods Sales Tax on Imports and/or Delivery of Certain Taxable Goods and/or Delivery of Certain Taxable Services and/or Utilisation of Certain Taxable Services from Outside of the Customs Area ("**GR 49/2022**") | GR 49/2022 revoked GR No.12 of 2001 on Import and or Delivery of Certain Strategic Taxable Goods Exempted from Value Added Tax Imposition which is cited in MOF Regulation 21/2010 that governs tax facilities, including VAT facilities. GR 49/2022 outlines the procedures for obtaining an exemption from VAT imposition. |
| GR No. 36 of 2023 on Foreign Exchange Export Proceeds from Business, Management, and/or Processing of Natural Resources ("**GR 36/2023**") as amended by GR No. 8 of 2025 ("**GR 8/2025**") | Under GR No. 36/2023, Indonesia's mining sector is subject to Foreign Exchange Export Proceeds ("**DHE**"), mining exporters in Indonesia with a Free-on-Board ("**FOB**") export value of at least US$ 250,000 are required to deposit their foreign exchange earnings into designated DHE accounts in Indonesia, corresponding to the amount listed in the Export Customs Notice ("**PPE**"). |

| Supplementary Legal & Regulatory Framework | Key takeaway |
|---|---|
| **Presidential Regulation ("PR")** | |
| PR No. 71 of 2006 on Assignment to PT Perusahaan Listrik Negara (Persero) to Perform the Acceleration of the Development of Coal-powered Power Plants as lastly amended by PR No. 193 of 2014 ("**PR 71/2006**") | Fast Track Program I ("**FTP I**") is the government's program for accelerating electricity infrastructure development through coal-powered power plants. The location guidelines and project operation schedules are specified in the Appendix of PR 71/2006. |
| PR 3/2016 on the Acceleration of the Implementation of National Strategic Projects as lastly amended by PR 109/2020 ("**PR 3/2016**") | PR 3/2016 listed the National Strategic Projects assigned by the government that may submit an application for corporate Income Tax deduction, as referred to in MOF Regulation 130/2020. |
| PR No. 18/2020 on the National Medium-Term Development Plan 2020-2024 ("**PR 18/2020**") | PR 18/2020 stipulates that there are several strategic priority projects that prioritise the procurement of new renewable energy and has determined that in order to strengthen economic resilience, the government has launched priority activities to accelerate the development of renewable energy plants that can be implemented by the Government, BUMN, and the private sector.<br><br>Furthermore, PR 18/2020 specifically regulates that there are several strategic priority projects that prioritise the procurement of new renewable energy, such as the development of palm oil-based green fuel renewable energy which has a budget of 32 trillion Rupiah. |
| PR No. 98 of 2021 on the Implementation of Carbon Economic Value (*Nilai Ekonomi Karbon* or "**NEK"**) ("**PR 98/2021**") | The Government of Indonesia is currently exploring the establishment of market-based mechanism for carbon trading and promoting investment in low-carbon technologies in order to fulfil Indonesia's commitments under international climate agreements, such as the Paris Agreement. The regulation will indirectly provide economic incentives to companies that use low-carbon technologies such as companies that develop new and renewable energy. |
| PR No. 10 of 2021 on Investment Business Fields as lastly amended by PR No. 49/2021 ("**PR 10/2021**") | PR 10/2021 shifts from a negative to a positive investment list, which opens most business sectors in Indonesia to foreign investment. Under this regulation, business sectors are now generally 100% open to foreign investors unless specific requirements apply. This move is aimed at boosting foreign investment by simplifying the rules, particularly in sectors like power generation, including new and renewable energy. |
| **Ministerial Regulation and Decree** | |
| Minister of Energy and Mineral Resources Regulation No. 33 of 2016 on Technical Settlements for Land, Buildings and/or Plants Owned by Communities Living in Forestry Areas for the Purpose of Accelerating the Development of Electrical Infrastructure ("**MEMR Regulation 33/2016**") | This regulation is an implementation regulation of PR 4/2016 regarding procedures for the procurement of land owned by local communities in forestry areas for the construction of electrical infrastructure for electrical infrastructure development. |
| Minister of Energy and Mineral Resources Regulation No. 7 of 2017 on the Procedures for | This regulation establishes standardised procedures for determining benchmark prices for the sales of metal minerals and coal in Indonesia. The regulation ensures transparency and fairness by outlining criteria and data sources, such |

