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Renewable Energy 2024

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Indonesia: Law and Practice

Dhani MM Pattinggi, Matthew Goerke and Paskalia Deviani Ekaputri
Hiswara Bunjamin & Tandjung in association with Herbert Smith Freehills

INDONESIA

Law and Practice

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Contents

Hiswara Bunjamin & Tandjung in association with Herbert Smith Freehills has a dedicated project development team in Indonesia, with its energy, natural resources and infrastructure practice handling both transactions and projects, including financing. The firm has deep relationships with major Indonesian and international companies in the renewable energy sector and has extensive experience and expertise in advising foreign investors on major projects involving Indonesia. The firm advises on the full range of renewable energy projects, including the Batam solar energy export project, bio-methane projects, the Darajat and Salak geothermal fields in West Java, some of the world's largest geothermal power assets, the Sunter waste-to-energy project and several rooftop solar projects, acting for Chevron, MOECO, Medco Power, Kansai Electric, ACEN Corporation, BP, Fortum Corporation, PowerChina, China Huaneng, EDFR and ENGIE, among others.

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1. Overview

1.1 Energy Transition

Indonesia has set an ambitious national target to reduce emissions by either 31.89% on its own or 43.2% with international support, by 2030, and then to achieve net-zero emissions by 2060. In order to achieve this target, the Indonesian government has launched numerous initiatives, including:

- a prohibition on the development of new coal-fired power-plant projects since September 2022 (subject to certain exceptions) and early retirement of existing coal power plants (including, for example, the expected early retirement of the Cirebon 1 coal-fired power plant in 2035);
- the prioritisation of renewable energy within the national electricity plan and expansion of access to clean energy through the deployment of off-grid renewable energy solutions;
- the introduction of carbon trading (through the establishment of a domestic carbon exchange); and
- the use of biofuel to reduce reliance on fossil fuels.

According to the Directorate General of New, Renewable Energy and Energy Conservation (the DGNRE), the total share of all renewable energy sources in Indonesia as of December 2023 was 13.29%. Although Indonesia has made progress in its energy transition, there remain a number of key challenges in Indonesia's energy transition and Indonesia still remains heavily reliant on fossil fuels for its energy production.

1.2 Renewable Energy Technologies

Indonesia has significant potential renewable resources, including (among others) over 550 GW of potential solar power, 450 GW of potential wind power, 100 GW of potential hydropower, 10 GW of potential geothermal power (as the world's largest source of geothermal power) and 20 GW of potential power generated from biomass.

Hydropower still makes the most significant renewable energy contribution in Indonesia,

representing 8% of the total Indonesian energy mix. The other main type of renewable energy in Indonesia is geothermal, which produced an estimated 16,935 GWh in 2023, compared to 24,589 GWh produced by hydropower in 2023. Notably, hydropower energy technology has been developed in Indonesia and is widely available locally.

There has been rapid growth in the development of solar power projects in Indonesia, including investment in floating solar projects, solar power export projects and rooftop solar projects. While Indonesia has started to see an increase in the investment in onshore solar power manufacturing plants and facilities, for now, solar PV equipment is still largely imported.

1.3 Renewable Energy Market and Recent Developments

With 2024 being an election year, the last 12 months have been a period of transition for the Indonesian government. Nonetheless, the Indonesian government and relevant stakeholders have sought to continue to accelerate development of renewable energy projects. Highlights of the development of renewable energy in Indonesia during the last 12 months include:

- the launch of Indonesia's first large-scale floating solar power project, which is located at Cirata dam with a capacity of 192 MW – the largest floating solar plant in Southeast Asia and the third largest in the world;
- the commencement of commercial production of green hydrogen from the Kamojang geothermal power plant (located in Darajat, West Java) – the first geothermal-based green hydrogen produced in Southeast Asia;
- the opening of Indonesia's new carbon exchange in September 2023 under the supervision and management of the Indonesian Stock Exchange;
- the execution of a Memorandum of Understanding between the Indonesian government and ExxonMobil for new carbon capture and storage projects; and
- the execution of a Memorandum of Understanding between the Indonesian and Singapore governments for the proposed export of 3.2 GW of clean energy from Indonesia to Singapore.

2. Legal and Regulatory Regime

2.1 Governing Law and Upcoming Changes

There is no one single law regarding the utilisation of renewable energy in Indonesia. Rather, the production, transmission and sale of renewable energy is governed under several different laws and regulations. Further, currently, there is no specific regulatory framework for the production, utilisation and/or development of certain renewable energy, including hydrogen and biomass – instead, these industries are governed by general sectoral laws and regulations.

The utilisation and development of renewable energy is mainly regulated under Indonesian Law No 30 of 2007 on Energy (the "Energy Law") as well as Indonesian Law No 30 of 2009 on Electricity (as amended) (the "Electricity Law"). The Energy Law requires the Indonesian central and local governments to (i) increase the utilisation of renewable energy and (ii) provide incentives for developers of clean energy. Further, Government Regulation No 79 of 2014 on National Energy Policy sets out the Indonesian government's national renewable energy sources targets as part of its national energy mix.

