

# REPORT

# Permitting and Regulation Assessment for Onshore Wind 2024

This document is produced as part of the Southeast Asia Energy Transition Partnership's 'Wind Energy Development in Indonesia: Investment Plan' Project





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## Foreword Director General of New Renewable Energy and Energy Conservation

Indonesia's commitment to achieving a renewable energy mix target of 23% by 2025 and 31% by 2050 demands our continuous innovation and hard work. In pursuit of these targets, the role of Wind Power Plants (*Pembangkit Listrik Tenaga Bayu*/PLTB) becomes very strategic. PLTB not only significantly contributes to reducing carbon emissions but also strengthens national energy resilience, improves environmental quality, and promotes local economic development.

This report presents a comprehensive review of the permitting and regulations related to the development of Wind Power Plant in Indonesia. This assessment is crucial for identifying the barriers and challenges faced by stakeholders in realizing sustainable PLTB projects. With this report, it is hoped that we can formulate more effective and efficient policy recommendations, and create a conducive investment climate for the development of renewable energy.

Indonesia has considerable wind potential, especially in certain regions such as Nusa Tenggara, Sulawesi, and the southern part of Java. This potential must be optimally utilized through supportive policies, clear regulations, and a transparent and efficient permitting process. In this context, this report serves not only as an evaluation tool but also as a guide for stakeholders to overcome various challenges and maximize the potential of PLTB in Indonesia.

This report is also expected to raise awareness and understanding of the importance of renewable energy, and motivate all parties to actively participate in supporting government policies. In this way, we can collectively realize Indonesia's commitment to reducing carbon emissions and combating global climate change.

We hope that this report will be beneficial to all stakeholders and encourage concrete steps to accelerate the energy transition in Indonesia. Let us continue to collaborate in order to create a better and more sustainable future for the next generations.



"We hope that this Permitting and Regulation Assessment for Onshore Wind can serve as a comprehensive guide for all parties involved in the development of renewable energy in Indonesia, so that it can accelerate the realization of quality and sustainable wind power plant projects. Let us together drive the national energy transformation towards a greener and cleaner future."

Director General of New Renewable Energy and Energy Conservation,

## Foreword

By giving thanks to the presence of God Almighty, we hereby convey that the "Permitting and Regulation Assessment for Onshore Wind" report has been completed. This report is one of the deliverables of the *Wind Energy Development in Indonesia: Investment Plan* project. This project aims to push for the energy transition and the development of renewable energy, especially onshore wind energy, in Indonesia. The significant potential of onshore wind energy in Indonesia needs to be properly utilized in the short term and in the long term as an effort to achieve the targeted share of renewable energy in the national energy mix. This utilization is also important to support the Government of Indonesia's commitment on achieving Net Zero Emissions (NZE) by 2060, or sooner.

This report is Report II of *Wind Energy Development in Indonesia: Investment Plan* project. This report summarizes various permits and regulations related to onshore wind energy in Indonesia. We hope that this report can help stakeholders in the wind energy sector, such as decision makers, developers, and investors as well as financial services institutions, to understand the applicable regulations. This report can also serve as an input for policymakers from relevant institutions in formulating strategies and action plans that can make the permitting and regulatory climate more conducive in supporting the acceleration of investment and development in the wind energy sector.

In addition to this report, the deliverables under this project include the "Roadmap for Onshore Wind Energy Development in Indonesia" (Report I), the "Wind Energy Development Prospectus" for eight locations in Java and Sumatra Island (Report III), and the "Investment Opportunities Guide for Indonesian Wind Projects" (Report IV).

Finally, please allow us to express our deepest gratitude for the cooperation and valuable input of all parties involved in the preparation of this report, especially the Ministry of Energy and Mineral Resources, the Ministry of Agrarian and Spatial Planning / National Land Agency, Regional Governments and the related agencies, members of the Wind Power Technical Working Group, wind energy developers, and other parties.

Jakarta, 12 June 2024

Editorial Team

## **Executive Summary**

## Background

Renewable energy has become one of the main focuses in various countries, including in Indonesia, as a way to reduce the dependence on fossil fuels that are increasingly limited as well as detrimental to the environment. One form of renewable energy that has received special attention is wind energy. In the context of Indonesia, an archipelago with significant wind potential, the utilization of wind energy becomes strategic to achieve energy sustainability targets and to reduce the negative impacts of climate change.

It is understood that Indonesia has a significant amount of renewable energy (including wind energy) potential which can be utilized to fulfill the nation's demand for electricity. According to BBSP KEBTKE, the wind energy potential of Indonesia amounts to 155 GW, consisting of 60.6 GW onshore wind and 94.2 GW of offshore wind. Nevertheless, at the time of writing, there is only 154.3 MW of onshore wind farm installed capacity; this corresponds to less than 0.1% of the total potential. Knowing that only a small fraction of the huge wind potential is realized raises the question: what are the barriers/challenges that prevent the proliferation of wind energy in Indonesia?

## **Underlying project**

The question above has been answered in the *Roadmap Onshore Wind Energy Development in Indonesia* ("Roadmap"), which just like this study, is part of a project titled *Wind Energy Development in Indonesia: Investment Plan.* This project is initiated by the Ministry of Energy and Mineral Resources (MEMR), managed by the Southeast Asia Energy Transition Partnership (ETP), and hosted by the United Nations Office for Project Services (UNOPS). ETP is a multi-donor partnership formed by governmental and philanthropic partners to accelerate sustainable energy transition in Southeast Asia in line with the Paris Agreement and Sustainable Development Goals. UNOPS is the fund manager and host of ETP Secretariat.

The Roadmap, which is an output of *Component 1: Stocktake and Sector Development Roadmap*, serves as the foundation for this study. One of the highlighted challenges in the Roadmap pertains to regulation and permitting aspects of onshore wind energy. In this study (*Component 2: Permitting and regulation assessment for onshore wind*), the two aspects are further assessed in greater detail. The study is a follow-up to the Roadmap, diving deeper into the regulation and permitting frameworks that underpin Indonesia's wind energy sector. Furthermore, this study is intended to find and explain the challenges in wind regulation and permitting, as well as to propose ways of overcoming the challenges. Therefore, readers can be informed of the recommended action points on regulation and permitting to drive wind energy development forward.

It is also worth noting that this study will be an input for *Component 3: Wind energy potential mapping, gap analysis and site selection* and *Component 4: Investment Opportunities Guide for Indonesian Wind Projects and Access to Finance Report.* Deliverables under these latter two components will be published in 2024.

#### **Relevance to project objectives**

There are three project objectives that underlie this study, namely, (i) consolidate a selection of suitable sites with the highest potential for wind energy development (referring to the potential sites stated on PLN Electricity Business Plan/RUPTL and from the reference studies available, e.g. from MEMR, and other agencies); (ii) analyze the suitability and quality of selected sites for installation and long-term operation of a commercially viable wind power project; and (iii) inform improved policies and regulations and create a favorable business climate to attract investments. Meanwhile, this study is aimed to contribute to three overarching project objectives, i.e. (i) encourage informed decision-making on the development of wind energy in Indonesia; (ii) streamline the permitting and regulatory processes for wind project development; and (iii) attract donor and business investment through provision of preliminary feasibility analysis.

## Approach

Based on the above objectives, this study is expected to answer the research questions below:

- 1. What are the regulations related to wind energy project in Indonesia?
- 2. What are the permits required to build a wind energy project in Indonesia?
- 3. Based on the results of the research, what are the challenges in wind energy projects in Indonesia?
- 4. What are the recommendations to overcome these challenges?

The questions above are answered using the insights derived from desk research, interviews with relevant key stakeholders, and Wind Power Technical Working Group (TWG) Events which are conducted as part of this project.

## Results

## Overall Regulatory Framework

The regulatory framework relevant to wind energy in Indonesia can be divided into 12 categories:

No	Regulations	Description
1	Law No. 30/2007 on Energy	Establishment of DEN ( <i>Dewan Energi</i> <i>Nasional</i> /National Energy Council), who formulates KEN ( <i>Kebijakan Energi</i> <i>Nasional</i> /National Energy Policy)
2	Government Regulation (GR) No. 79/2014 on KEN ( <i>Kebijakan Energi Nasionall</i> National Energy Policy)	Increase the share of new and renewable energy in the context of the primary energy mix to 23% by 2025 and to 31% by 2050
3	GR No. 25/2021 on Implementation in the Energy and Mineral Resources Sector	Organizing the energy and mineral resources sector which includes minerals and coal, geothermal, and electricity
4	Presidential Regulation (PR) No. 3/2016 on Accelerating the Implementation of National Strategic Projects	Simplification of ease of licensing and non- licensing facilities for national strategic projects

## 1. Renewable Energy Regulations

No	Regulations	Description
5	PR No. 22/2017 on RUEN ( <i>Rencana Umum Energi Nasional</i> /General National Energy Plan)	Cross-sector policy implementation plans to achieve KEN targets
6	PR No. 112/2022 on the Acceleration of Renewable Energy Development for Electricity Supply	Preparation of RUPTL (Electricity Supply Business Plan) in order to accelerate the development of renewable energy and renewable energy electricity tariff
7	PR No. 11/2023 on Additional Concurrent Government Affairs in Energy and Mineral Resources Sector in the Renewable Energy Subfield	Provide legal certainty for local governments in developing renewable energy in the region
8	Minister of Energy and Mineral Resources (MEMR) Regulation No. 39/2017 on Implementation of Physical Activities for the Utilization of New and Renewable Energy and Energy Conservation	Activities for the utilization of new and renewable energy are implemented to improve national energy security
9	MEMR Regulation No. 50/2017 jis. MEMR Regulation No. 53/2018 and MEMR Regulation No. 4/2020 on the Utilization of Renewable Energy Sources for the Supply of Electricity	Mechanism for purchasing electricity from power plants that utilize renewable energy sources

## 2. Electricity Regulations

No	Regulations	Description
1	Law No. 30/2009 on Electricity	General understanding of electricity regarding the supply and utilization of electricity
2	GR No. 14/2012 on Electricity Providing Business Activities	Business activities in the field of electricity: generation, transmission, distribution, and sale of electricity
3	GR No. 42/2012 on Cross-Border Electricity Purchases	Cross-border electricity purchases mechanism
4	GR No. 14/2012 jo. GR No. 23/2014 on Electricity Supply Business Activities	Regulates conditions on electricity supply business
5	PR No. 4/2016 jo. No. 14 of 2017 on the Acceleration of Electricity Infrastructure Development	Electricity Infrastructure Development to accelerate the realization of the power plant construction program
6	MEMR Regulation No. 28/2012 jo. MEMR Regulation No. 7/2016 on Application Procedures for Business Area Providing Electricity for Public Interest	Regulates business licensing on provision of electricity for public purposes

No	Regulations	Description
7	MEMR Regulation No. 35/2013 jo. MEMR Regulation No. 12/2016 on Electricity Business Licensing Procedures	Regulates licensing procedures for electricity companies, including business licensing provision of electricity for public purposes
8	MEMR Regulation No. 35/2014 jis. No. 14/2017 and MEMR No. 30/2018 on Delegation of Authority to Grant Electricity Business Licenses in the Context of Implementing One-Stop Integrated Services to the Head of the Investment Coordinating Board	Delegates the authority for granting Electricity Business Licenses with the implementation of One Stop Integrated Services ( <i>Pelayanan</i> <i>Terpadu Satu Pintu</i> /PTSP) to the Head of the Investment Coordination Agency ( <i>Badan</i> <i>Koordinasi Penanaman Modal</i> /BKPM)
9	MEMR Regulation No. 38/2016 on the Acceleration of Electrification in Undeveloped, Remote, Border Rural Areas and Inhabited Small Islands through the Implementation of Small-Scale Electricity Supply Ventures	Use of renewable energy sources for undeveloped rural areas, remote, border, and small inhabited islands
10	MEMR Regulation No. 10/2017 jis. MEMR Regulation No. 49/2017 and No. 10/2018 on Principles of Power Purchase Agreement	Regulates Principles in the Power Purchase Agreement (PPA or <i>Perjanjian Jual Beli Listrik</i> /PJBL) between PLN as off-taker and business entities as the electricity seller
11	MEMR Regulation No. 24/2017 on Mechanism for Electricity Generation Cost Stipulation of PT PLN (Persero)	Regulates determination mechanism for electricity generation costs by PLN, excluding electricity transmission costs
12	MEMR Regulation No. 39/2017 on Implementation of Physical Activity on New and Renewable Energy and Energy Conservation	Regulates the physical activities of renewable energy utilization conducted by the relevant directorate
13	MEMR Regulation No. 20/2020 on Power System Network Rules (Grid Code)	Regulates network management, connection, planning & execution of operations, power transactions, measurements, and a summary of operational schedules
14	MEMR Regulation No. 10/2021 on Electricity Safety	Stipulation that it is mandatory that electricity ventures meet electricity safety
15	MEMR Regulation No. 11/2021 on Implementation of Electricity Businesses	Implementation for business activities in the field of electricity: generation, transmission, distribution, and sale of electricity
16	MEMR Regulation No. 12/2021 on Classification, Qualification, Accreditation and Certification of Electricity Support Services Businesses	Electricity certification procedures

No	Regulations	Description
17	MEMR Regulation No. 10/2022 on the Procedures for Application for Approval of Electricity Selling Price and Electricity Network Lease and Procedures for Application for the Electricity Tariff Stipulation	Guideline in determination of electricity tariff in order to guarantee consumers get reasonable tariff
18	MEMR Decree No. 55.K/20/MEM/2019 on the Amount of the Basic Cost of Electricity Supply for Power Generation of State Electric Company PLN (Persero)	Determination of the amount of Basic Cost of Electricity Supply ( <i>Biaya Pokok Penyediaan</i> <i>Tenaga Listrik</i> /BPP) of PLN
19	MEMR Decree No. 143.K/20/MEM/2019 on RUKN / 2019-2038	Ratification of RUKN ( <i>Rencana Umum Ketenagalistrikan Nasional</i> /General National Electricity Plan) of 2019-2038
20	MEMR Decree No. 169.K/HK.02/MEM. L/2021 on the Amount of the Basic Cost of Electricity Supply PT PLN (Persero) / 2020	Determination of the amount of the Basic Cost of Electricity Supply (BPP) of PLN Power Generator for 2020
21	MEMR Decree No. 188.K/HK.02/MEM.L/ 2021 on Ratification of PT PLN (Persero) National Electricity Supply Business Plan / 2021 to 2030	Ratification of PLN's Electricity Supply Business Plan ( <i>Rencana Umum Penyediaan</i> <i>Tenaga Listrik</i> /RUPTL) 2021-2030
22	Board of Directors (BOD) of PT PLN (Persero) Regulation No. 0357 K/DIR/2014 on Guidelines for Connecting Renewable Energy Power Plants to the PLN Distribution System	Guidelines for connecting renewable energy power plants to PLN's distribution system
23	BOD of PT PLN (Persero) Regulation No. 0076.P/DIR/2020 on the Organization and Work Procedures of PT PLN (Persero)	Transformation of organizational changes and work procedures of PLN
24	BOD of PT PLN (Persero) Regulation No. 0012.E/DIR/2023 on Standard Procedures for Procurement of Other Goods/Services	Procedural provisions in the procurement of PLN goods and services
25	BOD of PT PLN (Persero) Regulation No. 0018.P/DIR/2023 on Strategic Policy for Procurement of Goods/Services PT PLN (Persero)	Strategic policy provisions for integrated procurement of goods and services

## 3. Local Content Regulations

No	Regulations	Description
1	Law No. 3/2014 on Industry	Mandatory use of local products in accordance with TKDN
2	Government Regulation (GR) No. 14/2015 on National Industrial Development Master Plan 2015-2035	Industrial empowerment policies to increase the use of local content in an effort to reduce dependence on imported products, and increase added value in the country
3	GR No. 29/2018 on Industrial Empowerment	Facilities to Green Industries and Strategic Industries in increasing the utilization of Local Products and International Cooperation
4	PR No. 16/2018 jo. No. 12/2021 on Procurement of Government Goods/Services	Government support for micro, small, and cooperative enterprises, as well as the use of local products
5	Ministry of Industry (MoI) Regulation No. 16/M-IND/PER/2/2011 on Provisions and Procedures for Calculating Local Content	Procedure for calculating the local content rate
6	Mol Regulation No. 48/2010 on Guidelines for the Use of Local Products for Electricity Infrastructure Development	Guidelines for TKDN for Electricity Infrastructure Development
7	Mol Regulation No. 54/M-IND/PER/3/2012 on Guidelines for the Use of Local Products for Electricity Infrastructure Development	Guidelines for TKDN for Electricity Infrastructure Development
8	Mol Regulation No. 05/M-IND/PER/2/2017 on Guidelines for the Use of Local Products for Electricity Infrastructure Development	Guidelines for TKDN for Electricity Infrastructure Development

## 4. Conformity of Spatial Utilization Activity Regulations

No	Regulations	Description
1	Law No. 26/2007 on Spatial Planning	General understanding of spatial planning and spatial planning implementation
2	GR No. 21/2021 on Implementation of Spatial Planning	Planning, utilization, management, supervision, guidance, and spatial planning institutions
3	Ministry of ATR/BPN (KATR/BPN) Regulation No. 12/2021 on Land Technical Considerations	Requirements for approval of control, ownership, use and utilization of land with regard to spatial compatibility (Pertek)
4	Ministry of ATR/BPN Regulation No. 13/2021 on Implementation of Conformity of Spatial Utilization Activities and Synchronization of Spatial Utilization Programs	Application of KKPR (Conformity of Spatial Utilization Activities), previously known as Location Permit
5	Ministry of ATR/BPN Regulation No. 14/2021 on Guidelines for Preparation of Database and Presentation of Maps of Provincial, Regency, and City Spatial Plans, as well as Maps of Regency/City Spatial Detail Plans	Accommodating electricity infrastructure network in spatial plan
6	Ministry of Finance (MoF) Regulation No.143/PMK.02/2021 on Types and Rates of Non-Tax State Revenue for Urgent Needs for Services to Issue Conformity of Spatial Utilization Activities Applicable to the Ministry of Agrarian Affairs and Spatial Planning/National Land Agency	Tariff on Types of Non-Tax State Revenue Applicable to Conformity of Spatial Utilization Activities

## 5. Forest Area Use Approval Regulations

No	Regulations	Description
1	Law No. 41/1999 on Forestry	Forest areas that are permitted to be used for non-forestry activities
2	GR No. 33/2014 on Types and Rates of Non-Tax State Revenues Derived from the Use of Forest Areas for Development Interests Outside of Forestry Activities Applicable to the Ministry of Forestry	Types and rates of non-tax state revenues derived from the Forest Area Use Approval
3	GR No. 23/2021 on Forestry Implementation	Management plans and forest utilization
4	Ministry of Environment and Forestry (MoEF) Regulation No. 7/2021 on Forestry Planning, Changes in the Designation and Function of Forest Areas, and Use of Forest Areas	Planning, change, designation, and function in the use of forest area ( <i>Pinjam Pakai Kawasan</i> <i>Hutan</i> /PPKH) in its implementation in coordination with the Forest Area Stabilization Center ( <i>Balai Pemantapan Kawasan</i> <i>Hutan</i> /BPKH)
5	MoEF Regulation No. 8/2021 on Forest Management and Preparation of Forest Management Plans, as well as Forest Utilization in Protected Forests and Production Forests	Management planning and forest utilization in protected and production forests

## 6. Environmental Management Regulations

No	Regulations	Description
1	Law No. 32/2009 on Protection and Environmental Management	General overview regarding environmental protection and management of the life environment
2	GR No. 22/2021 on Implementation of Protection and Environmental Management	Environmental approval, management of hazardous and toxic waste, and others related to management of the life environment
3	MoE (Ministry of Environmental) Regulation No. 29/2009 on Guidelines for the Conservation of Biodiversity in the Regions	Biodiversity conservation planning, including determination of policies and implementation of conservation, sustainable use, and control of damage to biodiversity
4	MoEF Regulation (Permen LHK) No. P.92/MEN LHK/SETJEN/KUM.1/8/2018 on Types of Protected Plants and Animals	List of protected plant and animal species
5	MoEF Regulation No. P.102/MENLHK/ SETJEN/KUM.11/2018 on Procedure for Wastewater Discharge Licensing through Electronically Integrated Business Licensing Services	Domestic wastewater discharge licensing procedures and requirements
6	MoEF Regulation No. 3/2021 on Business Activity Standards in the Implementation of Risk-based Business Licensing in the Environment and Forestry Sector	Risk-Based Assessment (RBA) Business Licensing in the Environment and Forestry sector
7	MoEF Regulation No. 4/2021 on List of Businesses and/or Activities that are Required to Have EIA, UKL-UPL, or SPPL	List of businesses and/or activities that are required to have EIA, UKL-UPL, or SPPL
8	MoEF Regulation No. 5/2021 on Procedures for Issuing Technical Approvals and Operational Feasibility Certificates in the Field of Environmental Pollution Control	Procedures and requirements for technical approval and certificate of operational feasibility of environmental pollution control section
9	MoEF Regulation No. 6/2021 on Procedures and Requirements for Hazardous and Toxic Waste Management	Procedures and requirements of the Hazardous & Toxic Material (B3) license during the construction phase
10	MoH (Ministry of Health) Regulation No. 2/2023 on the Implementation of GR No. 66/2014 on Environmental Health	Establishing environmental health quality standards and health requirements for water, air, soil, food, facilities, and buildings, as well as vectors and disease-carrying animals

## 7. Transportation Regulations

No	Regulations	Description
1	Law No. 22/2009 on Road Traffic and Transportation	Overview of the development and implementation of safe Road Traffic and Transportation
2	GR No. 30/2021 on the Implementation of Road Traffic and Transportation	Activities in the field of traffic and road transport that include the provision of Andalalin
3	Ministry of Transportation (MoT) Regulation No. KM 44/2005 on the Implementation of SNI 03-7112-2005 on KKOP Areas as a Mandatory Standard	Operational standards for KKOP ( <i>Kawasan</i> <i>Keselamatan Operasional Penerbangan</i> /Aviation Operation Safety Area)
4	MoT Regulation No. PM 48/2014 on Procedures for Loading, Preparing, Transporting and Unloading Goods by Train	Procedures and requirements for transporting goods by train
5	MoT Regulation No. PM 57/2015 on Ship Guiding and Delaying	Procedures and requirements for transporting goods at the port
6	MoT Regulation No. PM 90/2018 on Norms, Standards, Procedures, and Criteria for Electronically Integrated Business Licensing in the Air Transportation Sector	Licensing of the transport sector including KKOP sector
7	MoT Regulation No. PM 60/2019 on Implementation of Goods Transport by Motorized Vehicles on Roads	Procedures and requirements for land transport licenses
8	MoT Regulation No. PM 17/2021 on Implementation of Andalalin	Procedures and requirements for Andalalin
9	MoT Regulation No. PM 59/2021 on Implementation of Services Related to Water Transport	Procedures and requirements for water transport licenses

## 8. Land Acquisition for Public Interest Development Regulations

No	Regulations	Description
1	Law No. 2/2012 on Land Acquisition for Public Interest Development	General explanation of land acquisition for public interest development
2	GR No. 19/2021 jo. No. 39/2023 on Implementation of Land Acquisition for Public Interest Development	Acceleration of land acquisition for development for public interest
3	Ministry of ATR/BPN No. 19/2021 on Provisions for Implementing GR No. 19/2021 on the Implementation of Land Acquisition for Public Interest Development	Stages in land acquisition for development in the public's interest

