



Renewable Energy Guidelines on **Biomass and Biogas Power Project Development in Indonesia**



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Authors

Thachatat Kuvarakul, GIZ ASEAN-RESP

Tjut Devi, GIZ PEP

Alin Pratidina, GIZ LCORE

Arne Schweinfurth, GIZ ASEAN-RESP

Djoko Winarno, Consultant

Ifnaldi Sikumbang, Consultant

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Disclaimer

Highest effort has been given to ensure and maintain accuracy of the Guidelines. Regulations and procedures for RE project development in Indonesia are complex, include numerous actors and are likely to be changed or updated over time. It is therefore not possible to cover all aspects and eventualities of RE project development with these Guidelines. The Guidelines are regularly updated in order to ensure correctness and completeness. However, GIZ and its implementing partners cannot be held responsible for any use of the Guidelines. The Guidelines shall not, in any case, replace or be used instead of existing laws, regulations and official guidelines issued by the relevant authorities in Indonesia.

Suggestions, feedbacks and updates are very welcome and can be addressed to asean-resp@giz.de.

Foreword



(If possible, please provide an official picture of Pak Rida and send it to ASEAN-RESP)

Renewable Energy is an important element in a diversified and sustainable energy mix. It contributes to energy security and is a basic element of climate change mitigation efforts. In the Presidential Regulation No. 5 issued in 2006 regarding National Energy Policy, the Government of Indonesia sets the target to produce 17 % of its energy supply from renewable energy sources by 2025.

Indonesia has a vast potential for using waste from the agro industry for energy generation. Estimates state a bioenergy potential of 50 GW, nevertheless only less than 2 GW has been utilized up to now. As depicted in the Ministerial Regulation No. 4 issued in 2012 regarding feed-in tariff for biomass/biogas generated electricity, the Government of Indonesia provides incentives for the private sector to develop and invest into RE projects in the biomass/biogas sector.

To assist project developers in navigating through permitting procedures and administrative processes, we are pleased to publish the “Guidelines on Biomass and Biogas Power Project Development in Indonesia” as a reference for project development in the sector.

The Guidelines provide transparency in the permitting process and assist all involved actors in obtaining the necessary permits and licenses for a grid-connected biomass or biogas project in Indonesia. The Guidelines are therefore an important tool to further support the RE market in Indonesia and help to build a green future for the country.

Ir. Rida Mulyana, MSc

Director General, Directorate General for New, Renewable Energy and Energy Conservation (DG NREEC)

Foreword



Over the last years, the Government of Indonesia put considerable effort in developing the renewable energy (RE) sector and to prepare the country for the energy challenges of the future. With ambitious targets and regulations on feed-in tariffs as well as other supporting policies, Indonesia set the base for more private sector participation in the market.

The “Guidelines on Biomass and Biogas Power Project Development in Indonesia” support those efforts by shedding light on permitting procedures and administrative processes for the development of grid-connected power projects in the bioenergy sector. The tool covers the whole project development cycle and provides important information for developers, investors and policy makers. The Guidelines are based on several stakeholder consultations and an extensive peer review within the public and private sector and combine regulatory provisions with hands-on experience.

Such Guidelines require a major research and development effort. To this end, the GIZ Renewable Energy Programme Indonesia/ASEAN combined the expertise from its different projects: While the Renewable Energy Support Programme for ASEAN (ASEAN-RESP) provided the research template and the structure of the Guidelines, the Project Development Programme Indonesia (PDP) conducted first stakeholder consultations, and the Least Cost Renewables Project (LCORE) carried out an extensive peer review.

I am convinced that the result of this joint effort will not only help to develop RE projects in Indonesia more efficiently, but is also a very good example for other countries in the region.

Dr. Rudolf Rauch

Director, Renewable Energy Programme Indonesia/ASEAN
Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Acknowledgements

These Guidelines are based on the know-how and the expertise of numerous stakeholders in the RE sector of Indonesia. Without their willingness to share insights into their own projects and experiences, it would not have been possible to compile the Guidelines in the present form and completeness.

Apart from the participants in different stakeholder dialogues, we would like to thank the following experts for their contributions, comments and advice: Abinanto, Björn Heidrich, Dadan Kusdiana (Directorate General NREEC), Eriell Salim, Hari Yuwono, Jan-Benjamin Spitzley, Karel Pajung, Matthias Eichelbrönnner, Paul Butarbutar, Paul Heinemann, Puji Sugia Harjiman, Raymond Bona, Sadman, Sofyan (PLN), Syaiful Bahri Ibrahim, Thomas Wagner, Trio Chadys, several experts from the Directorate General for Electricity.

A special thanks goes to Lisa Conrads, Ikke Prasetyaning and Adnan Tripradipta from the GIZ LCORE project for their input and for conducting stakeholder interviews.

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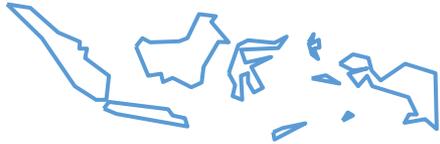
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About the Guidelines – Objective and Purpose

In recent years, the Government of Indonesia made considerable effort to tap the vast RE resources in the country. Feed-in-tariffs and regulations for the development of RE projects were introduced as well as other supportive policies, for example tax and customs exemptions or tax holidays.

The **“Guidelines on Biomass and Biogas Power Project Development in Indonesia”** are developed to facilitate increased private sector activity and investment in the RE sector of Indonesia. Since the confidence of project developers and investors is prerequisite to boost RE deployment and to develop a sustainable market, the provision of transparent project development and permit procedures is indispensable.

The Guidelines are an easy-to-access and regularly updated tool which includes complete information on the ideal RE project development cycle in Indonesia. The Guidelines:

- highlight administrative procedures including requirements for project developers and/or investors;
- lists legal and regulatory provisions as well as necessary permits;
- identifies country-specific challenges for project development; and
- gives information on how to obtain financial closure.

The Guidelines are designed as close as possible to the needs of project developers and potential investors, to promote transparency and clearness in the RE projects’ pathway. The Guidelines lead through the various procedures and help identifying risks embedded in each steps, so that proper mitigation measures can be designed and implemented.

About the Guidelines – Scope and Limitations

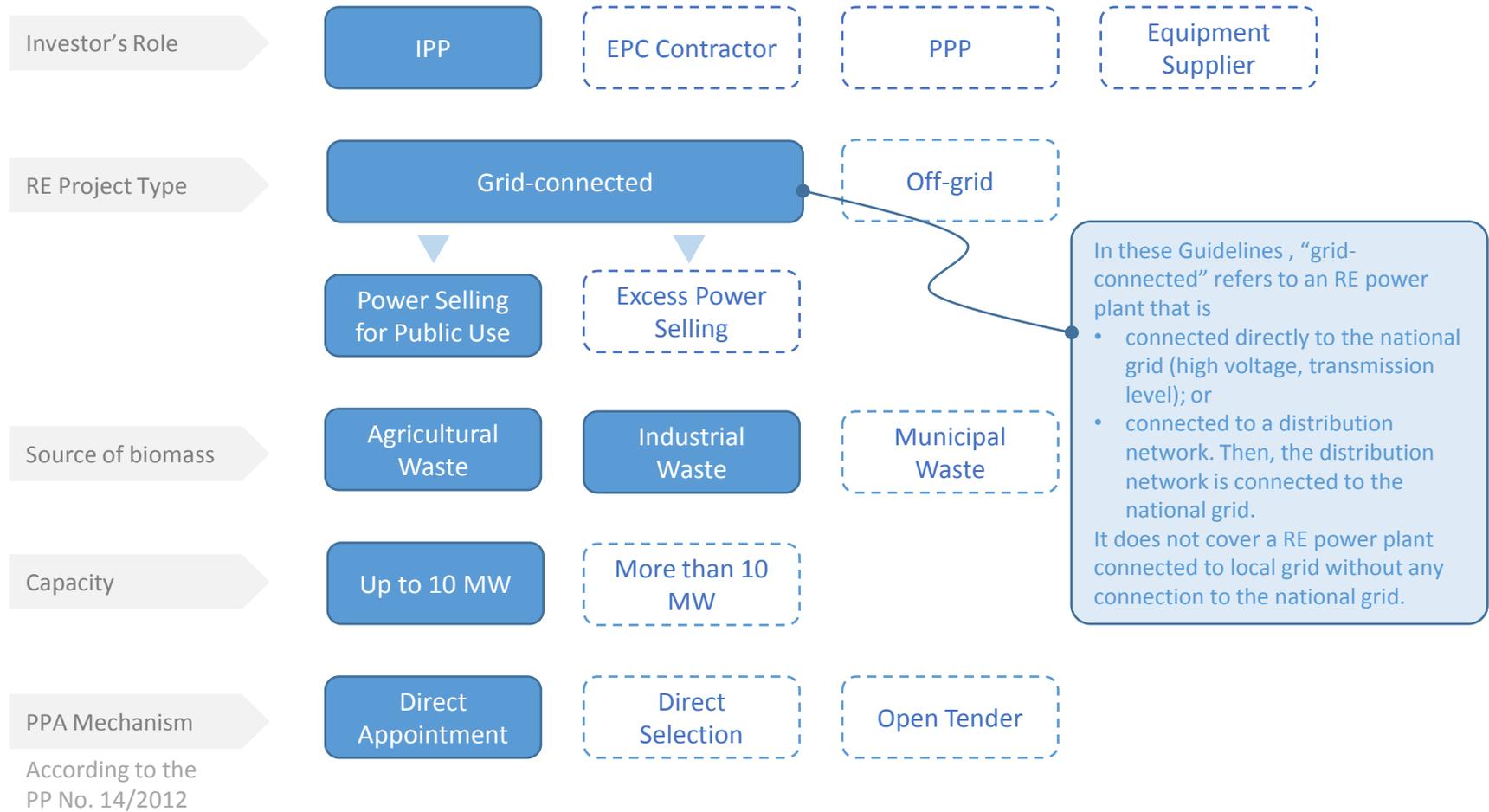
This Guidelines portrays the procedures for developing a biomass/biogas power plant in Indonesia. The target group of the Guidelines are project developers, investors and other actors involved in the development of RE power projects as independent power producers (IPP). The Guidelines does not cover the procedures for developers acting as EPC contractors to PLN, developers who participate in a public-private partnership with the Government of Indonesia or its agencies, or an equipment supplier for biomass/biogas power plant.

A grid-connected power plant can be classified into two types according to its purpose: (i) a plant which sells its electricity to the grid for public use and (ii) a plant which sells excess power to the grid. In the former case, the plant sells almost all electricity it generates to the grid. In the latter case, the generated electricity is used mainly for own consumption; only excess portion is fed back to the grid. Typically, PPA for excess power can be concluded only for a short-period (e.g. one year), the sale of excess power is not part of the Guidelines.

A variety of biomass feedstock can be used for power generation. In Indonesia, biomass feedstock from agro-industry has a large potential. The industrial waste and municipal solid waste can be used as well. However, additional licenses/permits are required for collecting and handling municipal solid waste and is not part of the Guidelines.

The Guidelines focus on the development of RE power plants with capacity of up to 10 MW. In this case, the project developer can propose the location of power plant to PLN and the feed-in tariff is applicable. The direct appointment mechanism according to the PP No. 14/2012 is typically used to reach a PPA with PLN. The direct selection and the open tender mechanisms are rarely applicable for this kind of projects and, thus, not covered by the Guidelines.

About the Guidelines – Scope and Limitations



Abbreviations IPP: Independent power producer, EPC: Engineering, procurement, and construction, PPP: Public-private partnership

Biomass/Biogas Project Development in Indonesia

Indonesia is the world largest archipelagic nation consisting of around 17,000 islands and the largest economy in the ASEAN region.

The provision of sufficient energy supply to meet with the rising demand and to sustain the economic development is a major challenge. The conventional energy resources can no longer be considered as a long-term solution. As an archipelagic nation, Indonesia is also more susceptible to the effect of climate change and global warming.

Since 2009, Indonesia is actively promoting the use of indigenous renewable energy (RE) resources. The government plans to increase the share of RE in the national energy mix, in 2006 the target of 17% share of RE was announced (PERPRES No. 5/2006). In the “Vision 25/25”, Indonesia formulated an even more ambitious target of a 25% share of RE by 2025.

The power sector has established the necessary framework for the development of RE power projects. The new electricity law was introduced in 2009 (UU No. 30/2009) and an implementing regulation was subsequently issued in 2012 (PP No. 14/2012). Both are important legal frameworks which allow the private sector to become active in the power sector, for example in power generation, transmission, distribution, and sale of electricity. The electricity law and the related regulations has since then attracted more private sector investment in the sector.

Indonesia has a strong agricultural sector and therefore a large potential to use residues from the agro industry as feedstock for power generation. The potential of using biomass for electricity production is estimated at around 50 GW. With the current total installed capacity of 170 MW, there is still a lot of rooms for further development.

Key Statistics of Indonesia

Population (2012)

244 million [1]

Nominal GDP (2013 estimation)

867 trillion USD [2]

Nominal GDP per capita (2013 estimation)

3,499 USD [2]

Installed power capacity

45 GW [3]

Electricity Production (2012)

200,000 GWh [3]

Electricity Consumption (2012)

174,000 GWh [3]

Electrification Rate (2013)

80.4% [4]

Source:

[1] BPS: Statistical Yearbook 2013

[2] IMF; 2013

[3] DJK, KESDM: ESDM Website; Dec 2012 [Accessed: Feb 2014]

[4] PLN; 2014

Overall Procedure Description

The life cycle of power project development can commonly be divided into three phases: 1. development phase, 2. construction phase, and 3. operation phase.

Development Phase

In the development phase, the project developer investigates the project concept. Basic information and inputs must be obtained to determine if the project should be further developed. Necessary licenses and permits must be obtained and financial support has to be secured.

The development of biomass/biogas project development in Indonesia starts from the **Site Selection**. Potential sites are to be identified, short-listed, and investigated in detail. At the end, one site has to be selected for further development.

The developer must approach the local government in the respective region to acquire several permits/licenses. This is a part of the **Administrative Authorization** step. At the same time, the developer might establish a Special Purpose Company (SPC) to carry out project development and power plant operation, in addition a principle license for investment must be acquired. Both is included in the **Corporate Legal/Fiscal** step. In parallel, some technical inputs are necessary for a subsequent power purchase agreement (PPA) application. Therefore, the developer must approach an engineering firm for a front-end engineering design (FEED) which is part of the **Planning and Engineering** step.

Once the agreement and support from local government is secured (by issuing permits and licenses), the developer must approach: (i) the national power utility (PLN) – to secure a **power purchase agreement**; (ii) the Directorate General of Electricity (DJK) – to obtain an **electricity production license** and (iii) a financial institution – to secure necessary **financing**.

The developer usually contract an engineering, procurement and construction (EPC) provider to perform detailed engineering, equipment procurement, construction and installation. This is done in parallel to the early phase of plant construction.

Overall Procedure Description

Construction Phase

After the financial closure, physical construction of the power plant can begin. The early phase of the construction is in parallel with the last phase of Planning and Engineering step i.e. detailed engineering, equipment procurements etc.

After the plant is being constructed and all equipment installed, the developer must arrange for an inspection and test of the power plant. A third (certified) party must be involved. Another joint inspection at the point of connection must be arranged with PLN. The developer can start to sell electricity to PLN after an agreed commercial operation date (COD) which is the final sub-step in the **Construction and Commissioning** step.