The Indonesian government is reportedly still formulating a new draft law specifically related to the development of new and renewable energy in Indonesia (the "Draft New Renewable Energy Law"). The key provisions of the Draft New Renewable Energy Law are expected to relate to, among other things, a roadmap for Indonesia's energy transition, an updated business licensing regulatory framework, revised local content obligations for renewable energy plants and equipment, and a pricing model for new and renewable energy. The Ministry of Energy and Mineral Resources (the MEMR) is also reportedly drafting a new regulation to provide a specific regulatory framework for green hydrogen production. This new regulation is expected to be finalised by 2025, signalling a potential shift towards recognising and promoting green hydrogen as a distinctly recognised and important component of Indonesia's clean energy future. However, the enactment of the Draft New Renewable Energy Law has suffered several delays due to prolonged political discussions on the scope of Indonesia's new and renewable energy ambitions and is expected to re-tabled once the new Prabowo government comes into power in late 2024.

2.2 Regulating Authorities

In Indonesia, the key regulators responsible for the new and renewable energy sectors are as follows.

- The DGNRE (which forms part of the MEMR), as the governmental body tasked with formulating and implementing policies for the development, control, and supervision of new and renewable energy in Indonesia. The DGNRE has the authority to issue business licences for companies engaging in new and renewable energy business activities.
- The Indonesian National Energy Board, which is responsible for:
  (a) formulating and designing national energy policy (to be determined by the Indonesian government upon approval from the House of Representatives);
  (b) stipulating the national energy plan; and
  (c) supervising the implementation of cross-sector energy policy.

In addition to the above, the Directorate General of Electricity (the DGE, also part of the MEMR) has the authority to issue business licences in relation to power generation, transmission, distribution and sale business activities (including for the generation of power from new and renewable energy sources) while the Ministry of Industry (the MOI) is generally responsible for industrial business activities (such as green hydrogen production) and for setting local content requirements.

2.3 Regulated Activities

The authors set out below a high-level summary of the regulatory framework for the generation of renewable energy under the Indonesian regulatory regime:

- geothermal – any business entities conducting the exploitation and utilisation of geothermal resources (for electricity purposes) requires an indirect utilisation of geothermal energy licence, issued by the DGNRE;
- hydro, solar, wind, hydrokinetic ocean, thermal energy – any business entities generating electricity from these renewable energy sources would require an electricity power supply business licence (IUPTL) from the DGE;
- bioenergy – a business licence from the DGNRE is required by business entities for the production of any biofuel (including bio-

diesel, bioethanol, fuel and diesel bio hydrocarbon) – further, any trading of biofuel would require a wholesale trading licence from the DGNRE; and
- hydrogen – the production of hydrogen would be classified as industrial activity and would require an industrial standard certificate from the MOI.

The transmission and sale of electricity is also heavily regulated in Indonesia. To supply electricity to a third party, the relevant electricity supply business will need to obtain a business area stipulation issued by the MEMR (a "Wilus Stipulation"). In principle, a Wilus Stipulation is issued by the MEMR to determine the area to be utilised by a business entity to carry out its electricity supply business (including the distribution and/or sale of electricity to third parties). However, the industry of electricity transmission and distribution is largely monopolised by a state-owned enterprise, namely PT Perusahaan Listrik Negara (Persero) (PLN). Accordingly, PLN essentially holds the Wilus Stipulation with an area which covers the entire area of Indonesia, except for certain areas of Indonesia which have been specifically relinquished by PLN in circumstances where PLN is not able to supply electricity or to meet quality and reliability levels (including, for example, in several industrial estate areas in Indonesia).

2.4 Ownership and Transfer of Control

Pursuant to the Indonesian Constitution, all natural resources in Indonesia (including renewable energy resources) are controlled by the state and must be used for the greatest welfare of the people of Indonesia. As a result, the ownership of geothermal resources in Indonesia resides with the state. As the owner of all renewable energy resources in Indonesia, only the state may grant access to renewable energy resources. However, private parties may utilise renewable energy resources by obtaining an appropriate licence.

Further, in the utilisation of state-owned assets (including, for example, dams) certain utilisation arrangements (including lease or borrow and use arrangements) would require a utilisation permit to be issued by the relevant government authorities. The utilisation of water resources in Indonesia is mainly regulated under Indonesian Law No 17 of 2019 on Water Resources (as amended) and implementing regulations issued by the Minister of Public Works and Social Housing (the MPWH). In order to be legally entitled to commercially utilise water for power generation activities, Indonesian business entities must obtain a water resources commercialisation business licence from the MPWH, governor or regent/mayor (as relevant). The development of hydro-power facilities will also typically require obtaining the following dam-related licences from the MPWH, governor or regent/mayor (as relevant):

- dam construction principle approval;
- dam construction implementation licence;
- initial dam filling licence; and
- dam operation licence.

In general, the Indonesian laws and regulations prohibit the transfer of any business licence (including any licence for the utilisation of renewable energy). However, in certain circumstances, the transfer of such business licence is allowed, subject to prior approval from the MEMR. There are also restrictions on the transfer of shares in companies holding an IUPTL. Under MEMR Regulation No 48 of 2017 (as amended) there is a prohibition on the transfer of shares in an independent power producer company holding an IUPTL (which sells its electricity to PLN) prior to such company achieving its commercial

operation date (subject to limited exceptions for transfers to affiliates).

2.5 Market Access and Foreign Investment

Under the Indonesian investment law (and subject to limited exceptions), foreign companies and individuals looking to do business in Indonesia are not permitted to set up branches or otherwise operate directly in Indonesia. Instead, they must establish an Indonesian foreign-owned (PMA) limited liability company to operate a business in Indonesia and obtain the requisite business licences.