## 9. Business Licensing Regulations

No	Regulations	Description
1	Law No. 25/2007 on Capital Investment	Forms of domestic and foreign investment activities
2	Law No. 23/2014 on Local Government	Establish regional policies to organize government affairs that are the authority of the region
3	Law No. 6/2023 on Establishment of GR Replacement Law No. 2/2022 on Job Creation becomes Law	Combining several laws into one new law to resolve overlapping regulations and simplification of business licensing procedures (Omnibus Law)
4	GR No. 5/2021 on Risk-Based Business Licensing	Electronically integrated licensing services (OSS-RBA)
5	GR No. 6/2021 on Implementation of Business Licensing in the Region	Authority to implement Business Licensing in the region
6	BKPM Regulation No. 4/2021 on Guidelines and Procedures for Risk-Based Business Licensing Services and Capital Investment Facilities	As a guide for use in providing licensing procedure and capital investment facilities for OSS-RBA Institution, ministry/agency/region, and other stakeholders

## 10. Building Regulations

No	Regulations	Regulation
1	Law No. 28/2002 on Buildings	Provisions on buildings include functions, requirements, implementation, community roles, and guidance
2	Law No. 2/2017 on Construction Services	Legal basis to ensure the sustainability of the construction services implementation process.
3	GR No. 22/2020 jo. No 14/2021 on Implementation of Law No. 2/2017 on Construction Services	Technical requirements in the implementation of construction work at the construction implementation stage, and building performance at the operation, maintenance, and decommissioning stages
4	GR No. 16/2021 on Implementing Regulations of Law No. 28/2002 on Buildings	Procedures and requirements for PBG ( <i>Persetujuan Bangunan Gedung</i> or Building Approval)
5	Ministry of Public Works and Public Housing (MPWPH) Regulation No. 27/PRT/M/2018 jo. No. 3/2020 on Certificate of Building Occupancy	Procedures and requirements for SLF ( <i>Sertifikat Laik Fungsi</i> or Certificate of Functional Eligibility)

## 11. Fiscal Facilities Regulations

No	Regulations	Description
1	Law No. 7/2021 on Harmonization of Tax Regulations	Realizing a tax system with justice and legal certainty, which is implemented through administrative reforms
2	GR No. 9/2021 on Tax Treatment to Support Ease of Doing Business	Optimizing the utilization of information technology in tax administration
3	Ministry of Finance (MoF) Regulation No. 176/2009 jo. No. 188/2015 on Exemption from Import Duty on Imports of Machinery and Goods and Materials for Industrial Construction or Development in the Context of Capital Investment	Regulates exemption from import duties on goods and services in accordance with applicable regulations
4	MoF Regulation No. 21/2010 on Providing Tax and Customs Facilities for Activities to Utilize Renewable Energy Sources	Taxation and customs facilities for activities that utilize renewable energy sources
5	MoF Regulation No. 66/2015 on Exemption from Import Duty on Imports of Capital Goods in the Context of Building or Expanding the Electricity Generation Industry for Public Interest	Criteria and procedures for recipients of import duty exemptions, and reporting on the realization of imported goods

No	Regulations	Description
6	MEMR Regulation No. 16/2015 on Criteria and/or Requirements for Utilizing Income Tax Facilities for Investment in Certain Business Fields in Certain Regions in the Energy and Mineral Resources Sector	Criteria and procedures for investment in certain business fields in certain regions in the Energy and Mineral Resources sector
7	MoF Regulation No. 16/PMK.010/2016 on Collection of Income Tax Article 22 In Connection with Payment for Delivery of Goods and Activities in the Field of Import or Business Activities in Other Fields	Collection of income tax in relation to the payment on delivery of goods and activities in the field of import
8	MoF Regulation No. 130/2020 on Providing Corporate Income Tax Reduction Facilities	Criteria and procedures for corporate income tax reduction facility provisions
9	Director General of Electricity Regulation No. 263/2015 on Procedures for Applications for Approval and Ratification of Plans to Import Capital Goods in the Context of Building or Expanding Public Interest Power Generation Industry	Application procedure for approval Goods Import Plan ( <i>Rencana Impor Barang</i> /RIB)

## 12. Employment Regulations

No	Regulations	Description
1	Law No. 13/2003 on Employment	Instruments to protect and regulate employment in Indonesia
2	Law No. 1/1970 on Work Safety	Occupational safety in the workplace, one of which is the obligation to apply Occupational Health and Safety (OHS) requirements to people and work tools
3	GR No. 34/2021 on the Use of Foreign Workers	Obligation to arrange approval for plans to use foreign workers (RPTKA)
4	Ministry of Manpower (MoM) Regulation No. 5/2018 on OHS Work Environment	Ensure and protect the safety and health of workers through efforts to prevent occupational accidents and occupational diseases
5	MoM Regulation No. 18/2017 jo. No. 4/2019 on Procedures for Mandatory Online Labor Reporting in Companies	Procedures for mandatory labor reporting in companies
6	MoM Regulation No. 8/2021 on Implementing Regulations of GR No. 34/2021 On the Use of Foreign Workers	Approval for plans to use foreign workers (RPTKA)

## Overall Permitting

Results of the analysis of overall permitting for wind power plants in Indonesia are divided into two parts, i.e. Online Permitting Services and Overall National Permitting Based on Project Phase.

- 1. Online Permitting Services
  - a. Online Single Submission (OSS) of the Ministry of Investment
  - b. E-Procurement of PT PLN (Persero)
  - c. <u>Business and Operational Licensing Application of the Ministry of Energy and Mineral</u> <u>Resources</u>
  - d. One Stop Integrated Service of the Ministry of Environment and Forestry (PTSP KLHK)
  - e. Si Andalan of the Ministry of Transportation
  - f. Sehati of the Ministry of Transportation
  - g. <u>Building Management Information System (SIMBG) of the Ministry of Public Works and</u> <u>Public Housing</u>
  - h. Sisnaker of the Ministry of Manpower
- 2. Overall National Permitting Based on Project Phase
  - a. Permitting in Development Phase
    - i. Legality of Business Entities
    - ii. Research Permit
    - iii. Fiscal Facilities Application
    - iv. Conformity of Spatial Utilization Activity (KKPR)
    - v. Forest Area Use Approval (PPKH)
    - vi. Environmental Approval
    - vii. Technical Approval
    - viii. Procurement by PLN
    - ix. Power Purchase Agreement (PPA/PJBL)
    - x. Electricity Supply Business License (IUPTL)
    - xi. Recommendations for Aviation Operation Safety Area (KKOP)
    - xii. Terminal Permit for Own Use (TUKS) / Special Terminal (TERSUS)
    - xiii. Land Acquisition for Development in the Public's Interest
  - b. Permitting in Construction Phase
    - i. Facility Application Permit
    - ii. Migrant Working Permits
    - iii. Building Approval (PBG)
    - iv. Water Use Permit
    - v. Testing and Certification of Occupational Health and Safety Equipment (K3)
    - vi. Heavy Equipment Operator's License
    - vii. Recommendation and Certification of Fire Extinguisher (APAR)
    - viii. Certificate of Eligibility for Operation (SLO)
    - ix. Building Function Certificate (SLF)
  - c. Permitting in Operation Phase
    - i. Facilities Application Permit
    - ii. Mandatory Company Employment Report



#### Site-Specific Permitting Aspects

To push for wind energy development in Indonesia, potential locations have been identified that are considered strategic for PLTB (*Pembangkit Listrik Tenaga Bayu*/Wind Power Plant) development. Each of these locations has its own characteristics and challenges in terms of permits and regulations. Therefore, special permits are needed that take into account various aspects of each location. The scope of this study is limited to 8 sites in 9 regencies across Indonesia (Sukabumi, Gunung Kidul, Aceh Besar, Dairi, South Tapanuli, North Padang Lawas, Kediri, Ponorogo, and Probolinggo). Results of this analysis will serve as the basis for Component 3 (Wind energy potential mapping, gap analysis and site selection) of this project and is divided into four parts/sections, i.e. Spatial Plans, Actual Land Use and Land Status, Biodiversity and Environmental Legislation, and Site-Specific Permitting Based on the Project Phase.

## 1. Spatial Plans

The spatial planning map of each regency was provided by the Ministry of Agrarian Affairs and Spatial Planning (KATR/BPN), whereas the Wind Turbine Generator (WTG) potential area was provided by Pondera based on the ongoing Component 3 study. The analysis entails overlaying the RTRW map (*Rencana Tata Ruang Wilayah* or Regional Spatial Plan) and the WTG potential area for each regency. However, the WTG potential areas for regencies in the East Java (Probolinggo, Ponorogo, and Kediri) have not yet been obtained at the time of writing due to the ongoing site selection procedure, and hence, the analysis for the three regencies will be incorporated into Component 3. The following table summarizes the spatial plan analysis.

No	Land Use Plan Types	Sukabumi	Gunung Kidul	Aceh Besar	Dairi	South Tapanuli	North Padang Lawas	Remarks
1	Conservation Forest areas	~						Cannot be used based on GR No. 23/2021
2	Protected Forest areas	~	~	~	<ul> <li></li> </ul>	~		Can be used if a forest area utilization permit is acquired from MoEF, based on GR No. 23/2021
3	Fixed Production Forest areas		~			~	~	Can be used if a forest area utilization permit is acquired from MoEF, based on GR No. 23/2021
4	Limited Production Forest areas	~		<i>✓</i>			<i>✓</i>	Can be used if a forest area utilization permit is acquired from MoEF, based on GR No. 23/2021
5	Community Forest areas		~	~				Can be used if a forest area utilization permit is acquired from MoEF, based on GR No. 23/2021
6	Rural Settlement areas	~	~	~		~		Can be used if a purchase or lease agreement is obtained
7	Urban Settlement areas			~				Can be used if a purchase or lease agreement is obtained
8	Mining area			~				Can be used if a mutual agreement (e.g. MOU) is obtained
9	Plantation area	~		✓				Can be used if a mutual agreement (e.g. MOU) is obtained

No	Land Use Plan Types	Sukabumi	Gunung Kidul	Aceh Besar	Dairi	South Tapanuli	North Padang Lawas	Remarks
10	Non-Forest Estate (APL)						~	Can be used if a purchase or lease agreement is obtained
11	Wetland Agricultural area	~		~				Can be used if a purchase or lease agreement is obtained
12	Dryland Agricultural area	~	~	~		~	~	Can be used if a purchase or lease agreement is obtained
13	Water Absorption Potential area		<i>✓</i>					Can be used if a forest area utilization permit is acquired from MoEF, based on GR No. 23/2021
14	<i>Embung</i> (retention basin) area			✓				Can be used for public interest activities
15	Flooding area							Can be used for public interest activities
16	Beach Border area	V		~				Can be used for public interest activities
17	River Border area	~						Can be used for public interest activities

## 2. Actual Land Use and Land Status

Data of actual land use and land status/ownership are not available, and therefore, some assumptions are made in this analysis based on the land use plans.

					Reg	ency			
No	Land Use Plan Types	Current Land Use	Sukabumi	Gunung Kidul	Aceh Besar	Dairi	South Tapanuli	North Padang Lawas	Land Status
1	Conservation Forest areas	Forest	~						State
2	Protected Forest areas	Forest	~	~	~	~	~		State
3	Fixed Production Forest areas	Forest		~			~	~	State
4	Limited Production Forest areas	Forest	~		~			~	State
5	Community Forest areas	Forest		~	~				State & Community
6	Rural Settlement areas	Settlement or others land use	~	~	~		~		Community
7	Urban Settlement areas	Settlement or others land use			~				Community
8	Mining area	Mining activities or others land use			~				Private
9	Plantation area	Plantation area or mixed plantation	~		~				State /Private or Community
10	Non-Forest Estate (APL)							~	State /Private or Community
11	Wetland Agricultural area	Sawah (rice field) or others land use	~		~				Private or Community
12	Dryland Agricultural area	Dryland plantations or other land use	~	~	~		✓	✓	Private or Community
13	Water Absorption area	Forests, open land, or others		~					Private or Community
14	<i>Embung</i> (retention basin) area	Forests, open land, or others			~				State or Community
15	Flooding area	Open land or others							State/Private or Community
16	Beach Border area	Open land or others	~		√		Ī		State
17	River Border area	Forests, open land, or others	~						State

#### 3. Biodiversity and Environmental Legislation

For the biodiversity aspect, it is necessary to pay attention to the presence of flora and fauna in the protected area, which is guided by the MoEF Regulation No. 20/2018 on *Protected Flora and Fauna*. To preserve protected flora and fauna in the planned activity area, identification of the presence of flora and fauna types in the area must first be conducted. Subsequently, the resulting list of types is then matched with the list attached to MoEF Regulation No. P.20/Menlhk/Setjen/Kum.1/6/2018 concerning *Types of Protected Plants and Animals*. Hence, it can be known whether there are protected types of flora and fauna in the planned activity area.

If the identification results reveal the presence of protected types of flora and fauna within the area, follow-up plans can be prepared to protect and prevent the extinction of these flora and fauna. Such plans include SOPs prohibiting the capture of birds and other animals for employees, preserving habitat, etc. Meanwhile, to maintain the safety and protection of the PLTB from damage, it is necessary to pay attention to the population of birds and bats, which could strike the wind turbine blades.

Given the above aspects, it is necessary to pay attention to Environmental Approval as a basis for construction implementation. The basic regulation for obtaining Environmental Approval, i.e. MoEF Regulation No. 4/2021 on *List of Business and/or Activities that Required to Perform Environmental Impact Assessment, Environmental Management Efforts, and Environmental Monitoring Efforts*, stipulates the preparation of environmental documents (i.e. EIA, UKL-UPL, and SPPL) as the prerequisites.

Another important regulation is MoEF Regulation No. 5/2021 regarding *Procedures for Issuing Technical Approvals and Operational Feasibility Letters in the Field of Environmental Pollution Control.* The core of this regulation states that businesses or activities that require an Environmental Impact Assessment (AMDAL or EIA) and Environmental Management Plan (UKL-UPL) must prepare technical approvals related to waste management in those activities. The results of the technical approval (*Persetujuan Teknis/*Pertek) that have been approved by the competent authority will be included in the AMDAL document. Therefore, the new AMDAL document will only be processed (evaluated) by the AMDAL commission if the technical approval has been completed. Since the publication of Government Regulation 22/2021 in October 2021, the preparation of AMDAL refers to this national regulation, including the process, quality standards, and approval.



Note: SKKLH = Surat Keputusan Kelayakan Lingkungan Hidup (Decree Letter of Live Environmental Fesibility)

4. Site-Specific Permitting Based on Project Phase

Examples of site-specific permitting based on project phase are mostly taken from Sukabumi Regency and Aceh Besar Regency through interviews with developers and the related regencylevel department. Nonetheless, it should be noted that these permitting specifics can be different at other regencies. Results of interviews and desktop studies suggest that PLTB project permits can be divided into two phases, i.e. Development Phase and Construction Phase.

- a. Permitting in Development Phase
  - i. Research Permit
  - ii. Conformity of Spatial Utilization Activity (KKPR)
  - iii. Forest Area Use Approval (PPKH)
  - iv. Environmental Approval
  - v. Technical Approval
  - vi. Recommendations for Aviation Operation Safety Area (KKOP)
  - vii. Terminal Permit for Own Use (TUKS)/Special Terminal (TERSUS)
  - viii. Land Acquisition for Development in the Public's Interest
- b. Permitting in Construction Phase
  - i. Building Approval (PBG)
  - ii. Testing and Certification of Occupational Health and Safety Equipment (OHS)
  - iii. Heavy Equipment Operator's License
  - iv. Recommendations and Certification of Fire Extinguisher (APAR)
  - v. Building Function Certificate (SLF)

## Challenges

No	Challenge	Points
1	Tender process	<ul> <li>A consensus between the stakeholders on the tender process is not yet achieved. The list below shows the tender aspects on which a consensus is needed:</li> <li>Uncertain and unclear PLN procurement process of wind projects, bringing considerable risks for the developers.</li> <li>Multiple developers agree that met mast data should not have an expiry date, as long as it is uninterrupted for 36 months. One developer disagrees and believes expiry date is important.</li> <li>Multiple developers agree that 'blanket rule' on having mandatory partners is burdensome. For instance, in the tender of PLTB Tanah Laut project, it is stipulated that the mandatory partner (e.g. PLN subsidiaries) will be required to have at least 30% share in the project's Special Purpose Company (SPC).</li> <li>One developer believes that operating developers should not be burdened by the obligation to form a new special purpose vehicle (SPV) for their PLTB expansion.</li> </ul>
2	Power Purchase Agreement	Multiple developers agree that PLN's ceiling tariff (whether based on tariff/BPP that is calculated equal for all kinds of energy or Predicted Capacity Matrix/PCM that cannot be revised) is unfair.
3	Construction/operation phase – local content requirements (LCR)	Developers differ on whether local content can be fulfilled or not (e.g., whether turbine manufacturers would accept Indonesian made towers). Although there is not yet a specific LCR for PLTB, there are concerns among IPPs that LCR will become applicable to wind projects too. IPPs do not think that the LCR of, for example, 20-30% (as for some other business activities) would be suitable for the current state of Indonesia's wind sector. If such LCR is applied, it could result in major issues as most wind turbine components (e.g. rotor, blades, hub, gear box) as well as electrical components (e.g. generator and transformer) can only be produced by limited or certain manufacturers which are not yet present in Indonesia.
4	Construction/operation phase – incentives	<ul> <li>Multiple developers agree that carbon credit distribution between PLN and developer is unfair (minimum should be 50% for developer).</li> <li>One developer faces a problem regarding tax incentive being cancelled unfairly.</li> </ul>

No	Challenge	Points
5	Wind data availability	<ul> <li>Limited availability of accurate long-term wind data</li> <li>High level of uncertainty of mesoscale models as the alternative to long-term wind data</li> <li>Financial burden of investments for wind measurements during tender processes by developers. A rough estimate is that for a small wind farm (10 MW) at least one wind measurement device (met mast or LiDAR) is required for at least one year, with the entailed cost of USD 80,000-130,000 (depending on height and location). For larger wind farms, multiple wind measurements are required to lower the uncertainty over the large terrain. This multiplies the cost for wind measurements, which is likely to be between USD 200,000 – 300,000.</li> <li>Lower probability to reach financial close for a project due to uncertainties in wind data</li> <li>Unpredictability of wind behavior during wind farm operation, resulting in difficulties for PLN to predict electricity production</li> </ul>
6	Availability of spatial data and standardized processes	<ul> <li>Absence of a clear Indonesian guideline on the analysis criteria and considerations for the technical, environmental, and social impact of a wind farm</li> <li>Lack of accessible and consistent digital or high-resolution spatial (planning) data to support screening of potential locations and designing wind farm layout</li> <li>Lack of standardization in the development process, including minimum prerequisite studies, feasibility study guideline, etc.</li> </ul>
7	Policy/regulation and permitting	<ul> <li>Uncertainty and frequent change of policies by the Government have created risks for investors and may impact the financial viability of projects</li> <li>Inconsistent implementation of existing regulations</li> <li>Delays in permitting process and land acquisition</li> </ul>
8	Infrastructure	<ul> <li>Sites with wind energy potential are not always near a well-developed grid; lack of transmission and distribution system infrastructure</li> <li>Hard to ensure the stability and reliability of wind power given its intermittency; whereas BESS (battery energy storage system) is still relatively expensive to produce and integrate with wind power plants</li> <li>Lack of supporting infrastructure such as port and road access</li> </ul>
9	Financing & bankability	<ul> <li>Suboptimal impact and support provided by existing fiscal and non-fiscal regulations to investments in wind energy</li> <li>Perception of wind project investments in Indonesia as 'risky and slow,' especially concerning the bankability of the unequally balanced PPAs between PLN and the developer</li> </ul>

No	Challenge	Points
10	Coordination between government agencies	Coordination and responsibility allocation between government offices is needed in the process of building a wind farm
11	Overlapping permits	There is overlap between licenses, for example between KKPR, PPKH, AMDAL, and IUPTL licenses. Another case: KKPR Licensing requires land ownership data (e.g. PPKH). However, the submission of PPKH documents require KKPR, AMDAL, IUPTL.
12	Time uncertainty	If there is an error in the input of data to the OSS system, one must recommence from the beginning which would require a long time.

## Conclusion

Based on the research, it has become clear that so far wind energy utilization is not yet fulfilling the expectations in Indonesia. It is still a question whether 60.6 GW of onshore wind (from RUEN) is a realistic potential, and whether the 8.5 GW onshore wind to be realized by 2030 (from the JETP Comprehensive Investment and Policy Plan) is a realistic target. Nevertheless, having realized only 0.13 GW of installed onshore wind farm capacity until 2023 and having only 0.14 GW in the pre-construction phase show the significant challenge (including in permitting and regulations) to wind energy development that still lies ahead.

The Roadmap (Component 1) shows the regulatory framework in which wind energy development activities take place is very extensive and difficult to comprehend for the involved stakeholders. Although it is important to have a solid regulatory framework in place, such a framework could also intensify bureaucracy, lengthen the project duration, and increase the development process' complexity. The same goes for the numerous permits and approvals that are required during the development, construction, and operation phase as listed in this report.

The results of the research conducted has led to the following conclusions:

## Policy/Regulation and Permitting

- The Government's policy/regulation is regularly subject to change, creating uncertainties and risk to investors and often has an impact on the project's financial viability. For long-term investments (e.g. a pipeline of projects), developers and investors require a stable regulatory environment before entering a country. These challenges create an elevated risk profile for them to enter Indonesia, and in turn, this condition leads to either higher cost (e.g. higher interest rates) or parties starting to invest somewhere else.
- Existing regulations are being implemented inconsistently.
- Observable delays had been mainly occurring in the permitting and land acquisition processes.

## Spatial Data Availability

 It is difficult to access official/ratified and consistent spatial planning data (in digital and/or highresolution formats) which are essential to support screening of potential locations and laying out the wind farm.

## Procurement Mechanism

 PLN procurement process for wind projects had been viewed as unclear, hence uncertain, creating significant risks for the investors/developers.

## Funding/Financing and Bankability

- Existing fiscal and non-fiscal regulations for wind project investments had only been providing suboptimal impact and support.
- The inequality/non-balanced PPA's between PLN and investors/developers had created the image that wind project investments in Indonesia as "risky and slow."

## Recommendations

Improvement of policy/regulation and permitting can be performed by the following three recommendations:

## Recommendation 1: Pre-conditions for policy/regulations and permitting in the wind sector

The recommendation can be categorized into four sub-clusters:

- Consistency:
  - Renewable energy projects, including wind energy projects, require long term commitments and planning. Consistency of policy/regulations is paramount in providing the predictability and stability needed for such long-term large investments.
  - Developers and investors should be assured that regulations and permitting processes are always applied in a consistent and diligent manner. This means that it does not matter if a project is developed in Aceh, Bali, or in other regions. It also means that regulations 'trickle down' in an unchanged manner from the initiating authority to the implementing authority.
- Transparency:
  - Transparency and engagement of stakeholders have been repeatedly highlighted, but the effectiveness of these interactions is to be observed further. It is recommended to have more details on how feedback and recommendations from stakeholders, including business associations and developer/investors, in a transparent manner is being considered and ultimately incorporated in the decision-making process by the Government.
  - Transparency on, apparently "unavoidable" although "undesirable" for developers, frequently changing policies and regulations can be done by announcing them in timely manner with prior consultation of key (private) stakeholders.
  - A more transparent and standardized permitting for projects, like in the case of the OSS System, will reduce project uncertainty in schedule, budget, and compliance to bankability.