Operation Phase

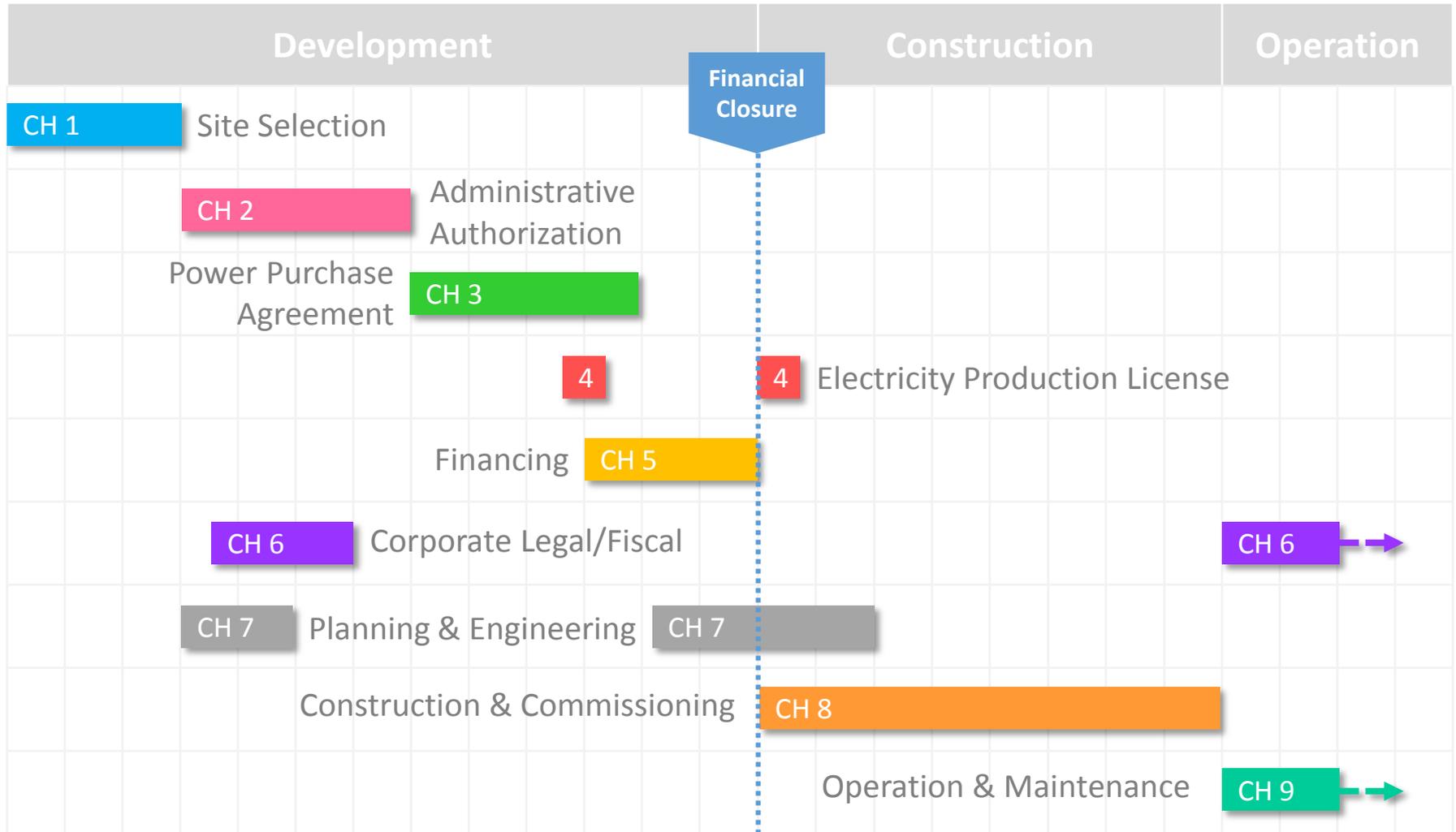
After the COD, the biomass/biogas power plant is operating.

The project developer can obtain an income tax exemption (compare **Corporate Legal/Fiscal** step). At the same time, the project developer must closely monitor the performance of the plant and plan for scheduled maintenance. It is indispensable to secure trained staff which is also part of the **Operation and Maintenance** step.

Guidelines for Biomass/Biogas Project Development in Indonesia

Overall Procedure (Gantt's Chart View)

Description >



Note: The bar length on the Gantt's chart is not to scale. It should be used for qualitative comparison only.

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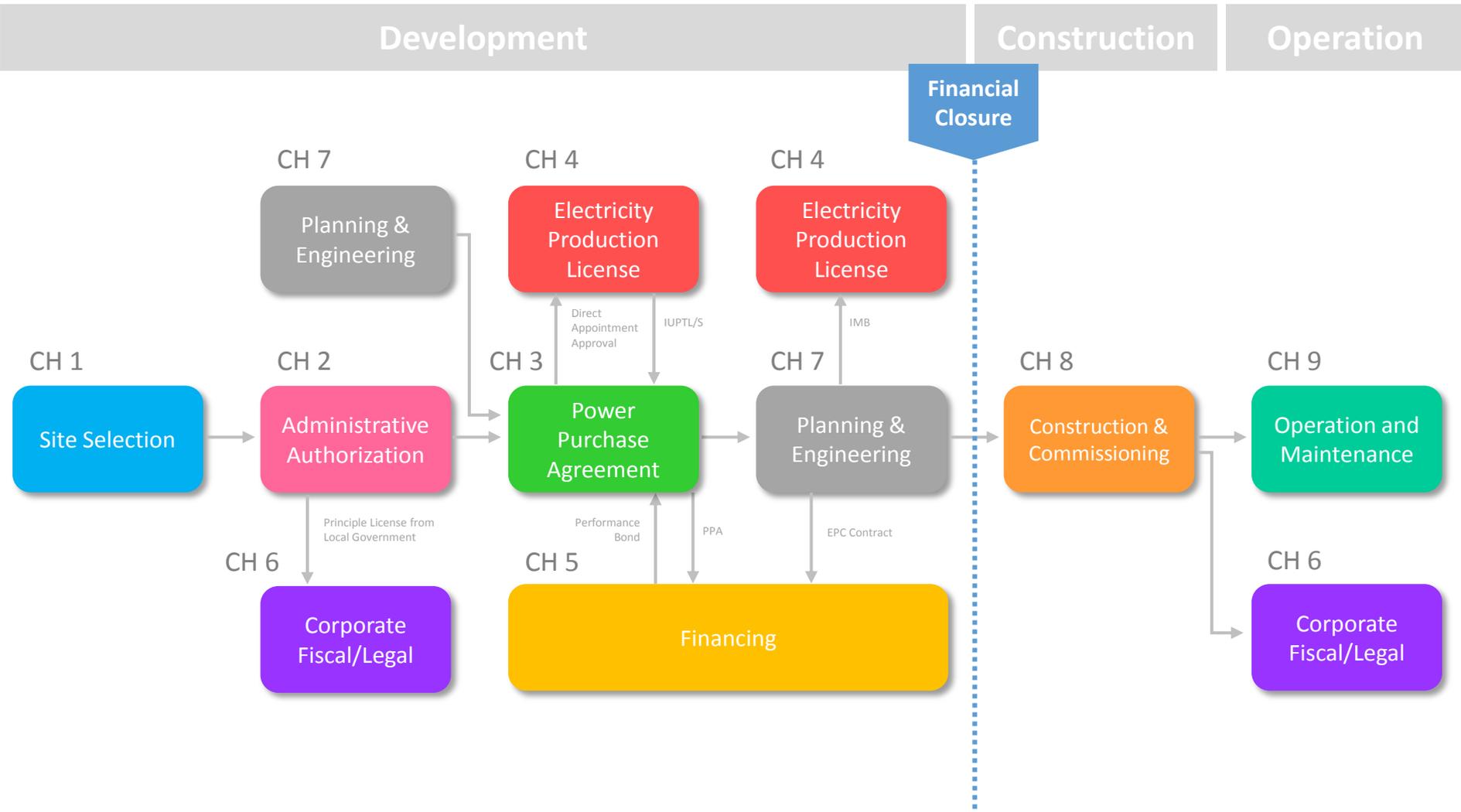
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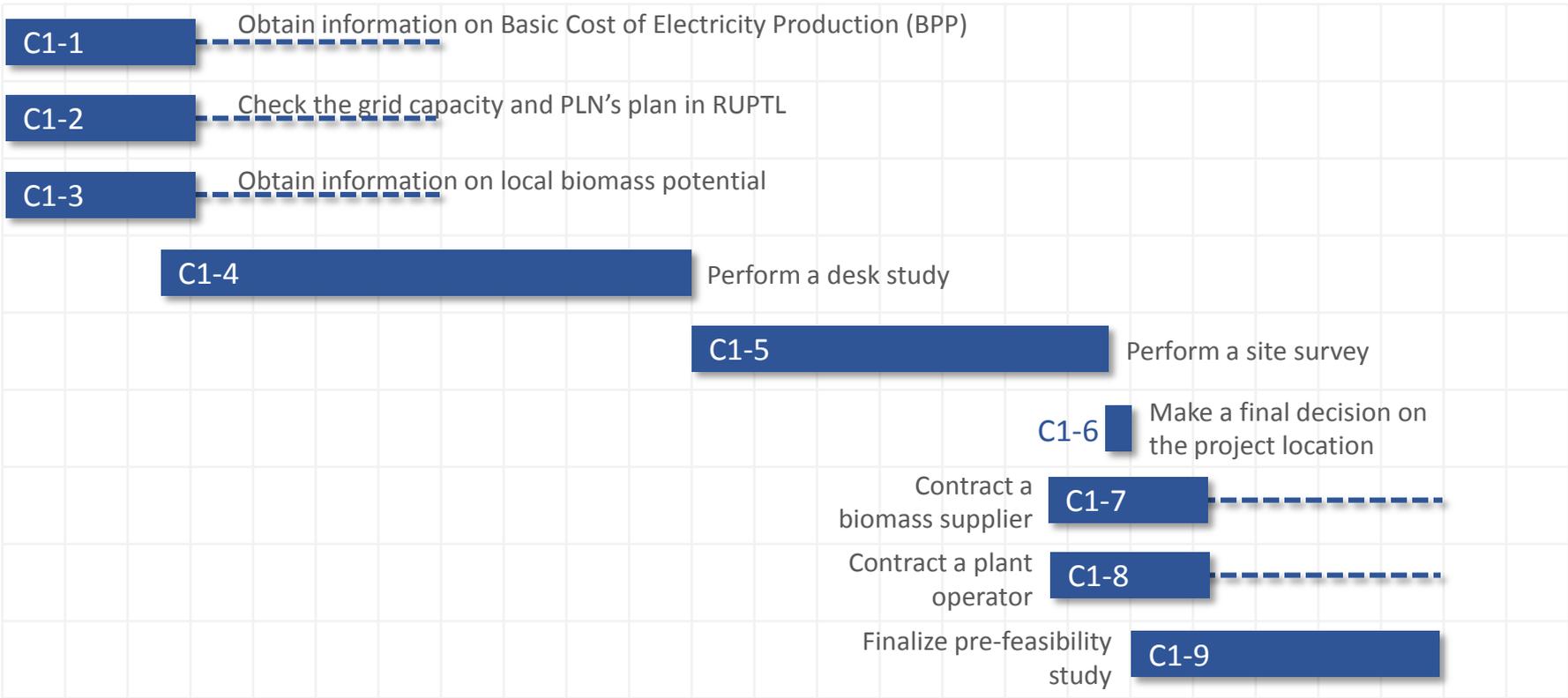
Guidelines for Biomass/Biogas Project Development in Indonesia

Overall Procedure (Flow Chart View)

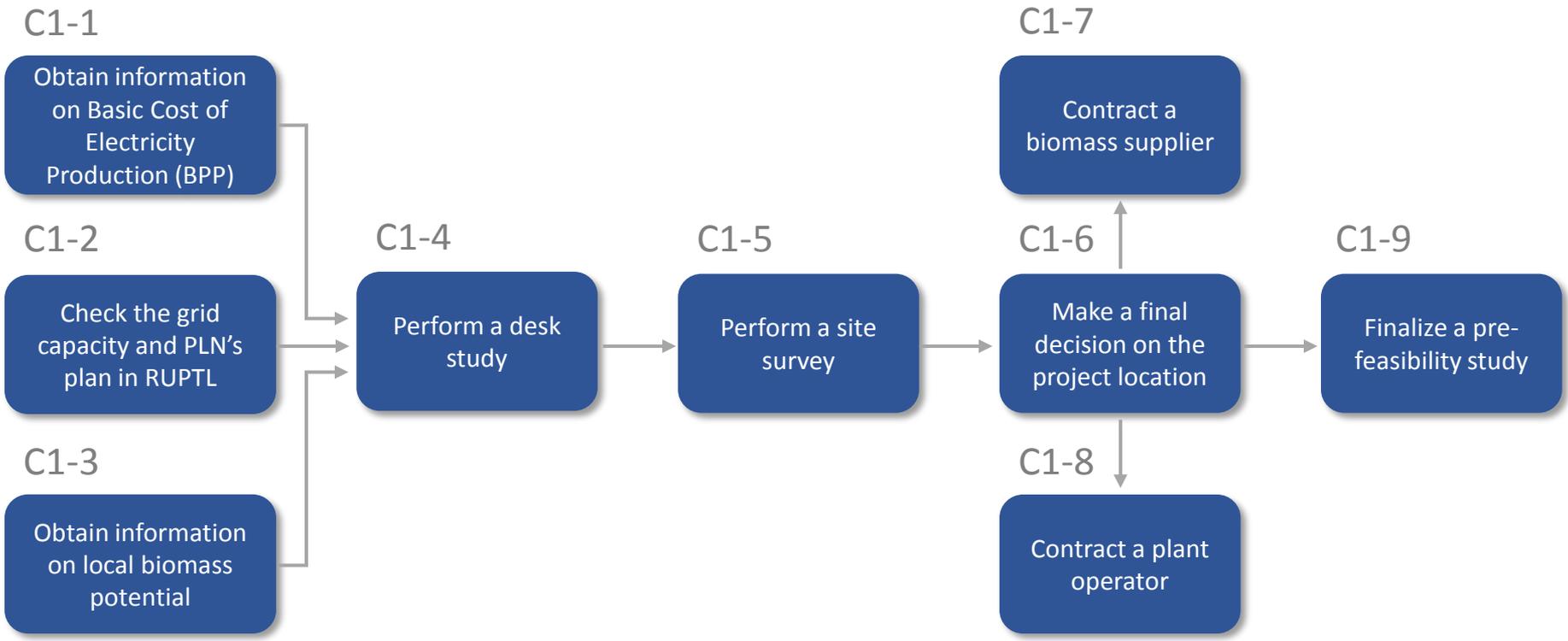
Description >



Site Selection



Site Selection



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Step Description

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A thorough Site Selection is done as the first step of project development. During Site Selection, a suitable location for project development is determined. The project developer must gather necessary information by performing a desk study & site survey, benchmarking several potential project locations and make a final decision on the project site, and finally preparing a pre-feasibility study (pre-F/S) report as final output. The pre-F/S report, will be an important part of the power purchase agreement (PPA) proposal to be submitted to PLN (*Perusahaan Listrik Negara*), state-owned power utility ([Sub-step C3-1](#)). In addition, the pre-F/S report becomes part of a loan proposal, submitted to a financial institution ([Sub-step C5-4](#))

Indispensable information to be considered during site selection are: PLN's basic cost of electricity production (BPP; *Biaya Pokok Produksi*), local grid capacity and PLN development plant (from RUPTL; *Rencana Usaha Penyediaan Tenaga Listrik*), and the local biomass/biogas potential. In a benchmarking process, unfeasible locations should be screened out. During site surveys, the remaining locations need to further verified and data that cannot be obtained during the desk study must be collected. After the the site survey reports are prepared, a final decision can be made on the project location.

During the site survey, the project developer should use this opportunity to approach local biomass supplier and potential plant operator. When, the final decision is made on the project location, both contract for biomass feedstock supply and plant operator must be concluded. At the same time, pre-F/S report should be prepared immediately after the final decision was made.