The foreign ownership of a PMA company in various sectors in Indonesia is subject to (and must comply with) the Indonesian Investment List. The Investment List identifies specific business sectors that are:

- completely closed for foreign investment;
- available for foreign investment but have a maximum percentage of shares that may be owned by the foreign investors;
- reserved for co-operatives, micro, small and medium enterprises (CMSMEs); or
- available for foreign investment but only in partnership with CMSMEs.

The Investment List generally does not provide any foreign ownership restrictions for the utilisation or generation of renewable energy, except for electricity generation (for commercial sale) with a capacity of less than 1 MW, which is reserved for CMSMEs. No such foreign ownership restriction applies to the generation or utilisation of energy for a business entity's own use.

3. Production/Generation

3.1 Electricity

The electricity sector in Indonesia is mainly regulated under the Electricity Law, under which electricity supply is controlled by the Republic of Indonesia and handled by the central and regional governments (through state-owned enterprises and regional-owned enterprises). Private business entities are permitted by the Electricity Law to engage in the electricity supply business. However, the Electricity Law does not separately regulate the utilisation of renewable energy for the generation of electricity. Instead, all business activities in respect of power generation, transmission, distribution and sale (irrespective of the sources of the power generation) are subject to the same provisions within the Electricity Law.

The structure of the Indonesian power market involves the following key participants:

- the DGE and DGNRE, as regulators;
- PLN, which is responsible for supplying electricity within its business area, serving as the principal offtaker and purchasing electricity generated by Independent Power Producers (IPP) – PLN is also granted the priority right to implement and develop the electricity supply business for public use;
- IPP companies (primarily as power suppliers to PLN); and
- private entities engaging in the electricity supply sector ("Power Developers"), which is typically licensed to generate and supply electricity in certain areas of Indonesia not yet managed by PLN (including, for example, industrial parks).

3.2 Gas

The Indonesian government has established a general business licensing framework for the production of biogas and green gas. However, there are currently no underlying implementing regulations which provide specific details on the procedures and requirements for the production of biogas and green gas.

Within the Indonesian regulatory framework, the raw materials for the production of biogas and green gas comprise of palm oil industrial waste, agriculture/farm waste and urban waste.

The key parties involved in the production of biogas and green gas are:

- the DGE, as the regulator;
- the producers of biogas and green gas, holding the relevant business licences; and
- the purchasers of biogas and green gas (through wholesale or business-to-business sale arrangements).

3.3 Heat

Under the Geothermal Law, the exploitation and utilisation of geothermal resources in Indonesia is subject to a licensing regime, namely: (i) a licence for the direct utilisation of geothermal resources for non-electricity purposes, such as tourism and agribusiness, and (ii) a Geothermal Licence for electricity purposes (for extracting the relevant geothermal resources) and an IUPTL (for producing and selling the electricity generated). Under previous regulatory regimes, pursuant to which several large-scale geothermal projects in Indonesia still operate, the Indonesian government (typically through its state-owned enterprises) has also entered into various concession agreements directly with private parties to permit the exploitation of geothermal resources for electricity generation purposes.

The Indonesian geothermal market involves the following key participants:

- the DGE and DGNRE;
- PT Pertamina Geothermal Energy Tbk (PT PGE, a subsidiary of the Indonesian state-owned enterprise PT Pertamina (Persero)), engaging in the business activity of geothermal utilisation and holding the majority of producing geothermal working areas in Indonesia;
- IPPs, typically utilising the heat from their geothermal assets to generate electricity for sale to PLN and Power Developers; and
- PLN and Power Developers (as applicable), serving as the principal offtakers and purchasing the heat generated from geothermal utilisation.

3.4 Hydrogen and Other Biofuels and Renewables

Hydrogen

Currently, there is no clear regulatory framework regarding the utilisation and development of hydrogen (including green hydrogen) in Indonesia. Under the current licensing regime, the production of hydrogen is classified as an industrial business activity and would require an industrial standard certificate from the Minister of Industry. The licensing regime applicable to the production of hydrogen is generic in the sense that the licence covers various industrial gas production activities and therefore, such licence does not differentiate between hydrogen produced from renewable sources (green hydrogen) and that produced from fossil fuels (gray or blue hydrogen). As a result, businesses producing hydrogen from renewable sources are subject to the same regulatory standards as those using fossil fuels, which is not ideal given the environmental and technical differences between these processes.

Given the current nascent regulatory framework for hydrogen in Indonesia, the MEMR is reportedly drafting a new regulation to provide a specific regulatory framework for green hydrogen production. This new regulation is expected to be finalised by 2025, signalling a potential shift towards recognising and promoting green hydrogen as a distinctly recognised and important component of Indonesia's clean energy future.

The structure of the Indonesian geothermal market involves the following key participants:

- the MEMR and Ministry of Industry (as regulators);
- private entities engaging in the industrial sector as the producers of hydrogen; and
- the offtakers of the hydrogen (or electricity generated from hydrogen), including industrial, transportation and power companies.