- Clarity:
  - Evaluation criteria for permit applications should be reasonable, be clearly defined upfront, and refer to published standards.
  - Upon the occurrences of frequently changing policy/regulations and permitting, there
    should be Clarity on a reasonable cut for how these revisions apply to ongoing and
    future projects.
  - For legal clarity on land disputes in land-acquisition process which can lead to legal complications, delay, and costs, it is recommended to have rules and mechanisms that define land ownership and usage rights to help prevent disputes and a legal clarity framework for wind energy projects. Eminent domain rules or similar land use priority can be introduced for renewable energy projects as being beneficial to the general public.
- Responsibility:
  - Responsibilities need to be assigned to a government body with strong leaderships, with effective process tracking and intervention empowerment to mitigate the risk of lack of coordination amongst government stakeholders during this crucial energy transition period.
  - For the wind energy regulations and permitting process, it is important to have a
    government body which directs allocation of responsibilities to the relevant authorities.
    In this definition of responsibility and authority, it is important to align and coordinate
    all key public stakeholders, especially between policymakers and PLN, to ensure that
    all parties aim for the same targets and execute them coherently in achieving the
    targets. The appointment of the government body can be based on the
    recommendation of, for instance, the Wind Power Technical Working Group.

## Recommendation 2: Continuous improvement of the OSS system

Improvements are required by focusing on the following:

- Integration of Indonesian complex regulation into the OSS system:
  - The regulatory environment in Indonesia is multifaceted and intricate, and integrating all necessary licenses and permits coherently into the OSS system is a substantial undertaking to be meticulously planned, including by monitoring and actively gathering feedback from all related stakeholders. A fast-track program could be tailored for particular cases in accelerating permitting process for wind power projects, which must be subjected to fulfilling pre-requisite documents and requirements for specific licenses and permits.
- <u>Coordination among government bodies:</u>

Effective cooperation and coordination among government bodies (including between central and regional government bodies) is imperative. Appointing dedicated PICs, both centrally and in each government body would be a significant step in OSS system continuous improvement. Authority and competence should be vested to these PIC's.

## Recommendation 3: Streamlining the land acquisition process

Land acquisition is the foremost impedance in all projects in Indonesia, including for wind power projects which are usually located in remote area and locations with specific challenges on local, environmental, and cultural/indigenous issues. It is recommended to streamline the rules and mechanisms to land acquisition issues, specifically on rampant land-overlapping issues in the Indonesian investment environment. This includes:

## Legal clarity:

As mentioned in Recommendation Cluster 1, Clarity in land acquisition and potential ensuing dispute from clear rules and mechanisms in place ensures that the developers have manageable access to the land they need to develop renewable energy projects.

Investments and development attraction:

The potential position of wind energy as one of the technologies crucial for Indonesia's energy transition, could be used as a motive to obtain land-use priority or land acquisition. Fast-tracking may become an example on how Indonesia's investment climate can get rid of the long-lasting "land acquisition stigma."

## Further research

On a final note, this study is part of a larger project called the *Wind Energy Development in Indonesia: Investment Plan.* Within this project, two additional deliverables will be created, namely:

- Mapping wind energy potential and analyzing possible gaps for 8 selected potential wind farm locations in 9 regencies
- Establishing investment opportunities guide for the onshore wind sector

It is the intention that these deliverables can further shed some light into ways to drive Indonesia's wind energy development forward.

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# List of Abbreviations

AMDAL	Analisis Mengenai Dampak Lingkungan (Environmental Impact Assessment)
Andalalin	Analisis Dampak Lalu Lintas (Traffic Impact Analysis)
APAR	Alat Pemadam Api Ringan (Fire Extinguisher)
APL	Areal Penggunaan Lain (Non-Forest Estate)
ATR/BPN	Agraria dan Tata Ruang/Badan Pertanahan Nasional (Agrarian Affairs and Spatial Planning/National Land Agency)
B3	Bahan Berbahaya dan Beracun (Hazardous and Toxic Waste)
Bappenas	<i>Badan Perencanaan Pembangunan Nasional</i> (National Development Planning Agency)
BBSP	Balai Besar Survei dan Pengujian Ketenagalistrikan, Energi Baru, Terbarukan, dan Konservasi Energi (Center for Survey and Testing of Electricity, New, Renewable Energy and Energy Conservation)
BBWS	Balai Besar Wilayah Sungai (River Basin Organization)
BESS	Battery Energy Storage System
ВКРМ	Badan Koordinasi Penanaman Modal (Investment Coordinating Board)
BOD	Board of Directors
ВРКН	Balai Pemantapan Kawasan Hutan (Forest Area Stabilization Center)
BPP	Biaya Pokok Penyediaan Tenaga Listrik (Basic Cost of Electricity Provision)
BRIN	Badan Riset dan Inovasi Nasional (National Research and Innovation Agency)
BUMN	Badan Usaha Milik Negara (State-Owned Enterprises)
COD	Commercial Operation Date
DEN	Dewan Energi Nasional (National Energy Council)
DLKr/ DLKp	Daerah Lingkungan Kerja dan Daerah Lingkungan Kepentingan (Work Authority Area and Interest Authority Area)
DPR RI	Dewan Perwakilan Rakyat Republik Indonesia (House of Representatives of the Republic of Indonesia)
DPT	Daftar Penyedia Terseleksi (Selected Provider List)
EBT	Energi Baru Terbarukan (New Renewable Energy)
EBTKE	Direktorat Jenderal Energi Baru Terbarukan dan Konservasi Energi (New, Renewable Energy, and Energy Conservation)

EIA	Environmental Impact Assessment
ETP	Southeast Asia Energy Transition Partnership
GATRIK	Ketenagalistrikan (Electricity)
GR	Government Regulation
GW	Gigawatt
IIEE	Indonesian Institute for Energy Economics
IPP	Independent Power Producer
IUP	Izin Usaha Pertambangan (Mining Business License)
IUPTL	Izin Usaha Penyediaan Tenaga Listrik (Electricity Supply Business)
JDIH	<i>Jaringan Dokumentasi dan Informasi Hukum</i> (Legal Information and Documentation Network)
jis.	Junctis
jo.	Juncto
К3	Kesehatan dan Keselamatan Kerja (Occupational Health and Safety)
KATR/BPN	<i>Kementerian Agraria dan Tata Ruang / Badan Pertanahan Nasional</i> (Ministry of Agrarian Affairs and Spatial Planning)
Kemenkomarves	Kementerian Koordinator Bidang Kemaritiman dan Investasi (Coordinating Ministry for Maritime and Investment Affairs)
KEN	Kebijakan Energi Nasional (National Energy Policy)
ККОР	Kawasan Keselamatan Operasi Penerbangan (Aviation Operations Safety Area)
KKPR	Kesesuaian Kegiatan Pemanfaatan Ruang (Conformity of Spatial Utilization Activity)
КЦНК	<i>Kementerian Lingkungan Hidup dan Kehutanan</i> (Ministry of Environment and Forestry)
КРА	Komisi Penilai AMDAL (Central AMDAL Commission)
КРРВ	Kawasan Pertanian Pangan Berkelanjutan (Sustainable Food Agriculture Area)
LIT	Lembaga Inspeksi Teknik (Electricity Engineering Inspection Institutions)
Lol	Letter of Intent
LSD	Lahan Sawah Dilindungi (Protected Rice Field)
MEMR	Ministry of Energy and Mineral Resources (or Minister of Energy and Mineral Resources)
MIGAS	Minyak dan Gas (Oil and Natural Gas)
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MINERBA	Mineral dan Batubara (Minerals and Coal)
MoEF	Ministry of Environment and Forestry
MoF	Ministry of Finance
Mol	Ministry of Industry
Moln	Ministry of Investment/BKPM
МоМ	Ministry of Manpower
МоТ	Ministry of Transportation
NIB	Nomor Induk Berusaha (Business Identification Number)
NIDI	Nomor Induk Data Instalasi (Installation Data Master Number)
NIK	Nomor Induk Kependudukan (National Identification Number)
NPWP	Nomor Pokok Wajib Pajak (Tax Identification Number)
OHS	Occupational Health and Safety
oss	Online Single Submission
OSS-RBA	Online Single Submission Risk Based Approach ( <i>Perizinan Berusaha Berbasis Risiko</i> )
PB-UMKU	<i>Perizinan Berusaha Untuk Menunjang Kegiatan Usaha</i> (Business Licenses to Support Business Activities)
PBG	Persetujuan Bangunan Gedung (Building Approval)
PDAM	Perusahaan Daerah Air Minum (Local Water Company)
Pertek	Persetujuan Teknis (Technical Approval)
PJBL	Perjanjian Jual Beli Listrik (Electricity Purchase Agreement)
PJK3	Perusahaan Jasa Keselamatan dan Kesehatan Kerja (Occupational Safety and Health Services Company)
PKKPR	Persetujuan Kesesuaian Kegiatan Pemanfaatan Ruang (Approval of the Suitability of Space Utilization Activities)
РКР	Pengusaha Kena Pajak (Taxable Entrepreneur)
PKTL	Direktorat Jenderal Planologi Kehutanan dan Tata Lingkungan (Directorate General of Forestry Planning and Environmental Management)
PLN	PT Perusahaan Listrik Negara (Indonesia's state-owned electricity company)
PLTB	Pembangkit Listrik Tenaga Bayu (Wind Power Plant)

PLT-ET	Pembangkit Listrik Tenaga-Energi Terbarukan (Renewable Energy Power Plants)
РМА	Penanaman Modal Asing (Foreign Capital Participation)
PMDN	Penanaman Modal Dalam Negeri (Domestic Capital Investment)
PNBP	Penerimaan Negara Bukan Pajak (Non-Tax State Revenue)
PPA	Power Purchase Agreement
PPh	Pajak Penghasilan (Income Tax)
РРКН	Persetujuan Prinsip Penggunaan Kawasan Hutan (Forest Area Use Approval)
PR	President Regulations
РТ	Perseroan Terbatas (Limited Liability Company)
PTSP	Pelayanan Terpadu Satu Pintu (One-Stop Investment Licensing Service)
RBA	Risk Based Assessment
RDTR	Rencana Detail Tata Ruang (Detailed Spatial Plan)
RIB	Rencana Impor Barang (Goods Import Plan)
RРТКА	Rencana Penggunaan Tenaga Kerja Asing (Expatriate Manpower Utilization Plan)
RTR	Rencana Tata Ruang (Spatial Plan)
RTRW	Rencana Tata Ruang Wilayah (Regional Spatial Plan)
RUEN	Rencana Umum Energi Nasional (National Energy Plan)
RUPTL	Rencana Usaha Penyediaan Tenaga Listrik (Electricity Supply Business Plan)
SIMBG	Sistem Informasi Manajemen Bangunan Gedung (Building Management Information)
Sisnaker	Sistem Informasi Ketenagakerjaan (Employment Information System)
SKF	Surat Keterangan Fiskal (Fiscal Certificate)
SKKLH	Surat Keputusan Kelayakan Lingkungan Hidup (Environmental Feasibility Decree)
SLF	Sertifikat Laik Fungsi (Certificate of Functional Eligibility)
SLO	Sertifikat Laik Operasi (Certificate of Operational Worthiness)
SOP	Standard Operating Procedure
SPC	Special Purpose Company
SPPL	Surat Pernyataan Kesanggupan Pengelolaan dan Pemantauan Lingkungan Hidup (Form of Statement of Capability for Environmental Management and Monitoring)

SPV	Special Purpose Vehicle
TERSUS	Terminal Khusus (Special Terminal)
TKDN	Tingkat Komponen Dalam Negeri (Local Content Requirement)
TUKS	Terminal Untuk Kepentingan Sendiri (Terminal Permits for Personal Use)
TWG	Technical Working Group
UKL- UPL	Upaya Pengelolaan Lingkungan Hidup dan Upaya Pemantauan Lingkungan Hidup (Environmental Management Efforts – Environmental Monitoring Efforts)
UNOPS	United Nations Office for Project Services
WLKP	<i>Wajib Lapor Ketenagakerjaan Perusahaan</i> (Mandatory Company Employment Report)
WTG	Wind Turbine Generator

# 1 Introduction

### 1.1 Background

Renewable energy has become one of the main focuses in various countries, including in Indonesia, as a way to reduce dependence on fossil fuels that are increasingly limited as well as detrimental to the environment. One form of renewable energy that has received special attention is wind energy. In the context of Indonesia, an archipelago with significant wind potential, the utilization of wind energy becomes strategic to achieve energy sustainability targets and to reduce the negative impacts of climate change.

It is understood that Indonesia has a significant amount of renewable energy (including wind energy) potential which can be utilized to fulfill the nation's demand for electricity. According to BBSP KEBTKE, the wind energy potential of Indonesia amounts to 155 GW, consisting of 60.6 GW onshore wind and 94.2 GW of offshore wind. Nevertheless, at the time of writing, there is only 154.3 MW of onshore wind farm installed capacity; this corresponds to less than 0.1% of the total potential. Knowing that only a small fraction of the huge wind potential is realized raises the question: what are the barriers/challenges that prevent the proliferation of wind energy in Indonesia?

The question above has been answered in the *Roadmap Onshore Wind Energy Development in Indonesia* ("Roadmap"), which just like this study, is part of a project titled *Wind Energy Development in Indonesia: Investment Plan.* This project is initiated by the Ministry of Energy and Mineral Resources (MEMR), managed by the Southeast Asia Energy Transition Partnership (ETP), and hosted by the United Nations Office for Project Services (UNOPS). ETP is a multi-donor partnership formed by governmental and philanthropic partners to accelerate sustainable energy transition in Southeast Asia in line with the Paris Agreement and Sustainable Development Goals. UNOPS is the fund manager and host of ETP Secretariat.

The Roadmap, which is an output of *Component 1: Stocktake and Sector Development Roadmap*, serves as the foundation for this study. One of the highlighted challenges in the Roadmap pertains to regulation and permitting aspects of onshore wind energy. In this study (*Component 2: Permitting and regulation assessment for onshore wind*), the two aspects are further assessed in greater detail. The study is a follow-up to the Roadmap, diving deeper into the regulation and permitting frameworks that underpin Indonesia's wind energy sector. Furthermore, this study is intended to find and explain the challenges in wind regulation and permitting, as well as to propose ways of overcoming the challenges. Therefore, readers can be informed of the recommended action points on regulation and permitting to drive wind energy development forward.

It is also worth noting that this study will be an input for *Component 3: Wind energy potential mapping, gap analysis and site selection* and *Component 4: Investment Opportunities Guide for Indonesian Wind Projects and Access to Finance Report.* Deliverables under these latter two components will be published in 2024.

# 1.2 Objectives

There are three project objectives that underlie this study, namely, (i) consolidate a selection of suitable sites with the highest potential for wind energy development (referring to the potential sites stated on PLN Electricity Business Plan/RUPTL and from the reference studies available, e.g. from MEMR, and other agencies); (ii) analyze the suitability and quality of selected sites for installation and long-term operation of a commercially viable wind power project; and (iii) inform improved policies and regulations and create a favorable business climate to attract investments. Meanwhile, this study is aimed to contribute to three overarching project objectives, i.e. (i) encourage informed decision-making on the development of wind energy in Indonesia; (ii) streamline the permitting and regulatory processes for wind project development; and (iii) attract donor and business investment through provision of preliminary feasibility analysis.

Based on the above objectives, this study is expected to answer the research questions below:

- 1. What are the regulations related to wind energy project in Indonesia?
- 2. What are the permits required to build a wind energy project in Indonesia?
- 3. Based on the results of the research, what are the challenges in wind energy projects in Indonesia?
- 4. What are the recommendations to overcome these challenges?

# 1.3 Methodology

The methodology for the overall regulatory and site permitting study, is as follows:

1. Desktop study research

To implement the study, the following activities were conducted:

- a. Desktop research
- b. Regulation and literature review

# 2. Interviews

Interviews were conducted with other parties, these being as follows:

- a. Interviews with members of ETP's Implementing Partners consortium for this project (including Pondera Consult B.V. and the Indonesian Institute for Energy Economics/IIEE), consisting of periodical coordination on progress of each task, information sharing, etc.
- b. Interviews with developers on:
  - Regulations applicable to wind energy developers in Indonesia
  - Actual experiences in processing and estimated time for wind power plant permitting process
  - Challenges in obtaining permits for wind farms, and suggestions/recommendations for overcoming them
- c. Interviews with IIEE and other experienced resource persons regarding wind power plant (PLTB) on the experiences and challenges on handling PLTB projects
- d. Interviews (by phone and in-person) with national and regional regulation/permit institutions (especially as recommended by IIEE through our consultation), such as:
  - Energy and Mineral Resources Office/*Dinas Energi dan Sumber Daya Mineral* West Java Province
  - Forestry Office/Dinas Kehutanan West Java Province

- Transport Office/Dinas Perhubungan West Java Province
- Public Works and Spatial Planning Office/*Dinas Pekerjaan Umum dan Penataan Ruang* – Aceh Besar Regency
- Land and Spatial Planning Office/Dinas Pertanahan dan Tata Ruang Sukabumi Regency
- Investment and One-Stop Integrated Service Office/Dinas Penanaman Modal dan Pelayanan Terpadu Satu Pintu (DPMPTSP) – Sukabumi Regency

In addition to the 'formal' interviews which will be conducted with several stakeholders, input to answering the research question will also be obtained via the Wind Power Technical Working Group (TWG) events. The TWG convenes important actors in the wind sector, including representatives from:

- Ministry of Energy and Mineral Resources (MEMR)
- Ministry of Finance (MoF)
- Ministry of National Development Planning (Bappenas)
- Ministry of Environment and Forestry (MoEF)
- Ministry of Agrarian Affairs and Spatial Planning (KATR/BPN)
- Ministry of Industry (MoI)
- Ministry of Investment (MoIn)
- Coordinating Ministry for Maritime and Investment Affairs
- National Research and Innovation Agency (BRIN)
- Offices for Energy and Mineral Resources from several provinces with onshore wind potential
- State-owned enterprises (PLN, PLN subsidiaries, and Pertamina NRE)
- Private enterprises (wind developers, consultants, and manufacturers)
- Associations in wind energy
- University research centers and think tank organizations
- Development agencies

TWG events serve as a platform for receiving input and feedback from these actors on (parts of) this study, as well as for dissemination of preliminary and final results. Up to the time of writing, three TWG events have been conducted. Meaningful insights gathered from the events have been integrated into this document.

### 1.4 Scope

The scope of this study is explained below:

- 1. The overall regulatory framework in which wind energy must be developed, consisting of the preparation of overall regulations related to wind power plants projects in Indonesia.
- 2. The site-specific permitting aspects, consisting of the preparation of overall permits related to wind power plant projects based on development phase, site permitting, and permitting challenges. These permitting aspects are assessed as preparation for the pre-feasibility study to be conducted in Component 3 of this project. There are 8 specific sites located in 9 regencies, which are:

- a. Sukabumi Regency, West Java
- b. Gunung Kidul Regency, DI Yogyakarta
- c. Aceh Besar Regency, DI Aceh
- d. Dairi Regency, North Sumatra
- e. South Tapanuli Regency, North Sumatra
- f. North Padang Lawas Regency, North Sumatra
- g. Kediri Regency, East Java
- h. Ponorogo Regency, East Java
- i. Probolinggo Regency, East Java
- Conclusion and Recommendations, containing the conclusion and recommendations for wind power plants projects in Indonesia based on the identified challenges in regulations and permitting.

### 1.5 Report Structure

This report is structured as follows:

- 1. Chapter 1 consists of background, objectives, methodology, scope, and report structure.
- 2. Chapter 2 provides a description of the current overall regulatory framework of wind energy in Indonesia, including:
  - Renewable Energy Regulations
  - Electricity Regulations
  - Local Content Regulations
  - Conformity of Spatial Utilization Activities (KKPR) Regulations
  - Forest Area Use Approval Regulations
  - Environmental Management Regulations
  - Transportation Regulations
  - Regulations on Land Acquisition for Public Interest Development
  - Basic Business Licensing Regulations
  - Building Regulations
  - Fiscal Facilities Regulations
  - Employment Regulations
- 3. Chapter 3 explains the overall permitting for wind power plant in Indonesia, consisting of:
  - Online Permitting Services
  - Overall National Permitting Based on the Project Phase
- 4. Chapter 4 elaborates upon site-specific permitting aspects, which address:
  - Spatial Plans
  - Land Use and Land Status
  - Biodiversity and Environmental Legislation
  - Site-Specific Permitting Based on the Phase of Wind Energy
- 5. Chapter 5 provides a description of the regulation and permitting challenges.
- 6. Chapter 6 presents the conclusion and recommendation of this study.

# 2 Overall Regulatory Framework for Wind Energy in Indonesia

The study on regulations conducted by the Indonesian Institute for Energy Economics (IIEE), confirmed by BITA's independent research, has revealed that, to date, there are no specific regulations governing the construction of wind power plants (*Pembangkit Listrik Tenaga* Bayu/PLTB). However, some of the relevant regulations regarding Renewable Energy Power Plant (*Pembangkit Listrik Energi Terbarukan*/PLT-ET) also define the regulatory framework for wind energy.

The specific regulation for PLT-ET, including centralized PLTB, is currently being designed. The regulation was already on the list of 2020-2024 National Priority Legislative Program. Currently, it is under discussion in the House of Representatives of the Republic of Indonesia (*Dewan Perwakilan Rakyat Republik Indonesia*/DPR RI) concerning the Draft Law on New and Renewable Energy (*Rancangan Undang-Undang Energi Baru dan Energi Terbarukan*/RUU EBET).

In the next sections, wind energy related regulations falling under twelve distinct categories are respectively summarized. The listed regulations are meant to complement those which are included in the Roadmap.

# 2.1 Renewable Energy Regulations

This Renewable Energy Regulation concerns the development of PLT-ET, including PLTB. Accordingly, the list on renewable energy regulations is presented in Table 1.

No	Regulations	Description
1	Law No. 30/2007 on Energy	Establishment of DEN ( <i>Dewan Energi</i> <i>Nasional</i> /National Energy Council), which formulates KEN ( <i>Kebijakan Energi</i> <i>Nasional</i> /National Energy Policy)
2	Government Regulation (GR) No. 79/2014 on KEN ( <i>Kebijakan Energi Nasional</i> /National Energy Policy)	Increase the share of new and renewable energy in the context of the primary energy mix to 23% by 2025 and to 31% by 2050
3	GR No. 25/2021 on Implementation in the Energy and Mineral Resources Sector	Organizing the energy and mineral resources sector which includes minerals and coal, geothermal, and electricity
4	Presidential Regulation (PR) No. 3/2016 on Accelerating the Implementation of National Strategic Projects	Simplification of ease of licensing and non- licensing facilities for national strategic projects.
5	PR No. 22/2017 on RUEN ( <i>Rencana Umum Energi Nasional</i> /General National Energy Plan)	Cross-sector policy implementation plans to achieve KEN targets

Table 1: Renewable energy regulation
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No	Regulations	Description
6	PR No. 112/2022 on the Acceleration of Renewable Energy Development for Electricity Supply	Preparation of RUPTL (Electricity Supply Business Plan) in order to accelerate the development of renewable energy and renewable energy electricity tariff
7	PR No. 11/2023 on Additional Concurrent Government Affairs in Energy and Mineral Resources Sector in the Renewable Energy Subfield	Provide legal certainty for local governments in developing renewable energy in the region
8	Minister of Energy and Mineral Resources (MEMR) Regulation No. 39/2017 on Implementation of Physical Activities for the Utilization of New and Renewable Energy and Energy Conservation	Activities for the utilization of new and renewable energy are implemented to improve national energy security
9	MEMR Regulation No. 50/2017 2017 jis. MEMR Regulation No. 53/2018 and MEMR Regulation No. 4/2020 on the Utilization of Renewable Energy Sources for the Supply of Electricity	Manage the electricity purchasing process with various cooperation schemes such as Build, Own, and Operate

Sources: Indonesian Institute for Energy Economics (IIEE) and BITA's research

# 2.2 Electricity Regulations

These electricity regulations regulate processes and provisions related to the implementation of electricity in Indonesia and the construction of PLT-ET, including PLTB. The electricity regulations are presented in Table 2.