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In Indonesia, a location for biomass/biogas project development can be proposed by the project developer to PLN. However, PLN still retain a right to reject the project which it considers as not technical or financial feasible or not according to RUPTL. Therefore, agreement of PLN on the project location is crucial. It is recommended that project developer should present a project concept and possible area for development to PLN. Then, the project developer can assess a possibility of the project to be approved by PLN later. This can reduce some risk that the project will be rejected in later step.

It is also recommended that developer should form up a partnership with a local Indonesian entity. The local partner can be local government institutions, businesses, or community. They can provide useful information regarding project site location. Reliable and experienced local consultant should be involved during desk study, site survey, and finalization of the pre-F/S report.

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Regulation No.	Name
KEPMEN (ESDM) No. 4092 K/21/MEM/2013	Ministerial Decree (ESDM): Approval of PLN's National Electricity Supply Master Plan (RUPTL 2013-2022) <i>(Pengesahan Rencana Usaha Penyediaan Tenaga Listrik PT Perusahaan Listrik Negara (Persero) Tahun 2013 s.d. 2022)</i>
KEPUTUSAN DIREKSI PT PLN (PERSERO) No. 0766 K/DIR/2013	PLN's Board of Director Decision: PLN's National Electricity Supply Master Plan (RUPTL 2013-2022) <i>(Rencana Usaha Penyediaan Tenaga Listrik (RUPTL) PT PLN (Persero) Tahun 2013-2022)</i> <i>Note: The RUPTL can be downloaded from PLN website. As of April 2014, the latest one is RUPTL 2013-2022 (Link to RUPTL)</i>

Abbreviations

ESDM – Energi dan Sumber daya Mineral; Energy and Mineral Resources

RUPTL – Rencana Usaha Penyediaan Tenaga Listrik; National Electricity Supply Master Plan

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Compulsory agreement from PLN

The project developer can determine a site location by themselves; however, the location must be in accordance with the National Electricity Supply Master Plan (RUPTL; *Rencana Usaha Penyediaan Tenaga Listrik*) published by PLN. In some cases, a location with abundant biomass feedstock supply is not accepted by PLN for biomass/biogas power project development. This could, for example, be because the project location is not included in PLN's plan for grid expansion.

Recommendation: The project developer must thoroughly review the RUPTL to ensure that the project location will be in accordance to the PLN's plan of grid expansion. The respective PLN local office should be consulted at an early stage of project development with regards to a potential location. Agreement of local PLN should be secured before the project developer proceed further.

Site in remote area

There are many suitable locations for biomass/biogas power project development. However, many of them are located in remote areas. Transportation and logistic (including for the feedstock) can be difficult in such case and access to the site may not be possible all year round.

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Weak grid infrastructure	<p>In some remote area, a power grid may not have sufficient capacity to be fed by a biomass/biogas power plant. In such case, PLN must requested for grid expansion/upgrade before the biomass/biogas power plant can be developed. This process can be time-consuming and the result is uncertain (depending on PLN's planning).</p>
Long distance to next grid connection point	<p>The nearest grid connection point as well as load centres may be far away from the power plant. So, the cost of the transmission line can be considerably high and usually have to be born by the project developer.</p> <p><u>Recommendation:</u> The project developer should consult with the respective PLN local office regarding possible grid connection points for each potential location. This information can be used to screen out some site locations with large distance to a grid connection point.</p>

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Inaccurate pre-feasibility study report

A pre-feasibility study prepared by a hired (local) consultant may not be reliable or accurate. This can cause major problems in subsequent steps, for example during construction and installation.

Recommendation: The project developer must carefully select (local) consultants to perform a pre-feasibility study and closely monitor its conduction. Only a consultant with sufficient experience and a good track record should be considered.

Difficult access to relevant information

The project developer may face some difficulties in getting some important information/data. For example, basic cost of electricity production (BPP; *Biaya Pokok Produksi*) data is available at the PLN local office only and is not published which makes benchmarking of different project locations challenging. The developer needs to seek the BPP directly from the PLN local office, therefore good work relations to the local PLN office are key.

Recommendation: The developer must consider PLN local office from an early stage on and build up a good relationships. A well connected local partner is necessary to obtain all relevant data.

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Uncertainty in long-term biomass feedstock supply

For a biomass/biogas power project, a reliable and sustainable feedstock supply is crucial. However, this can be challenging when the feedstock is supplied externally. The developer might only be able to conclude a short-term fuel supply agreement (FSA) with local biomass feedstock supplier(s). This can cause some difficulties as the PLN local office normally expects a long-term FSA. Furthermore, if the feedstock price fluctuates significantly, there is the risk that the biomass supplier(s) will not adhere to the FSA.

Recommendation: Where possible, it is recommended to either involve the feedstock supplier as stakeholder in the project or to use (bio-)waste material with no or low commodity value directly at the source (e.g. waste water).

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Lack of coordination between different authorities

There is no central coordinating authority for a RE project development in Indonesia. This can lead to conflicting situations: for example, local government agrees to and supports the development of a power plant. However, at a later stage, PLN is going to develop a power plant in the same area and not willing to purchase an electricity from the biomass/biogas power plant.

Recommendation: The project developer needs to play a role of coordinator between various authorities. All relevant authorities (central and local) must be consulted with to ensure that there is no opposition later on. The project developer must not perceive the approval from the local government as a green light for the whole project development. The National Electricity Supply Master Plan (RUPTL; *Rencana Usaha Penyediaan Tenaga Listrik*) must be always reviewed to ensure that the project is in accordance to the PLN's plan of grid expansion.

Check Basic Cost of Electricity Production (BPP)

[Sub-step Details](#)

A project developer should consult the PLN local office for a basic cost of electricity production (BPP; *Biaya Pokok Produksi*) in each potential location. The BPP is the cost of electricity production of PLN. Typically, PLN determines the BPP in the region by taking into account: fuel cost, operation and maintenance cost, and investment in infrastructure. The BPP is calculated by each PLN local office and continuously updated. The PLN local office is obliged to report the BPP to the PLN headquarter on quarterly basis. However, BPP information is normally used internally and not published.

The BPP is crucial since it can clarify whether a biomass/biogas power project is going to be financially attractive for PLN or not. If the local BPP is high, PLN is more likely to be more interested in the biomass/biogas project development and in finally purchasing electricity from the IPP.

The BPP of a remote power grid with diesel generator is high. PLN local office usually need a diversification of fuel mix in those areas, to reduce its BPP. Therefore, possibility that the biomass/biogas project will be supported by PLN local office is high in that area.

Related Authorities

Central government	-
Provincial	> PLN local office
Regency / City	

Check Grid Capacity and PLN's Plan in RUPTL

[Sub-step Details](#)

Sufficient grid infrastructure is one of the precondition for the feasibility of a specific location for a biomass/biogas power plant. Developers should check the local grid capacity in the National Electricity Supply Master Plan (RUPTL; *Rencana Usaha Penyediaan Tenaga Listrik*) published annually by PLN.

Furthermore, it is key that the project location is in line with the PLN's grid expansion and development plan. PLN is likely to accept and agree on the project which is consistent with its grid expansion and development plan. This information is also in the RUPTL and must be carefully checked by the developer.

Note: As of April 2014, RUPTL 2013 - 2022 is the latest version.

Obtain Information on Local Biomass Potential

[Sub-step Details](#)

The developer must obtain reliable data on the local biomass feedstock potential. Supply of biomass is a crucial factor for biomass/biogas power projects. It must be ensured for the entire project lifetime.

Biomass type, feedstock capacity, and quality of supplied biomass needs to be checked. The developer may involve an experienced local consultant to perform the necessary study and evaluation on the biomass potential. Also, local authorities or communities might be able to deliver valuable information on the local biomass potential.

Perform a Desk Study

[Sub-step Details](#)

The developer shall analyse all data/information at hand and perform a desk study. This can be considered as a short-listing process in which a couple of potential sites are filtered out. The desk study is to be done before the actual site survey. The shortlisting process should be done together with an experienced local consultant.

During the desk study, some data are likely to be missing or not in sufficient quality. The developer must list down those points in order to have them verified during the site survey. Based on the desk study the project developer must prepare a list of information/data to be obtained during the site visit. A plan of activity during the site survey should be also prepared.

Perform a Site Survey

Sub-step Details

A site survey must be done to ensure that the actual site condition is really suitable for project development. The developer should conduct the survey on shorted-list locations (Refer to [Sub-step C1-4](#)).

The site survey allows several aspects to be thoroughly investigated, e.g. road access, grid condition, sampling of biomass feedstock etc. The project developer should involve local community/government during the site survey and seek their approval.

It is advisable to contract an experienced local consultant to support this task or to completely conduct the survey. Knowledge about local circumstances and good relations to local authorities and communities are important.

The project developer also use this opportunity to visit and contact several potential biomass feedstock supplier ([Sub-step C1-7](#)) and potential local operator ([Sub-step C1-8](#)).

Related Authorities

Central government	-
Provincial	-
Regency / City	> Head of Regency (<i>Bupati</i>) / Mayor (<i>Kota</i>)

Make a final decision on the project location

Sub-step Details

Based on the site survey report, the developer must make a final decision regarding the project location. Several factors are to be considered, among others:

- Point of grid connection;
- The project location is according to the the National Electricity Supply Master Plan (RUPTL; *Rencana Usaha Penyediaan Tenaga Listrik*) – Refer to [Sub-step C1-2](#);
- Feedstock supply.

Once the project location has been decided on, the developer notifies local community/government. Also, the respective PLN local office must be informed.

Related Authorities

Central government	-
Provincial	-
Regency / City	<ul style="list-style-type: none">> Head of Regency (<i>Bupati</i>) / Mayor (<i>Kota</i>)> PLN local office

Contract a Biomass Supplier

[Sub-step Details](#)

For biomass/biogas power project, reliable biomass feedstock supply is indispensable. The developer must conclude a fuel supply agreement (FSA) with local biomass supplier(s). This should be done immediately after exact project location is determined. The FSA must be submitted to PLN as a part of PPA proposal ([Sub-step C3-1](#)).

The developer must arrange for a lab test on biomass feedstock. Crucial parameters: e.g. heating capacity, moisture content etc. must be quantified. The lab test result must be included as a part of a pre-feasibility study (pre-F/S) which is to be submitted to the PLN local office for the PPA application ([Sub-step C3-1](#)). In addition to that, the list of potential biomass suppliers in the area is an important document for obtaining finance ([Sub-step C5-3](#)).

Contract a Plant Operator

[Sub-step Details](#)

For biomass/biogas projects in Indonesia, it is often the case that the power plant is operated by local community/business entity later on. This can ensure long-term and sustainable operation of the power plant and attract supports from local community and authorities. However, adequate capacity building must be considered and planned in later stage ([Sub-step C9-4](#)).

During the site visit, the developer may use the opportunity to identify a potential local company or community which can operate and maintain the plant in the long-term. Then, the developer shall place an operation and maintenance (O&M) contract with a plant operator.

The developer may team up with local community/company or form another company to serve as a plant operator. The formal contract between the special purpose company (SPC) for project development and the operator company is made.

The contract with a plant operation and maintenance company usually has to be submitted as a part of a loan proposal ([Sub-step C5-3](#)).

Finalize Pre-feasibility Study (pre-F/S)

[Sub-step Details](#)[Recommendations on pre-F/S content](#)

The pre-feasibility study (pre-F/S) is to be prepared as the final step of site selection. Major factors which directly affect the overall viability of the project must be thoroughly assessed in the report. Some inputs from the site survey report ([Sub-step C1-5](#)) can be fed into the pre-F/S report. However, a pre-F/S report will focus on one project location only. The developer must contract an experienced RE consultant to perform this task.

The list of recommendations regarding content of pre-F/S report is provided (refer to [the list](#)). This is based on the experience of local project developers.

Finalize Pre-feasibility Study (pre-F/S)

[Sub-step Details](#)[Recommendations on pre-F/S content](#)

There is no fixed structure of a pre-feasibility study. However, following are some recommendations of the report's content:

- > Local impact should be clearly presented in the pre-F/S e.g. local job creation, benefits to the local biomass supplier etc. This can better convince the local government to support the project.
- > Output of the plant (in term of MW and GWh)
- > Guarantee of operation over a year e.g. 80% plant operation
- > Strategy to secure reliable biomass feedstock. The project developer should list as many potential biomass suppliers as possible.
- > Source of water supply for boiler (if applicable)
- > Possible point of grid connection
- > Analysis on local electricity demand
- > Major and critical risks and barriers for the project development
- > Financial analysis including estimated investment cost, return of investment (ROI), annual energy sale revenue, payback period
- > ...

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Administrative Authorization

C2-1 Obtain Principle License from local government

C2-2 Obtain a Location Permit

C2-3 Obtain an Environmental Permit

For a plant with large boiler

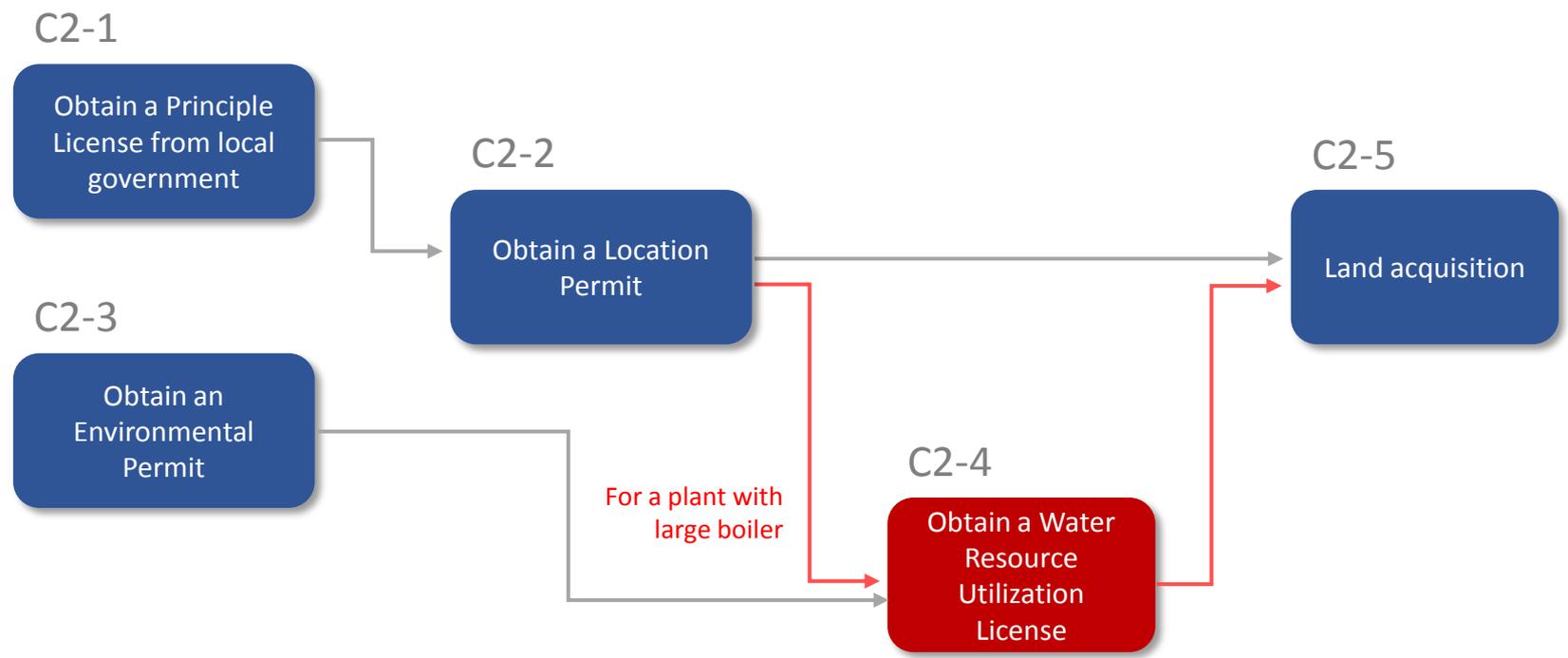
C2-4

Obtain a Water Resource Utilization License

Land acquisition **C2-5**

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Administrative Authorization



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The Administrative Authorization includes obtaining all necessary licenses for the power purchase agreement (PPA) application as well as the legal right on the land. The underlying procedures need to immediately be started with, once the project location is finally decided on ([Chapter 1](#)). At the end, all licenses required for the PPA application and a land right certificate must be obtained. They will be part of the PPA proposal ([Sub-Step C3-1](#)) as well as the loan proposal ([Sub-Step C5-4](#)). The Corporate Fiscal/Legal step ([Chapter 6](#)) and the Construction and Installation step ([Chapter 7](#)) can be done in parallel.