| Supplementary Legal & Regulatory Framework | Key takeaway |
|---|---|
| Determining Benchmark Prices for Sales of Metal Minerals and Coal as lastly amended by MEMR Regulation No. 11 of 2020 ("**MEMR Regulation 7/2017**") | as market prices and production costs, for price calculations. It also specifies the roles of mining companies and the government in the pricing process, aiming to create a stable and predictable pricing environment that supports industry growth and national economic interests. |
| Minister of Energy and Mineral Resources Regulation No. 10 of 2017 on the Main Provisions for PPA as lastly amended by MEMR Regulation No. 10 of 2018 ("**MEMR Regulation 10/2017**") | Establishes the key elements of the power purchase agreement between PLN and the electricity generation company to ensure fair and transparent electricity supply operations, while providing legal certainty in the implementation of the power purchase agreement. |
| Minister of Energy and Mineral Resources Regulation No. 19/2017 on Utilisation of Coal for Electricity Generation and Purchase of Excess Power ("**MEMR Regulation 19/2017**") | MEMR Regulation 19/2017 determines the purchase of electricity for power plants using coal based on PPA. |
| Minister of Energy and Mineral Resources Regulation No. 25 of 2018 on the Mineral and Coal Mining Operations as lastly amended by MEMR Regulation No. 17 of 2020 ("**MEMR Regulation 25/2018**") | The regulation provides guidelines for the entire lifecycle of mining activities, from exploration and exploitation to reclamation and post-mining activities. It emphasises the importance of sustainable and environmentally responsible mining practices, including specific requirements for environmental management and community development. Additionally, the regulation outlines the procedures for obtaining and renewing mining permits, the obligations of mining companies, and the mechanisms for government oversight and enforcement. |
| Minister of Energy and Mineral Resources Regulation No. 10 of 2022 on Procedures for Applications for Approval of Sales Price for Electrical Power And Leasing of Electrical Power Networks and Procedures for Applications for the Stipulation of Electrical Power Tariffs ("**MEMR Regulation 10/2022**") | To support holders of Business Licences for Electrical Power Supply in the Public Interest (*IUPTL untuk Kepentingan Umum* – "**IUPTLU**") who have secured business areas ("**IUPTLU Holders with Business Areas**") during activities relating to the sale and purchase of electrical power and the leasing of electrical power networks ("**Leasing**"), this regulation sets out procedures for applications for the following:<br>1. Approvals for sales prices for electrical power and leasing; and<br>2. Determinations of Tariffs. |
| Minister of Energy and Mineral Resources Regulation No. 16 of 2022 on Procedures for The Implementation of Carbon Economic Value within The Power Plant Subsector ("**MEMR Regulation 16/2022**") | The regulation outlines the procedures for implementing carbon economic value in Indonesia's power plant subsector. It establishes emission upper limits for power plants, mandates the creation of GHG monitoring plans, and sets guidelines for carbon trading, including emission trading and GHG emission offsets. The regulation also details reporting obligations for business actors and introduces a web-based application for calculating and reporting emissions. |
| Minister of Finance No. 176/PMK.011/2009 of 2009 on Import Duty Exemptions on the | MOF Regulation 176/2009 is the provision of import duty exemptions on the import of machinery, goods, and materials needed for the construction or development of industries within the framework of investment to stimulate |

| Supplementary Legal & Regulatory Framework | Key takeaway |
|---|---|
| Import of Machineries and Goods and Materials for Industrial Construction or Development for Investment Purposes as lastly amended by Minister of Finance Regulation No. 188/PMK.010/2015 ("**MOF Regulation 176/2009**") | domestic investment and support the national economy amid global competition. |
| MOF Regulation No. 66/PMK.010/2015 of 2015 on the Exemption of Import Duties on the Import of Capital Goods in the Framework of Development or Development of Electricity Power Plant for General Interest ("**MOF Regulation 66/2015**") | MOF Regulation 66/2015 revoked MOF Regulation No. 154/PMK.011/2008 on Import Duty Exemption on the Import of Capital Goods in the Framework of Development and Development of Electricity Plants for Public Interest, which is cited in MOF Regulation 21/2010 that governs tax facilities, including Import Duty Facility. |
| Minister of Finance Regulation No. 115/PMK.03/2021 of 2021 on Procedure for the Granting of Facilities of Being Exempted From the Imposition of Value Added Tax on Import and/or Delivery of Certain Strategic Taxable Goods, Procedure for the Payment of Value Added Tax of Certain Taxable Strategic Goods That Have Been Exempted From the Imposition of Value Added Tax That Are Not Used in Accordance With the Initial Purpose or Being Transferred, and the Imposition of Sanctions for Delayed Payment of Value Added Tax ("**MOF Regulation 115/2021**") | MOF Regulation 115/2021 enhances legal certainty and simplifies business processes by integrating procedures for providing VAT exemptions on the import and/or delivery of certain strategic taxable goods. This regulation replaces the previous framework under MOF Regulation 268/PMK.03/2015, as it did not fully accommodate the growing need for streamlined and integrated processes. Regulation 115/2021 provides updated guidelines on granting VAT exemptions, procedures for paying VAT on goods that no longer meet exemption criteria (e.g., if repurposed or transferred), and the imposition of sanctions for delayed VAT payments. |
| MOF Regulation No. 73 of 2023 on the Imposition and Revocation of Administrative Sanctions for Violation of Provisions on Foreign ("**MOF Regulation 73/2023**") | This set of implementing regulations imposes the requirements of DHE export proceeds, including the benefits available to compliant exporters. |
| Minister of Environment and Forestry Regulation No. 21 of 2022 on Procedures for The Application of Carbon Economic Value ("**MOE/MF Regulation 21/2022**") | The regulation establishes the framework for implementing carbon economic value in Indonesia. It includes guidelines for carbon trading, result based payment, and carbon levies. The regulation includes the energy sector as one of the sectors that can contribute to the carbon economic value implementation. In this case, the energy sector also includes renewable energy. |
| Minister of Maritime Affairs and Investment Regulation No. 6/2020 on the Strategic Plan of the Coordinating Ministry for Maritime Affairs and Investment | One of the national development agendas is to fulfil energy needs by prioritising the increase of renewable energy. |