No	Regulations	Description		
1	Law No. 30/2009 on Electricity	General understanding of electricity regarding the supply and utilization of electricity		
2	Government Regulation (GR) No. 14/2012 on Electricity Providing Business Activities	Business activities in the field of electricity: generation, transmission, distribution, and sale of electricity		
3	GR No. 42/2012 on Cross-Border Electricity Purchases	Cross-border electricity purchases mechanism		
4	GR No. 14/2012 jo. GR No. 23/2014 on Electricity Supply Business Activities	Regulates conditions on electricity supply business		
5	Presidential Regulation (PR) No. 4/2016 jo. No. 14 of 2017 on the Acceleration of Electricity Infrastructure Development	Electricity Infrastructure Development to accelerate the realization of the power plant construction program		

Table 2: Electricity regulations

No	Regulations	Description
6	MEMR Regulation No. 28/2012 jo. MEMR Regulation No. 7/2016 on Application Procedures for Business Area Providing Electricity for Public Interest	Regulates business licensing on provision of electricity for public purposes
7	MEMR Regulation No. 35/2013 jo. MEMR Regulation No. 12/2016 on Electricity Business Licensing Procedures	Regulates licensing procedures for electricity companies, including business licensing provision of electricity for public purposes
8	MEMR Regulation No. 35/2014 jis. No. 14/2017 and MEMR No. 30/2018 on Delegation of Authority to Grant Electricity Business Licenses in the Context of Implementing One-Stop Integrated Services to the Head of the Investment Coordinating Board	Delegates the authority for granting Electricity Business Licenses with the implementation of One Stop Integrated Services ( <i>Pelayanan Terpadu Satu</i> <i>Pintu</i> /PTSP) to the Head of the Investment Coordination Agency ( <i>Badan Koordinasi</i> <i>Penanaman Modal</i> /BKPM)
9	MEMR Regulation No. 38/2016 on the Acceleration of Electrification in Undeveloped, Remote, Border Rural Areas and Inhabited Small Islands through the Implementation of Small-Scale Electricity Supply Ventures	Use of renewable energy sources for undeveloped rural areas, remote, border, and small inhabited islands
10	MEMR Regulation No. 10/2017 jis. MEMR Regulation No. 49/2017 and No. 10/2018 on Principles of Power Purchase Agreement	Regulates Principles in the Power Purchase Agreement (PPA or <i>Perjanjian Jual Beli Listrik</i> /PJBL) between PLN as off-taker and business entities as the electricity seller
11	MEMR Regulation No. 24/2017 on Mechanism for Electricity Generation Cost Stipulation of PT PLN (Persero)	Regulates determination mechanism for electricity generation costs by PLN, excluding electricity transmission costs
12	MEMR Regulation No. 39/2017 on Implementation of Physical Activity on New and Renewable Energy and Energy Conservation	Regulates the physical activities of renewable energy utilization conducted by the relevant directorate
13	MEMR Regulation No. 20/2020 on Power System Network Rules (Grid Code)	Regulates network management, connection, planning & execution of operations, power transactions, measurements, and a summary of operational schedules
14	MEMR Regulation No. 10/2021 on Electricity Safety	Stipulation that it is mandatory that electricity ventures meet electricity safety
15	MEMR Regulation No. 11/2021 on Implementation of Electricity Businesses	Implementation for business activities in the field of electricity: generation, transmission, distribution, and sale of electricity

No	Regulations	Description
16	MEMR Regulation No. 12/2021 on Classification, Qualification, Accreditation and Certification of Electricity Support Services Businesses	Electricity certification procedures
17	MEMR Regulation No. 10/2022 on the Procedures for Application for Approval of Electricity Selling Price and Electricity Network Lease and Procedures for Application for the Electricity Tariff Stipulation	Guideline in determination of electricity tariff in order to guarantee consumers get reasonable tariff
18	MEMR Decree No. 55.K/20/MEM/2019 on the Amount of the Basic Cost of Electricity Supply for Power Generation of State Electric Company PLN (Persero)	Determination of the amount of Basic Cost of Electricity Supply ( <i>Biaya Pokok</i> <i>Penyediaan Tenaga Listrik</i> /BPP) of PLN
19	MEMR Decree No. 143.K/20/MEM/2019 on RUKN ( <i>Rencana Umum Ketenagalistrikan</i> <i>Nasional</i> /General National Electricity Plan)/ 2019-2038	Ratification of RUKN ( <i>Rencana Umum Ketenagalistrikan Nasional</i> /General National Electricity Plan) of 2019-2038
20	MEMR Decree No. 169.K/HK.02/MEM. L/2021 on the Amount of the Basic Cost of Electricity Supply PT PLN (Persero) / 2020	Determination of the amount of the Basic Cost of Electricity Supply (BPP) of PLN Power Generator for 2020
21	MEMR Decree No. 188.K/HK.02/MEM.L/2021 on Ratification of PT PLN (Persero) National Electricity Supply Business Plan / 2021 to 2030	Ratification of PLN's Electricity Supply Business Plan ( <i>Rencana Umum Penyediaan</i> <i>Tenaga Listrik</i> /RUPTL) 2021-2030
22	Board of Directors (BOD) of PT PLN (Persero) Regulation No. 0357 K/DIR/2014 on Guidelines for Connecting Renewable Energy Power Plants to the PLN Distribution System	Guidelines for connecting renewable energy power plants to PLN's distribution system
23	BOD of PT PLN (Persero) Regulation No. 0076.P/DIR/2020 on the Organization and Work Procedures of PT PLN (Persero)	Transformation of organizational changes and work procedures of PLN
24	BOD of PT PLN (Persero) Regulation No. 0012.E/DIR/2023 on Standard Procedures for Procurement of Other Goods/Services	Procedural provisions in the procurement of PLN goods and services
25	BOD of PT PLN (Persero) Regulation No. 0018.P/DIR/2023 on Strategic Policy for Procurement of Goods/Services PT PLN (Persero)	Strategic policy provisions for integrated procurement of goods and services

Sources: Indonesian Institute for Energy Economics (IIEE) and BITA's research

# 2.3 Local Content Regulations

The Government of Indonesia has established Local Content (*Tingkat Komponen Dalam Negeri*/TKDN) requirements for the development of PLT-ET, including PLTB. The local content regulations are presented in Table 3.

No	Regulations	Description
1	Law No. 3/2014 on Industry	Mandatory use of local products in accordance with TKDN
2	Government Regulation (GR) No. 14/2015 on National Industrial Development Master Plan 2015-2035	Industrial empowerment policies to increase the use of local content in an effort to reduce dependence on imported products and increase added value in the country
3	GR No. 29/2018 on Industrial Empowerment	Facilities to Green Industries and Strategic Industries in increasing the utilization of Local Products and International Cooperation
4	Presidential Regulation No. 16/2018 jo. Presidential Regulation No. 12/2021 on Procurement of Government Goods/Services	Government support for micro, small, and cooperative enterprises, as well as the use of local products
5	Ministry of Industry (MoI) Regulation No. 16/M- IND/PER/2/2011 on Provisions and Procedures for Calculating Local Content	Procedure for calculating the local content rate
6	Mol Regulation No. 48/2010 on Guidelines for the Use of Local Products for Electricity Infrastructure Development	Guidelines for TKDN for Electricity Infrastructure Development
7	Mol Regulation No. 54/M-IND/PER/3/2012 on Guidelines for the Use of Local Products for Electricity Infrastructure Development	Guidelines for TKDN for Electricity Infrastructure Development
8	Mol Regulation No. 05/M-IND/PER/2/2017 on Guidelines for the Use of Local Products for Electricity Infrastructure Development	Guidelines for TKDN for Electricity Infrastructure Development

Table 3: Local content regulations

Sources: Indonesian Institute for Energy Economics (IIEE) and BITA's research

# 2.4 Conformity of Spatial Utilization Activity Regulations

This regulation previously known as Location Permit, is currently known as Conformity of Spatial Utilization Activity (*Kesesuaian Kegiatan Pemanfaatan Ruang*/KKPR), which regulates provisions for the alignment of plans for PLT-ET, including PLTB. Accordingly, the regulations on KKPR are presented in Table 4.

Table	Λ.			a sa a ti a l		a aki sik s	we would be a set
rable	4.	Comonnity	/ 01	spalial	utilization	activity	regulations

No	Regulations	Description	
1	Law No. 26/2007 on Spatial Planning	General understanding of spatial planning and spatial planning implementation	
2	GR No. 21/2021 on Implementation of Spatial Planning	Planning, utilization, management, supervision, guidance, and spatial planning institutions	
3	Ministry of ATR/BPN Regulation No. 12/2021 on Land Technical Considerations	Requirements for approval of control, ownership, use and utilization of land with regard to spatial compatibility (Pertek)	
4	Ministry of ATR/BPN Regulation No. 13/2021 on Implementation of Conformity of Spatial Utilization Activities and Synchronization of Spatial Utilization Programs	Application of KKPR (Conformity of Spatial Utilization Activities), previously known as Location Permit	
5	Ministry of ATR/BPN Regulation No. 14/2021 on Guidelines for Preparation of Database and Presentation of Maps of Provincial, Regency, and City Spatial Plans, as well as Maps of Regency/City Spatial Detail Plans	Accommodating electricity infrastructure network in spatial plan	
6	Ministry of Finance (MoF) Regulation No.143/PMK.02/2021 on the Types and Rates of Non-Tax State Revenue for Urgent Needs for Services to Issue Conformity of Spatial Utilization Activities Applicable to the Ministry of Agrarian Affairs and Spatial Planning/National Land Agency	Tariff on Types of Non-Tax State Revenue Applicable to Conformity of Spatial Utilization Activities	

Sources: BITA's research

# 2.5 Forest Area Use Approval Regulations

These regulations relate to forest areas that can be used for development purposes outside of forestry activities without changing the function and designation of forest areas or non-forestry activities. The forest area use approval regulations are presented in Table 5.

No	Regulations	Description
1	Law No. 41/1999 on Forestry	Forest areas that are permitted to be used for non-forestry activities
2	GR No. 33/2014 on Types and Rates of Non- Tax State Revenues Derived from the Use of Forest Areas for Development Interests Outside of Forestry Activities Applicable to the Ministry of Forestry	Types and rates of non-tax state revenues derived from the Forest Area Use Approval
3	GR No. 23/2021 on Forestry Implementation	Management plans and forest utilization
4	Ministry of Environment and Forestry (MoEF) Regulation No. 7/2021 on Forestry Planning, Changes in the Designation and Function of Forest Areas, and Use of Forest Areas	Planning, change, designation, and function in the use of forest area ( <i>Pinjam Pakai</i> <i>Kawasan Hutan</i> /PPKH) in its implementation in coordination with the Forest Area Stabilization Center ( <i>Balai Pemantapan</i> <i>Kawasan Hutan</i> /BPKH)
5	MoEF Regulation No. 8/2021 on Forest Management and Preparation of Forest Management Plans, as well as Forest Utilization in Protected Forests and Production Forests	Management planning and forest utilization in protected and production forests

Table 5: Forest area use approval regulations

Sources: Indonesian Institute for Energy Economics (IIEE) and BITA's research

# 2.6 Environmental Management Regulations

These regulations are related to environmental management, which require business activities to have environmental documents such as (i) Environmental Impact Assessment/EIA or *Analisis Mengenai Dampak Lingkungan*/AMDAL, (ii) Environmental Management Efforts and Environmental Monitoring Efforts or *Upaya Pengelolaan Lingkungan – Upaya Pemantauan Lingkungan*/UKL-UPL, and (iii) Form of Statement of Capability for Environmental Management and Monitoring or *Surat Pernyataan Kesanggupan Pengelolaan dan Pemantauan Lingkungan Hidup*/SPPL. These environmental management regulations are presented in Table 6.

### Table 6: Environmental management regulations

No	Regulations	Description
1	Law No. 32/2009 on Protection and Environmental Management	General overview regarding environmental protection and management of the life environment
2	Government Regulation (GR) No. 22/2021 on Implementation of Protection and Environmental Management	Environmental approval, management of hazardous and toxic waste, and others related to management of the life environment
3	MoE (Ministry of Environmental) Regulation No. 29/2009 on Guidelines for the Conservation of Biodiversity in the Regions	Biodiversity conservation planning, including determination of policies and implementation of conservation, sustainable use, and control of damage to biodiversity
4	Ministry of Environmental and Forestry (MoEF) Regulation (Permen LHK) No. P.92/MEN LHK/SETJEN/KUM.1/8/2018 on Types of Protected Plants and Animals	List of protected plant and animal species
5	MoEF Regulation No. P.102/MENLHK/ SETJEN/KUM.11/2018 on Procedure for Wastewater Discharge Licensing through Electronically Integrated Business Licensing Services	Domestic wastewater discharge licensing procedures and requirements
6	MoEF Regulation No. 3/2021 on Business Activity Standards in the Implementation of Risk-based Business Licensing in the Environment and Forestry Sector	Risk-Based Assessment (RBA) Business Licensing in the Environment and Forestry sector
7	MoEF Regulation No. 4/2021 on List of Businesses and/or Activities that are Required to Have EIA, UKL-UPL, or SPPL	List of businesses and/or activities that are required to have EIA, UKL-UPL, or SPPL
8	MoEF Regulation No. 5/2021 on Procedures for Issuing Technical Approvals and Operational Feasibility Certificates in the Field of Environmental Pollution Control	Procedures and requirements for technical approval and certificate of operational feasibility of environmental pollution control section
9	MoEF Regulation No. 6/2021 on Procedures and Requirements for Hazardous and Toxic Waste Management	Procedures and requirements of the Hazardous & Toxic Material (B3) license during the construction phase
10	MoH (Ministry of Health) Regulation No. 2/2023 on the Implementation of GR No. 66/2014 on Environmental Health	Establishing environmental health quality standards and health requirements for water, air, soil, food, facilities, and buildings, as well as vectors and disease-carrying animals

Sources: Indonesian Institute for Energy Economics (IIEE) and BITA's research

# 2.7 Transportation Regulations

These regulations are related to transportation permit requirements, which must be implemented before commencing construction activities, including: KKOP, Andalalin (*Analisis Dampak Lalu Lintas*/Traffic Impact Analysis), Land Transport Permit, and Sea Transport Permit. The transportation regulations are presented in Table 7.

No	Regulations	Description
1	Law No. 22/2009 on Road Traffic and Transportation	Overview of the development and implementation of safe Road Traffic and Transportation
2	GR No. 30/2021 on the Implementation of Road Traffic and Transportation	Activities in the field of traffic and road transport that include the provision of Andalalin
3	Ministry of Transportation (MoT) Regulation No. KM 44/2005 on the Implementation of SNI 03-7112-2005 on KKOP Areas as a Mandatory Standard	Operational standards for KKOP ( <i>Kawasan</i> <i>Keselamatan Operasional Penerbangan</i> /Aviation Operation Safety Areas)
4	MoT Regulation No. PM 48/2014 on Procedures for Loading, Preparing, Transporting and Unloading Goods by Train	Procedures and requirements for transporting goods by train
5	MoT Regulation No. PM 57/2015 on Ship Guiding and Delaying	Procedures and requirements for transporting goods at the port
6	MoT Regulation No. PM 90/2018 on Norms, Standards, Procedures, and Criteria for Electronically Integrated Business Licensing in the Air Transportation Sector	Licensing of the transport sector including KKOP sector
7	MoT Regulation No. PM 60/2019 on Implementation of Goods Transport by Motorized Vehicles on Roads	Procedures and requirements for land transport licenses
8	MoT Regulation No. PM 17/2021 on Implementation of Andalalin	Procedures and requirements for Andalalin
9	MoT Regulation No. PM 59/2021 on Implementation of Services Related to Water Transport	Procedures and requirements for water transport licenses

Table 7:	Transportation	regulations
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Sources: Indonesian Institute for Energy Economics (IIEE) and BITA's research

# 2.8 Land Acquisition for Public Interest Development Regulations

These regulations are related to the need for land for the construction of wind farms. Land acquisition for development in the public's interest is a procedure that must be conducted before commencing development activities. The regulations on land acquisition for public interest development are presented in Table 8.

### Table 8: Land acquisition for public interest development regulations

No	Regulations	Description
1	Law No. 2/2012 on Land Acquisition for Public Interest Development	General explanation of land acquisition for public interest development
2	Government Regulations (GR) No. 19/2021 jo. GR No. 39/2023 on Implementation of Land Acquisition for Public Interest Development	Acceleration of land acquisition for development for public interest
3	Ministry of ATR/BPN Regulation No. 19/2021 on Provisions for Implementing GR No. 19/2021 on the Implementation of Land Acquisition for Public Interest Development	Stages in land acquisition for development in the public's interest

Sources: BITA's research

# 2.9 Business Licensing Regulations

Business Licensing is the legality given to Business Actors to start and run their businesses and/or activities. Omnibus law on Job Creation is a legal product that officially combines (amends) several laws and regulations into one new law, with the aim of overcoming regulations that overlap, and shortening bureaucratic problems, which are considered to hinder the implementation of the necessary policies, including: Simplification of Business Licensing, Investment Requirements, Labor, Ease of Doing Business, Land Acquisition, and Investment and Government Projects. The business licensing regulations are presented in Table 9.

Table	٩·	<b>Business</b>	licensing	regulations
rabic	υ.	Dusiness	neensing	regulations

No	Regulations	Description
1	Law No. 25/2007 on Capital Investment	Forms of domestic and foreign investment activities
2	Law No. 23/2014 on Local Government	Establish regional policies to organize government affairs that are the authority of the region
3	Law No. 6/2023 on Establishment of Government Regulation (GR) Replacement Law No. 2/2022 on Job Creation becomes Law	Combining several laws into one new law to resolve overlapping regulations and simplification of business licensing procedures (Omnibus Law)

No	Regulations	Description
4	GR No. 5/2021 on Risk-Based Business Licensing	Electronically integrated licensing services (OSS-RBA)
5	GR No. 6/2021 on Implementation of Business Licensing in the Region	Authority to implement Business Licensing in the region
6	BKPM Regulation No. 4/2021 on Guidelines and Procedures for Risk-Based Business Licensing Services and Capital Investment Facilities	As a guide for use in providing licensing procedure and capital Investment Facilities for OSS-RBA Institution, ministry/agency/region, and other stakeholders

Sources: Indonesian Institute for Energy Economics (IIEE) and BITA's research

# 2.10 Building Regulations

These regulations are related to building permits including Building Approval, previously known as Building Permit and Building Function Certificate that must be secured prior to commencing construction activities and after construction activities. The building regulations are presented in Table 10.

Table 10: Building regulations

No	Regulations	Description
1	Law No. 28/2002 on Buildings	Provisions on buildings include functions, requirements, implementation, community roles, and guidance
2	Law No. 2/2017 on Construction Services	Legal basis to ensure the sustainability of the construction services implementation process
3	GR No. 22/2020 jo. No 14/2021 on Implementation of Law No. 2/2017 on Construction Services	Technical requirements in the implementation of construction work at the construction implementation stage, and building performance at the operation, maintenance, and decommissioning stages
4	GR No. 16/2021 on Implementing Regulations of Law No. 28/2002 on Buildings	Procedures and requirements for PBG ( <i>Persetujuan Bangunan Gedung</i> or Building Approval)
5	Ministry of Public Works and Public Housing (MPWPH) Regulation No. 27/PRT/M/2018 jo. No. 3/2020 on Certificate of Building Occupancy	Procedures and requirements for SLF ( <i>Sertifikat Laik Fungsi</i> or Certificate of Functional Eligibility)

Sources: BITA's research

# 2.11 Fiscal Facilities Regulations

These regulations are related to fiscal facilities provided by the Government to business entities or prospective wind farm developers to increase investment that can be obtained when commencing development, construction, and operation activities. The regulations are presented in Table 11.

No	Regulations	Description
1	Law No. 7/2021 on Harmonization of Tax Regulations	Realizing a tax system with justice and legal certainty, which is implemented through administrative reforms
2	GR No. 9/2021 on Tax Treatment to Support Ease of Doing Business	Optimizing the utilization of information technology in tax administration
3	Ministry of Finance (MoF) Regulation No. 176/2009 jo. MoF Regulation No. 188/2015 on Exemption from Import Duty on Imports of Machinery and Goods and Materials for Industrial Construction or Development in the Context of Capital Investment	Regulates exemption from import duties on goods and services in accordance with applicable regulations
4	MoF Regulation No. 21/2010 on Providing Tax and Customs Facilities for Activities to Utilize Renewable Energy Sources	Taxation and customs facilities for activities that utilize renewable energy sources
5	MoF Regulation No. 66/2015 on Exemption from Import Duty on Imports of Capital Goods in the Context of Building or Expanding the Electricity Generation Industry for Public Interest	Criteria and procedures for recipients of import duty exemptions, and reporting on the realization of imported goods
6	MEMR Regulation No. 16/2015 on Criteria and/or Requirements for Utilizing Income Tax Facilities for Investment in Certain Business Fields in Certain Regions in the Energy and Mineral Resources Sector	Criteria and procedures for investment in certain business fields in certain regions in the Energy and Mineral Resources sector
7	MoF Regulation No. 16/PMK.010/2016 on Collection of Income Tax Article 22 In Connection with Payment for Delivery of Goods and Activities in the Field of Import or Business Activities in Other Fields	Collection of income tax in relation to the payment on delivery of goods and activities in the field of import

Table 11: Fiscal facilities regulations

No	Regulations	Description
8	MoF Regulation No. 130/2020 on Providing Corporate Income Tax Reduction Facilities	Criteria and procedures for corporate income tax reduction facility provisions
9	Director General of Electricity Regulation No. 263/2015 on Procedures for Applications for Approval and Ratification of Plans to Import Capital Goods in the Context of Building or Expanding Public Interest Power Generation Industry	Application procedure for approval Goods Import Plan ( <i>Rencana Impor Barang</i> /RIB)

Sources: Indonesian Institute for Energy Economics (IIEE) and BITA's research

# 2.12 Employment Regulations

These regulations are related to employment and work safety to protect workers prior to, during, and after work. Foreign workers are required to apply for approval of the Plan for the Use of Foreign Workers (*Rencana Penggunaan Tenaga Kerja Asing*/RPTKA). The labor regulations are presented in Table 12.

Table 12: Employment regulations

No	Regulations	Description
1	Law No. 13/2003 on Employment	Instruments to protect and regulate employment in Indonesia
2	Law No. 1/1970 on Work Safety	Occupational safety in the workplace, one of which is the obligation to apply Occupational Health and Safety (OHS) requirements to people and work tools
3	GR No. 34/2021 on the Use of Foreign Workers	Obligation to arrange approval for plans to use foreign workers (RPTKA)
4	Ministry of Manpower (MoM) Regulation No. 5/2018 on Occupational Health and Safety (OHS) Work Environment	Ensure and protect the safety and health of workers through efforts to prevent occupational accidents and occupational diseases
5	MoM Regulation No. 18/2017 jo. MoM Regulation No. 4/2019 on Procedures for Mandatory Online Labor Reporting in Companies	Procedures for mandatory labor reporting in companies
6	MoM Regulation No. 8/2021 on Implementing Regulations of GR No. 34/2021 on the Use of Foreign Workers	Approval for plans to use foreign workers (RPTKA)

Sources: BITA's research

# 3 Overall Permitting for Wind Power Plant in Indonesia

The transformation of licensing in Indonesia has had a positive impact on the wind energy sector with the introduction of an online licensing system. This process speeds up and simplifies permit applications, allowing wind energy project developers to navigate the licensing process more efficiently. In the context of wind energy, licensing in Indonesia involves coordination between the central and local governments. Project developers need to comply with a series of renewable energy-related licenses, and also interact with the local governments of the project site. However, challenges remain, particularly related to interagency coordination and the understanding required by all relevant parties. The Government's commitment to supporting the development of renewable energy, including wind energy, continues to spur improvements.