Waste to Energy

Indonesia has developed a specific regulatory regime for the development of waste-to-energy projects through Presidential Regulation No 35 of 2018. This regulation was issued to promote the development of waste-to-energy projects to manage and reduce the level of domestic waste in Indonesia (in particular in Jakarta, Tangerang, South Tangerang, Bekasi, Bandung, Semarang, Surakarta, Surabaya, Makassar, Denpasar, Palembang and Manado). Waste-to-energy projects developed under this regulatory framework are currently the only renewable energy projects in Indonesia with a fixed feed-in tariff (whereas all other Indonesian renewable energy projects are subject to a prescribed ceiling price which is determined based on the type, size and location of the relevant project).

3.5 Local and Domestic Production

Captive Power Plants

Pursuant to the elucidation of the Electricity Law, captive power supply is divided into the following activities:

- electricity power generation;
- electricity power generation and distribution; and
- electricity power generation, transmission and distribution.

In order to construct and operate a captive power plant, a business entity will need to apply for and obtain an Electricity Supply Business Licence for Private Use (IUPTLS) for power generation with capacity exceeding 500 kW (in one integrated electricity installation system). The regulatory framework for the production and generation of renewable energy for own use is relatively liberalised in Indonesia, subject to compliance with the relevant environmental, health and safety standards.

Rooftop Solar Sector

The rooftop solar PV sector has seen notable growth in recent years. The sector is primarily structured through an operating lease model whereby electricity consumers lease rooftop solar PV installations from third-party providers (which also service and maintain the relevant installation). Under this model, electricity consumers are considered to be generating electricity for their own use and are therefore subject to the more relaxed IUPTLS regulatory regime (and are not deemed to be "selling" electricity to a third party, which is otherwise prohibited without specific licences). Electricity consumers with rooftop solar PV installations (whose electrical power network is also connected to the electrical power network of an IUPTL holder) must obtain a prior approval from the relevant IUPTL

holder (for example, PLN) for the purpose of the installation and sale to the relevant IUPTL holder of the electricity generated from the rooftop solar PV installation.

4. Infrastructure: Transportation and Storage

4.1 Electricity

Under the Electricity Law, the transmission and distribution of power requires an IUPTL from the MEMR. Further, the activity of power sale/distribution requires a Wilus Stipulation, also issued by the MEMR.

As the state-owned enterprise having the authority for power supply in Indonesia, PLN essentially holds the business area stipulation with an area covering the entire territory of Indonesia (except for certain business areas which have been relinquished to the holders of Integrated IUPTLs). As a result, PLN essentially owns and operates all electricity grids in Indonesia except for transmission networks owned and operated by IPPs and/or Power Developers. PLN has been taking a number of important steps to seek to upgrade Indonesia's electricity, including to seek to better manage intermittent power supply and to accommodate battery storage solutions.

Private parties (being IPPs and/or Power Developers) may also own and operate their own transmission networks in Indonesia. In particular, IPPs may enter into arrangements with PLN to construct their own transmission networks under a build operate transfer (BOT) or build lease transfer (BLT) scheme. Under the BOT scheme, the operation and maintenance of the transmission network will be conducted by the IPP in accordance with a dispatch order from PLN, while under the BLT scheme, the operation and maintenance of the transmission network will be conducted by PLN. The transmission assets will typically be transferred to PLN at the end of the concession period.

Under the relevant electricity regulations, there is also a clear regulatory basis for the joint-utilisation of a transmission line through the lease of capacity (ie, power wheeling), which is subject to a wheeling price approval from the MEMR.

4.2 Intermittency, Grid Congestion and Flexibility

The current electricity regulatory framework does not provide clear regulatory guidance for managing the intermittent nature of renewable power plants and grid congestion. The relevant regulations currently provide that provisions for the terms of power purchase agreements (PPA) for new and renewable energy power plants of an intermittent nature will be regulated in a separate regulation to be issued by the MEMR. However, the MEMR is still formulating this regulation, which is expected to be issued shortly to provide greater clarity on the regulatory framework for addressing intermittent power supply.

However, the standard PPA template of PLN already includes provisions regarding forced curtailment, whereby the curtailment may occur as a result of (among other things) (i) a system emergency affecting PLN, including operating conditions on its system or its inability to accept deliveries of energy, and/or (ii) non-compliance of the IPP with the prescribed grid code (which seeks to manage grid congestion). PLN has also introduced take-and-pay PPA arrangements which provide PLN with greater financial flexibility for supply-side management.

4.3 Gas

Transporting biogas, hydrogen and green gas can be carried out by way of (i) pipeline infrastructure, or (ii) bottled plant (compressed or liquefied) biogas, hydrogen and green gas to be further transported by trucks or vessels.

There is currently no specific regulatory framework for the transportation and storage of gas from renewable energy – accordingly, these business activities are governed by general sectoral laws and regulations. In practice, producers of biogas, hydrogen and green gas may elect one of the following.

- Construct their own pipelines to transport the biogas, green gas and hydrogen as part of their production facilities – in the absence of the relevant specific regulations, such activities would require a licence from the Directorate General of Oil and Gas (the DGOG) for the construction and operation of pipelines for own use.
- Enter into an arrangement with the holder of a business licence for the transportation of oil and gas through pipelines ("Pipeline Licence") for the storage and transportation of biogas, green gas and hydrogen from the plant to the end-user. The relevant regulations mandate that Pipeline Licence holders must provide access to third parties to jointly utilise pipelines for transporting their oil and gas production, taking into account both technical and economic considerations. However, the authors expect that such arrangements are unlikely to be appropriate for hydrogen given that the infrastructure required to transport and handle hydrogen presents significant challenges due to its highly volatile nature.