| Supplementary Legal & Regulatory Framework | Key takeaway |
|---|---|
| Year 2020 – 2024 | |
| Minister of Maritime Affairs and Investment Regulation No. 5/2022 on the Structure and Work Procedures of the Steering Committee for the Implementation of Carbon Economic Value for Achieving Nationally Determined Contribution Targets and Controlling Greenhouse Gas Emissions in National Development | There is a Carbon Economy Steering Committee that functions to develop cross-field national and international cooperation and is tasked with coordinating the implementation of the carbon economy and the direction of fiscal policy related to it. |
| the Investment Coordinating Board (*Badan Koordinasi Penanaman Modal* or "**BKPM**") Regulation No. 7/2020 on Details of Business Fields and Production Types of Pioneer Industries and Procedures for Providing Corporate Income Tax Reduction Facilities ("**BKPM Regulation 7/2020**") | This regulation implements the details of the business fields and types of production of each Pioneer Industry scope and issuance of the decision to grant a reduction in corporate income tax as regulated under MOF Regulation 130/2020. |
| the Investment Coordinating Board Regulation No. 4 of 2021 on Guidelines and Procedures for Risk-based Business Licensing Services and Investment Facilities ("**BKPM Regulation 4/2021**") | This regulation provides legal certainty in organising risk-based business licensing. It implements MOF Regulation 130/2020 on applications for import duty exemption facilities and format of a concession known as a masterlist for all BKPM-licensed investments and provides an exemption from Import Duty. |
| The Financial Services Authority (*Otoritas Jasa Keuangan* or "**OJK**") Regulation on the Issuance of and Requirements for Sustainability-based Debt Securities and Sukuk ("**OJK Regulation 18/2023**") | This regulation introduced a framework that specifically regulates Green Bonds and encourages their development. |
| Minister of Energy and Mineral Resources Decree No. 267.K/MB.01/MEM.B/2022 as amended by MEMR Decree No. 399.K/KMB.01/MEM.B/2023 on the Fulfilment of Domestic Coal Needs ("**MEMR Decree 267/2022**") | Mandates that coal producers allocate a portion of their production to meet domestic demand. The decree outlines allocation quotas, pricing mechanisms, and compliance requirements to ensure energy security. It also includes monitoring and enforcement measures to ensure adherence to domestic market obligations, balancing domestic needs with export opportunities. |
| Minister of Energy and Mineral Resources Decree Number 14.K/TL.04/MEM.L/2023 of 2023 on Technical Approval for the Upper Limit of Greenhouse Gas Emissions for Coal-fired Power | MEMR Decree 14/2023 provides categories of coal-fired power plant emissions caps in the appendix of this decree. |

| Supplementary Legal & Regulatory Framework | Key takeaway |
|---|---|
| Plants Connected to the Electricity Network of PT Perusahaan Listrik Negara (Persero) for Phase One ("**MEMR Decree 14/2023**") | |
| Minister of Energy and Mineral Resources Decree No. 191.K/EK.01/MEM.E/2024 on the Minimum Limit of Combined Domestic Component Level of Goods and Services within the Scope of the Electricity Infrastructure Development Project ("**MEMR Decree 191/2024**") | This regulation mandates a minimum level of domestic components in goods and services used in electricity infrastructure development projects in Indonesia. It applies to various electricity infrastructure projects, including power plants and transmission lines. |
| Minister of Energy and Mineral Resources Decree No. 277.K/MB.01/MEM.B/2024 on the Reference Price of Metal Minerals and the Reference Price of Coal for the month of October 2024 ("**MEMR Decree 277/2024**") | This Decree establishes the latest reference price for coal. |