To elaborate upon the overall permitting aspects, this chapter is divided into two sections, namely, Online Permitting Services, and National Permitting Based on the Project Phase.

# 3.1 Online Permitting Services

Ease of doing business on various scales has become one of the main focuses of the Indonesian Government in its efforts to encourage economic growth and investment, one of which is investment in the development of wind power plants (PLTB). The concrete step that has been taken is the issuance of Law No. 6/2023 concerning *the Stipulation of Government Regulations in Lieu of Law Number No. 2/2023 concerning Job Creation into Law* and implementing regulations through reform of the online licensing system.

The following subsections explain the different online permitting services available which are relevant for wind energy development activities.

# 3.1.1 Online Single Submission (OSS) of the Ministry of Investment/BKPM

Introduction of licensing concepts through the Online Single Submission (OSS) application system (<u>https://oss.go.id</u>) brought significant changes in the way business is done in Indonesia. OSS carries the principle of one national portal, one business licensing identity known as the Business Identification Number (*Nomor Induk Berusaha*/NIB), and one simple business licensing format. The OSS system has been transformed into Risk-Based Business Licensing OSS since the publication of PP (*Peraturan Pemerintah*/Government Regulation) No. 5 of 2021, reflecting the Government's commitment to continue to improve efficiency and transparency in the licensing process. Figure 1 shows the process flow of OSS.



Figure 1: Procedure for Online Single Submission (OSS)

# 3.1.2 E-Procurement of PT PLN (Persero)

The procurement process conducted by PLN to support the development of renewable energy power plants can be seen in PT PLN (Persero) Directors Regulation No. 0012.E/DIR/2023 concerning *Guidelines for Procurement of Goods/Services for PT PLN (Persero)*. In this regulation, PLN regulates the types of procurement, which include procurement of goods, procurement of construction work, procurement of consultancy services, procurement of other services, and special procurement.

Within the direct selection mechanism, in this case the procurement of a PLTB Independent Power Producer (IPP), the prospective developer must be registered on the PLN Selected Provider List (*Daftar Penyedia Terseleksi*/DPT). In its implementation, registration of prospective developers until they are registered on DPT for direct procurement or direct selection is facilitated through the PLN e-Procurement Application. The application's flowchart can be seen in Figure 2.



Figure 2: Procedure for E-Procurement of PT PLN (Persero)

# 3.1.3 <u>Business and Operational Licensing Application of the Ministry of Energy and Mineral</u> <u>Resources</u>

On the home page of the Ministry of Energy and Mineral Resources' Business and Operational Licensing Application website (<u>https://perizinan.esdm.go.id</u>), there are four licensing portals displayed, including: MIGAS (Oil and Natural Gas); MINERBA (Minerals and Coal); EBTKE (New, Renewable Energy, and Energy Conservation) & Geology; and GATRIK (Electricity).

In connection with investment in the renewable energy sector, in this case the development of PLTB, there are two portals that are relevant for business entities or developers, namely, GATRIK and EBTKE & Geology portals. In this service, developers can apply for a Permit for Approval and Ratification of Goods Import Plans (RIB), Electricity Supply Business (*Izin Usaha Penyediaan Tenaga Listrik*/IUPTL), Ground Water Business Permit, and Certificate of Operational Worthiness (*Sertifikat Laik Operasi*/SLO). The application's process flow is presented in Figure 3.



Figure 3: Procedure of Ministry of Energy and Mineral Resources (MEMR) Business and Operational Licensing Application

# 3.1.4 <u>One Stop Integrated Service of the Ministry of Environment and Forestry (PTSP KLHK)</u>

Referring to Government Regulation (PP) No. 22/2021 concerning *the Implementation of Environmental Protection and Management*, business entities or developers can apply for Environmental Approvals and other permits required in the Environmental and Forestry sector through the OSS system and by submitting the required documents that is to be verified via the PTSP KLHK (*Pelayanan Terpadu Satu Pintu Kementerian Lingkungan Hidup dan Kehutanan*) website (<u>https://ptsp.menlhk.go.id/</u>). The Technical Unit of the Ministry of Environment and Forestry will conduct verification and validation.

If the required documents have been validated, the Ministry of Environment and Forestry will issue a Decree/Recommendation Letter, and also send a notification to the OSS system so that the permit will have "effective" status. The entire process is summarized in Figure 4.



Figure 4: Procedure of One Stop Integrated Service (PTSP) of the Ministry of Environment and Forestry (MoEF)

# 3.1.5 Si Andalan of the Ministry of Transportation

Si Andalan (<u>https://siandalan.dephub.go.id</u>) is the Ministry of Transportation's online licensing application for processing permits for Traffic Impact Analysis (Andalalin), which is a mandatory requirement for developers in conducting PLTB construction.

# 3.1.6 Sehati of the Ministry of Transportation

Sehati is the Ministry of Transportation's online licensing application (<u>https://sehati.hubla.dephub.go.id</u>) for processing terminal permits for personal use (TUKS). This application is specifically designed to apply for and monitor the services of Hubla (*Direktorat Jenderal Perhubungan Laut*/Directorate General of Sea Transportation).

# 3.1.7 <u>Building Management Information System (SIMBG) of the Ministry of Public Works</u> and Public Housing

Referring to Government Regulation No. 16/2021 concerning Implementing Regulations of Law No. 28/2021 concerning Building Construction, through SIMBG (*Sistem Informasi Manajemen Bangunan Gedung* or Building Management Information System) services (<u>https://simbg.pu.go.id</u>), business entities or developers can submit two applications, namely: (i) Building Approval (PBG) when constructing a building; and (ii) Certificate of Functional Eligibility (SLF) when completed. Developers first enter the SIMBG website to register an account, then can submit a PBG and SLF application, by completing the administrative and technical requirements required by SIMBG.

# 3.1.8 Sisnaker of the Ministry of Manpower

Employment Information System (Sisnaker) is a digital ecosystem that is a platform for all types of public services and employment activities, both at the central and regional levels. This Manpower System enables all information systems in all ministries or institutions and regional governments to work together across organizational boundaries. Sisnaker consists of 16 integrated employment services, which include 12 technical employment services and 4 supporting services, especially in this case for Permits to Use Foreign Workers and Mandatory Company Employment Reports. All these services are integrated in one Sisnaker website domain (<u>https://kemnaker.go.id</u>).

# 3.2 Overall National Permitting Based on the Project Phase

Based on the results of interviews with previous PLTB developers and stakeholders from several government agencies, PLTB development is divided into three (3) phases: Development Phase, Construction Phase, and Operation Phase. Whenever any activities are conducted during each of these phases, permits will materialize and must be processed before the activity can be conducted. The permits contained within the three phases are depicted in Figure 5.

Currently, all permits are centralized through the Online Single Submission (OSS) system application. Although the management of permits is centralized, there are still some permits that require validation and/or technical considerations from the local governments (at the provincial/regency/city levels).



Figure 5: Flowchart of overall permitting for wind energy in Indonesia

### 3.2.1 Permitting in Development Phase

The Development Phase is the initial phase of a PLTB project. The following paragraphs will explain further regarding the stages of PLTB development.

### 1. Legality of Business Entities

The business entity that wins the auction through the Direct Selection mechanism must establish a new business entity aimed at developing PLTB. This new business entity is generally known as a Special Purpose Company (SPC) or Special Purpose Vehicle (SPV). The establishment of SPV was conducted to limit the risks and responsibilities of investor companies. The procedure for forming a new business entity in the form of a SPV is grouped into two, as follows:

### a. Establishment of a Limited Liability Company (Perseroan Terbatas/PT)

New business entities must register through a Notary Public to obtain a Deed of Establishment, and then be registered with the Ministry of Law and Human Rights (*Kementerian Hukum dan HAM*) through the Ministry's AHU Online application system. In turn, the company's Deed of Establishment and Decree of the Minister of Law and Human Rights can then be obtained. The requirements needed to establish a Limited Liability Company are shown in Table 15 on page 44.

### b. Application for Business Identification Number (NIB)

New business entities are required to register users in the OSS system (<u>https://oss.go.id</u>) by entering the National Identification Number (*Nomor Induk Kependudukan*/NIK) of the Person in Charge of the Business Entity or the President Director, as well as filling in various other information in the provided registration system. After completing all legal data through OSS, these entities must then submit an NIB application.

For the record, NIB is applicable to (i) Company Registration Certificate (*Tanda Daftar Perusahaan*/TDP), (ii) Import Identification Number (*Angka Pengenal Impor*/API); and (iii) customs access rights. After obtaining the NIB, business entities can start applying for business permits and fiscal facilities through the OSS system in accordance with the requirements for PLTB development in Indonesia.

The summarized procedure of preparing the legality of new business entities is displayed in Figure 6.



Figure 6: Procedure of Legality of Business Entities

### 2. Research Permit

Research Permit is a permit issued to grant permission to researchers, whether individuals or groups, to conduct research or collect data in a certain area. The permit is required in the development of PLTB for collecting important data, such as wind characteristics (wind speed and direction) and environmental characteristics surrounding the envisioned PLTB area.

To obtain the permit, there are several documents that must be sequentially fulfilled by the developer. These documents' order are as follows: Letter of Measurement Recommendation, Sub-district Recommendation, Spatial Planning Direction, Regent's Research Recommendation, Regional Recommendation, and Governor's Support Letter. Table 15 on page 44 summarizes the prerequisites of the Research Permit application.

### 3. Fiscal Facilities Application

In order to increase investment, bolster economic growth, and accelerate the development of the electricity generation sector, the Government provides facilities in the form of Tax Allowance and Tax Holiday. Tax Allowance is a tax facility provided in the form of a reduction in Income Tax (*Pajak Penghasilan*/PPh) to Taxable Entrepreneurs (*Pengusaha Kena Pajak*/PKP), calculated based on the amount of investment made. Meanwhile, Tax Holiday is an exemption or reduction in Corporate Income Tax rates for business entities that invest new capital into the country for a certain period. In developing PLTB in Indonesia, prospective developers must choose one of the fiscal facilities above (Tax Allowance or Tax Holiday) in accordance with the criteria stipulated for each facility. The entailed application procedure for these facilities can be found in Figure 7.



Figure 7: Procedure of Fiscal Facilities Application

### 4. Conformity of Spatial Utilization Activity (KKPR)

KKPR is the conformity between the space utilization activity plan and the Spatial Plan (*Rencana Tata Ruang*/RTR). In particular, if the location of business activities is in a forest area, Forest Area Use Approval is required. KKPR implementation is conducted through three schemes, as follows:

- a. Confirmation of KKPR (KKPR), for business activities whose location already has a Detailed Spatial Plan (*Rencana Detail Tata Ruang*/RDTR)
- b. KKPR approval (*Persetujuan KKPR*/PKKPR), for business activities whose location plan does not yet have a Detailed Spatial Plan
- c. KKPR recommendations (*Rekomendasi KKPR*/RKKPR), for activities of national strategic nature and the planned space utilization activities which have not been included in the Spatial Plan

KKPR applications for Confirmation/Approval/Recommendations are made through the OSS system (<u>www.oss.go.id</u>). The procedure for obtaining KKPR is shown in Figure 8. Meanwhile, requirements for submitting a KKPR application are displayed in Table 15 on page 44.



Figure 8: Procedure of Conformity of Spatial Utilization Activity (KKPR)

### 5. Forest Area Use Approval (PPKH)

There are three mechanisms to obtain Forest Area Use Approval: (i) Forest Area Use Approval by Ministerial Decree, (ii) Forest Area Use Approval upon cooperation agreement by a letter from the Director General of PKTL (*Planologi Kehutanan dan Tata Lingkungan* or Forestry Planning and Environmental Management) on behalf of MoEF, and (iii) Approval of Survey Activity Implementation by a letter from the Director General of PKTL on behalf of MoEF. Prospective developers must submit an application to MoEF and fulfil the administrative and technical requirements. It is worth noting that based on MoEF Regulation No. 7/2021, mechanism (ii) is not applicable to activities related to PLTB. Thus, only mechanism (i) and (iii) are further explained in the next paragraphs.

### a. Forest Area Use Approval by Ministerial Decree

To obtain Forest Area Use Approval through a Ministerial Decree, business entities/developers shall apply through the OSS application system by meeting the administrative and technical requirements. Figure 9 shows the processes to get the approval. The obligations that must be conducted by the holder of the Forest Area Use Approval are as follows:

- Conduct boundary demarcation of the Forest Area Use Approval area
- Pay Non-Tax State Revenue (*Pendapatan Negara Bukan Pajak*/PNBP) for Forest Area Use
- Conduct planting in the context of watershed rehabilitation
- Pay PNBP Compensation, for holders of Forest Area Use Approval in provinces with insufficient forest area
- Organize forest protection
- Conduct reclamation and/or reforestation in forest areas which have been granted Forest Area Use Approval that are no longer in use
- Reimburse investment costs to the manager/holder of forest utilization management/business license
- Conduct other obligations stipulated by the Minister of Environment and Forestry

Wind farms that are included in the national strategic programs are exempted from the obligation to pay PNBP for the use of forest areas and PNBP for compensation and planting in the context of watershed rehabilitation.



Figure 9: Procedure of Forest Area Use Approval by Ministerial Decree

### b. Approval for Survey Activities

Approval for the use of forest areas for survey activities is very necessary in the construction of PLTB, especially during the development phase, because forest areas have high environmental and biodiversity value. By obtaining this approval, the PLTB project can conduct survey activities by paying attention to and managing environmental impacts wisely. This permit allows authorities to assess the potential impacts on forest ecosystems, biodiversity, and other natural resources. The procedure to obtain the approval is summarized in Figure 10.



Figure 10: Procedure of Forest Area Use Approval for Survey Activities

### 6. Environmental Approval

Environmental Approval is a decision on environmental suitability or a statement of environmental management capability that has received approval from the Central/Province/Regent/City government. Environmental Approval can be done through:

- a. Preparation and feasibility testing of Environmental Impact Analysis (*Analisis Mengenai Dampak Lingkungan*/AMDAL);
- b. Preparation and inspection of Environmental Management Efforts Environmental Monitoring Efforts (UKL-UPL) forms; or
- c. Form of Statement of Capability for Environmental Management and Monitoring (SPPL).

In this section, Environmental Approval through the preparation of AMDAL is explained (see the procedure in Figure 11). Prospective developers must first apply for an Environmental Approval to the OSS system for the issuance of Environmental Approval with the status "not yet effective". Subsequently, there is a set of technical requirements to be fulfilled, as listed in Table 15 on page 44. The verification process of technical requirements (documents) is carried out by MoEF, namely, through either the PTSP KLHK website (see Subsection 3.1.4) in case the application falls under the authority of the Central Government, or the Provincial / Regency / City Environment Office in case the application falls under the authority of the Regional Government.



Figure 11: Procedure of Environmental Approval

### 7. Technical Approval

Technical Approval consists of four parts, i.e. Traffic Impact Analysis, Hazardous and Toxic Waste Permit, Wastewater Treatment, and Gas Emission Permit. Each part is elaborated in the following paragraphs.

### a. Traffic Impact Analysis (Andalalin)

Traffic Impact Analysis (Andalalin) is a series of study activities regarding traffic impacts due to development of activity centers, settlements, and infrastructure. Andalalin is classified into three categories on the scale of the impact of traffic generation, namely, activities with high, medium, and low traffic generation. The process flow for Andalalin application is depicted in Figure 12. Moreover, the related application requirements are provided in Table 15 on page 44.

Andalalin related to the construction of PLTB is the approval/permit required to examine and assess whether the PLTB project may affect surrounding traffic, including an analysis of the possibility of increasing vehicle movements, traffic impacts, and the measures needed to overcome or reduce traffic disruptions. This permit is needed to ensure smooth traffic and road safety during and after PLTB construction and is a requirement for building construction permits. To obtain Andalalin permission/approval, one can go through the Si Andalan application system (https://siandalan.dephub.go.id; see Subsection 3.1.5).



Figure 12: Procedure of Traffic Impact Analysis (Andalalin)

### b. Hazardous and Toxic Waste Permit (B3)

Hazardous and Toxic Waste Permit (B3) is a permit required for the construction of PLTB in Indonesia, especially during the construction phase, to regulate the handling, transportation, storage, and disposal of waste that is included in the B3 category. This permit is needed to ensure that B3 waste is managed safely and in accordance with applicable regulations. Application for a B3 Waste Permit can be done via the OSS application system (https://oss.go.id), whereas the application procedure is presented in Figure 13. The requirements for B3 Waste Permit are shown in Table 15 on page 44.



Figure 13: Procedure of Hazardous and Toxic Waste Permit (B3)

### c. <u>Wastewater Permit</u>

Wastewater permits are required to protect the environment, including rivers and local aquatic ecosystems, from pollution that can be caused by industrial waste. PLTB projects can generate waste which can pollute surrounding waters with chemicals or hazardous substances. Therefore, the waste needs to be carefully managed to prevent any negative impact on the environment. The process of obtaining this permit is shown in Figure 14.

### d. Gas Emission Permit

Gas emission permits are required to control the amount of polluting gases released into the atmosphere during PLTB operations. This is essential for maintaining air quality and preventing negative impacts on human health and the surrounding environment. This permitting process not only creates standards for emissions management, but also ensures that PLTB operates in accordance with sustainable environmental principles. Application requirements for this permit are shown in Table 15 on page 44, whereas the procedure is presented in Figure 14.



Figure 14: Procedure of Wastewater & Gas Emission Permit

### 8. Procurement by PLN

PLN holds tenders to select IPPs for cooperation via long-term PPAs. To participate in the tender, IPPs must first be registered in the List of Selected Providers (*Daftar Penyedia Terseleksi*/DPT). DPT is a prequalification stage conducted by PLN to ensure that IPPs who wish to collaborate with PLN have adequate competence, both from a technical and non-technical perspective, including financial stability. Among others, IPPs are required to submit their legal documents and project portfolio. IPPs who passed the DPT pre-selection process will then be able to participate in PLN's tender process. Requirements for participating in PLN's procurement process are listed in Table 15 on page 44, whereas the process is shown in Figure 15.



Figure 15: PLN's Procurement Process for wind energy projects established by an IPP

### 9. Power Purchase Agreement (PPA/PJBL)

In order to meet national electricity needs, utilize renewable energy, and use environmentally friendly energy, PT PLN (Persero) is required to purchase clean electricity Independent Power Producers (IPPs) in accordance with agreements that have been made and existing provisions.

Based on MEMR Regulation No. 4/2020 concerning the Second Amendment to the Regulation of the MEMR Regulation No. 50/2017 concerning *the Utilization of Renewable Energy Sources for the Supply of Electricity*, the purchase price of electricity from various renewable energy-based power plant was determined with the following provisions:

- a. In the event that the Basic Cost of Provision (BPP) for Generation in the local electricity system is above the average National Generation BPP, the highest purchase price for electricity is 85% of the BPP for Generation in the local electricity system.
- b. In the event that the BPP for Generation in the local electricity system is equal to or below the national average BPP for Generation, then the electricity purchase price is determined based on the agreement of the parties.
- c. In the event that the BPP for Generation in the electricity system in Sumatra, Java, and Bali or other local electricity systems is equal to or below the national average BPP for Generation, then the purchase price for electricity is determined based on the agreement of the parties.

Based on the above provisions, if in the development of a PLTB project conditions points (b) or (c) apply, PLN would invite prospective developers to negotiate the price of new electricity, until an agreement is reached on the purchase price of electricity by both parties.

The latest conditions of wind power purchase price (tariff) are stipulated in Presidential Regulation No. 112/2022 on *the Acceleration of Renewable Energy Development for Electricity Generation*. Ceiling tariffs (see Table 13), which are set to be dependent on PLTB capacity, staging throughout PLTB lifetime, and location factor (F; see Table 14), are applied for wind power. Similar to the previous regulation, however, this latest regulation does not eliminate the negotiation process between the IPP and PLN.

Capacity (MW)	Ceiling Price					
	≤ 5 MW		> 5 MW to 20 MW		> 20 MW	
	Staging Year 1-10	Staging Year 11-30	Staging Year 1-10	Staging Year 11-30	Staging Year 1-10	Staging Year 11-30
c\$/kWh	11.22 x F	6.73	10.26 x F	6.15	9.54 x F	5.73
LCOE c\$/kWh	9.41		8.60		8.00	

Table 13: Ceiling tariffs for wind power based on Presidential Regulation No. 112/2022 (F = location factor)

No.	Region	F
1.	Java, Madura, Bali	1.00
	- Small Island	1.10
2.	Sumatra	1.10
	- Riau Island	1.20
	- Mentawai	1.20
	<ul> <li>Bangka Belitung</li> </ul>	1.10
	- Small Island	1.15
3.	Kalimantan	1.10
	- Small Island	1.15
4.	Sulawesi	1.10
	- Small Island	1.15
5.	Nusa Tenggara	1.20
	- Small Island	1.25
6.	Maluku Utara	1.25
	- Small Island	1.30
7.	Maluku	1.25
	- Small Island	1.30
8.	West Papua	1.50
9.	Papua	1.50

Table 14: Value for location factor (F) based on Presidential Regulation No. 112/2022

PPA (Power Purchase Agreement or *Perjanjian Jual Beli Listrik*/PJBL) is used as a requirement in the application for an Electricity Supply Business License (IUPTL). The requirements for PPA are shown in Table 15 on page 44. Moreover, the procedure for obtaining PPA can be seen in Figure 16.



Figure 16: Procedure of Power Purchase Agreement (PJBL or PPA)
#### 10. Electricity Supply Business License (IUPTL)

Developers are required to have an IUPTL to conduct business in electricity provision in Indonesia. After there is an agreement on the electricity purchase and sales price, the developer must submit an IUPTL application and submit the required documents, one of which is the results of the Feasibility Study that has been approved by the Minister of Energy and Mineral Resources.

IUPTL applications are made through the OSS system. Next, the developer submits the required documents via the MEMR Licensing application (<u>https://perizinan.esdm.go.id</u>) within a period of 25 days. Furthermore, verification of technical requirements will be conducted by DJK-MEMR (DG Electricity of MEMR). If the documents are declared to meet the requirements, a Commitment Fulfillment Letter will be issued within five (5) days. DJK-MEMR will then provide a notification to the OSS system, and accordingly, the IUPTL submitted by the developer can be issued through the OSS system with "effective" status. This procedure is depicted in Figure 17.



Figure 17: Procedure of Electricity Supply Business License (IUPTL)

#### 11. Recommendations for Aviation Operation Safety Area (KKOP)

KKOP are zones determined by aviation authorities to maintain flight safety. KKOP's recommendations regarding the construction of PLTB are guidelines that PLTB developers must adhere to so that the project does not disrupt flight operations, especially if the PLTB is located close to airports or flight paths. KKOP recommendations include wind turbine height, lighting, and visual signs to avoid collisions with aircraft, as well as electromagnetic interference monitoring that could affect aircraft navigation equipment. Consequently, flight safety is ensured when the PLTB is being constructed and in operation. The requirements for KKOP are shown in Table 15 on page 44, whereas the procedure to obtain KKOP recommendations is shown in Figure 18.



Figure 18: Procedure of Recommendations for Aviation Operation Safety Area (KKOP)

12. Terminal Permit for Own Use (TUKS) / Special Terminal (TERSUS)

TUKS/TERSUS is a permit required to establish, operate, or use a terminal or pier/port for one's own benefit in transporting goods or construction equipment on PLTB projects in Indonesia. TUKS is required to transport construction equipment such as wind turbines, generators, and other components that must be imported and brought to the project site. Application for TUKS Permit is processed via the Sehati Hubla Application System (https://sehati.hubla.dephub.go.id). Before the use of TUKS/TERSUS permits are confirmed, the differences between these permits are first elaborated:

- a. TERSUS is a terminal located "inside" the working area (*Daerah Lingkungan Kerja*/DLKr) and the Environmental Area of Interest (*Daerah Lingkungan Kepentingan Pelabuhan*/DLKp) of the port which is part of the nearest port.
- b. TUKS is a terminal located "outside" the working area (DLKr) and the Environmental Area of Interest (DLKp) of the port which is part of the nearest port.