Indonesia has a decentralized governmental structure in which the local government (regency; *Bupati* and city; *Kota*) is responsible for issuing several important licenses. Therefore, exact procedures and requirements might differ from region-to-region. Additional licenses and permits may be required in some cases. The guideline lists only the most important and crucial licenses. The developer must re-check with the local government if additional licenses or permits are needed.

In a first sub-step, the developer must obtain a principle license from the respective local government (*Izin Prinsip*). In some region, a location permit (*Izin Lokasi*) can be obtained at the same time with the principle license, in other regions, an application for a location permit can only be done after the principle license is granted. The developer is allowed to buy or lease land for the project development only after the location permit is granted.

In parallel, the developer should contract a consultant to perform an environmental management and monitoring report (UKL-UPL; *Upaya Pengelolaan Lingkungan Hidup-Upaya Pemantauan Lingkungan Hidup*). After the UKL-UPL is approved, an environment permit can be granted.

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If the power plant will be equipped with a boiler and utilization of external water is required, a water resource utilization license must be obtained in addition. The developer can apply for a water resource utilization license right after the environment permit is obtained.

Support from local government and/or the local community are crucial for the project development. The duration for obtaining necessary licenses can be shorten if the local government agrees in general with the project concept. However, the project developer should note that an approval from the local government does not automatically imply that the project will be approved later by PLN.

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Regulation No.	Name
General	
UU No. 32/2004	Law: Local Government (<i>Pemerintahan Daerah</i>)
PP No. 38/2007	Governmental Regulation: Distribution of authorities between central government, provincial government, and district/city government (<i>Pembagian Urusan Pemerintahan Antara Pemerintah, Pemerintah Daerah Provisi, dan Pemerintahan Daerah Kabupaten/Kota</i>)

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Regulation No.	Name
Land Use	
UU No. 2/2012	Law: Land Acquisition for Development on Public Interests (<i>Pengadaan Tanah Bagi Pembangunan untuk Kepentingan Umum</i>)
PERPRES No. 71/2012	Presidential Regulation: Land Acquisition for Development on Public Interests (<i>Pengadaan Tanah Bagi Pembangunan untuk Kepentingan Umum</i>) <i>Note: The PERPRES No. 71/2012 is the second amendment of PERPRES No. 36/2005 on similar topic. The first amendment, the PERPRES No. 65/2006, was revoked entirely except Article 123.</i>
PERPRES No. 65/2006	Presidential Regulation: Land Acquisition for Development on Public Interests (<i>Pengadaan Tanah Bagi Pembangunan untuk Kepentingan Umum</i>) <i>Note: The PERPRES No. 65/2006 is the first amendment of the PERPRES No. 36/2005. It was entirely revoked by the PERPRES No. 71/2012 except Article 123 which is still effective.</i>

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Regulation No.	Name
Land Use (cont.)	
PERPRES No. 36/2005	Presidential Regulation: Land Acquisition for Development on Public Interests <i>(Pengadaan Tanah Bagi Pembangunan untuk Kepentingan Umum)</i>
KEPRES No. 55/1993	Preidential Decree: Land Acquisition for Development on Public Interests <i>(Pengadaan Tanah Bagi Pelaksanaan Pembangunan untuk Kepentingan Umum)</i>
PERMEN (Finance) No. 58/PMK.02/2008	Ministerial Regulation (Finance): Fee for Land Procurement Committee Development on Public Interests <i>(Biaya Panitia Pengadaan Tanah Bagi Pelaksanaan Pembangunan untuk Kepentingan Umum)</i>
PERMEN (State Agrarian) / PERKA (National Defense) No. 2/1999	Ministerial Regulation (State Agrarian) & National Defense's Regulation: Location Permit <i>(Izin Lokasi)</i>

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Regulation No.	Name
Land Use (cont.)	
PERKA (BPN) No. 3/2007	BPN's Regulation: Implementation regulation of PERPRES No. 36/2005 (<i>Ketentuan Pelaksanaan Perpres No. 36/2005 Sebagaimana telah Diubah Dengan Perpres No. 65/2006</i>) <i>Note: The PERKA is the implementation regulation of PERPRES No. 36/2005 (amended by PERPRES No. 65/2006). It is still in effect even after the PERPRES No. 71/2012 was issued to amend both PERPRES No. 36/2005 and PERPRES 65/2006.</i>
PERKA (BPN) No. 2/2011	BPN's Regulation: Technical Guidelines for issue a Location Permit, Location Determination, and Change of Land Use Permit (<i>Pedoman Pertimbangan Teknis Pertanahan Dalam Penerbitan Izin Lokasi, Penetapan Lokasi dan Izin Perubahan Penggunaan Tanah</i>)

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Regulation No.	Name
Water Utilization	
UU No. 7/2004	Law: Wate Resources (<i>Sumber Daya Air</i>)
PP No. 38/2011	Governmental Regulation: Rivers (<i>Sungai</i>)
PP No. 42/2008	Governmental Regulation: Water Resources Management (<i>Pengelolaan Sumber Daya Air</i>)
PP No. 82/2001	Governmental Regulation: Water Quality Management and Water Pollution Control (<i>Pengelolaan Kualitas Air dan Pengendalian Pencemaran Air</i>)
PERPRES No. 33/2011	Presidential Regulation: National Policy on Water Resources Management (<i>Kebijakan Nasional Pengelolaan Sumber Daya Air</i>)
PERMEN (Public Works) No. 06/PRT/M/2011	Ministerial Regulation (Public Works): Guideline for Water Resource Utilization (<i>Pedoman Penggunaan Sumber Daya Air</i>)

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Regulation No.	Name
Water Utilization (cont.)	
PERMEN (Public Works) No. 22/PRT/M/2009	Technical Guideline on Water Resource Management Procedure <i>(Pedoman Teknis dan Tatacara Penyusunan Pola Pengelolaan Sumber Daya Air)</i>

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Regulation No.	Name
Environment	
UU No. 32/2009	Law: Environment Protection and Management (<i>Perlindungan dan Pengelolaan Lingkungan Hidup</i>)
PP No. 27/2012	Governmental Regulation: Environment License (<i>Izin Lingkungan</i>)
PP No. 150/2000	Governmental Regulation: Land Damage Control for Biomass Production (<i>Pengendalian Kerusakan Tanah untuk Produksi Biomassa</i>)
PP No. 41/1999	Governmental Regulation: Air Pollution Control (<i>Pegendalian Pencemaran Udara</i>)
PERMEN (Environment) No. 13/2010	Ministerial Regulation (Environment): Environmental Management and Monitoring (UKL-UPL) (<i>Upaya Pengelolaan Lingkungan Hidup dan Upaya Pemantauan Lingkungan Hidup dan Surat Pernyataan Kesanggupan Pengelolaan dan Pemantauan Lingkungan Hidup</i>)

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Regulation No.	Name
Environment (cont.)	
PERMEN (Environment) No. 7/2006	Ministerial Regulation (Environment): Standard Procedure and Criteria for Measurement of Land Damage from Biomass Production <i>(Tata Cara Pengukuran kriteria Baku Kerusakan Tanah Untuk Produksi Biomassa)</i>

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Complex and time-consuming land acquisition procedure

Land acquisition is considered to be relevant to public interest and is closely regulated. The entire process is complex and time-consuming since several actors are involved. For example, a land certificate is only granted for up to 1 ha. In case more than 1 ha land is required, several land certificates must be obtained. The issuance of the land right certificate is under the responsibility of the independent National Land Agency (BPN; *Badan Pertanahan Nasional*) and the local government is not involved and cannot support the process.

Recommendation: The developer should involve a legal expert in the land acquisition process. Sufficient time and resources should be allocated to this step.

(Special case when biomass feedstock is supplied by the palm oil industry)

In this case, the project site is typically located on the palm oil mill (POM) area. The land right certificate is issued under the name of the POM. So, it may not be possible to obtain the land right certificate under the project developer's name.

Recommendation: One possible solution for this is to make a contract with the POM in the way that the biomass/biogas plant is constructed by the POM. Then, the power plant is rented to the project developer.

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Decentralized structure	<p>The Indonesian government structure is highly decentralized. Although, laws are applied uniformly to all regions, implementation procedures might differ depending on the region. Experiences from similar project in other regions are therefore only transferable to a limited extend. For example, the exact requirements, duration, and fees for a principle license (<i>Izin Prinsip</i>) and a location license (<i>Izin Lokasi</i>) are different in each region.</p> <p><u>Recommendation</u>: The project developer should present the project concept to the local government in early stage of project development. The local government can then provide advice on the procedure including exact requirements, fees, and duration.</p>
Unclear fees	<p>For some licensing procedures, information and regulation about associated fees are not widely announced or published.</p> <p><u>Recommendation</u>: The developer should approach the local government to ask for such information.</p>

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Local administration unfamiliar with licensing procedure

The introduction of “one door” services in many local government offices has simplified many licensing procedures for project developers. However local officers must now handle many different types of licenses and may not always be experienced with the procedures and requirements the developer needs to adhere to.

Obtain a Principle License from Local Government

[Sub-step Details](#)[Required Documents](#)

A principal license (*Izin Prinsip*) is issued by the local government to an investor who plans to conduct a business activity in the area. Due to the decentralized structure of the government, the exact procedures and required documents for a principle license application can be different from region-to-region. In some region, it is possible that a principle license and a location license ([Sub-step C2-2](#)) can be obtain at the same time.

Letters of recommendation from several local agencies (e.g. public works, agriculture, environment etc.) may be required for the application for principle license. It is recommend that the developer approaches the local government first. The local government can help in identifying relevant local agencies and may be willing to assist in a meeting arrangement with relevant local agencies.

Related Authorities

Central government	-
Provincial	-
Regency / City	> Head of Regency (<i>Bupati</i>) / Mayor (<i>Kota</i>)

Obtain a Principle License from Local Government

[Sub-step Details](#)[Required Documents](#)

List of required documents

> Filled-in application form

Note: Application form is developed individually by each local government. They are different from region-to-region. The developer should obtain the right form from the local government office.

> Applicant's identity card (KTP; *Kartu Tanda Penduduk*)

> Tax registration code number (NPWP; *Kartu Tanda Penduduk*)

> Proposal describing the investment capital and business plan

> Site layout

Note: Granting of a principle license is under the responsibility of local government. Therefore, the procedure, required documents, and timeframe can be different from region-to-region.

Obtain a Location Permit

[Sub-step Details](#)[Required Documents](#)

The location permit (*Izin Lokasi*) is an instrument used by the local government to control land procurement of companies within its area of responsibility. In Indonesia, acquisition and utilization of land are perceived as public interests and are regulated by the local government. The location permit will allow the developer to buy or lease land for the power plant construction. The developer must inform the local office of the Agency for Land Affairs every three month regarding the progress in land acquisition.

Similar to the principle license ([Sub-step C2-1](#)), the procedures, required documents, and timeframe for obtaining a location permit can be different from region-to-region. In some areas, a principle license and a location permit can be obtained at the same time.

Related Authorities

Central government	-
Provincial	-
Regency / City	<ul style="list-style-type: none">> Head of Regency (<i>Bupati</i>) / Mayor (<i>Kota</i>)> Local office of Agency for Land Affairs

Obtain a Location Permit

[Sub-step Details](#)[Required Documents](#)

List of required documents

> Filled-in application form

Note: Application form is developed individually by each local government. They are different from region-to-region. The developer should obtain the right form from the local government office.

> Principal license from local government

Note: Refer to the [Sub-step C2-1](#)

> Articles of Association of the company

> Applicant's identity card (KTP; *Kartu Tanda Penduduk*)

> Tax registration code number (NPWP; *Kartu Tanda Penduduk*)

> Sketch of the required land

> Project description

Note: Granting of a location permit is under the responsibility of local government. Therefore, the procedure, required documents, and timeframe can be different from region-to-region.

Obtain an Environment Permit

[Sub-step Details](#)
[Required Documents](#)

For biomass/biogas power projects with capacity of up to 10 MW, the developer does not have to perform an environmental impact study (AMDAL; *Analisis dampak lingkungan*). However, it is required to prepare an environmental management and monitoring report (UKL-UPL; *Upaya Pengelolaan Lingkungan Hidup-Upaya Pemantauan Lingkungan Hidup*). The UKL-UPL is an environmental impact assessment similar to the AMDAL, but applicable for activities which do not bear significant risk to the environment. The procedure to obtain UKL-UPL is considerably simpler than for the AMDAL.

The developer must contract a local consultant to prepare the UKL-UPL. The environmental permit will be granted with the approval of the UKL-UPL. The authority, which approves the UKL-UPL, also issues the environment permit.

Relevant authorities for this Sub-step can be different. This depends on the boundary of environmental impacts caused by the project development.

Related Authorities

Central government	Depending on the boundary of environmental impacts of the project, different authorities in different level are relevant to this Sub-step.
Provincial	
Regency / City	

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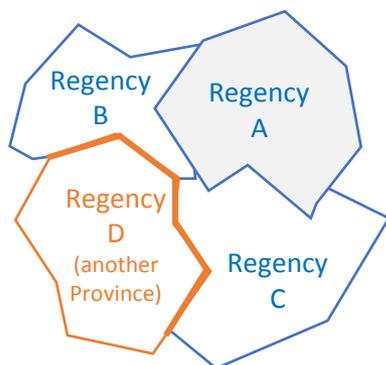
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Obtain an Environment Permit

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Environment impact is limited within Regency A

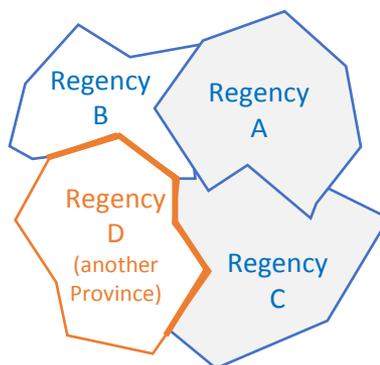


Approval of an environment permit and UKL-UPL evaluation is under jurisdiction of the **respective Regency** (in this case, Regency A)

Related Authorities

- > Head of Regency (*Bupati*) / Mayor (*Kota*)
- > UKL-UPL evaluation committee in regency/city level

Environment impact on Regency A and Regency C (both are still in the same province)

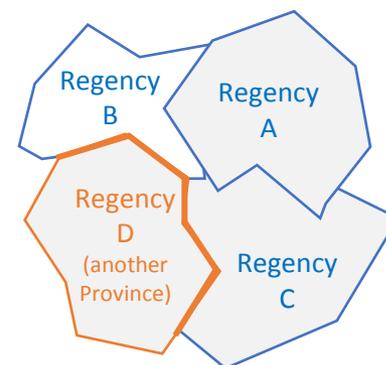


Approval of an environment permit and UKL-UPL evaluation is under jurisdiction of the **respective Provincial Government** (in this case, the Province where Regency A and C are belong to)

Related Authorities

- > Governor
- > UKL-UPL evaluation committee in provincial level

Environment impacts on Regency A, Regency C, and Regency D (on different province)



Approval of an environment permit and UKL-UPL evaluation is under jurisdiction of **the central government**.