4.4 Heat

In principle, the transportation and storage of heat from geothermal sources is included under the Geothermal Licence issued by the DGNRE. In practice, Indonesian geothermal power plants will typically be located close to the specific geothermal working area for the ease of supply of heat energy to the power plant. As a result, a Geothermal Licence holder would typically supply the relevant heat energy to the power plant through the construction and maintenance of certain infrastructure (including pipelines). There is not otherwise a well-developed market for the transportation and storage of heat from renewable sources in Indonesia.

4.5 Hydrogen and Other Biofuels and Renewables

See **4.3 Gas**.

5. Trade and Supply

5.1 Electricity

Under the Electricity Law, a business entity is required to obtain an integrated IUPTL for the purpose of the distribution and sale of electricity. Prior to applying for and obtaining an integrated IUPTL, the relevant business entity would need to obtain a Wilus Stipulation from the MEMR. In principle, a Wilus Stipulation is issued by the MEMR to determine the area to be utilised by a business entity to carry out its electricity supply business (including the distribution and sale of electricity).

Regulatory Framework

The general terms and conditions of PPAs are regulated under regulations issued by the MEMR. In general, each PPA must at least contain terms and conditions relating to the following:

- the duration of the power purchase agreement;
- the rights and obligations of the power producer and PLN;
- risk allocation;
- project performance guarantees;
- the commissioning and commercial operating date;
- fuel supply;
- the power purchase transaction (whether on a take-and-pay or take-or-pay basis, or a combination of both);
- system operation control;
- penalties related to power plant performance;
- termination;
- transfer of rights;
- price adjustment requirements;
- dispute resolution; and
- force majeure.

Presidential and MEMR regulations explicitly mandate PLN to purchase electricity from IPPs that utilise renewable energy sources. PLN may purchase electricity sourced from renewable energy by way of direct selection or direct appointment (as applicable). During the tender award process, PLN will typically prepare a PPA which is prepared based on the relevant regulatory guidance and precedent agreed-form PPAs. While PLN will typically prepare PPA terms which are as favourable as possible to PLN, PLN is also concerned to ensure that the PPA terms are consistent with market conditions and bankable.

PPA Provisions

There are a number of important commercial provisions included in PLN's standard-form PPA, including:

- Allocation of Risks (PLN) – the risks borne by PLN typically include:
  (a) demand for electricity (take-or-pay);
  (b) limited transmission capability; and
  (c) force majeure (on a shared-risk basis with developers);
- Allocation of Risks (IPPs) – the risks borne by IPPs typically include:
  (a) land acquisition issues;
  (b) licensing (including environmental permits);
  (c) fuel/input availability;
  (d) accuracy of construction schedule;
  (e) power plant performance (availability payments); and
  (f) force majeure (shared-risk).
- Performance Guarantees – IPPs are typically required to provide a three-stage project performance guarantee for the periods up to:
  (a) financial close;
  (b) commissioning date; and
  (c) the commercial operations date (COD), further, liquidated damages may apply for certain delays in achieving COD.
- Purchase Price Arrangements – PLN is typically obliged to purchase power based on the availability factor or capacity factor specified in the power plant's technical specifications, at a price which must be no more than the relevant prescribed ceiling price (determined based on the type, size and location of the renewable energy project as set out in the relevant Presidential Regulation).

The tariff payable under PPAs with PLN typically includes a number of different components including, among others:

- the Capital Cost Recovery Charge Rate, which is intended to recover the portion of project costs relating to the facility, including hard capital costs, financing costs and all project development costs through debt and equity financing (including interest and prin-

cipal payments as well as recovery of equity investment and return on equity);
- a Fixed O&M Charge Rate, which includes the periodic operating costs, including costs of labour, insurance costs and operating taxes; and
- Capital Cost Recovery Charge Rate for the Special Facilities (related to the supporting transmission infrastructure associated with the project), which is intended to recover the portion of project costs relating to the special facilities (if any).

5.2 Gas

Currently, there is no specific regulatory framework (or well-developed market) for the trading and supply of biogas, green gas, hydrogen or other renewable fuels. From a regulatory perspective, such activities would require:

- the applicable licence (such as an industrial standard certificate issued by the MOI) for the production of the relevant energy, which would also apply as the trading licence; and
- for any specific trading activity (which is not conducted by the relevant energy producer), the relevant business entity will need to obtain a separate wholesale energy trading licence from the DGOG.

The sale and purchase transaction for such energy would typically be carried out on a business-to-business basis, by taking into account the absence of prescribed terms and conditions of the contract under the laws and regulations.

5.3 Heat

There is not a well-developed market for the trade and supply of heat from renewable sources in Indonesia. Accordingly, the trade and supply of heat is typically conducted through captive projects whereby the holder of a Geothermal Licence may either directly (i) sell the electricity produced from the geothermal power plant (typically to PLN); or (ii) sell the heat energy from the geothermal fluid to the relevant captive power generation company.

5.4 Hydrogen and Other Biofuels and Renewables

See **5.3 Heat**.

5.5 Renewable Energy Certificates and (Corporate) Power Purchase Agreements

Renewable Energy Certificates

MEMR Regulation 11/2021 stipulates that a holder of a Wilus Stipulation must have a valid Electricity Supply Business Plan (RUPTL), which shall include the details of the energy mix target for the relevant supply area. In practice, such energy mix target can be achieved through:

- maximising the potential of renewable energy within its operating area;
- co-operations between the holders of Wilus Stipulations; or
- the purchase of Renewable Energy Certificates (RECs).