The requirements for Terminal Permits for Own Use (TUKS) are displayed below in Table 15 on page 44. Figure 19 displays the procedure to obtain TUKS.



Figure 19: Procedure of Terminal Permit for Own Use (TUKS)

## 13. Land Acquisition for Development in the Public's Interest

In the context of accelerating and effectively implementing land procurement for development in the public's interest, land procurement is an activity that is needed in PLTB development. This is especially the case at locations of network connection from the PLTB to the PLN substation. The requirements for Land Acquisition for Development in the Public's Interest, are shown in Table 15 on page 44, whereas the acquisition's stages are summarized in Figure 20.



Figure 20: Stages of Land Acquisition for Development in the Public's Interest

## 3.2.2 Permitting in Construction Phase

The construction phase in PLTB projects involves a series of stages to build the necessary infrastructure. These stages are presented in the paragraphs below.

## 1. Facility Application Permit: Goods Import Plan and Import Duty

Developers can apply for Import Duty Exemption facilities on imports of goods for PLTB construction after obtaining an Electricity Supply Business License (IUPTL) and before conducting plant construction activities. A series of regulations governing the application for these facilities are as follows:

- Director General of Electricity Regulation No. 263/2015 on the Procedures for Applications for Approval and Ratification of Plans to Import Capital Goods in the Context of Building or Expanding the Electricity Generation Industry for Public Interest
- Minister of Finance Regulation No. 66/2015 on the Exemption from Import Duty on Imports of Capital Goods in the Context of Building or Expanding the Electricity Generation Industry for Public Interest

The application for these facilities is divided into two sub-stages, with a brief description of each substage as follows:

a. Goods Import Plan (RIB)

The developer must prepare a Goods Import Plan (RIB) document and select and appoint a surveyor. The surveyor then verifies the RIB documents, including administrative and technical aspects. If the documents meet the requirements, the Surveyor will prepare a RIB Verification Report, which is then submitted to the developer.

The developer then submits a written and stamped application for a Permit for Approval and Ratification of RIB to the Director General of Electricity of MEMR cq. Director of Electricity Engineering and Environment, accompanied by a RIB Verification Result Report from the Surveyor and other application attachments. Submission of applications and required documents can be done online via the MEMR Licensing website (<u>https://perizinan.esdm.go.id</u>) on the Gatrik menu. The RIB requirements are displayed in Table 15 on page 44.

## b. Import Duty Exemption

There are several provisions for granting import duty exemption on imports of goods for the electricity generation industry, as follows:

- Equipment or machinery cannot be produced domestically;
- Equipment has been produced domestically, but does not yet meet the required specifications; or
- Equipment has been produced domestically, but the quantity is not sufficient for industrial needs.

Exemption from import duties is given to business entities holding IUPTL. To obtain the Import Duty Exemption facility, developers must submit an application to the Ministry of Investment (MoIn/BKPM) accompanied by submission of the required application documents and attachments.

The requirements for Goods Import Plan (RIB) and Import Duty Exemption, are shown in Table 15 on page 44. Meanwhile, the procedure for facility application permit is presented in Figure 21.



OSS System

Figure 21: Procedure of Facility Application Permit

## 2. Migrant Working Permits

Migrant Working Permits are required in PLTB construction because these projects often require specific skills and labor that are not yet available in Indonesia. This permit ensures that the use of migrant workers is conducted in accordance with applicable labor regulations and immigration laws. The application for Migrant Working Permits is available via the Sisnaker application system (<u>https://kemnaker.go.id</u>). Furthermore, the requirements for this permit are listed in Table 15 on page 44.

#### 3. Building Approval (PBG)

Building Approval (PBG) is regulated in PP No. 16/2021 concerning *Implementing Regulations of Law No. 28/2002 concerning Buildings*. To obtain PBG, developers must first submit a PBG application through the Building Management Information System (SIMBG) application (<u>https://simbg.pu.go.id</u>) by submitting administrative and technical requirements, in the form of applicant/owner data, building data, technical plan documents, and other supporting documents. Figure 22 displays the procedure of Building Approval application. Furthermore, the application requirements can be found in Table 15 on page 44.



Figure 22: Procedure of Building Approval (PBG)

#### 4. Water Use Permit

This is a permit to extract and utilize water for PLTB construction activities, including for employee sanitation needs when the plant starts operating, and other activities. To apply for this permit, one must first ensure that the river area falls under the authority of the Central Government or Regional Government via the website (<u>https://mypatriot.id/ws/</u>). There are two mechanisms for water licensing, namely:

a. Groundwater Business Permit

This is a permit to use groundwater resources to conduct business activities. Application for such a permit entails several processing stages, including Drilling Approval and Feasibility Study. The application is initiated through the MEMR Licensing Application System (<u>https://perizinan.esdm.go.id/ebtke</u>), and then continued to OSS Application System (PB-UMKU) to process the Groundwater Business Permit.

b. Water Resources Cultivation Permit

The permit concerns the use of Surface Water Resources to conduct business activities. The application is initiated through the PUPR Ministry's Water Resources Licensing Application System (<u>https://perizinansda.pu.go.id</u>), and subsequently through the OSS Application System (PB-UMKU) to process the Water Resources Cultivation Permit.

Requirements pertaining to the application of Water Permit are displayed in Table 15 on page 44.

5. Testing and Certification of Occupational Health and Safety Equipment (K3)

Any work equipment that has the potential to cause work accidents certainly requires certification to meet work safety requirements and standards. Compliance with K3 regulations is key to avoiding work accidents and risks that can arise due to the use of unsafe work equipment during the construction phase. There are several scopes of K3 Work Equipment, including: (i) Fire Protection System Certification, (ii) Lightning Distribution Installation Certification, (iii) Electrical Installation Certification, (iv) Power Aircraft and Production Aircraft Certification, and (v) Lift and Transport Aircraft Certification. To apply for Testing and Certification of Occupational Health and Safety Equipment (K3), one shall submit an application and attach the entailed requirements to the Regional Government through the Provincial Manpower and Transmigration Office. These requirements are listed in Table 15 on page 44, whereas the application procedure is shown in Figure 23.



Figure 23: Procedure of Testing and Certification of Occupational Health and Safety Equipment (K3)

## 6. Heavy Equipment Operator's License

Heavy Equipment Operator's License is an official document issued by the Provincial Department of Manpower and Transmigration giving permission to an operator to operate heavy equipment, such as forklifts. Heavy Equipment Operator's License refers to Law no. 1/1970 concerning *Work Safety*, and Minister of Manpower Regulation no. 8/2020 concerning *Occupational Safety and Health of Lifting and Transporting Aircraft*. To apply for Testing and Certification of Occupational Health and Safety Equipment (K3), one shall submit an application along with the requirements (see Table 15 on page 44) to the Regional Government through the Provincial Manpower and Transmigration Office.

#### 7. Recommendation and Certification of Fire Extinguisher (APAR)

Fire extinguishers used at construction sites must be certified and meet the standards set by the District/City Regional Fire Department. A fire extinguisher that has been certified shows that the tool meets the requirements and functions properly as intended. Figure 24 shows the procedure for obtaining the recommendation and certification, whereas Table 15 on page 44 lists the required documentation to process an application for the recommendation and certification.



Figure 24: Procedure of Recommendations and Certification of Fire Extinguisher

## 8. Certificate of Eligibility for Operation (SLO)

Operational Eligibility Certificate (SLO) is one of the requirements in determining the Commercial Operation Date (COD). To obtain an SLO, the developer must submit an application during the implementation of the electricity network connection and commissioning. The relevant SLO consists of two parts, namely:

- a. SLO Electrical Installation
- b. SLO Generator > 500 kV

As the first step, developers must submit an SLO application through the OSS system (<u>https://oss.go.id</u>) for the issuance of SLOs with the status "not yet effective". In addition, the developer must also contact one of the licensed or accredited Electricity Engineering Inspection Institutions (*Lembaga Inspeksi Teknik*/LIT), and submit the required documents to the LIT. Next, the processing continues using the Si Ujang Gatrik application system (<u>https://siujang.esdm.go.id</u>). Application procedure and requirements are summarized on Figure 25 and Table 15 on page 44, respectively.



Figure 25: Procedures of Certificate of Eligibility for Operation (SLO) Electrical Installation (top chart) and SLO Generator (bottom chart)

## 9. Building Function Certificate (SLF)

Referring to Government Regulation No. 16/2021 concerning *Implementing Regulations of Law No. 28/2002 concerning Buildings*, a Building Function Certificate (SLF) is a certificate issued by the Regency/City Regional Government to state the functional suitability of a building, both administratively and technically, before utilization of the building can take place. SLF applications are made through the Building Management Information System (SIMBG) online application (<u>https://simbg.pu.go.id</u>), by submitting the required administrative and technical documents (see Table 15 on page 44). Figure 26 highlights the flow of processes involved in the SLF application.





Figure 26: Procedure of Building Function Certificate

## 3.2.3 Permitting in Operation Phase

In this study, the Operation Phase is considered as the final phase in the PLTB project. The following paragraphs will explain the permits relevant to this phase.

## 1. Facilities Application Permit

Facilities in the form of Tax Allowance or Tax Holiday can be utilized from the tax year when the PLTB begins commercial production as regulated in Minister of Finance Regulation No. 130/2020. Based on this regulation, developers (Taxpayers/Corporate Taxpayers) can apply for the use of these tax facilities. Application requirements can be found in Table 15 on page 44, whereas the procedure is depicted in Figure 27.



Figure 27: Procedure of Facilities Application Permit

#### 2. Mandatory Company Employment Report

Mandatory Company Employment Reporting is regulated in Minister of Manpower Regulation No. 4/2019 concerning *Amendments to Minister of Manpower Regulation No. 18/2017 on Procedures for Online Mandatory Manpower Reports.* Currently, the Company's Mandatory Employment Report application is done via the Employment Information System (Sisnaker; <u>https://kemnaker.go.id</u>). Requirements to the application are listed in Table 15 on page 44. Meanwhile, the procedure is shown in Figure 28.



Figure 28: Procedure of Mandatory Company Employment Report

Table 15: Resume of permits along with their requirements, responsibility allocation, and estimated duration

				Re	sponsibili	ty	Duration		
No	Activities	Applications	Requirements	Central	Province	Regency/ City	Optimistic	Worst Case	
Α	Development Phase								
1	Legality of Business Entities								
a	Establishment of a Limited Liability Company (PT)	<ul> <li>Notary</li> <li>AHU Online Application System</li> </ul>	<ul> <li>Director Identity</li> <li>Commissioners and Shareholders</li> <li>Tax identification number/NPWP</li> <li>Passport-sized photos of the Shareholders/Owners</li> <li>Proof of Investment Payment</li> </ul>	Ministry of Law and Human Rights			7 Working Days	14 Working Days	
b	Application for Business Identification Number (NIB)	<ul> <li>OSS Application System</li> </ul>	<ul> <li>NPWP</li> <li>Capital Data</li> <li>Management Data</li> <li>Shareholder Data</li> <li>Business Purpose</li> <li>Input of Business Activity Data according to KBLI</li> <li>Input Completeness of Data related to the Business Field such as Type of Business and Business Products</li> </ul>	Ministry of Investment/ BKPM			1 Working Days	2 Working Days	
2	Research Permit								
a	Measurement of Wind Potential (Met Mast Installation) Recommendation Letter	- Regent - District	<ul> <li>MoU between PLN and Developer</li> <li>Proposal</li> <li>Location Map</li> <li>Community Approval</li> <li>Recommendation Letter</li> <li>Spatial Direction</li> </ul>			Local Government	3 Working Days	7 Working Days	
b	Letter of Support from Governor	- Governor	<ul> <li>Proposal</li> <li>Location Map</li> <li>Community Approval</li> <li>Head of Sub-district Recommendation Letter</li> <li>Spatial Direction</li> <li>Regent Recommendation</li> </ul>		Local Government		3 Working Days	7 Working Days	

				Re	sponsibili	ty	Duration		
No	Activities	Applications	Requirements	Central	Province	Regency/ City	Optimistic	Worst Case	
3	Fiscal Facility Application								
a	Tax Allowance	<ul> <li>OSS Application System</li> </ul>	<ul> <li>Completeness of Company Data (NIB, NPWP, Business License Data, and others)</li> <li>Fiscal Certificate (SKF) of all Shareholders</li> <li>Asset Data</li> <li>Project requirements already have an Investment License</li> <li>Preview Application</li> </ul>	Ministry of Investment/ BKPM & Ministry of Finance			5 Working Days	14 Working Days	
b	Tax Holiday	<ul> <li>OSS Application System</li> </ul>	<ul> <li>Completeness of Company Data (NIB, NPWP, Business License Data, and others)</li> <li>Fiscal Certificate (SKF) of all Shareholders</li> <li>Asset Data</li> <li>Project requirements already have an Investment License</li> <li>Preview Application</li> </ul>	Ministry of Investment/ BKPM & Ministry of Finance			5 Working Days	14 Working Days	
4	<u>Conformity of Spatial Utilization</u> <u>Activities (KKPR)</u>	- OSS Application System	<ul> <li>Location coordinates</li> <li>Land area requirement for spatial utilization activities</li> <li>Land ownership information</li> <li>Activity type information</li> <li>Building floor plan</li> <li>Building floor area plan</li> <li>Pre-feasibility study document of space utilization activities (for KKPR recommendation mechanism)</li> <li>Building technical plan and or area masterplan</li> </ul>	Ministry of Investment/ BKPM		Agrarian Affairs and Spatial Planning (ATR/BPN) Regional Office	20 Working Days	60 Working Days	

				Re	sponsibili	ty	Duration		
No	Activities	Applications	Requirements	Central	Province	Regency/ City	Optimistic	Worst Case	
5	Forest Area Use Approval (PPKH)								
а	Approval for Survey Activities	- Ministry of Environment and Forestry Office	<ul> <li>Application Letter</li> <li>Map of scale at least 1:50,000</li> <li>Hardcopy and shape files</li> <li>Environmental Document</li> <li>Business Licenses</li> <li>Integrity Pact</li> </ul>	Ministry of Environment and Forestry	Local Government (Governor)		15 Working Days	30 Working Days	
b	Forest Area Use Approval by Ministerial Decree	- OSS Application System	<ul> <li>Commitment Statement</li> <li>Integrity Pact</li> <li>Business Entity Data</li> <li>Application Letter</li> <li>Map</li> <li>Governor's Recommendation</li> <li>IUPTL</li> <li>Environmental Document</li> </ul>	Ministry of Investment/ BKPM	Local Government (Governor)		54 Working Days	108 Working Days	
6	Environmental Approval	<ul> <li>OSS Application System</li> <li>One Stop Integrated Service MoEF Application System</li> </ul>	<ul> <li>Directive Letter for the Preparation of Environmental Documents</li> <li>AMDAL Document</li> <li>NIB</li> <li>KKPR</li> <li>Technical Approval (Pertek) including Andalalin</li> <li>Environmental Feasibility Decree (SKKLH)</li> </ul>	Ministry of Investment /BKPM & Ministry of Environment and Forestry	Environment Department	Environment Department	180 Working Days	360 Days	
7	Technical Approval								
a	Traffic Impact Analysis (Andalalin)	<ul> <li>Si Andalan Application System</li> </ul>	<ul> <li>Application Letter for Andalalin Approval</li> <li>KKPR</li> <li>Photo of Current Existing Field Condition</li> <li>Letter of Proof of Land Ownership</li> <li>Proposed Site Plan and DED Andalalin Document</li> </ul>	Ministry of Transportation	Transportation Department	Transportation Department	15 Working Days	30 Working Days	
b	Hazardous and Toxic Waste Permit (B3)	<ul> <li>One Stop Integrated Service MoEF Application System</li> </ul>	<ul> <li>Application Letter</li> <li>Technical Assessment of Hazardous Waste Collection</li> </ul>	Ministry of Environment and Forestry	Environment Department	Environment Department	47 Working Days	60 Working Days	

1				Re	sponsibili	ty	Duration	
No	Activities	Applications	Requirements	Central	Province	Regency/ City	Optimistic	Worst Case
С	Wastewater Permit	<ul> <li>One Stop Integrated Service MoEF Application System</li> </ul>	<ul> <li>Self-Screening Results</li> <li>Layout from inlet to outfall, including: IPAL, wastewater line piping, compliance points, monitoring points, and discharge points</li> <li>NIB</li> </ul>	Ministry of Environment and Forestry	Environment Department	Environment Department	14 Working Days	28 Working Days
d	Gas Emission Permit	- One Stop Integrated Service MoEF Application System	<ul> <li>Self-Screening Results</li> <li>Layout of gas emission sources and infrastructure, including chimney characteristics, emissions management, compliance points, and monitoring points</li> <li>NIB</li> </ul>	Ministry of Environment and Forestry	Environment Department	Environment Department	14 Working Days	28 Working Days
8	Electricity Supply Business License (IUPTL)	<ul> <li>OSS Application System</li> <li>MEMR Licensing Application System</li> </ul>	<ul> <li>Feasibility study of electricity supply business</li> <li>PJBL</li> <li>RUPTL</li> <li>NIB</li> <li>Beneficial Ownership</li> </ul>	Ministry of Energy and Mineral Resources			30 Working Days	60 Working Days
9	Recommendations for Aviation Operation Safety Area Permit (KKOP)	<ul> <li>Ministry of Transportation</li> <li>Regional Airport Authority</li> </ul>	<ul> <li>Letter Submission for KKOP Permit/Recommendation Letter</li> <li>Location Address</li> <li>Location Coordinates Location Land Elevation</li> <li>Contact Person</li> <li>Land Ownership Letter</li> <li>Map/Location Plan</li> <li>Elevation Plan Drawing</li> </ul>	Ministry of Transportation			16 Working Days	32 Working Days

				Re	sponsibili	ty	Dura	tion
No	Activities	Applications	Requirements	Central	Province	Regency/ City	Optimistic	Worst Case
10	<u>Terminal Permit for Own Use</u> (TUKS)/ Special Terminal (TERSUS)	- SEHATI Application System	<ul> <li>Request letter for field review</li> <li>NIB</li> <li>Proof of Land Title Ownership Status</li> <li>Loading and Unloading Volume Plan and Ship Visit Frequency and Ship Size Plan</li> <li>Site Plan and type of construction of the port facilities to be built</li> <li>Flow-Sailing Plan in and out of TUKS/TERSUS</li> <li>Survey activity report document</li> <li>Bathymetry map</li> <li>Plotting the location of TUKS/TERSUS</li> <li>Situation Map (mapping) of other installations / buildings around it</li> <li>Environmental Approval</li> </ul>	Ministry of Transportation	Transportation Department, Spatial Planning Department, & Fisheries and Maritime Department	Transportation Department, Spatial Planning Department, & Fisheries and Maritime Department	17 Working Days	34 Working Days
11	Land Acquisition (for network connection from wind farm to PLN substation)	<ul> <li>ATR/ BPN Regional Office</li> <li>Local Government</li> </ul>	<ul> <li>Land Acquisition Planning Document (DPPT)</li> <li>KKPR</li> <li>Environmental Document</li> </ul>		Governor & ATR/BPN Regional Office		± 1 Year	± 1 Year
В	Construction Phase							
1	Facility Application Permit							
а	Goods Import Plan (RIB)	<ul> <li>MEMR Licensing Application System</li> <li>OSS Application System</li> </ul>	<ul> <li>IUPTL</li> <li>PJBL</li> <li>List of Goods Import Plan (RIB) that has been verified by the Surveyor</li> <li>Statement letter from the Surveyor</li> </ul>	Ministry of Investment/ BKPM & Ministry of Finance			7 Working Days	14 Working Days
b	Import Duty Exemption	<ul> <li>OSS Application System</li> </ul>	<ul> <li>NIB</li> <li>RIB</li> <li>Deed of Establishment of the business entity</li> <li>IUPTL</li> <li>PJBL</li> </ul>	Ministry of Investment/ BKPM & Ministry of Finance			7 Working Days	14 Working Days
2	Migrant Working Permit	<ul> <li>Sisnaker Application System</li> </ul>	<ul><li>Business Entity Data</li><li>Labor Qualification Data</li></ul>	Ministry of Manpower			2 Working Days	7 Working Days

				Re	sponsibili	ty	Dura	Duration	
No	Activities	Applications	Requirements	Central	Province	Regency/ City	Optimistic	Worst Case	
3	Building Approval (PBG)	- SIMBG Application System	<ul> <li>Business Entity Data</li> <li>Architectural Technical Documents</li> <li>Structural Technical Documents</li> <li>Mechanical, Electrical, and Plumbing (MEP) Technical Documents</li> <li>Land Technical Document</li> </ul>	Ministry of Public Works and Housing		Investment and One- Stop Integrated Service Office (DPMPTSP)	28 Working Days	3-4 Months	
4	Water Use Permit								
a	Groundwater Business Permit 1) Drilling Approval 2) Feasibility Study Approval	- MEMR Licensing Application System	<ul> <li>NIB</li> <li>Applicant Information</li> <li>Well Site Address</li> <li>Coordinates of borehole/dug well point</li> <li>Period of time for which Groundwater is being used</li> <li>Description of borehole/digging well</li> <li>Proof of ownership/land tenure</li> <li>Environmental Approval, Feasibility study approval letter</li> <li>Groundwater utilization feasibility study report</li> <li>Certificate from BBWS/BWS</li> <li>Certificate from PDAM</li> <li>Results of public consultation on Groundwater utilization plan</li> <li>Statement letter</li> <li>Total Groundwater withdrawal discharge plan in m<sup>3</sup>/day</li> <li>Groundwater utilization plan</li> <li>Construction drawing of borehole/dug well</li> </ul>	Ministry of Energy and Mineral Resources			35 Working Days	60 Working Days	
b	Water Resources/Surface Water Exploitation Permit	- Water Resources Licensing Application by MPWPH	<ul> <li>Location drawing/situation map (with coordinates of extraction and/or construction route)</li> <li>Type of infrastructure and technology used</li> <li>Drawing of the type of infrastructure that has been approved by BBWS/BWS</li> <li>Technical recommendation from the Head of BBWS/BWS</li> </ul>	Ministry of Public Works and Housing			7 Working Days	14 Working Days	