# References

AidData. (n.d.). CDB and ICBC provide $625.2 million loan for 660MW Adipala Power Plant Construction Project.; Power Technology. (2024). Power plant profile: Adipala Coal Fired Power Plant, Indonesia.

ASEAN Centre for Energy. (2024). *Assessment of the role of coal in the ASEAN energy transition and coal phase-out*. https://aseanenergy.org/wp-content/uploads/2024/05/ACE_Assessment-of-the-Role-of-Coal-in-the-ASEAN-Energy-Transition-and-Coal-Phase-out.pdf

Asian Development Bank. (2024). The Governance Brief: Tax Incentives and Investment.

Asian Development Bank. (2024). Tax Incentives and Investment.

Azhgaliyeva, D., Le, H., Olivares, R.O. and Tian, S., 2024. Renewable energy investments and feed-in tariffs: firm-level evidence from Southeast Asia. Applied Energy, 374, p.123986.

Balkan Green Energy News (2024). Coal power plants in Bulgaria cutting production amid losses, pollution breaches.

Bank Negara Indonesia (BNI). (2024). BNI Green Bond Report 2024.

Blended Finance Taskforce. (2018). Better Finance Better World. London: Business & Sustainable Development Commission; International Energy Agency ("IEA"). (2021). Financing Clean Energy Transitions in Emerging and Developing Economies. Paris: IEA. Licence: CC BY 4.0

Choi, G., Huh, S.Y., Heo, E. and Lee, C.Y., 2018. Prices versus quantities: Comparing economic efficiency of feed-in tariff and renewable portfolio standard in promoting renewable electricity generation. Energy Policy, 113, pp.239-248.

European Commission (2024). Record reduction of 2023 ETS emissions due largely to boost in renewable energy.

Evaluating the Viability of Co-Firing Biomass Waste to Mitigate Coal Plant Emissions in Indonesia", https://assets-eu.researchsquare.com/files/rs-3481484/v1/0d958a3a-0f09-4778-ae6d-33bf2fbece4c.pdf?c=1723359962 (accessed 24 October 2024).

Halimatussadiah, A., Kurniawan, R., Farah Mita, A., Amanda Siregar, A., Al Kautsar Anky, W., Farah Maulia, R. and Hartono, D., 2023. The Impact of Fiscal Incentives on the Feasibility of Solar Photovoltaic and Wind Electricity Generation Projects: The Case of Indonesia. Journal of Sustainable Development of Energy, Water and Environment Systems, 11(1), pp.1-16.

Holland, D., & Vann, R. J. (1998). "Chapter 23 Income Tax Incentives for Investment". In Tax Law Design and Drafting, Volume 2. USA: International Monetary Fund.

IEA (2023), Scaling Up Private Finance for Clean Energy in Emerging and Developing Economies, IEA, Paris, Licence: CC BY 4.0.

IEA. (2021). Financing Clean Energy Transitions in Emerging and Developing Economies. Paris: IEA. Licence: CC BY 4.0

IEEFA (2024), Unlocking Indonesia's Renewable Energy Investment Potential.

Ihsan, A., Abriningrum, D.E., Suharnoko, B., Rahmawati, A., Giannozzi, S. F. (2024). Indonesia's Fuel Subsidies Reforms. Equitable Growth, Finance and Institutions Insight Washington, D.C.: World Bank Group.

IISD (2017), Fossil Fuel Subsidy Reform and the Just Transition: Integrating approaches for complementary outcomes.

IMF. (2014). External debt statistics: guide for compilers and users. Washington, D.C.: IMF

International Finance Corporation (IFC). (2020). The Green Bond Handbook: a step-by-step guide to issuing a green bond. Washington, D.C.: IMF

International Monetary Fund (IMF). (2014). External debt statistics: guide for compilers and users. Washington, D.C.: IMF

JETP Indonesia Secretariat (2023). Comprehensive Investment and Policy Plan.

Kementerian Energi dan Sumber Daya Mineral Republik Indonesia. (n.d.). DMO dan ICPR untuk Keamanan Pasokan Batubara Domestik dan Optimasi Penerimaan Negara

Kementerian Investasi dan Hilirisasi/BKPM. (2024). Realisasi Investasi 2024.