An REC generally certifies the amount of electricity produced by a renewable-energy-sourced power plant. However, Indonesia has not yet issued any implementing regulations which set out the procedures and requirements for the registration and trading of RECs.

PLN has an internal system for creating RECs from its projects and has established a service portal which enables an individual or business entity to purchase RECs as proof of the utilisation of renewable energy for its projects. There is also regulatory scope for a third-party independent institution, being REC Indonesia, to issue RECs for projects in circumstances where

the relevant project will be implemented without any involvement of PLN.

Indonesia has also created a legal framework for carbon credit trading (and launched, through the Indonesian Stock Exchange, Indonesia's first carbon exchange). Carbon trading can be conducted either domestically or in the international market, subject to the fulfilment of the following:

- the issuance of a plan and nationally determined contribution (NDC) achievement strategy by the relevant technical ministries particular to the relevant sectors and sub-sectors;
- the achievement of the NDC target for the relevant sectors and sub-sectors for carbon trading in the international market; and
- the issuance of approval from the Ministry of Environment and Forestry (the MOEF).

Further implementing regulations are expected to be issued to clarify the processes and procedures for the international trading of carbon credits.

Corporate PPAs

Long-term corporate PPAs are available in Indonesia (from PLN and Power Developers holding a Wilus Stipulation to be able to sell electricity to end customers) in respect of large-scale energy consumption projects. These corporate PPAs (particularly between Power Developers) can vary significant in their structure and complexity. However, PLN has developed a relatively standard form corporate PPA which typically provides corporate customers with certainty in respect of the term of the PPA and the availability of power supply.

6. Renewable Energy Projects

6.1 Onshore Project Development

In principle, the development of an onshore renewable energy project would vary depending on the type of renewable energy involved. For example, in order to apply for and obtain a Geothermal Licence, a business entity must participate in a tender to obtain a geothermal working area (and be determined as the tender winner). In addition, an onshore renewable energy project would require an IUPTL for power generation (as discussed previously).

Environmental Approvals

Prior to conducting any business activities in Indonesia (such as commencing development, construction or operation), companies are required to assess the environmental impact of their business activities and prepare the relevant environmental documents by:

- preparing comprehensive Environmental Impact Analysis documents (AMDAL) to be submitted to the Indonesian central or regional government (as applicable) for approval, if the business activities are expected to have a material impact on the environment;
- issuing a statement of environmental management undertaking and completing a prescribed form of Environmental Management Efforts – Environmental Supervision Efforts document (UKL/UPL) to be reviewed by the Indonesian central or regional government for approval, if the business activities are expected to cause a non-material impact on the environment; or
- issuing a statement of environmental management and monitoring capability (SPPL), where the business activities are expected to cause a non-material impact on the environment and are not classified as business

activities required to have an AMDAL or UKL/UPL.

The construction and operation of any power plant with a capacity >50MW is required to have an AMDAL. For the business activity of electricity transmission, the requirement for the environmental document would depend on the particular unit being constructed, ie, airways (direct current), airways (alternating current), cable line, sea cable line, high voltage substation, gas insulated switchgear substation, or HVDC transmission converter substation. If those units each have a capacity of >230kV, then the transmission facilities will also be required to have an AMDAL. Smaller scale projects will generally be required to obtain a UKL/UPL or SPPL.

The AMDAL approval process includes significant scope for engagement with (and participation by) relevant government stakeholders and the surrounding community. The typical time required for completion of the AMDAL preparation process is approximately six to eight months.

Forestry Approvals

If the relevant renewable energy project is built or developed within a forestry area, the relevant business entity would need to apply for and obtain a Forest Area Utilisation Approval covering the intended business activity area as issued by the MOEF. Certain renewable energy projects can only be developed (with a licence) within certain forestry areas.

Building Approvals

For the construction of any electricity generation facilities, the relevant electricity generation company will need to obtain a building approval ("Building Approval") from the Ministry of Public Works and Public Housing (MPWH) through the Building Management Information System managed by the MPWH. A Building Approval must be obtained prior to the commencement of any construction activities.

Prior to the commercial operation of any renewable energy installations, the relevant business entity will be required to apply for and obtain an operational worthiness certificate (SLO), issued by the DGE or an accredited technical inspection institution registered under the DGE (as applicable). The regulatory purpose of an SLO is to ensure that the renewable energy installation has been constructed in accordance with all relevant zoning, health, safety and environmental requirements.

Spatial Utilisation

A Conformity to Spatial Utilisation Activities (KKPR) is also required for the development of renewable energy projects to ensure the conformity of spatial utilisation plans with the spatial layout (ie, zoning) plan determined by the central or local government. A KKPR is a pre-requisite document for a company to obtain its relevant main business licence.

In general, there are three types of KKPR.

- KKPR confirmation – where the proposed location of the spatial utilisation is in line with the regency/municipal Spatial Layout Detailed Plan (RDTR) which has been integrated with the OSS system.
- KKPR approval – where there is no integrated regency/municipal RDTR, requiring a detailed assessment of the application documents for the KKPR by the Directorate General of Spatial Planning (the DGSP).
- KKPR recommendation – where the proposed project is not covered under the regency/municipal Spatial Layout Plan (RTR) and

therefore requires registration of the KKPR recommendation by the relevant applicant and detailed assessment of the application documents for the KKPR by the DGSP.