				Re	sponsibili	ty	Dura	tion
No	Activities	Applications	Requirements	Central	Province	Regency/ City	Optimistic	Worst Case
5	Testing and Certification of Occupational Health and Safety Equipment (K3)	<ul> <li>Provincial Manpower Office</li> <li>PJK3</li> </ul>	<ul> <li>Application letter</li> <li>Copy of the applicant's valid ID card</li> <li>Drawing of Equipment Installation along with Specifications</li> <li>Power of Attorney (if represented)</li> </ul>		Manpower Department		14 Working Days	28 Working Days
6	Heavy Equipment Operator's License	<ul> <li>Provincial Manpower</li> <li>Office</li> <li>PJK3</li> </ul>	- Operator Personnel Data		Manpower Department		14 Working Days	28 Working Days
7	Recommendations and Certification of Fire Extinguisher	- Fire Department	<ul> <li>Application letter</li> <li>Copy of the applicant's valid ID card</li> <li>Mechanical and Electrical Installation Drawings Duplicate 2, Including: Fire Installation System Plan available (e.g., Hydrant, Alarm, Sprinkler, APAR)</li> <li>Power of Attorney (if represented)</li> </ul>			Fire Department	14 Working Days	28 Working Days
8	Certificate of Eligibility for Operation (SLO)							
a	SLO Electrical Installation	<ul> <li>Gatrik Application</li> <li>System</li> <li>Technical Inspection</li> </ul>	<ul> <li>IUPTLU</li> <li>Installation and layout drawings</li> <li>One-line diagram</li> <li>Main equipment specifications of the installation</li> <li>Engineering specifications and standards used</li> <li>Installation Data Master Number (<i>Nomor Induk Data Instalasi</i>/NIDI)</li> </ul>	Ministry of Energy and Mineral Resources			3 Working Days	7 Working Days
b	SLO EDG	<ul> <li>Gatrik Application System</li> <li>Technical Inspection</li> </ul>	<ul> <li>IUPTLS</li> <li>NIDI</li> <li>Engineering specifications and standards used</li> <li>Valid manufacturer's warranty</li> <li>Commissioning test results from distributor engineering</li> <li>Power plant installation maintenance documents</li> </ul>	Ministry of Energy and Mineral Resources			3 Working Days	7 Working Days

1				Re	sponsibili	ty	Duration	
No	Activities	Applications	Requirements	Central	Province	Regency/ City	Optimistic	Worst Case
9	Building Function Certificate (SLF)	<ul> <li>SIMBG Application System</li> </ul>	<ul> <li>Business Entity Data</li> <li>Architectural Technical Documents</li> <li>Structural Technical Documents</li> <li>Mechanical, Electrical, Plumbing (MEP), and Land Technical Documents</li> <li>As-Built Drawing</li> <li>Data of Technical Assessment Expert</li> <li>Building Periodic Inspection Report</li> <li>Building Function Completeness Inspection Report</li> </ul>	Ministry of Public Works and Housing		Investment and One- Stop Integrated Service Office (DPMPTSP)	3 Working Days	7 Working Days
С	Operation Phase							
1	Facility Application Permit for Tax Allowance or Tax Holiday	<ul> <li>OSS Application System</li> </ul>	<ul> <li>Realization of fixed assets along with layout drawing</li> <li>Taxpayer's Fiscal Certificate</li> <li>The first time the production is sold to the market, among others in the form of tax invoices or billing receipts; or the first time the production is used for further production processes, among others in the form of self-use reports</li> </ul>	Ministry of Investment/ BKPM & Ministry of Finance			60 Working Days	120 Working Days
2	Mandatory Company Employment Report (WLKP)	<ul> <li>Sisnaker Application System</li> </ul>	<ul> <li>Name of account manager in online WLKP reporting</li> <li>Company Identity</li> <li>NIB</li> <li>License Letter</li> <li>Company NPWP</li> <li>BPJS Employment</li> <li>BPJS Health Data</li> <li>Deed of Establishment</li> <li>Employee Data</li> </ul>	Ministry of Manpower			2 Working Days	7 Working Days

# 4 Site-Specific Permitting Aspects

To push for wind energy development in Indonesia, potential locations have been identified that are considered strategic for PLTB development. Each of these locations has its own characteristics and challenges in terms of permits and regulations. Therefore, special permits are needed that take into account various aspects of each location. As mentioned in Chapter 1, the scope of this study is limited to 8 sites in 9 regencies across Indonesia. In this chapter, special permits related to the development of PLTB, in particular at the 9 regencies, will be explained and serve as the basis for Component 3 (Wind energy potential mapping, gap analysis and site selection) of this project. The explanation is divided into four parts/sections, i.e. Spatial Plans, Actual Land Use and Land Status, Biodiversity and Environmental Legislation, and Site-Specific Permitting Based on the Project Phase.

## 4.1 Spatial Plans

The spatial planning map of each regency was provided by the Ministry of Agrarian Affairs and Spatial Planning (KATR/BPN), whereas the Wind Turbine Generator (WTG) potential area was provided by Pondera based on the ongoing Component 3 study. However, the WTG potential areas for regencies in the East Java (Probolinggo, Ponorogo, and Kediri) have not yet been obtained at the time of writing due to the ongoing site selection procedure. In the next subsections, results of the overlay between the RTRW map (*Rencana Tata Ruang Wilayah* or Regional Spatial Plan) and the WTG potential area for each regency are presented.

## 4.1.1 Sukabumi Regency Spatial Plan

Identification of spatial plans is conducted by overlaying land use plans based on the Sukabumi Regency Spatial Plan (RTRW) year 2012 – 2032 with the WTG potential area, which can be seen in Figure 29. The land use plan types in WTG potential area based on Sukabumi Regency RTRW 2012-2032 received from KATR/BPN consists of:

- 1. Conservation Forest area (Kawasan Hutan Konservasi)
- 2. Protected Forest area (Kawasan Hutan Lindung)
- 3. Limited Production Forest area (Kawasan Hutan Produksi Terbatas)
- 4. Plantation area (Kawasan Perkebunan)
- 5. Wetland Farming area (Kawasan Pertanian Lahan Basah)
- 6. Dryland Farming area (Kawasan Pertanian Lahan Kering)
- 7. Rural Residential area (Kawasan Permukiman Perdesaan)
- 8. Beach Border area (Kawasan Sempadan Pantai)
- 9. River Border area (Kawasan Sempadan Sungai)

The WTG potential area that crosses the Conservation Forest area must be removed in accordance with the provisions of Government Regulation No. 24/2010 concerning *Use of Forest Areas*, Article 3, Paragraph 1, that states: "*Use of forest areas as intended in Article 2 can only be carried out in: a. production forest area; and/or b. protected forest area*". To build PLTB at this location, cooperation will be required with the owner of the Plantation Cultivation Rights (*Hak Guna Usaha*/HGU) and a Forest Area Use Approval from MoEF. Based on the information obtained from the wind farm developer in Sukabumi, the wind farm area does not interfere with the Cikembar Airport Planned Aviation Operations Safety Area (KKOP) based on the results of measurements by the Department of Transportation (Angkasa Pura) in 2019.

#### Notes:

Sukabumi Regency has prepared a new RTRW through Regional Regulation No. 10/2023, hence the RTRW of Sukabumi Regency for 2012 - 2032 can be assumed to be no longer valid. However, to date the Sukabumi Regency Government has not yet officially issued the latest RTRW.



Figure 29: Regional Spatial Plan map of the WTG potential area in Sukabumi Regency

## 4.1.2 Gunung Kidul Regency Spatial Plan

Identification of spatial plans is conducted by overlaying land use plans based on Gunung Kidul Regency Spatial Plan (RTRW) year 2010 – 2030 with the WTG potential area as shown in Figure 30. The land use plan types within the WTG potential area based on Gunung Kidul RTRW 2010-2030, consists of:

- 1. Protected Forest area (Kawasan Hutan Lindung)
- 2. Production Forest area (Kawasan Hutan Produksi)
- 3. Community Forest area (Kawasan Hutan Rakyat)
- 4. Potential Water Absorption area (Kawasan Potensial Resapan Air)
- 5. Dryland Farming area (Kawasan Pertanian Lahan Kering)
- 6. Rural Residential area (Kawasan Permukiman Perdesaan)

If the Potential Water Absorption area is in a Conservation Forest area, then based on the provisions stipulated in Government Regulation No. 23/2021, the area may not be used for PLTB development. However, if it is in a Protected Forest area or other use area, then the area can be used for PLTB development.

## Notes:

The obtained RTRW for Gunung Kidul Regency is for the year 2010-2030. Usually, the Regency Government conducts a review and prepares a new RTRW midway through the period. However, it is necessary to confirm this assumption with the competent agency in Gunung Kidul Regency, because if a new RTRW has been prepared and a new Regional Regulation on the RTRW has been issued, then the obtained RTRW can no longer be considered as valid.



Figure 30: Regional Spatial Plan map of the WTG potential area in Gunung Kidul Regency

## 4.1.3 Aceh Besar Regency Spatial Plan

Identification of spatial plans is conducted by overlaying land use plans of Aceh Besar Regency Spatial Plan (RTRW) year 2013 - 2033 with the WTG potential area (see Figure 31). The land use plan types in WTG potential area based on Aceh Besar RTRW 2013-2033 received from KATR/BPN (still valid for the near future) consists of:

- 1. Protected Forest area (Kawasan Hutan Lindung)
- 2. Limited Production Forest area (Kawasan Hutan Produksi Terbatas)
- 3. Community Forest area (Kawasan Hutan Rakyat)
- 4. Plantation area (*Kawasan Perkebunan*)
- 5. Wetland Farming area (Kawasan Pertanian Lahan Basah)
- 6. Dryland Farming area (Kawasan Pertanian Lahan Kering)
- 7. Mining area (Kawasan Pertambangan)
- 8. Rural Residential area (Kawasan Permukiman Perdesaan)
- 9. Urban Settlement area (Kawasan Permukiman Perkotaan)
- 10. Retention basin (Embung) area
- 11. Beach Border area (Kawasan Sempadan Pantai)

The problem with the land use plan of WTG potential area in Aceh Besar Regency is that it overlaps with Mining Business Permits (*Izin Usaha Pertambangan*/IUP) and Plantation Business Use Rights (HGU), and hence, a cooperation with companies holding mining IUPs and plantation HGUs is required.

## Notes:

The obtained RTRW of Aceh Besar Regency is for the year 2013-2033. Based on information from the Public Works and Spatial Planning Office of Aceh Besar Regency, the RTRW will be revised. Hence, whilst the revision process is still being conducted, the RTRW is still valid.



Figure 31: Regional Spatial Plan map of the WTG potential area in Aceh Besar Regency

## 4.1.4 Dairi Regency Spatial Plan

Identification of spatial plans is conducted by overlaying land use plans of Dairi Regency through the Regency Spatial Plan (RTRW) for the year 2014 - 2034 with the WTG potential area, as shown in Figure 32. The land use plan types in WTG potential area based on Dairi Regency RTRW 2014-2034 received from KATR/BPN (still require validation) consists of:

1. Protected Forest area (Kawasan Hutan Lindung)

## Notes:

The obtained RTRW of Dairi Regency is for the year 2013-2033, however, it is not yet known whether there is a new Regional Regulation has been issued regarding the new RTRW, or if the new RTRW is still being revised/prepared. Hence, confirmation from the competent agency in Dairi Regency is required. If there is already a new RTRW Regional Regulation, the RTRW used in this analysis is no longer valid. Nevertheless, if the RTRW of Dairi Regency has not yet been revised or is still being revised, then this analyzed RTRW is still valid.



Figure 32: Regional Spatial Plan map of the WTG potential area in Dairi Regency

## 4.1.5 South Tapanuli Regency Spatial Plan

Identification of spatial plans is carried out by overlaying land use plans based on the South Tapanuli Regency Spatial Plan (RTRW) for the year 2017 – 2037 with the WTG potential area, which can be seen in Figure 33. The land use plan types in the WTG potential area based on South Tapanuli RTRW 2017-2037 consists of:

- 1. Protected Forest area (Kawasan Hutan Lindung)
- 2. Fixed Production Forest area (Kawasan Hutan Produksi Tetap)
- 3. Dryland Farming area (Kawasan Pertanian Lahan Kering)
- 4. Settlement area (Kawasan Permukiman)

Before the expansion of South Tapanuli Regency in 2007, there was the Aek Godang Local Airport, which was between 3 - 5 km away from the location of the WTG potential area. Based on the information from Kualanamu Airport officials, the building a wind farm at the WTG potential area around Aek Godang Airport could disrupt flight navigation.

## Notes:

The obtained RTRW of South Tapanuli Regency is for the year 2017-2037. This RTRW can be assumed to be valid (and recent), given that the revision process takes a long time. However, confirmation from the competent agency in South Tapanuli Regency is still required.



Figure 33: Regional Spatial Plan map of the WTG potential area in South Tapanuli Regency

## 4.1.6 North Padang Lawas Regency Spatial Plan

Identification of spatial plans is conducted by overlaying land use plans based on North Padang Lawas Spatial Plan (RTRW) for the year 2015-2035 with the WTG potential map, as shown in Figure 34. The land use plan types in the WTG potential area based on North Padang Lawas Regency RTRW 2015-2035 from GISTARU Website (still require validation) consists of:

- 1. Fixed Production Forest area (Kawasan Hutan Produksi Tetap)
- 2. Limited Production Forest area (Kawasan Hutan Produksi Terbatas)
- 3. Non-Forest Estate area (Area Penggunaan Lain/APL)
- 4. Dryland Farming area (Kawasan Pertanian Lahan Kering)

North Padang Lawas Regency was formed in 2007 as a division of South Tapanuli Regency. With the formation of the North Padang Lawas Regency, Aek Godang Airport became part of the North Padang Lawas Regency area. The airport is between 3 – 5 km away from the WTG potential area. Based on the information from Kualanamu Airport officials, the WTG potential area could disrupt the flight navigation around Aek Godang Airport.

#### Notes:

The obtained RTRW of North Padang Lawas Regency is for the year 2015-2035, however, it is not yet known whether any new Regional Regulation has been issued on the new RTRW. Hence, confirmation from the competent agency in North Padang Lawas Regency is required. If there is already a new RTRW Regional Regulation, this analyzed RTRW is no longer valid. On the other hand, if the RTRW of North Padang Lawas Regency has not yet been revised or is still being revised, then this analyzed RTRW is still valid.



Figure 34: Regional Spatial Plan map of the WTG potential area in North Padang Lawas Regency

Based on the overlaps between the land use plan map and the WTG potential area for each district, the analysis results can be summarized as shown in Table 16.

		Regency						
No	Land Use Plan Types	Sukabumi	Gunung Kidul	Aceh Besar	Dairi	South Tapanuli	North Padang Lawas	Remarks
1	Conservation Forest areas	<ul> <li>Image: A start of the start of</li></ul>						Cannot be used based on GR No. 23/202
2	Protected Forest areas	~	~	~	~	~		Can be used if a forest area utilization permit is acquired from MoEF based, based on GR No. 23/2021
3	Fixed Production Forest areas		~			~	~	Can be used if a forest area utilization permit is acquired from MoEF, based on GR No. 23/2021
4	Limited Production Forest areas	~		~			✓	Can be used if a forest area utilization permit is acquired from MoEF, based on GR No. 23/2021
5	Community Forest areas		~	~				Can be used if a forest area utilization permit is acquired from MoEF, based on GR No. 23/2021
6	Rural Settlement areas	~	<ul> <li>✓</li> </ul>	~		~		Can be used if a purchase or lease agreement is obtained
7	Urban Settlement areas			~				Can be used if a purchase or lease agreement is obtained
8	Mining area			~				Can be used if a mutual agreement (e.g. MOU) is obtained

 Table 16: Summary of land use plan for the six analyzed regencies

		Regency						
No	Land Use Plan Types	Sukabumi	Gunung Kidul	Aceh Besar	Dairi	South Tapanuli	North Padang Lawas	Remarks
9	Plantation area	~		~				Can be used if a mutual agreement (e.g. MOU) is obtained
10	Non-Forest Estate (APL)						~	Can be used if a purchase or lease agreement is obtained
11	Wetland Agricultural area	~		~				Can be used if a purchase or lease agreement is obtained
12	Dryland Agricultural area	~	~	~		~	~	Can be used if a purchase or lease agreement is obtained
13	Water Absorption Potential area		~					Can be used if it is not in a conservation forest area based on GR No. 23/2021
14	<i>Embung</i> (retention basin) area			V				Can be used for public interest activities
15	Flooding area							Can be used for public interest activities
16	Beach Border area	~		V				Can be used for public interest activities
17	River Border area	1						Can be used for public interest activities

## 4.1.7 Kediri Regency Spatial Plan

In Kediri, there is Dhoho Airport, and therefore, future construction of PLTB needs to consider the Aviation Operations Safety Area (KKOP) of this airport. The land use plan based on Kediri Regency RTRW for the year 2011-2031 received from KATR/BPN (see Figure 35) can be assumed to no longer be valid.

## Notes:

The RTRW of Kediri Regency obtained is for the year 2011-2031. Based on the information obtained, the Kediri Regency Government revised the RTRW in 2020, and it is possible that a Regional Regulation regarding the RTRW has been issued. If the new Regional Regulation on RTRW has been issued, the RTRW of Year 2011-2031 is no longer valid. It is therefore necessary to seek confirmation from the authorized agencies of Kediri Regency.

## 4.1.8 Ponorogo Regency Spatial Plan

Considering the RTRW for this regency for the year 2012-2032 (see Figure 36), future development of PLTB in Ponorogo Regency must pay attention to nature reserve and nature conservation areas.

## Notes:

The obtained RTRW of Ponorogo Regency is for the year 2012-2032. It is not yet known whether a new Regional Regulation on the new RTRW has been issued or is still being prepared. Therefore, confirmation from the competent agency in Ponorogo Regency is required. If a new RTRW Regional Regulation is already in place, the obtained RTRW is no longer valid. However, if the RTRW of Ponorogo Regency has not yet been revised or is still being revised, then the obtained RTRW is still valid.

## 4.1.9 Probolinggo Regency Spatial Plan

Considering the RTRW for this regency for the year 2010-2029 (see Figure 37), future development of PLTB in Probolinggo Regency must pay attention to the Hyang Highland Wildlife Sanctuary area and the Bromo-Tengger-Semeru National Park area.

## Notes:

The obtained RTRW of Probolinggo Regency is for the year 2010-2029. It is not yet known whether there is a new Regional Regulation on the RTRW, or if it is still being revised/prepared. Therefore, confirmation from the competent agency in Probolinggo Regency is required. If a new RTRW Regional Regulation is already in place, this obtained RTRW is no longer valid. Vice versa, if the RTRW of Probolinggo Regency has not yet been revised or is still being revised, then the obtained RTRW is still valid.



Figure 35: Regional Spatial Plan map of Kediri Regency



Figure 36: Regional Spatial Plan map of Ponorogo Regency


Figure 37: Regional Spatial Plan map of Probolinggo Regency

## 4.2 Actual Land Use and Land Status

Data of actual land use and land status/ownership are not available for this study, and therefore, assumptions are made based on the land use plans as follows:

- 1. The current/actual conditions of Conservation Forests, Protected Forests, Fixed Production Forests, and Limited Production Forests are considered to be Forest Areas, which belong to the Government, namely, the Ministry of Environment and Forestry (MoEF).
- Conservation Forest areas may not be used for wind power plant development in accordance with Government Regulation No. 23/2021. Meanwhile, Protected Forests, Fixed Production Forests, and Limited Production Forests can be used for the construction of wind power plants subject to the issuance of a forest area utilization permit (PPKH) by MoEF.
- 3. The current/actual condition of the Community Forest area is probably a forest with certain types of wood planted by the community, and hence, it is assumed that this forest area belongs to the Government (MoEF). The Community Forest area can be used for the construction of a wind power plant subject to the issuance of PPKH by MoEF.
- 4. Urban Settlement areas and Rural Settlement areas may currently be partly residential areas and partly non-residential areas. Residential areas are assumed to belong to the community. Urban Settlement areas and Rural Settlement areas can be used for the construction of wind power plants after a purchase or lease agreement is achieved.
- 5. Plantation area and Non-Forest Estate (APL) is assumed to belong to the community if the type of commodity consists of several types of plants. On the other hand, if the type of commodity is only one (singular), it is assumed that the area belongs to a private company or state-owned company (*Badan Usaha Milik Negara*/BUMN). Moreover, if the area is not used as Sustainable Food Agriculture Area (*Kawasan Pertanian Pangan Berkelanjutan*/KPPB), then the area can be used for wind power plant development after a purchase or lease agreement is achieved.
- 6. Dryland Agricultural Areas are assumed to be mixed plantation land. Wetland Agricultural Areas are assumed to be rice fields, whereas Horticultural Areas are assumed to be mixed plantation land. Land ownership in this area is assumed to belong to the community. If these areas are not part of Sustainable Food Agriculture Area (KPPB), then the area can be used for wind farm development once a purchase or lease agreement is obtained.
- 7. Water Catchment/Absorption areas are assumed to be areas that have land use in the form of forests, open land, or others. Ownership of water catchments is assumed to belong to the Government or the community. If the Water Catchment areas are in conservation areas, then they should not be used for wind power plant development, but if they are not in conservation areas, then they can be used for wind power plant development in accordance with the applicable regulations.

- 8. *Embung* (retention basin), Beach Border, and River Border areas are assumed to be areas that have land use in the form of forests, open land, or others. Ownership of *Embung*, Beach Border, and River Border areas is assumed to be assigned to the Government or the community. If *Embung*, Beach Border, and River Border, and River Border areas are in conservation areas, then they may not be used for wind power plant development. However, if they are not in conservation areas, then they may be used for wind power plant development in accordance with the applicable regulations.
- 9. Flooding areas are assumed to be owned by the Government or owned by the community. If the Flooding area is in a conservation area, it may not be used for the wind power plant development. Vice versa, if it is not in a conservation area, then it may be used for wind power plant development in accordance with the applicable regulations.

In addition to the land uses in accordance with the Spatial Plan, there are several other types of areas that may not be used for wind power plant development, namely:

- 1. Locations within the Aviation Operations Safety Area (KKOP)
- 2. Locations within the Protected Rice Field (*Lahan Sawah Dilindungi*/LSD) area and the Sustainable Food Agriculture Area (KPPB)
- 3. Locations within military zones (however, based on the obtained RTRW, no WTG potential areas were found to be located such zones)

Given the above assumptions, results of actual land use and land status assessment on the six regencies (excluding Kediri, Ponorogo, and Probolinggo Regency for reasons stated in Section 4.1) is summarized in Table 16.

1									
No	Land Use Plan Types	Current Land Use	Sukabumi	Gunung Kidul	Aceh Besar	Dairi	South Tapanuli	North Padang Lawas	Land Status
1	Conservation Forest areas	Forest	~						State
2	Protected Forest areas	Forest	~	~	$\checkmark$	~	~		State
3	Fixed Production Forest areas	Forest		~			~	~	State
4	Limited Production Forest areas	Forest	~		✓			~	State
5	Community Forest areas	Forest		~	✓				State & Community
6	Rural Settlement areas	Settlement or others land use	~	~	~		~		Community
7	Urban Settlement areas	Settlement or others land use			~				Community
8	Mining area	Mining activities or others land use			~				Private

rable 17. Sammary of assumed samen and use and status for such of the six analyzed regension	Table 1	7:	Summary	of	assumed	current	land	use	and	status	for	each	of	the six	analyzed	regencies
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No	Land Use Plan Types	Current Land Use	Sukabumi	Gunung Kidul	Aceh Besar	Dairi	South Tapanuli	North Padang Lawas	Land Status
9	Plantation area	Plantation area or mixed plantation	~		~				State /Private or Community
10	Non-Forest Estate (APL)							V	State /Private or Community
11	Wetland Agricultural area	<i>Sawah</i> (rice field) or others land use	~		~				Private or Community
12	Dryland Agricultural area	Dryland plantations or other land use	~	~	~		~	~	Private or Community
13	Water Absorption area	Forests, open land, or others		~					Private or Community
14	<i>Embung</i> (retention basin) area	Forests, open land, or others			~				State or Community
15	Flooding area	Open land or others							State/Private or Community
16	Beach Border area	Open land or others	~		~				State
17	River Border area	Forests, open land, or others	~						State

## 4.3 Biodiversity and Environmental Legislation

For the biodiversity aspect, it is necessary to pay attention to the presence of flora and fauna in the protected area, which is guided by the MoEF Regulation No. 20/2018 on *Protected Flora and Fauna*. This regulation identifies protected flora and fauna species, which will be taken into account when assessing species of concern within the project area. Through the regulation, 919 species of plants and animals are protected, of which 562 of them (or 61%) are bird species.