Kementerian Keuangan Republik Indonesia. (2021). Kenalkan Pajak Karbon untuk Mengendalikan Perubahan Iklim, Indonesia Ambil Manfaat Sebagai Penggerak Pertama di Negara Berkembang.

Kementerian Keuangan Republik Indonesia. (n.d.). Tax Holiday: Mempercantik Iklim Investasi, Memperkuat Industri.

Kementerian Koordinator Bidang Perekonomian Republik Indonesia. (2015). Kajian Efektivitas Fasilitas Pajak Penghasilan Untuk Penanaman Modal Di Bidang-bidang Usaha Tertentu Dan/ Atau Di Daerah-daerah Tertentu (Tax Allowance).

Lin, B. and Xie, Y., 2024. How feed-in-tariff subsidies affect renewable energy investments in China? New evidence from firm-level data. Energy, 294, p.130853.

Lou, J., Squire, C., & Hilde, T. (2024). Evaluating the Viability of Co-Firing Biomass Waste to Mitigate Coal Plant Emissions in Indonesia.

Mentari (2021), UK Energy Transition Lessons Learnt and Opportunities for Indonesia.

Mentari (2022). Policy Analysis: Power Purchase Agreements in Indonesia - Case Study: Solar Photovoltaic Hybrid Systems.

Ministry of Energy and Mineral Resources Indonesia (MEMR Indonesia). (2024). Handbook of Energy & Economic Statistics of Indonesia 2023.

Ministry of Finance. (2025). Buku II Nota Keuangan 2025.

Monetary Authority of Singapore and McKinsey & Company (2023). Accelerating the Early Retirement of Coal-Fired Power Plants through Carbon Credits.

National Renewable Energy Laboratory (NREL). (2015). Renewable Electricity: How do you know you are using it?; U.S. Environmental Protection Agency (EPA). (2017). Energy and Environment Guide to Action - Chapter 5: Renewable Portfolio Standards.

Organisation for Economic Co-operation and Development. 2021. Clean Energy Finance and Investment Policy Review of Indonesia. Green Finance and Investment. OECD Publishing. Paris.

Peimani, H. (2018). Financial Barriers to Development of Renewable and Green Energy Projects in Asia. ADBI Working Paper 862. Tokyo: Asian Development Bank Institute; ERIA study team. (2023). 'Key Barriers and Enablers', Saswata Chaudhury, Raktimava Bose, Debanka Samanta, and Venkatachalam Anbumozhi (eds.), Renewable Energy Transition in South Asia: Role of Regional Energy Trade. ERIA Research Project Report FY2023 No. 10, Jakarta: ERIA, pp.35-40.

PT Sarana Multi Infrastruktur (Persero). (n.d.). PT SMI Green Bond dan Green Sukuk Framework.

PwC (2018), Indonesian Power Industry Survey 2018.

PwC (2024), Tapping into the power of blended finance.

Qadir, S.A., Al-Motairi, H., Tahir, F. and Al-Fagih, L., 2021. Incentives and strategies for financing the renewable energy transition: A review. Energy Reports, 7, pp.3590-3606.

Sudheer Singh and Aarushi Koundal, "Historic dip in Chinese solar module prices set to boost India's solar capacity addition," Energyworld.com, July 11, 2023; "India may cut solar panel import tax to make up domestic shortfall," Reuters, May 30, 2023.

Tryndina, N., An, J., Varyash, I., Litvishko, O., Khomyakova, L., Barykin, S., & Kalinina, O. (2022). Renewable energy incentives on the road to sustainable development during climate change: A review. *Frontiers in Environmental Science*, *10*, 1016803.

U.S. Energy Information Administration. (2013). Feed-in tariff: A policy tool encouraging deployment of renewable electricity technologies.

World Bank (2023). “Scaling Up to Phase Down: Financing Energy Transitions in the Power Sector”. Washington, DC: World Bank.

World Bank. (2015). Options for low-income countries’ effective and efficient use of tax incentives for investment: tools for the assessment of tax incentives (English). Platform for Collaboration on Tax Washington, D.C.: World Bank Group.

Zhang, Q., Wang, G., Li, Y., Li, H., McLellan, B. and Chen, S., 2018. Substitution effect of renewable portfolio standards and renewable energy certificate trading for feed-in tariff. Applied Energy, 227, pp.426-435.

Zhao, Z.Y., Chen, Y.L., Chang, R.D., 2016. How to stimulate renewable energy power generation effectively? - China’s incentive approaches and lessons. Renew. Energy 92, 147–156.