Accordingly, the development of renewable projects must take into account the relevant spatial utilisation (ie, zoning requirements) for the relevant project location, specifically including whether the designated area has been approved by the government for industrial activities.

Construction Contracts

Further, the relevant project company would typically enter into an EPC contract with an Indonesian construction company holding the relevant construction licences for the construction of the project. Onshore Indonesian construction projects (including renewable energy projects) are closely regulated under the Indonesian construction services law. Notably, all onshore Indonesian construction services contracts must:

- comply with the prescribed form and content requirements set out in the Indonesian construction services law;
- be governed by Indonesian law (although international dispute resolution is possible); and
- be entered into in the Indonesian language (and, in the event of any bilingual documents, the Indonesian language version must prevail).

Local Content

Indonesia requires renewable energy project developers for public use (including developers of electricity infrastructure for cross-border electricity sales) to:

- prioritise the utilisation of domestic products;
- fulfil the relevant domestic component level (TKDN) requirement; and
- prioritise domestic product procurement.

Under current regulations, compliance with the TKDN requirements (for the combination of goods and services) must be verified by an independent entity. The result of the verification process must be further submitted to the DGNRE (with a copy to the DGE for certain renewable projects). Failure to comply with the local content requirement may lead to administrative sanctions.

The most recently issued regulations take an overall approach to local content requirements, such that there is no longer any specific TKDN requirement for individual goods and services. Instead, there is now only one TKDN level for each type of power plant, which will be assessed on a combination of goods and services. This updated approach reflects the reality that domestic production can be very limited (or non-existent) for certain projects and instead allows projects to satisfy the TKDN requirement through a holistic assessment of the project.

Land

Land access is one of the key project risks for renewable energy projects in Indonesia. Indonesian business entities should ensure that they have a clear and achievable land access strategy (whether through acquisition, forestry licences or land lease arrangements) to ensure the viability of the project. Indonesia also has a specific regulatory framework (including a restitution and compensation regime) for the construction and operation of electricity transmission infrastructure over third-party land. Under this regulatory regime, the amount of compensation provided to the relevant landowners or occupiers must be

determined by an independent valuer appointed and approved by the MEMR.

6.2 Offshore Project Development

Offshore Renewable Energy Projects

The Indonesian government is starting to explore the potential of offshore renewable energy, particularly offshore wind and ocean energy. While the market is still in its early stages, promising areas identified for offshore wind farms include Aceh, Java and Papua. The Indonesian government is also looking into wave and tidal energy as part of its broader renewable energy strategy. However, the authors note that currently there is no operating power plant in Indonesia utilising offshore wind or wave and tidal energy resources.

There is also no specific or different regulatory regime for the development of offshore renewable energy projects (as compared to onshore renewable energy projects). Accordingly, the authors' response in **6.1 Onshore Project Development** will also generally apply to offshore projects.

Electricity Export Projects

Following the execution of a Memorandum of Understanding between the Indonesian and Singapore governments for the proposed export of 3.2 GW of clean energy from Indonesia to Singapore, there has been renewed interest and investment in Indonesian renewable energy export projects. The development of cross-border transmission infrastructure is strongly supported by the Association of Southeast Asian Nations Power Grid initiative.

In addition to the usual licensing requirements (including an IUPTL and Wilus Stipulation), the export of renewable energy from Indonesia also requires (i) a cross-border electricity sale licence, and (ii) a cross-border electricity network interconnection licence, each of which are currently only available for a period of up to five years (but can be extended). In general, in order to obtain such licences for the export of renewable energy from Indonesia, the relevant project developer will need to be able to demonstrate that:

- the electricity demand in the relevant local and surrounding areas has been fulfilled;
- the electricity sale price does not include any Indonesian government-subsidised tariff; and
- the sale does not compromise the quality and reliability of the local electricity supply.

Currently, there is a lack of clear regulatory framework for the procedures and requirements for the construction and development of the cross-border transmission infrastructure. At this stage, there is no specific prohibition on the construction and development of the relevant cross-border transmission infrastructure. The MEMR is reportedly currently drafting the relevant implementing regulations for the construction and development of the relevant cross-border transmission infrastructure.

6.3 Project Finance

In general, financing for development of electricity supply sourced from renewable energy projects in Indonesia is carried out by way of equity or loan financing (or a combination of both). However, investment loans (typically on a limited-recourse project finance basis) remain the main source of funds for the financing of renewable power projects.

The granting of project financing will ultimately depend on the bankability of the relevant project. The bankability of renewable energy projects would depend on the following, among others:

- the availability and creditworthiness of any potential offtaker with regard to the generated electricity from the projects (which is not typically a major concern in circumstances where PLN is the off-taker);
- the readiness (and sustainability) of the relevant renewable energy to be utilised for the project; and
- the terms of the contracts and other project documents.

PPA Terms

From a bankability perspective (and in addition to the payment regime, ie, take-and-pay or take-or-pay, and step-in rights of financiers of the project if there is any default of the project company under the relevant PPA), there will typically be particular focus on the termination (and termination payment) regime for the relevant PPA. In general, financiers will want to ensure that sufficient protections are included in the PPA for the pay-out of the senior debt in the event of such termination events, including through a combination of available insurance (particularly for natural disaster force majeure events affecting the plant) and termination payments payable by PLN (particularly for non-performance events, government force majeure events and natural disaster force majeure events affecting the grid facilities).