Related Authorities

- > Ministry of Environment
- > UKL-UPL evaluation committee in national level

Legend *area of the environmental impact caused by the project*

Obtain an Environment Permit

[Sub-step Details](#)[Required Documents](#)

List of required documents

> Deed of establishment

> Business profile

> Environmental management and monitoring report (UKL-UPL; *Upaya Pengelolaan Lingkungan Hidup-Upaya Pemantauan Lingkungan Hidup*)

Obtain a Water Resource Utilization License

[Sub-step Details](#)[Required Documents](#)

For biomass/biogas project which require external water supply for its boiler (typically, for the installed capacity of more than 3 MW)

If the power plant utilizes water resource for its operation, a water resource utilization license must be obtained. Depending on the scale of water body to be used by the plant, different authorities is responsible for granting the permit.

Related Authorities

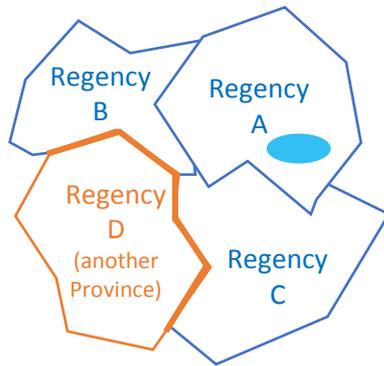
Central government	Depending on the boundary of body of water used by the project, different authorities in different level are relevant to this Sub-step. See Details
Provincial	
Regency / City	

Obtain a Water Resource Utilization License

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Water body used by the project is within Regency A

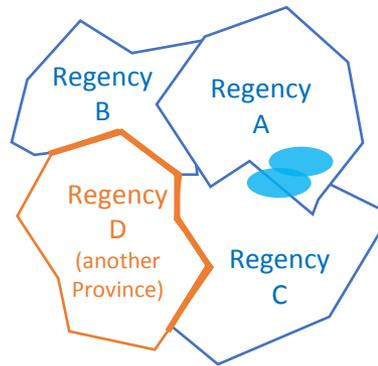


Approval of a water resource utilization license is under jurisdiction of the **respective Regency** (in this case, Regency A)

Related Authorities

> Regency/city office of public works

Water body used by the project is on Regency A and Regency C (both are still in the same province)

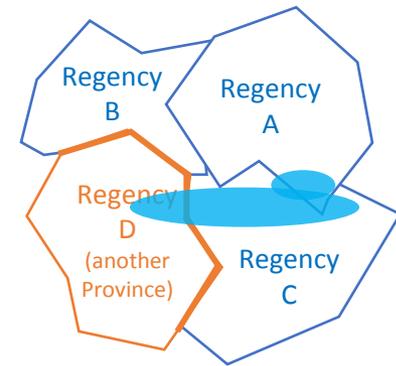


Approval of a water resource utilization license is under jurisdiction of the **respective Provincial Government** (in this case, the Province where Regency A and C are belong to)

Related Authorities

> Provincial office of public works

Water body used by the project is on Regency A, Regency C, and Regency D (different province)



Approval of a water resource utilization license is under jurisdiction of **the central government**.

Related Authorities

> Ministry of Public Works

Legend  *body of water to be used by the project*

Obtain a Water Resource Utilization License

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List of required documents

> Application letter

> Applicant's identity card (KTP; *Kartu Tanda Penduduk*)

> Tax registration code number (NPWP; *Nomor Pokok Wajib Pajak*)

> Principle License (*Izin Prinsip*)

Note: Refer to [Sub-step C2-1](#)

> Location License (*Izin Lokasi*)

Note: Refer to [Sub-step C2-2](#)

> Environment Permit

Note: Refer to [Sub-step C2-3](#)

> Evidence of last tax payment

> Statement letter indicating that the respective water body can be utilized by public (from respective local agencies/local government)

> Location map (in 1:10000 scale)

> Detailed map (in 1:1000 scale)

> Purpose of water utilization

Obtain a Water Resource Utilization License

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List of required documents

> Location and technical description on the method of water removal/disposal

> Recommendations from following local agencies:

1. Office of Spatial Planning and Human Settlement (*Dinas Tata Ruang dan Cipta Karya*)
2. Office of Public Works (*Dinas Pekerjaan Umum*)
3. Environmental Agency (*Badan Lingkungan Hidup*)
4. Natural Resource Section (*Bagian Adm. SDA Setda*)

Land Acquisition

Sub-step Details

This step involves the land acquisition (purchase or lease) including the respective land rights. The developer must obtain either Freehold Right (HM; *Hak Milik*) or Building Right (HGB; *Hak Guna Bangunan*) on the land. Only Indonesian individuals or Indonesian legal entities (which are entirely owned or controlled by Indonesian citizens) can obtain a HM. Foreign investors can only obtain a HGB. Both are granted by the Office for Land Affairs in the regency/city.

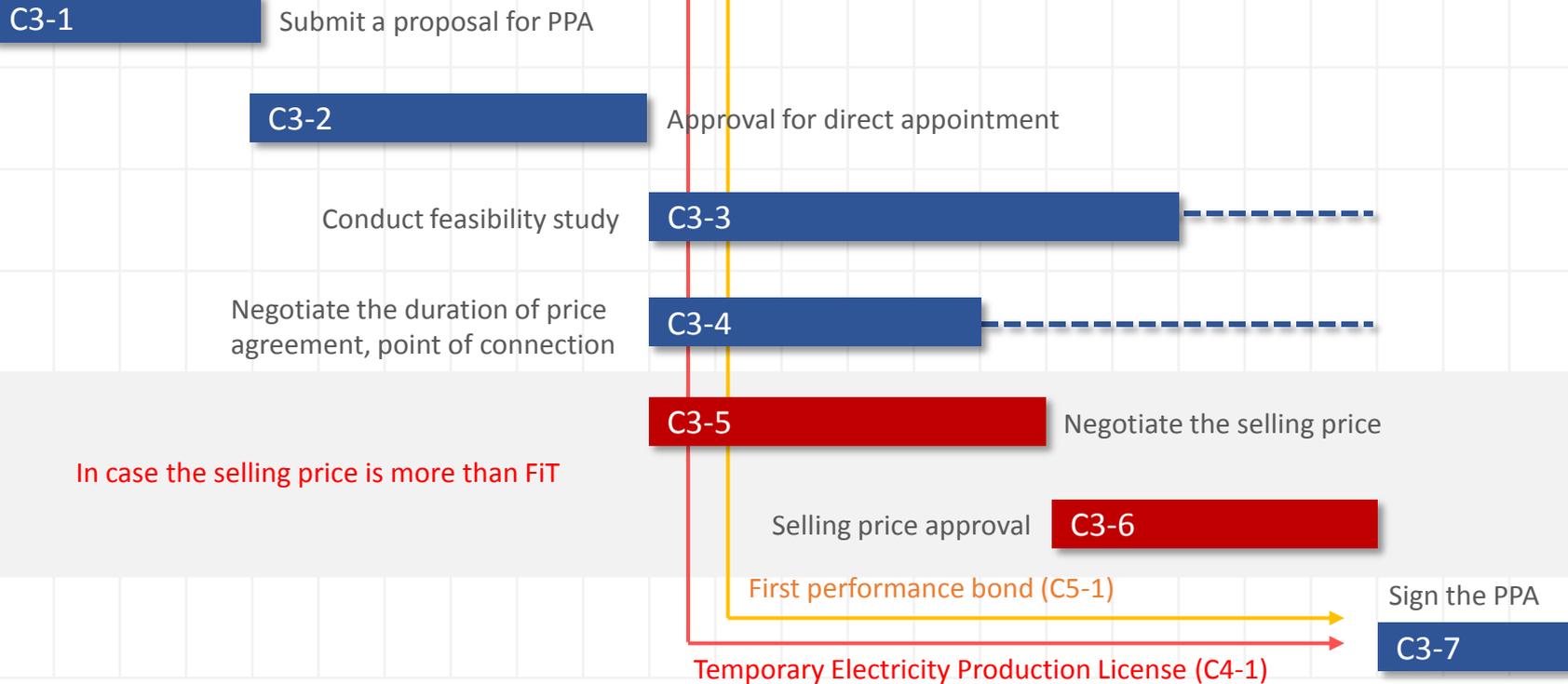
The developer should avoid land which covers more than one regency/city or province. In such case, more authorities will be involved in the process. As the acquisition of land can be complex and time-consuming, the developer should spare sufficient time for this sub-step. It is also recommended that the developer contracts a legal advisor to assist in this process.

The developer can purchase or lease a land only after the location permit (*Izin Lokasi*; [Sub-step C2-2](#)) is granted.

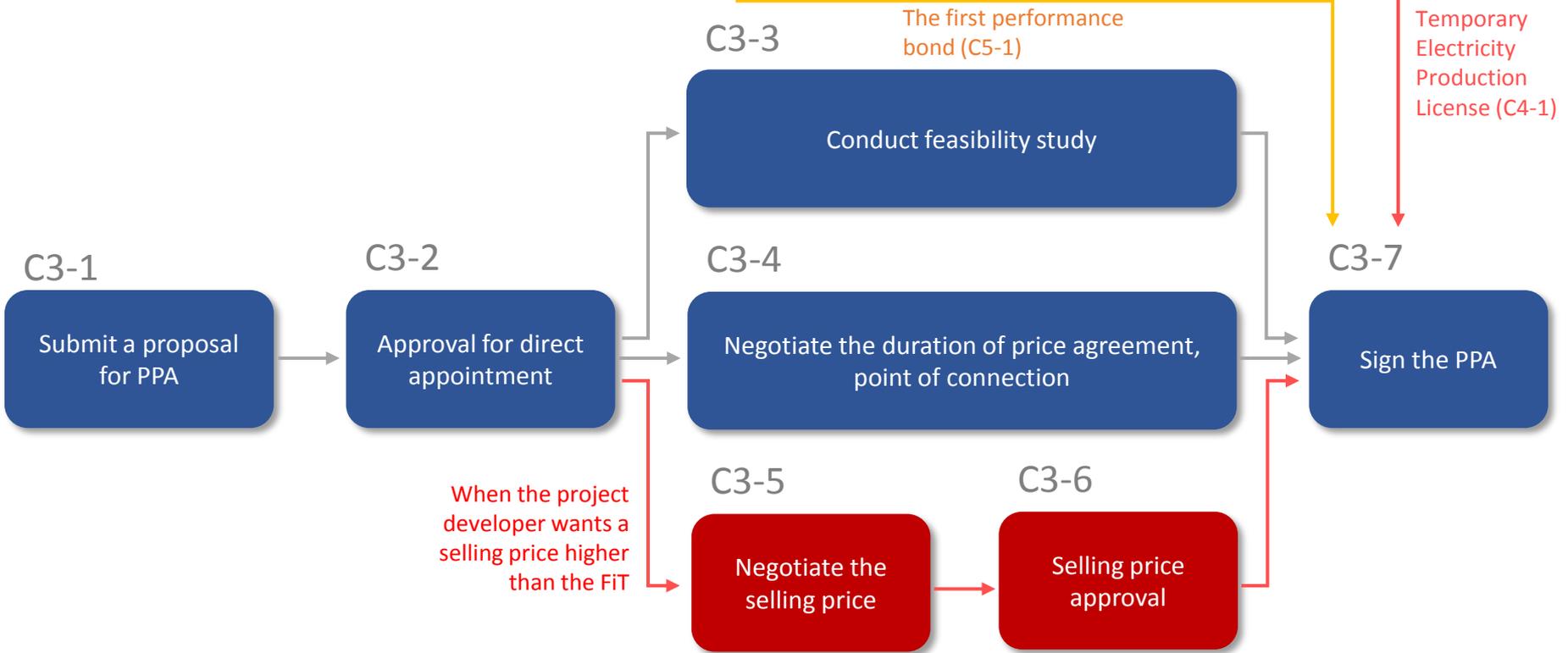
Related Authorities

Central government	-
Provincial	-
Regency / City	> Local office of Land Affairs (<i>BPN Kabupaten/Kota</i>)

Power Purchase Agreement



Power Purchase Agreement



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The Power purchase agreement (PPA) is a legally binding contract between a developer and PLN. In this step, the developer must prepare a PPA proposal, finalize a feasibility study (F/S), negotiate with PLN on the selling price (if applicable), the point of connection, and the duration of selling price agreement. The outcome of this step is a signed PPA between the developer and PLN. It will be required for financial closure ([Sub-step C5-6](#)) and the application for the electricity production license ([Sub-step C4-2](#)). The project developer should perform the PPA step immediately after completion of the Administrative Authorization step ([Chapter 2](#)). In parallel, the Electricity Production License step ([Chapter 4](#)) and Financing step ([Chapter 5](#)) must be undertaken.

In a first step, the developer must submit the PPA application to the respective PLN local office. After evaluation, the PPA proposal is forwarded by the PLN local office to PLN headquarters. If PLN headquarter agrees, a “willingness-to-purchase” letter will be issued to the developer while the proposal will be forwarded to the Ministry of Energy and Mineral Resources (ESDM; *Energi dan Sumber Daya Mineral*) for final approval. Upon receipt of "willingness-to-purchase" letter, the developer can finalize the feasibility study (F/S) which will be needed for PPA signature. At the same time, the negotiations on selling price duration and point of connection must be done with the PLN local office.

If the developer want to sell electricity with a higher price than the established feed-in tariff (FiT) rate, this price has to be negotiated with PLN local office. The agreed selling price must be then approved by the Ministry (ESDM). The PPA can be signed only after the F/S is finalized, the temporary electricity production license is granted ([Sub-step C4-1](#)), and the first performance bond is obtained ([Sub-step C5-1](#)).

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Private sector investment in the Indonesian power sector is governed by the [PP No. 14/2012](#). It can be done through three mechanisms: open tender, direct selection, and direct appointment. However, for a biomass/biogas power project of up to 10 MW, the direct appointment mechanism is normally applied. Indonesia also introduced a fixed FiT for a biomass/biogas project of up to 10 MW in capacity through the [PERMEN ESDM No. 4/2012](#). This regulation obliges PLN to purchase all power produced from RE sources to a fixed price. However, in practice, PLN still can reject the purchase of electricity if it can be proven that it is technically or economically not feasible.

[See more information about Indonesian Guaranteed Price \(Feed-in Tariff\)](#)

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Regulation No.	Name
UU No. 30/2009	Law: Electricity (<i>Ketenagalistrikan</i>)
PP No. 14/2012	Governmental Regulation: Electrical Power Business (<i>Kegiatan Usaha Penyediaan Tenaga Listrik</i>)
PERMEN (ESDM) No. 4/2007	Ministerial Regulation (ESDM): Amendment of the PERMEN (ESDM) No. 1/2006 (Perubahan atas Peraturan Menteri Energi dan Sumber daya Mineral Nomor 001 Tahun 2006) <i>Note: The PERMEN (ESDM) No. 4/2007 amends the PERMEN (ESDM) No. 1/2006</i>

Abbreviations

ESDM: Energi dan Sumber Daya Mineral; Energy and Mineral Resources

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Identified
Challenges

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Regulation No.	Name
PERMEN (ESDM) No. 1/2006	Ministerial Regulation (ESDM): Procedures of Power Purchase and/or Network Lease for Public Interest <i>(Prosedur Pembelian Tenaga Listrik dan/atau Sewa Menyewa Jaringan dalam Usaha Penyediaan Tenaga Listrik untuk Kepentingan Umum)</i> <i>Note: Some parts of The PERMEN (ESDM) No. 1/2006 was amended by the PERMEN (ESDM) No. 4/2007). The others are still in effect.</i>
PERMEN (ESDM) No. 5/2009	Ministerial Regulation (ESDM): Guidelines for Power Purchase by PLN from Cooperatives or other Business Entities <i>(Pedoman Harga Pembelian Tenaga Listrik oleh PT PLN (PERSERO) dari Koperasi atau Badan Usaha Lain)</i>
PERMEN (ESDM) No. 4/2012	Ministerial Regulation (ESDM): PLN's Power Purchase Price from Small to Medium Scale RE Power Plant and Excess Power Purchase <i>(Harga Pembelian Tenaga Listrik oleh PT PLN (PERSERO) dari Pembangkit Tenaga Listrik yang Menggunakan Energi Terbarukan Skala Kecil dan Menengah atau Kelebihan Tenaga Listrik)</i>

Abbreviations

ESDM: Energi dan Sumber Daya Mineral; Energy and Mineral Resources

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Chapter 3 | Power Purchase Agreement

Identified Challenges

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Challenges

Description

Unclear responsibilities regarding the transmission line

There is no clear regulation who has to bear the costs for the transmission between the biomass/biogas power plant and the PLN grid. This issue is especially important if the power plant is located far away from the point of connection. A possible cost sharing for the transmission line can be negotiated with PLN local office; however, this is generally difficult.