To preserve protected flora and fauna in the planned activity area, identification of the presence of flora and fauna types in the area must first be conducted. Subsequently, the resulting list of types is then matched with the list attached to MoEF Regulation No. P.20/Menlhk/Setjen/Kum.1/6/2018 concerning *Types of Protected Plants and Animals*. Hence, it can be known whether there are protected types of flora and fauna in the planned activity area.

If the identification results reveal the presence of protected types of flora and fauna within the area, follow-up plans can be prepared to protect and prevent the extinction of these flora and fauna. Such plans include SOPs prohibiting the capture of birds and other animals for employees, preserving habitat, etc. Meanwhile, to maintain the safety and protection of the PLTB from damage, it is necessary to pay attention to the population of birds and bats, which could strike the wind turbine blades.

Given the above aspects, it is necessary to pay attention to Environmental Approval as a basis for construction implementation. The basic regulation for obtaining Environmental Approval, i.e. MoEF Regulation No. 4/2021 on *List of Business and/or Activities that Required to Perform Environmental Impact Assessment, Environmental Management Efforts, and Environmental Monitoring Efforts,* stipulates the preparation of environmental documents (i.e. EIA, UKL-UPL, and SPPL) as the prerequisites. Furthermore, this regulation classifies businesses and activities based on their scale and potential impact on the environment and provides a list of those that must undergo an Environmental Impact Assessment (EIA or AMDAL). The regulation specifies:

- a) list of businesses and/or activities that are required to have an EIA;
- b) list of businesses and/or activities that are required to have UKL-UPL;
- c) list of businesses and/or activities that are required to have an SPPL;
- d) addition or deletion of the listed businesses and/or activities that are required to have an AMDAL, UKL-UPL, or SPPL.

In essence, this regulation requires each activity plan (e.g. PLTB construction and operation) to prepare appropriate environmental documents as regulated in Attachment 1 of this regulation. This environmental document is a requirement for obtaining Environmental Approval, so that construction activities can be conducted.

Another important regulation is MoEF Regulation No. 5/2021 regarding *Procedures for Issuing Technical Approvals and Operational Feasibility Letters in the Field of Environmental Pollution Control.* The core of this regulation states that businesses or activities that require an Environmental Impact Assessment (AMDAL or EIA) and Environmental Management Plan (UKL-UPL) must prepare technical approvals related to waste management in those activities. The results of the technical approval (*Persetujuan Teknis*/Pertek) that have been approved by the competent authority will be included in the AMDAL document. Therefore, the new AMDAL document will only be processed (evaluated) by the AMDAL commission if the technical approval has been completed. Since the publication of Government Regulation 22/2021 in October 2021, the preparation of AMDAL refers to this national regulation, including the process, quality standards, and approval.

The authority to evaluate AMDAL studies is in accordance with the processing of permits. If the permit is issued at the Central Government, then the Central AMDAL Commission (*Komisi Penilai AMDAL*/KPA) will conduct the evaluation of AMDAL studies. Meanwhile, if the permit is issued at the Local Government, then the authority to evaluate AMDAL studies lies in the Local AMDAL Commission (Province/Regency/City).

If there is foreign capital participation (*Penanaman Modal Asing*/PMA) or the activity location is in a protected forest or borders a protected forest, the Central AMDAL Commission will automatically evaluate the AMDAL study. This is also the case if the activity is located within the area of 2 provinces. However, if the initiator of the activity is a Domestic Capital Investment (*Penanaman Modal Dalam Negeri*/PMDN), the Local AMDAL Commission will evaluate the AMDAL study. Moreover, if the activities are in Regency/City areas, then the Regency/City AMDAL Commission will evaluate the AMDAL studies. Finally, if the activities are conducted at locations in 2 Regency/City areas, the Provincial AMDAL Commission will evaluate AMDAL studies.

A summary of processes entailed within the AMDAL evaluation and Environmental Approval issuance can be found in Figure 38.



Figure 38: Procedure of Environmental Approval issuance

## 4.4 Site-Specific Permitting Based on the Project Phase

In this section, examples of site-specific permitting based on project phase are mostly taken from Sukabumi Regency and Aceh Besar Regency through interviews with developers and the related regency-level department. Nonetheless, it should be noted that these permitting specifics can be different at other regencies. Results of interviews and desktop studies suggest that PLTB project permits can be divided into two phases, i.e. Development Phase and Construction Phase. Permitting for each phase is respectively explained in the following subsections.

## 4.4.1 Permitting in Development Phase

## 1. <u>Research Permit</u>

Research Permits are required in the development of PLTB in terms of collecting data including:

- Wind potential data, including met mast installation
- Environmental baseline data

To obtain a Research Permit, there are several documents that must be obtained by the developer, including:

- Letter of Measurement Recommendation from Regent and Head of Sub District (Camat)
- Spatial Planning Direction from Land and Spatial Agency (Dinas Pertanahan dan Tata Ruang)
- Recommendation and Support Letter from Governor

## 2. Conformity of Spatial Utilization Activity (KKPR)

The authority of the Regional Government in granting KKPR is in accordance with the Agrarian Minister/Head of BPN Regulation No. 13/2021 concerning *Implementation of Conformity of Spatial Utilization Activity (KKPR) and Synchronization of Space Utilization Programs (SPPR)*. KKPR may be granted if the following documents are obtained:

- Technical Considerations (Pertek) from the Regency Land Office/BPN related to land status information data
- Field Survey and Minutes of Survey Results by the Regency Team
- Minutes of Approval/Rejection of KKPR by the Spatial Planning Agency

## 3. Forest Area Use Approval (PPKH)

Technical Requirements of Forest Area Use Approval for Electricity Activities is stipulated in MoEF Regulation No. 7/2021. Governor's Recommendation Letter is among the requirements to obtain PPKH.

## 4. Environmental Approval

Environmental Approval can be issued by the local government (province/district/city) if:

- The business license is issued by the local government
- Domestic investment (PMDN)
- The activity (e.g. PLTB location) is not located in a protected forest or adjacent to a protected forest

## 5. <u>Technical Approval</u>

Technical Approvals, such as permits on hazardous waste (B3), wastewater, and gas emissions, will be issued by the authority who issues the Environmental Approval. Moreover, the authority to grant the technical approval on Andalalin is determined based on the road status:

- If via National Road, Recommendations and Traffic Engineering by the Ministry of Transportation
- If via Provincial Road, Recommendations and Traffic Engineering by the Provincial Transportation Service
- If via Regency Road, Recommendations and Traffic Engineering by the Regency/City Transportation Service

## 6. <u>Recommendations for Aviation Operations Safety Area (KKOP)</u>

Survey and Recommendations for KKOP are issued based on the nearest/relevant aviation authority, i.e.:

- Field Survey and KKOP Recommendations for WTG potential area in Sukabumi Regency by the Regional I Airport Authority Office (Soekarno Hatta International Airport);
- Field Survey and KKOP Recommendations for WTG potential area in Aceh Besar, South Tapanuli, Dairi, North Padang Lawas by the Regional II Airport Authority Office (Kualanamu International Airport);
- Field Survey and KKOP Recommendations for WTG potential area in Gunung Kidul, Kediri, Ponorogo, and Probolinggo by the Regional III Airport Authority Office (Juanda International Airport).

# <u>Terminal Permit for Own Use (TUKS)/Special Terminal (TERSUS)</u> Validation and Recommendations for Terminal Permit for Own Use (TUKS)/Spatial Terminal (TERSUS) Construction Permits requires:

- Field Survey and Minutes of Survey Result by the Regional Transportation Service, Regional Spatial Planning Service, and Regional Fisheries and Maritime Service
- Location Approval by the Regional Spatial Planning Service
- 8. Land Acquisition for Development in the Public's Interest

Land acquisition for the public interest is conducted by the Government through a land acquisition committee. Such land acquisition authority lies with the Regent/Mayor (for land < 5 ha) and the Governor (for land > 5 ha). This is different than land acquisition for private interests, which is conducted directly between the seller and the buyer.

## 4.4.2 Permitting in Construction Phase

## 1. Building Approval (PBG)

Building Approval Validation and Recommendations by the Regional Government entails:

- Verification of suitability of administrative and technical requirements by DPMPTSP Regency/City and Spatial Planning Agency in Regency/City;
- Verification and discussion of conformity of PBG technical requirements by the Expert Review Team (*Tim Profesi Ahli*/TPA) of the Spatial Planning Agency in Regency/City;
- Regional Retribution Determination Letter (issued by DPMPTSP Regency/City) that must be paid on the PBG Application; and
- PBG Minutes published by DPMPTSP Regency/City via the SIMBG Application System.

## 2. Testing and Certification of Occupational Health and Safety Equipment (OHS)

To apply for Testing and Certification of Occupational Health and Safety Equipment (OHS), one shall prepare and submit the application (along with the requirements) to the Regional Government through the Provincial Manpower and Transmigration Office.

## 3. Heavy Equipment Operator's License

To apply for Heavy Equipment Operator's License, one shall prepare and submit the application (along with the requirements) to the Regional Government through the Provincial Manpower and Transmigration Office.

## 4. Recommendations and Certification of Fire Extinguisher (APAR)

To apply for Recommendations and Certification of Fire Extinguisher, one shall prepare and submit the application (along with the requirements) to the Regional Government through the Regency/City Fire Department Office.

## 5. Building Function Certificate (SLF)

Validation and Recommendations for the Building Function Certificate (SLF) by the Regional Government includes the following processes:

- Verification of suitability of administrative and technical requirements by DPMPTSP Regency/City and Spatial Planning Agency in Regency/City;
- Verification and discussion of conformity of PBG technical requirements by the Expert Review Team (TPA) of the Spatial Planning Agency in Regency/City;
- Field visit by Spatial Planning Agency in Regency/City and a team of experts who assessed the suitability of the building; and
- SLF Minutes publication by DPMPTSP Regency/City via the SIMBG Application System.

## 5 Challenges

Based on interviews with developers, and central and local government agencies, and on the Roadmap (Component 1), challenges related to regulations and permitting are summarized in Table 18.

Table		
No	Challenge	Points
1	Tender process	<ul> <li>A consensus between the stakeholders on the tender process is not yet achieved. The list below shows the tender aspects on which a consensus is needed:</li> <li>Uncertain and unclear PLN procurement process of wind projects, bringing considerable risks for the developers.</li> <li>Multiple developers agree that met mast data should not have an expiry date, as long as it is uninterrupted for 36 months. One developer disagrees and believes expiry date is important.</li> <li>Multiple developers agree that 'blanket rule' on having mandatory partners is burdensome. For instance, in the tender of PLTB Tanah Laut project, it is stipulated that the mandatory partner (e.g. PLN subsidiaries) will be required to have at least 30% share in the project's SPC.</li> <li>One developer believes that operating developers should not be burdened by the obligation to form a new special purpose vehicle (SPV) for their PLTB expansion.</li> </ul>
2	Power Purchase Agreement	Multiple developers agree that PLN's ceiling tariff (whether based on tariff/BPP that is calculated equal for all kinds of energy, or Predicted Capacity Matrix/PCM that cannot be revised) is unfair.
3	Construction/operation phase – local content requirements (LCR)	Developers differ on whether local content can be fulfilled or not (e.g., whether turbine manufacturers would accept Indonesian made towers). Although there is not yet a specific LCR for PLTB, there are concerns among IPPs that LCR will become applicable to wind projects too. IPPs do not think that the LCR of, for example, 20-30% (as for some other business activities) would be suitable for the current state of Indonesia's wind sector. If such LCR is applied, it could result in major issues as most wind turbine components (e.g. rotor, blades, hub, gear box) as well as electrical components (e.g. generator and transformer) can only be produced by limited or certain manufacturers which are not yet present in Indonesia.
4	Construction/operation phase – incentives	<ul> <li>Multiple developers agree that carbon credit distribution between PLN and developer is unfair (minimum should be 50% for developer).</li> <li>One developer faces a problem regarding tax incentive being cancelled unfairly.</li> </ul>

Table 18: Identified points of regulation and permitting challenges

No	Challenge	Points
5	Wind data availability	<ul> <li>Limited availability of accurate long-term wind data</li> <li>High level of uncertainty of mesoscale models as the alternative to long-term wind data</li> <li>Financial burden of investments for wind measurements during tender processes by developers. A rough estimate is that for a small wind farm (10 MW) at least one wind measurement device (met mast or LiDAR) is required for at least one year, with the entailed cost of USD 80,000-130,000 (depending on height and location). For larger wind farms, multiple wind measurements are required to lower the uncertainty over the large terrain. This multiplies the cost for wind measurements, which is likely to be between USD 200,000 – 300,000.</li> <li>Lower probability to reach financial close for a project due to uncertainties in wind data</li> <li>Unpredictability of wind behavior during wind farm operation, resulting in difficulties for PLN to predict electricity production</li> </ul>
6	Availability of spatial data and standardized processes	<ul> <li>Absence of a clear Indonesian guideline on the analysis criteria and considerations for the technical, environmental, and social impact of a wind farm</li> <li>Lack of accessible and consistent digital or high-resolution spatial (planning) data to support screening of potential locations and designing wind farm layout</li> <li>Lack of standardization in the development process, including minimum prerequisite studies, feasibility study guideline, etc.</li> </ul>
7	Policy/regulation and permitting	<ul> <li>Uncertainty and frequent change of policies by the Government have created risks for investors and may impact the financial viability of projects</li> <li>Inconsistent implementation of existing regulations</li> <li>Delays in permitting process and land acquisition</li> </ul>
8	Infrastructure	<ul> <li>Sites with wind energy potential are not always near a well-developed grid; lack of transmission and distribution system infrastructure</li> <li>Hard to ensure the stability and reliability of wind power given its intermittency; whereas BESS (battery energy storage system) is still relatively expensive to produce and integrate with wind power plants</li> <li>Lack of supporting infrastructure such as port and road access</li> </ul>
9	Financing & bankability	<ul> <li>Suboptimal impact and support provided by existing fiscal and non-fiscal regulations to investments in wind energy</li> <li>Perception of wind project investments in Indonesia as 'risky and slow', especially concerning the bankability of the unequally balanced PPAs between PLN and the developer</li> </ul>

No	Challenge	Points
10	Coordination between government agencies	Coordination and responsibility allocation between government offices is needed in the process of building a wind farm.
11	Overlapping permits	There is overlap between licenses, for example between KKPR, PPKH, AMDAL, and IUPTL licenses. Another case: KKPR Licensing requires land ownership data (e.g. PPKH). However, the submission of PPKH documents require KKPR, AMDAL, IUPTL.
12	Time uncertainty	If there is an error in the input of data to the OSS system, one must recommence from the beginning which would require a long time.

## 6 Conclusion and Recommendations

## 6.1 Conclusion

Based on the research, it has become clear that so far wind energy utilization is not yet fulfilling the expectations in Indonesia. It is still a question whether 60.6 GW of onshore wind (from RUEN) is a realistic potential, and whether the 8.5 GW onshore wind to be realized by 2030 (from the JETP Comprehensive Investment and Policy Plan) is a realistic target. Nevertheless, having realized only 0.13 GW of installed onshore wind farm capacity until 2023 and having only 0.14 GW in the pre-construction phase show the significant challenge (including in permitting and regulations) to wind energy development that still lies ahead.

Overarching insights in the current status of wind energy development in Indonesia has been created through this study and the Roadmap (Component 1). The research shows the regulatory framework in which wind energy development activities take place is very extensive and difficult to comprehend for the involved stakeholders. Although it is important to have a solid regulatory framework in place, such a framework could also intensify bureaucracy, lengthen the project duration, and increase the development process' complexity. The same goes for the numerous permits and approvals that are required during the development, construction, and operation phase as listed in this report. The site-specific permitting aspects that have been gathered for the 9 regencies will be utilized in the follow-up study to determine techno-economic feasibility for onshore wind development in these regions.

During the drafting of this report, active online and offline engagements with key stakeholders from all sectors (public/private and national/international parties) were conducted through interviews, informal consultations, and during multiple Technical Working Group (TWG) events, where the preliminary assessments were disseminated, and ensuing feedback was gathered.

The results of the research conducted has led to the following conclusions:

## **Policy/Regulation and Permitting**

The Government's policy/regulation is regularly subject to change, creating uncertainties and risk to
investors and often has an impact on the project's financial viability. For long-term investments (e.g.
a pipeline of projects), developers and investors require a stable regulatory environment before
entering a country. These challenges create an elevated risk profile for them to enter Indonesia, and
in turn, this condition leads to either higher cost (e.g. higher interest rates) or parties starting to invest
somewhere else.

Case: Minister of Energy and Mineral Resources Regulation No. 50/2017 on *Utilization of Renewable Energy Sources for Electricity Supply* regulates the offered RE tariff as being determined based on the cost of electricity production (Cost of Production or BPP) for each region. However, with the issuance of Presidential Regulation No. 112/2022 on the *Acceleration of Renewable Energy Development for Electricity Generation*, the electricity purchase price is based on a gradual upper limit tariff, which will be evaluated annually by the MEMR.

- Existing regulations are being implemented inconsistently. Case: The old and current regulations allow for a negotiation process between PLN and developers regarding the electricity purchase tariff. However, as PLN holds a monopoly in the grid sector, developers are in a weak position in the negotiations.
- Observable delays had been mainly occurring in the permitting and land acquisition processes. Case: Where KKPR Licensing and PNPB payment has been made, the Regional Land Office must issue a technical approval no later than 10 days after the PNPB payment. Issuance of Forest Area Use Approval (PPKH) takes 54 working days, but the actual time will be longer because a survey must be conducted by the Forest Area Management Centre (BPKH).

## **Spatial Data Availability**

 It is difficult to access official/ratified and consistent spatial planning data (in digital and/or highresolution formats) which are essential to support screening of potential locations and laying out the wind farm.

Case: Available spatial plan data is often out of date because the local government has revised the spatial plan and issued new local regulations. This is exemplified by RTRW Sukabumi Regency and RTRW Kediri Regency in this study.

## **Procurement Mechanism**

• PLN procurement process for wind projects had been viewed as unclear, hence uncertain, creating significant risks for the investors/developers.

Case: For long-term investments (e.g. a pipeline of projects), developers and investors require a stable, reasonable, and transparent procurement process before entering a country and starting to bid on projects. If this process cannot be offered, they will perceive the project as having an elevated risk profile. In turn, this risk profile leads to either higher costs (e.g. higher interest rates) or parties starting to invest somewhere else.

## Funding/Financing and Bankability

- Existing fiscal and non-fiscal regulations for wind project investments had only been providing suboptimal impact and support.
- The inequality/non-balanced PPA's between PLN and investors/developers had created the image that wind project investments in Indonesia as "risky and slow."
   Case: Before developers and investors decide to make large investment in a wind energy project in Indonesia, they require the right incentives and a well-balanced PPA to ensure a reliable business case throughout the project lifetime. If this business case cannot be guaranteed, they will perceive the project as having a high risk profile. In turn, this risk profile leads to either higher costs (e.g. higher interest rates) or parties starting to invest somewhere else.

## 6.2 Recommendations

In line with considerations included in the Roadmap, the recommendation for the underlying research on Permitting and Regulation are centered on the basic premise of "improvements to the existing policy/regulatory framework and permitting, among others for procurement process and pricing of wind projects, are needed to reduce unnecessary risks for the investors, hence accelerating wind energy development in Indonesia."

Such improvement of policy/regulation and permitting can be performed by the following three recommendations:

## Recommendation 1: Pre-conditions for policy/regulations and permitting in the wind sector

Following the Roadmap's preconditions to a smooth wind energy development process, which are deemed to be applicable to Policy/Regulations and Permitting, this recommendation can be categorized into four sub-clusters:

- <u>Consistency:</u>
  - Renewable energy projects, including wind energy projects, require long term commitments and planning. Consistency of policy/regulations is paramount in providing the predictability and stability needed for such long-term large investments.
  - Developers and investors should be assured that regulations and permitting processes are always applied in a consistent and diligent manner. This means that it does not matter if a project is developed in Aceh, Bali, or in other regions. It also means that regulations 'trickle down' in an unchanged manner from the initiating authority to the implementing authority.

## Transparency:

- Transparency and engagement of stakeholders have been repeatedly highlighted, but the effectiveness of these interactions is to be observed further. It is recommended to have more details on how feedback and recommendations from stakeholders, including business associations and developer/investors, in a transparent manner is being considered and ultimately incorporated in the decision-making process by the Government.
- Transparency on, apparently "unavoidable" although "undesirable" for developers, frequently changing policies and regulations can be done by announcing them in timely manner with prior consultation of key (private) stakeholders.
- A more transparent and standardized permitting for projects, like in the case of the OSS System, will reduce project uncertainty in schedule, budget, and compliance to bankability.
- Clarity:
  - Evaluation criteria for permit applications should be reasonable, be clearly defined upfront, and refer to published standards.
  - Upon the occurrences of frequently changing policy/regulations and permitting, there should be Clarity on a reasonable cut for how these revisions apply to ongoing and future projects.

- For legal clarity on land disputes in land-acquisition process which can lead to legal complications, delay, and costs, it is recommended to have rules and mechanisms that define land ownership and usage rights to help prevent disputes and a legal clarity framework for wind energy projects. Eminent domain rules or similar land use priority can be introduced for renewable energy projects as being beneficial to the public.
- Responsibility:
  - Responsibilities need to be assigned to a government body with strong leaderships, with effective process tracking and intervention empowerment to mitigate the risk of lack of coordination amongst government stakeholders during this crucial energy transition period.
  - For the wind energy regulations and permitting process, it is important to have a
    government body which directs allocation of responsibilities to the relevant authorities.
    In this definition of responsibility and authority, it is important to align and coordinate
    all key public stakeholders, especially between policymakers and PLN, to ensure that
    all parties aim for the same targets and execute them coherently in achieving the
    targets. The appointment of the government body can be based on the
    recommendation of, for instance, the Wind Power Technical Working Group.

#### **Recommendation 2: Continuous improvement of the OSS system**

Based on feedback from the developers/investors, quite significant delays and agencies visitations still occur when processing the application, mainly due to transitioning of the new OSS system. Improvements are required by focusing on the following:

Integration of Indonesian complex regulation into the OSS system:

The regulatory environment in Indonesia is multifaceted and intricate, and integrating all necessary licenses and permits coherently into the OSS system is a substantial undertaking to be meticulously planned, including by monitoring and actively gathering feedback from all related stakeholders. A fast-track program could be tailored for particular cases in accelerating permitting process for wind power projects, which must be subjected to fulfilling pre-requisite documents and requirements for specific licenses and permits.

<u>Coordination among government bodies:</u>

Effective cooperation and coordination among government bodies (including between central and regional government bodies) is imperative. Appointing dedicated PICs, both centrally and in each government body would be a significant step in OSS system continuous improvement. Authority and competence should be vested to these PIC's.

#### **Recommendation 3: Streamlining the land acquisition process**

Land acquisition is the foremost impedance in all projects in Indonesia, including for wind power projects which are usually located in remote area and locations with specific challenges on local, environmental, and cultural/indigenous issues. It is recommended to streamline the rules and mechanisms to land acquisition issues, specifically on rampant land-overlapping issues in the Indonesian investment environment. This includes:

## Legal clarity:

As mentioned in Recommendation Cluster 1, Clarity in land acquisition and potential ensuing dispute from clear rules and mechanisms in place ensures that the developers have manageable access to the land they need to develop renewable energy projects.

## Investments and development attraction:

The potential position of wind energy as one of the technologies crucial for Indonesia's energy transition, could be used as a motive to obtain land-use priority or land acquisition. Fast-tracking may become an example on how Indonesia's investment climate can get rid of the long-lasting "land acquisition stigma."

## 7 References

No.	Stakeholder/Institutions	Sources
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## Permitting and Regulation Assessment for Onshore Wind 2024

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