Security

As part of the financing of the project, relevant lenders would typically require the granting of security from the relevant project company (as applicable) to secure the repayment obligations of the project company under the relevant loan agreement.

The typical security package for Indonesian renewable energy projects would include:

- fiduciary security over movable assets (including renewable energy equipment) and/or over intangible property (including insurance proceeds);
- pledges over the shares in the project company;
- security rights (mortgages) over immovable assets (including project land and renewable project plant and buildings); and
- an assignment for security purposes, which is a "quasi" security that can be created over bank accounts and other project contracts (including, for example, remedial rights under EPC and O&M contracts).

Depending on the overall bankability of the project, financiers may also require project sponsors to provide completion guarantees or other forms of equity support.

A direct agreement between the lenders and PLN is typically also a major bankability requirement. PLN typically attaches a template PLN consent letter to the PPA (which is currently the accepted market standard direct agreement between lenders and PLN for IPP projects).

World Bank Negative Pledge

Pursuant to the obligations of the Republic of Indonesia to the World Bank, Indonesian state-owned enterprises are subject to the World Bank negative pledge which, in respect of foreign currency loans or offshore loans only, restricts the ability to grant security over any "public assets" which are owned or controlled by the government of the Republic of Indonesia without also granting similar security to the World Bank. The World Bank negative pledge can have an impact on the financing arrangements for renewable energy projects in circumstances where an Indonesian state-owned enterprise is a project sponsor. Addressing the requirements and

restrictions involving the World Bank negative pledge often involves complex debt structuring arrangements and specialist legal advice should be sought.

6.4 Subsidies and Incentive Schemes

There are several incentives offered by the Indonesian government for businesses engaged in the renewable energy sector, including:

- tax allowances – including:
  (a) an annual net income reduction of 5% of the amount of the taxpayer's total fixed tangible assets for a period of six years;
  (b) accelerated depreciation on tangible assets or amortisation of intangible assets;
  (c) 10% income tax on foreign taxpayer dividends; and
  (d) compensation of losses for five to ten years;
- tax holiday – as an alternative to tax allowances, a tax holiday (in the form of corporate income tax deduction up to 100% of its income) for a certain prescribed period;
- import duty exemptions – an exemption of import duty for certain goods;
- value-added tax (VAT) and sales tax on luxury goods exemptions – VAT and sales tax on luxury goods exemptions for goods which are used for geothermal indirect utilisation which covers exploration, exploitation and utilisation activities; and
- business viability guarantee letter – in respect of qualified geothermal projects, a business viability guarantee letter from the Ministry of Finance to support the project's financial obligations based on the relevant power purchase agreement.

6.5 Decommissioning Requirements

There is no clear regulatory guidance on the decommissioning of renewable energy installations in Indonesia. However, the authors note that under the relevant environmental regulations, business entities must conduct environmental management in respect of their post-operation stage, which includes conducting an environmental audit to ensure all obligations related to the termination of environmental management and monitoring have been fulfilled.

In practice, IPP projects in Indonesia are generally developed under a "Build, Own, Operate, Transfer" (BOOT) scheme whereby, following the termination of the PPA, which is for a maximum period of 30 years from the date of commercial operation, the project will then be transferred to PLN. This transfer obligation requires the IPP to transfer the renewable energy project to PLN in a useable and properly maintained state. As a result, following the transfer, PLN will be primarily responsible for managing the end-of-life and decommissioning requirements for the project.

7. Outlook

7.1 Renewable Energy Policy Developments

Enhancing Indonesia's Regulatory Framework

The Indonesian government and parliament are currently contemplating the Draft New Renewable Energy Law, which will include provisions on, among other things, licensing and concessions, research and development, and renewable energy pricing, and will create a new and specific regulatory framework for Indonesian renewable energy projects.

Additionally, the Indonesian government is working on enhancing Indonesia's regulatory framework through the issuance of new implementing regulations for:

- the development of hydrogen (including green hydrogen) projects;
- the construction and development of the cross-border transmission infrastructure;
- further guidelines for PPAs with renewable energy Power Developers; and
- further guidelines regarding TKDN requirements for renewable energy projects.

Future Renewable Energy Projects

Points of interest in the future development of Indonesian renewable energy projects include the following.

- Renewable Energy Export Projects – following the execution of a Memorandum of Understanding between the Indonesian and Singapore governments for the proposed export of 3.2 GW of clean energy from Indonesia to Singapore, the Singapore Energy Market Authority has granted Conditional Licences to five companies for the export of a total of 2 GW and has granted Conditional Approvals to two companies for the export of an additional 1.4 GW of renewable energy from Indonesia to Singapore. These renewable energy sources are expected to primarily involve onshore and floating PV systems.
- Geothermal Energy – Indonesia is actively seeking new geothermal working areas to expand its geothermal energy capacity by procuring tenders for new geothermal working areas, and aims to further develop co-generation geothermal power plants, especially through co-operations between PLN and PT PGE.
- Hydrogen, Biofuel and Biogas – in addition to evaluating a national hydrogen strategy, the Indonesian government is reportedly preparing regulations to offer incentives and tax relief to green hydrogen developers, aiming to speed up the growth of the country's green hydrogen industry.

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