Recommendation: The developer should consult with the PLN local office already during site selection in order to identify possible connection points. This might help to avoid a large distance between the power plant and the connection point. In case the power plant is built in high electricity demand area, it will be more likely that PLN agrees to share the cost of transmission line with the project developer.

Point of connection

There is no clear regulation regarding the point of connection to the grid. PLN reserves the right to determine the point of connection, which sometimes can be very distant from the power plant location.

Recommendation: The project developer should consult with the PLN local office already during site selection in order to identify possible connection points. This might help to avoid a large distance between the power plant and the connection point.

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Chapter 3 | Power Purchase Agreement

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Challenges	Description
Unattractive feed-in tariff	The FiT is relatively low and makes investment in biomass/biogas power plants only attractive under very conducive circumstances. Furthermore, the FiT does not foresee adjustments over time. The developer or investor bears the risk of currency exchange rate and inflation. It is possible to negotiate with PLN for an escalation FiT; however, this is generally difficult.
Time-consuming procedure	The entire PPA process can take relatively long and there is no procedural difference between large-scale and small-scale projects. The share of transaction cost related to the PPA is therefore relatively high for smaller projects.
Negative experience with previous projects	<p>Some PLN local offices have made bad experiences during previous unsuccessful projects, making PLN generally more cautious in evaluating PPA proposals. This is especially the case for “new” project developers without sufficient track record yet. In some cases, PLN may very strict very strict requirements for the PPA proposal application process by asking for numerous documents.</p> <p><u>Recommendation:</u> A high quality pre-feasibility study needs to be developed and presented for the PPA application. Project developers without significant track-record in Indonesia are advised to team up with experienced (local) consultants.</p>

Chapter 3 | Power Purchase Agreement

Identified Challenges

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Challenges

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Challenges

Description

Unfamiliarity with biomass/biogas PPA	In some regions, the PLN local office may not have a lot of experience with biomass/biogas or any other RE power project. Local officers may be unfamiliar with the exact procedures. This can slow down the process significantly.
Change of regulations	Due to the on-going fast development in the Indonesian RE sector, regulations are relatively often adjusted or changed. This potentially causes uncertainty for developers and investors.

Submit a PPA Proposal

[Sub-step Details](#)[Required Documents](#)

Project developer submits a PPA proposal to the PLN local office. The application will be evaluated by the PLN local office by conducting a n operational feasibility study (KKO; *Kajian Kelayakan Operasi*), a financial feasibility study (KKF; *Kajian Kelayakan Finansial*), and a risk assessment (RA). When the results are satisfying, PLN local office submits the application along with its studies to PLN headquarters (Renewable Energy Department).

The PPA application must be supported by the a financial prove. The developer must show that 10% of the minimum project cost is already available in a dedicated bank account. In addition, the bank has to issue a letter of guarantee saying that the fund can only be used for project development.

Related Authorities

Central government	> PLN headquarter (Renewable Energy Division)
Provincial	
Regency / City	> PLN local office

Submit a PPA Proposal

[Sub-step Details](#)[Required Documents](#)Page 1/2 [>](#)

List of required documents

Administration and technical documents

- > Application letter to PLN
- > Applicant's identity card (KTP; *Kartu Tanda Penduduk*)
- > Official corporate establishment document
- > Company profile
- > Tax registration code number (NPWP; *Nomor Pokok Wajib Pajak*)
- > Pre-feasibility study (pre-F/S)
Note: Refer to [Sub-step C1-9](#)
- > Principal License (*Izin Prinsip*) from local government
Note: Refer to [Sub-step C2-1](#)
- > Details of main equipment from the manufacturer
Note: It must be confirmed that continuous operation for more than 15,000 hours can be achieved
- > Short list of three EPC firms
Note: The EPC firms must have sufficient experience in power plant development with capacity of at least 50% of the current project capacity (in term of MW)

Submit a PPA Proposal

[Sub-step Details](#)[Required Documents](#)[< Page 2/2](#)

List of required documents

Administration and technical documents (cont.)

> Plant capacity [MW]

> Main configuration of power plant

Note: The PLN electrical relay station where the power plant will be connected to must be clearly indicated

> Details of the distribution network that connecting the power plant to PLN's relay station

> Signed draft PPA

Note: A PPA template can be obtained directly from PLN local office

> Biomass feedstock contract (fuel supply agreement; FSA)

Note: The biomass lab test must be included, Refer to [Sub-step C1-7](#)

> Plant operator contract

Note: Refer to [Sub-step C1-8](#)

> Soil investigation

Note: Refer to [Sub-step C7-2](#)

Selling Price

> Selling Price in IDR/kWh without adjustment rate

Approval for Direct Appointment

Sub-step Details

In case PLN headquarters agrees with the evaluation of PLN local office, the proposal for direct appointment is submitted to the Ministry of Energy and Mineral Resources (ESDM; *Energi dan Sumber Daya Mineral*) for approval. At this point of time, the PLN local office issues a formal 'willingness to purchase' to allow the developers to proceed with the feasibility study (F/S) preparation ([Sub-step C3-3](#)).

The project developer will be notified when the approval of direct appointment is granted by the Ministry (ESDM). After the direct appointment approval is obtained, the project developer can apply for a temporary electricity production license (IUPTL/S; *Ijin Usaha Penyediaan Tenaga Listrik Sementara*) at the Directorate General for Electricity ([Sub-step C4-1](#))

Related Authorities

Central government	<ul style="list-style-type: none">> PLN headquarter (Renewable Energy Division)> Ministry of Energy and Mineral Resource (ESDM)
Provincial	
Regency / City	<ul style="list-style-type: none">> PLN local office

Conduct Feasibility Study

Sub-step Details

When the project developer receives the ‘willingness to purchase’ letter from the PLN local office ([Sub-step C3-2](#)), the feasibility study (F/S) can immediately be prepared and finalized. The F/S must be completed prior to the PPA signing ([Sub-step C3-7](#)). The developer may contract an experienced RE consultant to prepare the F/S.

Negotiate the Duration of Selling Price and Point of Connection

Sub-step Details

The developer must negotiate with the PLN the duration of the selling price as well as agree on the point of connection. In addition, the costs for the transmission line connecting the power plant to the point of connection is subjected to negotiation. As a rule of thumb, when the length is more than 8 km, cost sharing is likely. In case the length is less than 8 km, the developer most probably has to bear the costs.

In case the project value is more than 50 billion IDR (approx. 4 Mio USD, Apr 2014), the PLN local office must obtain a principal license from the board of directors of PLN headquarters prior to PPA signing ([Sub-step C3-7](#)). For project value of less than 50 billion IDR, the general manager of PLN local office can approve the price and proceed with the PPA signature.

Remark: This principle license indicated here in an internal document of PLN. It must not to be confused with the principle license from the local government or the principle license for investment

Related Authorities

Central government	> PLN headquarter (Renewable Energy Division)
Provincial	
Regency / City	> PLN local office

Negotiate the Selling Price

Sub-step Details

Only in case the project developer wants to sell electricity with a price higher than FiT

It is possible to sell power to PLN with a higher price than the FiT stipulated by [PERMEN \(ESDM\) No. 4/2012](#). The project developer must negotiate with PLN local office to reach an agreed selling price. The result of the price negotiation must be proposed to the Ministry of Energy and Mineral Resources (ESDM; *Energi dan Sumber Daya Mineral*) for approval.

Related Authorities

Central government	> PLN headquarter (Renewable Energy Division)
Provincial	
Regency / City	> PLN local office

Negotiate the Selling Price

Sub-step Details

Only in case the project developer wants to sell electricity with a price higher than FiT

After the price negotiation with PLN ([Sub-step C3-5](#)), the agreed selling price must be submitted to the Ministry of Energy and Mineral Resource (ESDM; *Energi dan Sumber daya Mineral*) for approval. The PLN local office will forward this document to the Ministry (ESDM). The developer shall follow-up on this approval.

Related Authorities

Central government	<ul style="list-style-type: none">> PLN headquarter (Renewable Energy Division)> Ministry of Energy and Mineral Resources (ESDM)
Provincial	
Regency / City	<ul style="list-style-type: none">> PLN local office

Sign a PPA

[Sub-step Details](#)[Required Documents](#)

The signature of the power purchase agreement (PPA) can be done immediately after the selling price is approved by the Minister of ESDM ([Sub-step C3-6](#)) (in case of the selling price is higher than the stipulated FiT) or after the feasibility study (F/S) is finalized ([Sub-step C3-3](#)) and an agreement on selling price duration and point of connection have been reached ([Sub-step C3-4](#)).

Before the PPA can be signed, the project developer must also obtain the first performance bond from a bank ([Sub-step C5-1](#)) and a temporary electricity production license (IUPTL; *Ijin Usaha Penyediaan Tenaga Listrik Sementara*) ([Sub-step C4-1](#)).

Related Authorities

Central government	-
Provincial	
Regency / City	> PLN local office

Sign a PPA

[Sub-step Details](#)[Required Documents](#)

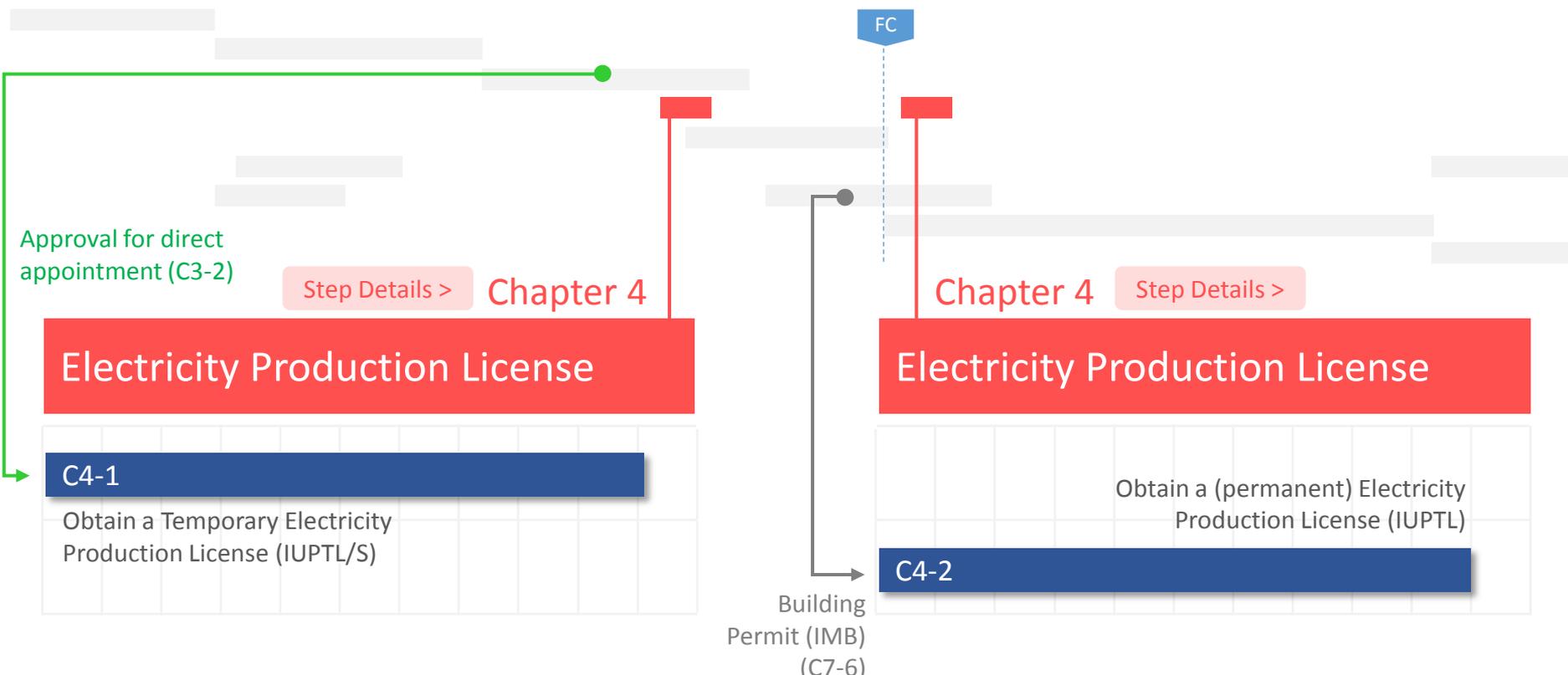
List of required documents

From the project developer

- > Approval for direct appointment – Refer to [Sub-step C3-2](#)
- > Temporary electricity production license (IUPTL/S; *Ijin Usaha Penyediaan Tenaga Listrik Sementara*)
Note: Refer to [Sub-step C4-1](#)
- > The first performance bond
Note: Refer to [Sub-step C5-1](#)
- > Bank statement showing that at least 10% of the investment costs is available
- > Necessary licenses
Note: Important licenses/permits are listed in [Chapter 2](#)

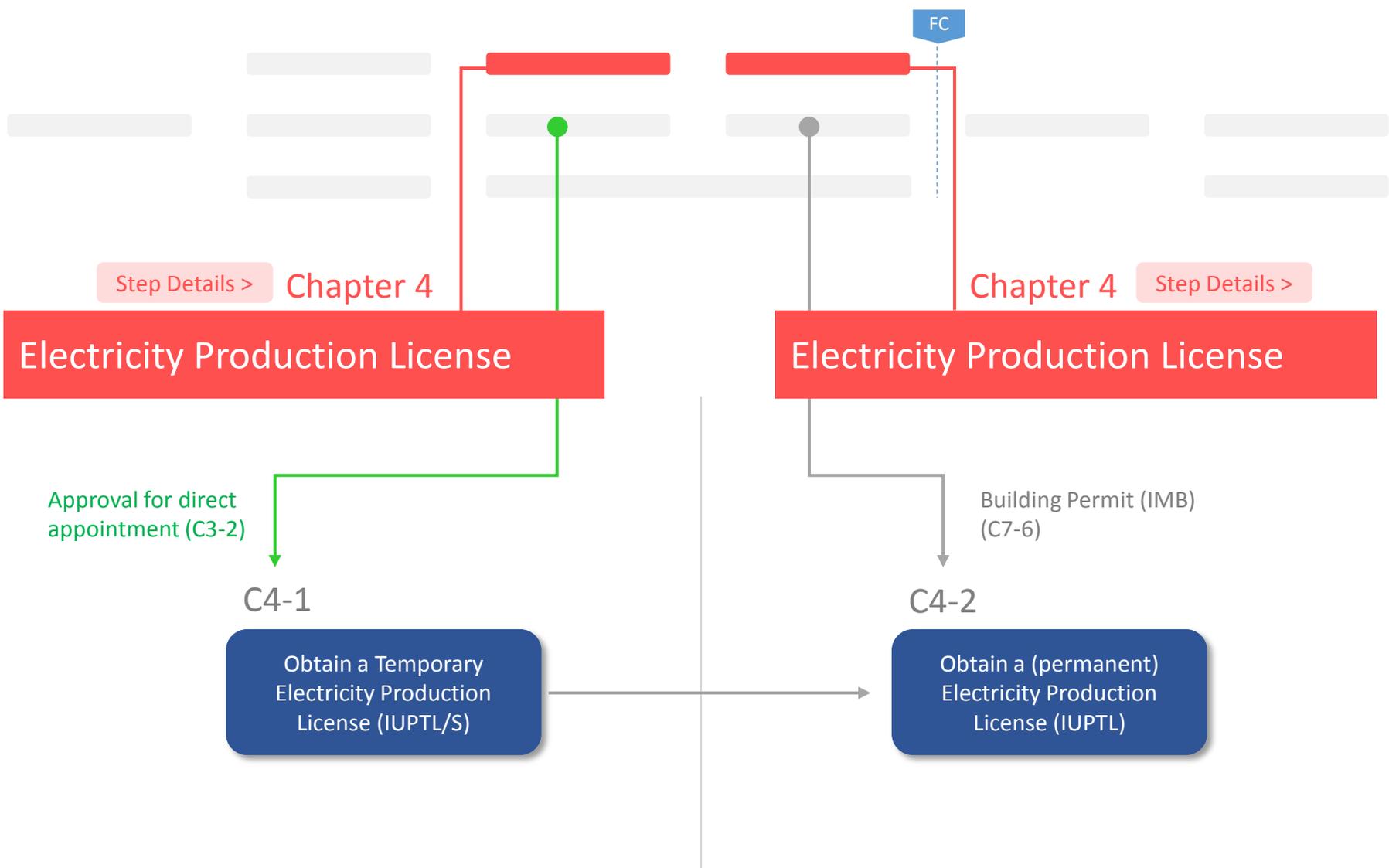
From PLN

- > An operational feasibility study (KKO; *Kajian Kelayakan Operasi*), a financial feasibility study (KKF; *Kajian Kelayakan Finansial*), and a risk assessment (RA)
Note: All of these are prepared by the PLN local office, Refer to [Sub-step C3-2](#)
- (In case the project value is more than 50 billion IDR, approx. 4 million USD – as of April 2014)*
- > A principle license PLN Headquarter signed by the board of director
Note: Refer to [Sub-step C3-4](#)



Abbreviations

IMB: Izin Mendirikan Bangunan; Building Permit
 IUPTL: Ijin Usaha Penyediaan Tenaga Listrik; Electricity Production License
 IUPTL/S: Ijin Usaha Penyediaan Tenaga Listrik Sementara; Temporary Electricity Production License



Abbreviations

IMB: Izin Mendirikan Bangunan; Building Permit
 IUPTL: Ijin Usaha Penyediaan Tenaga Listrik; Electricity Production License
 IUPTL/S: Ijin Usaha Penyediaan Tenaga Listrik Sementara; Temporary Electricity Production License

Chapter 4 | Electricity Production License

Step Description

Step
Description

Related
Regulations

Identified
Challenges

In the Electricity Production License step, the developer need to get the permission to run a power business and generate electricity in Indonesia. This step is divided into two parts. Firstly, a temporary electricity production license (IUPTL/S; *Ijin Usaha Penyediaan Tenaga Listrik Sementara*) must be obtained. This should be done immediately after receipt of an approval for direct appointment ([Sub-step C3-2](#)). The IUPTL/S is required before PPA signature ([Sub-step C3-7](#)).

Secondly, a (permanent) electricity production license (IUPTL; *Ijin Usaha Penyediaan Tenaga Listrik*) must be obtained. This can be done at a later stage, after the building permit (IMB; *Izin Mendirikan Bangunan*) is granted ([Sub-step C7-6](#)). The IUPTL must be obtained before the commercial operation date (COD) ([Sub-step C8-3](#))

The term IUPTL has just been introduced by the [PP No. 14/2012](#). The implementation regulation regarding the IUPTL has been issued in 2013 by the [PERMEN No. 35/2013](#).

Chapter 4 | Electricity Production License

Related Regulations

?

Step
Description

Related
Regulations

Identified
Challenges

Regulation No.	Name
UU No. 30/2009	Law: Electricity (<i>Ketenagalistrikan</i>)
PP No. 14/2012	Governmental Regulation: Electrical Power Business (<i>Kegiatan Usaha Penyediaan Tenaga Listrik</i>)
PERMEN (ESDM) No. 35/2013	Ministerial Regulation: Licensing Procedure for Electrical Power Business (<i>Tata Cara Perizinan Usaha Ketenagalistrikan</i>)

Chapter 4 | Electricity Production License

Identified Challenges

Step
Description

Related
Regulations

Identified
Challenges

Challenges

Description

-	No significant challenges are identified.
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Obtain a Temporary Electricity Production License (IUPTL/S)

[Sub-step Details](#)[Required Documents](#)

Once the direct appointment approval is granted by the Ministry of Energy and Mineral Resources (ESDM; *Energi dan Sumber Daya Mineral*) ([Sub-step C3-2](#)), the project developer can apply for a temporary electricity production license (IUPTL/S; *Ijin Usaha Penyediaan Tenaga Listrik Sementara*). The IUPTL/S must be obtained before signature of the PPA ([Sub-step C3-7](#)). The IUPTL/S is valid for two years and must later be converted into a (permanent) electricity production license (IUPTL; *Ijin Usaha Penyediaan Tenaga Listrik*) ([Sub-step C4-2](#))

The entire process takes around 30 days after complete document submission. The application must be submitted to the Directorate General for Electricity, Ministry of Energy and Mineral Resources (ESDM)

Related Authorities

Central government	> Directorate General for Electricity (Ministry of Energy and Mineral Resources; ESDM)
Provincial	-
Regency / City	-

Obtain a Temporary Electricity Production License (IUPTL/S)

[Sub-step Details](#)[Required Documents](#)

List of required documents

- > Filled-in application form
- > Applicant's identity (KTP; *Kartu Tanda Penduduk*)
- > Deed of establishment
- > Company profile
- > Tax registration code number (NPWP; *Nomor Pokok Wajib Pajak*)
- > Pre-feasibility study
Note: Refer to [Sub-step C1-9](#)
- > Type of power generation and installed capacity
- > Construction schedule
- > Location permit (*Izin Lokasi*)
Note: Refer to [Sub-step C2-2](#)
- > Letter of direct appointment
Note: Refer to [Sub-step C3-2](#)

Obtain an (permanent) Electricity Production License (IUPTL)

[Sub-step Details](#)
[Required Documents](#)

After the PPA is signed ([Sub-step C3-7](#)) and all necessary licenses are obtained including the Building Permit (IMB; *Izin Mendirikan Bangunan*) ([Sub-step C7-6](#)), the project developer can apply for a (permanent) Electricity Production License (IUPTL; *Ijin Usaha Penyediaan Tenaga Listrik*). The project developer must prove that the project location is in accordance to the National Electricity Supply Master Plan (RUPTL; *Rencana Usaha Penyediaan Tenaga Listrik*) (refer to [Chapter 1](#))

The IUPTL is valid for 15 years. The project developer must obtain the IUPTL before the commercial operation date (COD) of the plant ([Sub-step C8-3](#)). Similar to the Temporary Electricity Production License (IUPTL/S; *Ijin Usaha Penyediaan Tenaga Listrik Sementara*), the IUPTL will be granted by the Directorate General for Electricity. The entire process takes around 30 days after complete document submission.

Related Authorities

Central government	> Directorate General for Electricity (Ministry of Energy and Mineral Resources; ESDM)
Provincial	-
Regency / City	-

Obtain an (permanent) Electricity Production License (IUPTL)

[Sub-step Details](#)[Required Documents](#)

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List of required documents

- > Filled-in application form
- > Applicant's identity (KTP; *Kartu Tanda Penduduk*)
- > Deed of establishment
- > Company profile
- > Tax registration code number (NPWP; *Nomor Pokok Wajib Pajak*)
- > A loan agreement
Note: Refer to [Sub-step C5-4](#)
- > Feasibility study
Note: Refer to [Sub-step C3-3](#)
- > Site layout including situational map
Note: Refer to [Sub-step C7-1](#)
- > Single line diagram
- > Type of power generation and installed capacity
- > Construction and operational schedule

Obtain an (permanent) Electricity Production License (IUPTL)

[Sub-step Details](#)[Required Documents](#)[< Page 2/2](#)

List of required documents

(In case the selling price is higher than the stipulated feed-in tariff)

> Approved electricity selling price

Note: Refer to [Sub-step C3-6](#)

> Approved Environmental Management and Monitoring (UKL-UPL; *Upaya Pengelolaan Lingkungan Hidup-Upaya Pemantauan Lingkungan Hidup*)

Note: Refer to [Sub-step C2-3](#)

> Building Permit (IMB; *Izin Mendirikan Bangunan*)

Note: Refer to [Sub-step C7-6](#)

> Principle License (*Izin Prinsip*) from local government

Note: Refer to [Sub-step C2-1](#)

> Other necessary licenses/permits

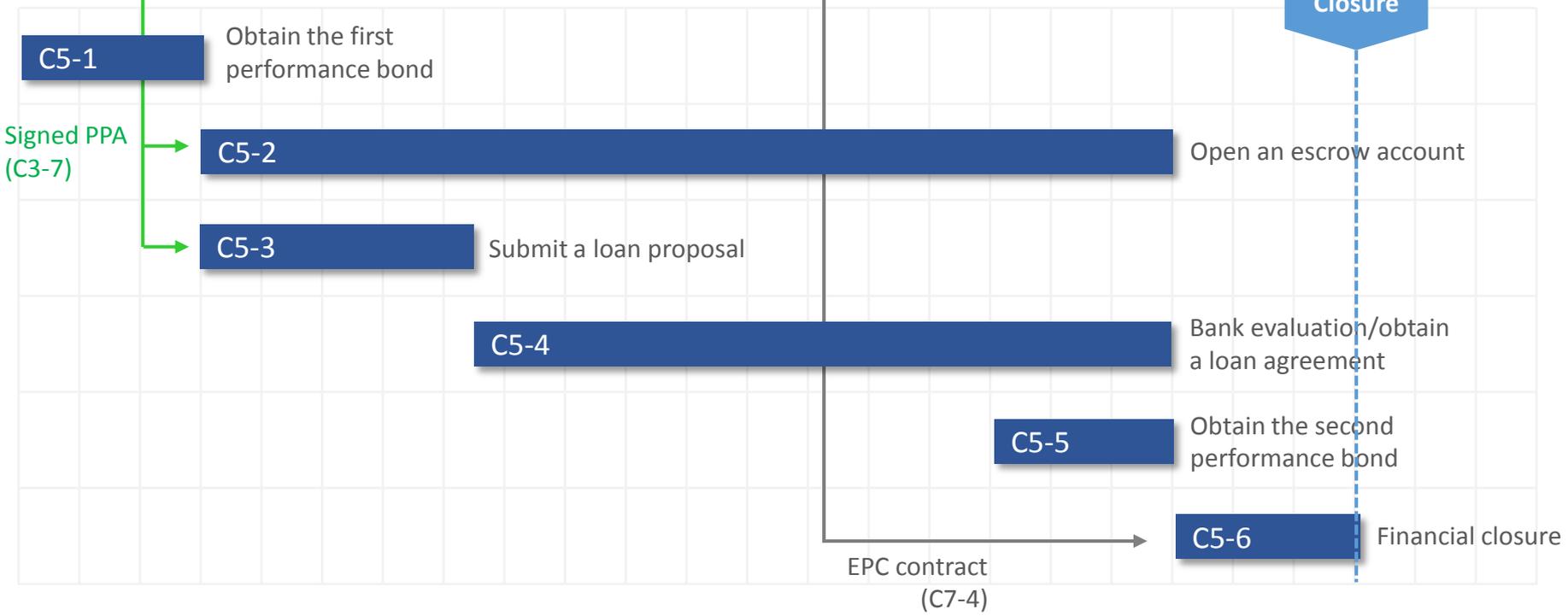
Note: Important licenses/permits are listed in [Chapter 2](#)

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Step Details > Chapter 5

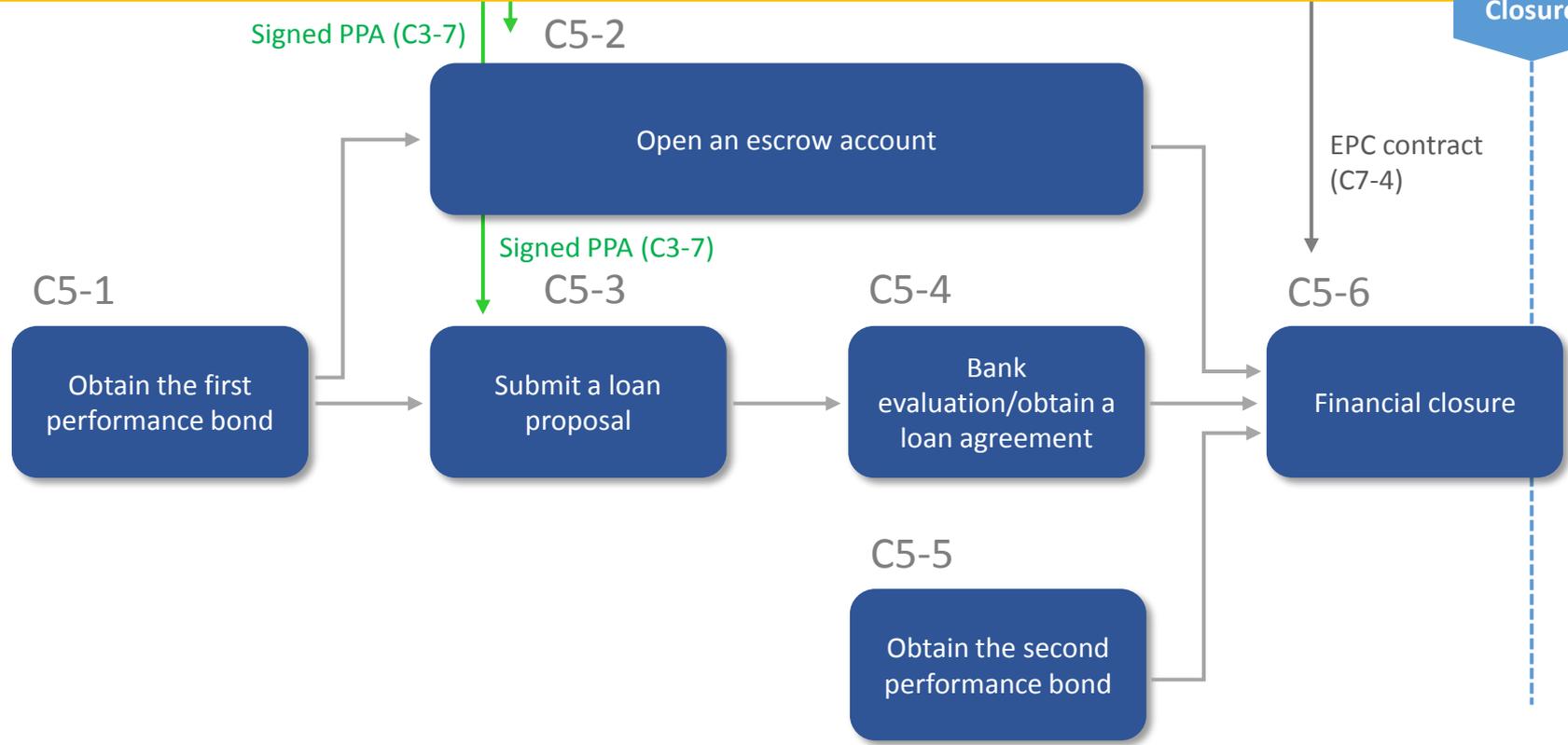
Financing

Financial Closure



Financing

Financial Closure



Chapter 5 | Financing

Step Description

Step
Description

Related
Regulations

Identified
Challenges

The Financing step includes, first of all, to secure the loan from a bank/investor and to satisfy the financial requirements set by PLN such as performance bonds or an escrow account. In this step, project developer must obtain two performance bonds, open an escrow account, submit the loan proposal to a bank, and seek financial closure.

Firstly, the developer must obtain the first performance bond before the signature of a power purchase agreement (PPA). After the PPA is signed ([Sub-step C3-7](#)), the developer must open an escrow account and can, at the same time, submit a loan proposal to a bank/investor. There is no specific regulatory framework, no long track record and no common standards regarding RE project financing in Indonesia. Therefore, each bank may request different documents to be included in a loan proposal.

After the bank approves a loan, financial closure can be secured. For project related expenses before financial closure, the developer can use the escrow account, but it must be continuously topped up. Finally, immediately after financial closure, the second performance bond must be obtained. The second performance bond must be valid until commercial operation date (COD) ([Sub-step C8-3](#)).

The Financing step must be implemented in parallel to the PPA step ([Chapter 3](#)) and, at a later stage, the Planning and Engineering step ([Chapter 7](#)).

In Indonesia, RE projects are usually financed through corporate financing (“recourse”). Financial institutes are often more confident with biomass power project compared to biogas project. This is because the technology for biomass combustion is rather similar to conventional fuel combustion which they are familiar with.

Chapter 5 | Financing

Related Regulations

?

Step
Description

Related
Regulations

Identified
Challenges

Regulation No.	Name
-	There is no specific regulation for financing of RE projects in Indonesia.

Chapter 5 | Financing

Identified Challenges

Step
Description

Related
Regulations

Identified
Challenges

Challenges	Description
Differing procedures	There is no specific law or regulation regarding financing of RE projects in Indonesia. Therefore, each bank develops their own procedure for a loan application. Different bank may ask for different list of documents for a loan evaluation.
Lack of experience with RE projects	Local banks may not have much experience in financing RE projects. This is reflected in relatively high interest rates and short credit payback duration. Most of the time, high collateral is requested from the bank for RE projects or a very comprehensive financial record from project developer is required. This is more critical for new project developers with small portfolio and lacking track record in Indonesia.
Bankability of PPA	A signed PPA is perceived only as one requirement for a loan application among several others. The signed PPA does not automatically build up a confidence of the banks and has only limited influence on the loan evaluation.

Obtain the First Performance Bond

Sub-step Details

Project developer must obtain a first performance bond from a local bank. The performance bond is required by PLN prior to the PPA signature ([Sub-step C3-7](#)). The bond is used as a guarantee, ensuring that the project developer will complete the project as committed to PLN.

The first performance bond must be valid from the date of PPA signature until one year after the financial closure ([Sub-step C5-6](#)). The minimum value is 2.5% of the estimated capital investment.

Open an Escrow Account

Sub-step Details

After the PPA is signed ([Sub-step C3-7](#)), the project developer must open an escrow account with a bank within two weeks. The escrow account is an account which is temporary held by a third party (the bank) to ensure that the developer will actually implements the project.

The developer are allowed to withdraw money from the escrow account and use it only for the project development activities (e.g. payment to EPC contractor etc.) However, the escrow account cannot be completely emptied, it must be topped-up regularly. The escrow account will be kept until financial closure ([Sub-step C5-6](#)). PLN determines a minimum value of escrow account.

Prepare a Loan Proposal

Sub-step Details

Project developer prepares a proposal to a bank/investor to obtain necessary financing for the project development. The developer may consult with a local financial advisor in preparing the loan proposal. Sufficient information must be included as part of the proposal to build up confidence of the banker. Typically, the financial institute expects that:

- the developer teams up with strong and reliable local partners (Indonesian);
- the developer and project sponsor(s) contribute sufficient equity for the project. The minimum equity should be 30%;
- the EPC contractor with sufficient experience with RE projects;
- reliable supply of biomass feedstock has already been secured;
- Etc.

Evaluation by Bank/Obtain a Loan Agreement

Sub-step Details

The financial institute performs a due diligence to evaluate the project developer's capability in carrying out the project. If agreed, the banker will forward the proposal to the respective credit committee for final approval.

The evaluation by bank can take around 2-3 months. If the bank agrees to finance the project, the loan or credit agreement will be provided to the project developer.

Obtain the Second Performance Bond

Sub-step Details

Project developer must obtain a second performance bond from a local bank before financial closure ([Sub-step C5-6](#)). The second performance bond must be valid for two year and a month after a commercial operation date (COD) ([Sub-step C8-3](#)). The value is 5% of the annual transaction value per kWh sale according to the PPA.

Financial Closure

[Sub-step Details](#)[Required Documents](#)

The financial closure can be done after signature of the PPA ([Sub-step C3-7](#)). In addition, all project and financial documents must be signed (e.g. loan agreement etc.) and all the pre-conditions must be fulfilled (e.g. acquisition of necessary permits/licenses etc.). The financial closure allows the project developer to start physical construction of the power plant.

The first performance bond will be returned and be replaced by the second performance bond ([Sub-step C5-5](#)).

Financial Closure

[Sub-step Details](#)[Required Documents](#)

List of required documents

> All necessary licenses/permits

Note: Important licenses/permits are listed in [Chapter 2](#)

> Loan or credit agreement

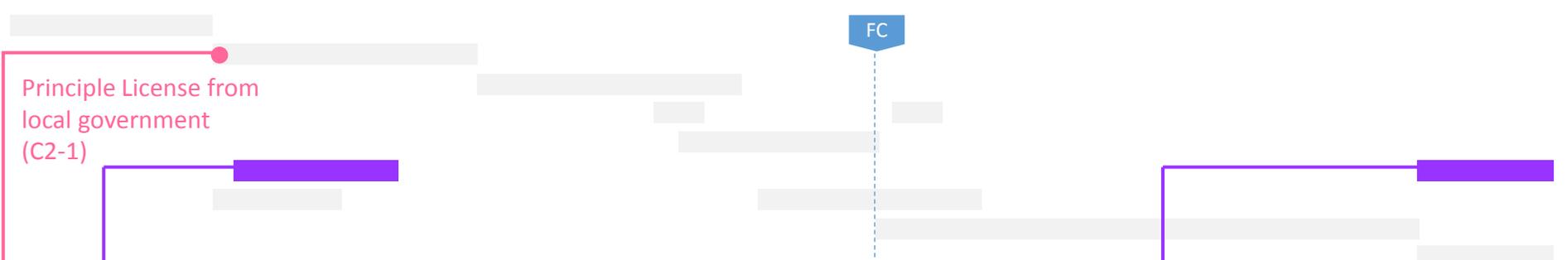
Note: Refer to [Sub-step C5-4](#)

> Clearing of the first fund

> Second phase of implementation security

Note: Refer to [Sub-step C5-5](#)

> Letter of insurance policy



Principle License from local government (C2-1)

Chapter 4 [Step Details >](#)

Corporate Fiscal/Legal

C6-1	Obtain a Principle License for Investment
C6-2	

Chapter 4 [Step Details >](#)

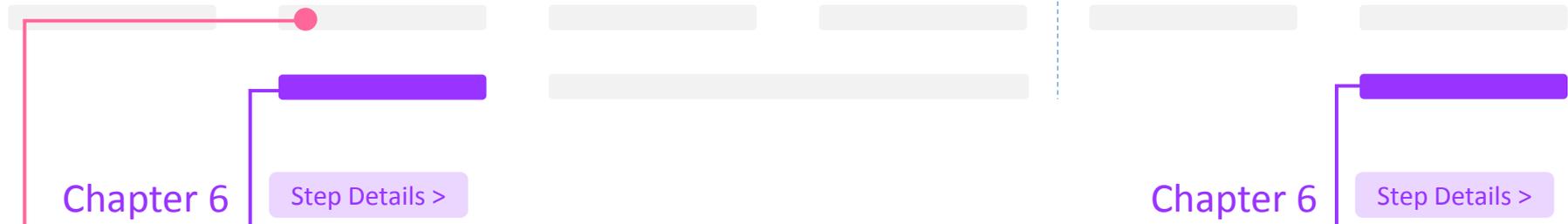
Corporate Fiscal/Legal

Establish a special purpose company (SPC)

Obtain income tax exemption

C6-3	

cont. →



Chapter 6

[Step Details >](#)

Corporate Fiscal/Legal

Principle License from local government (C2-1)

C6-1

Obtain a Principle License for Investment

C6-2

Establish a special purpose company (SPC)

Chapter 6

[Step Details >](#)

Corporate Fiscal/Legal

C6-3

Obtain income tax exemption

cont. →

Chapter 6 | Corporate Fiscal/Legal

Step Description

Step
Description

Related
Regulations

Identified
Challenges

Corporate Fiscal/Legal step is to establish a special purpose company (SPC) in Indonesia to carry out a biomass/biogas project and to obtain possible exemption on income tax. This step consists of two parts.

In the first part, a Principle License for Investment from the Indonesia Investment Coordinating Board (BKPM; *Badan Koordinasi Penanaman Modal Republik Indonesia*) must be obtained. This can be done as soon as a Principle License (*Izin Prinsip*) from the local government is granted ([Sub-step C2-1](#)). In addition, a SPC has to be established and legalized. A new SPC is usually formed for development of biomass/biogas projects to limit the risk for the investors. Establishing an SPC in Indonesia can be a complicating and lengthy process. The developer should do it as soon as possible and with assistance from a legal consultant. This first part of the Corporate Fiscal/Legal step takes place in parallel to the Administrative Authorization step ([Chapter 2](#)).

In the second part of the Corporate Fiscal/Legal step, the developer can seek for an income tax exemption. This can be done right after the commercial operation date (COD).

Chapter 6 | Corporate Fiscal/Legal

Related Regulations

?

Step
Description

Related
Regulations

Identified
Challenges

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Regulation No.	Name
UU No. 25/2007	Law: Investment (<i>Penanaman Modal</i>)
PERPRES No. 36/2010	Law: Negative List of Investment (<i>Daftar Bidang Usaha Yang Tertutup Dan Bidang Usaha Yang Terbuka Dengan Persyaratan Di Bidang Penanaman Modal</i>)
PERMEN (Finance) No.21/PMK.011/2010	Ministerial Regulation (Finance): Regulation of tax and customs facility for renewable energy resources utilization activities (<i>Pemberian Fasilitas Perpajakan Dan Kepabeanan Untuk Kegiatan Pemanfaatan Sumber Energi Terbarukan</i>)
PERMEN (Finance) No.130/PMK.011/2011	Ministerial Regulation: Provision of exemption facilities or reduction of income tax (<i>Pemberian Fasilitas Pembebasan Atau Pengurangan Pajak Penghasilan Badan</i>)
PERKA (BKPM) No. 12/2013	BKPM's Regulation: Amendment of PERKA (BKPM) No. 5/2013 (<i>Perubahan Atas Peraturan Kepala Badan Koordinasi Penanaman Modal Nomor 5 Tahun 2013</i>) <i>Note: PERKA (BKPM) amends some articles of PERKA (BKPM) No. 5/2013.</i>

Abbreviation BKPM: Badan Koordinasi Penanaman Modal Republik Indonesia, Indonesia Investment Coordinating Board

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Regulation No.	Name
PERKA (BKPM) No. 5/2013	BKPM's Regulation: Guidelines and Procedures for Licensed and Non-licensed investment <i>(Pedoman Dan Tata Cara Perizinan Dan Nonperizinan Penanaman Modal)</i> <i>Note: Some articles of PERKA (BKPM) No. 5/2013 are amended by PERKA (BKPM) No. 12/2013. Other articles remain in effect.</i>

Abbreviation BKPM: Badan Koordinasi Penanaman Modal Republik Indonesia, Indonesia Investment Coordinating Board

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Chapter 6 | Corporate Fiscal/Legal

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Complicating and time-consuming procedure

The establishment of a special purpose company (SPC) under Indonesian law can be very complicating and time-consuming.

Recommendation: Project developers should contract a legal consultant to assist in a SPC establishment.

Obtain a Principle License for Investment

[Sub-step Details](#)
[Required Documents](#)

A principal license for investment is issued by the Indonesia Investment Coordinating Board (BKPM; *Badan Koordinasi Penanaman Modal Republik Indonesia*). A principle license from respective local government ([Sub-step C2-1](#)) is a prerequisite of this sub-step.

According to the requirements on the “negative list of investment” ([PERPRES No. 36/2010](#)), foreign investment on electricity generation project is allowed for more than 1 MW. Minimum share of 5% from Indonesian entity is also required in this case. Investment on a small power plant of up to 1 MW is reserved for a small and medium enterprises (SME).

Note: Principle license for investment is granted by BKPM. It is different from principle license granted by local government ([Sub-step C2-1](#))

Related Authorities

Central government	> Indonesia Investment Coordinating Board (BKPM)
Provincial	-
Regency / City	-

Obtain a Principle License for Investment

[Sub-step Details](#)[Required Documents](#)

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List of required documents

> Filled-in application form

(For foreign government related institutions)

> Letter of recommendation from the related country or letter issued by the embassy/representative office of the related country in Indonesia

(For individual foreigner)

> Passport

(For foreign company)

> Article of association of the company

Note: This document must be in English or translated into Bahasa Indonesia by a sworn translator

(For Indonesian Individual)

> Identity card (KTP; *Kartu Tanda Penduduk*)

(For Indonesian company)

> Article of establishment of the company

Note: Any amendment(s) must be submitted along with approval from the Minister of Law and Human Rights

Obtain a Principle License for Investment

[Sub-step Details](#)[Required Documents](#)[< Page 2/2](#)

List of required documents

> Business description

Note: This documents should, at least, includes description on production process, list of raw materials, production flow diagram, and service activities etc.

> Recommendation letters from local government/local agencies

Note: BKPM can issue an introduction letter for approaching local government/local agencies.

Establish a Special Purpose Company (SPC)

[Sub-step Details](#)
[SPC's Structure](#)

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The developer must establish a Special Purpose Company (SPC) to carry out the development of the biomass/biogas power plant. The legal form of the company established under a foreign investment must be a limited liability company (LLC) or so-called “Limited Liability Foreign Investment Company (PMA; *Penanaman Modal Asing*)”.

Establishment of a legal Indonesian entity involves many authorities. The project developers should seek advice from a local legal consultant.

The details of company establishment procedure can be found from the Investment Step-by-Step on the Indonesia Investment Coordinating Board (BKPM; *Badan Koordinasi Penanaman Modal Republik Indonesia*) website (www.bkpm.co.id)

Related Authorities

Central government	<ul style="list-style-type: none"> > Ministry of Laws and Human Rights > Ministry of Manpower > Jamsostek
Provincial	-
Regency / City	<ul style="list-style-type: none"> > Head of the village (“Lurah”) at the company location > Local tax office

Establish a Special Purpose Company (SPC)

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In summary, project developers must:

- acquire the company's name approval from Ministry of Laws and Human Rights;
- arrange the company documents to be notarized by Notary Public;
- obtain a certificate of company domicile issued by head of village (so-called "Lurah");
- pay non-tax state revenue (PNBP; *Penerimaan Negara Bukan Pajak*) fee for legal services;
- obtain approval of the deed of establishment from Ministry of Laws and Human Rights;
- register with the Ministry of Manpower;
- apply for the Workers Security Programme (so-called "Jamsostek Programme");
- apply for a tax registration code number (NPWP; *Nomor Pokok Wajib Pajak*) for the SPC;
- ...

Related Authorities

Central government	<ul style="list-style-type: none"> > Ministry of Laws and Human Rights > Ministry of Manpower > Jamsostek
Provincial	-
Regency / City	<ul style="list-style-type: none"> > Head of the village ("Lurah") at the company location > Local tax office

Establish a Special Purpose Company (SPC)

[Sub-step Details](#)
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A typical structure of an SPC for biomass/biogas power project is provided (refer to [the SPC's structure](#)). Several project sponsors team-up and invest in SPC's equity. The remaining investment can be mobilized from a financial institution in form of loan.

SPC must concludes following agreements with four relevant parties:

1. Power purchase agreement with PLN;
2. Fuel supply agreement (FSA) with biomass feedstock supplier(s);
3. Operating and maintenance contract with (local) operator;
4. EPC contract with engineering firm.

Related Authorities

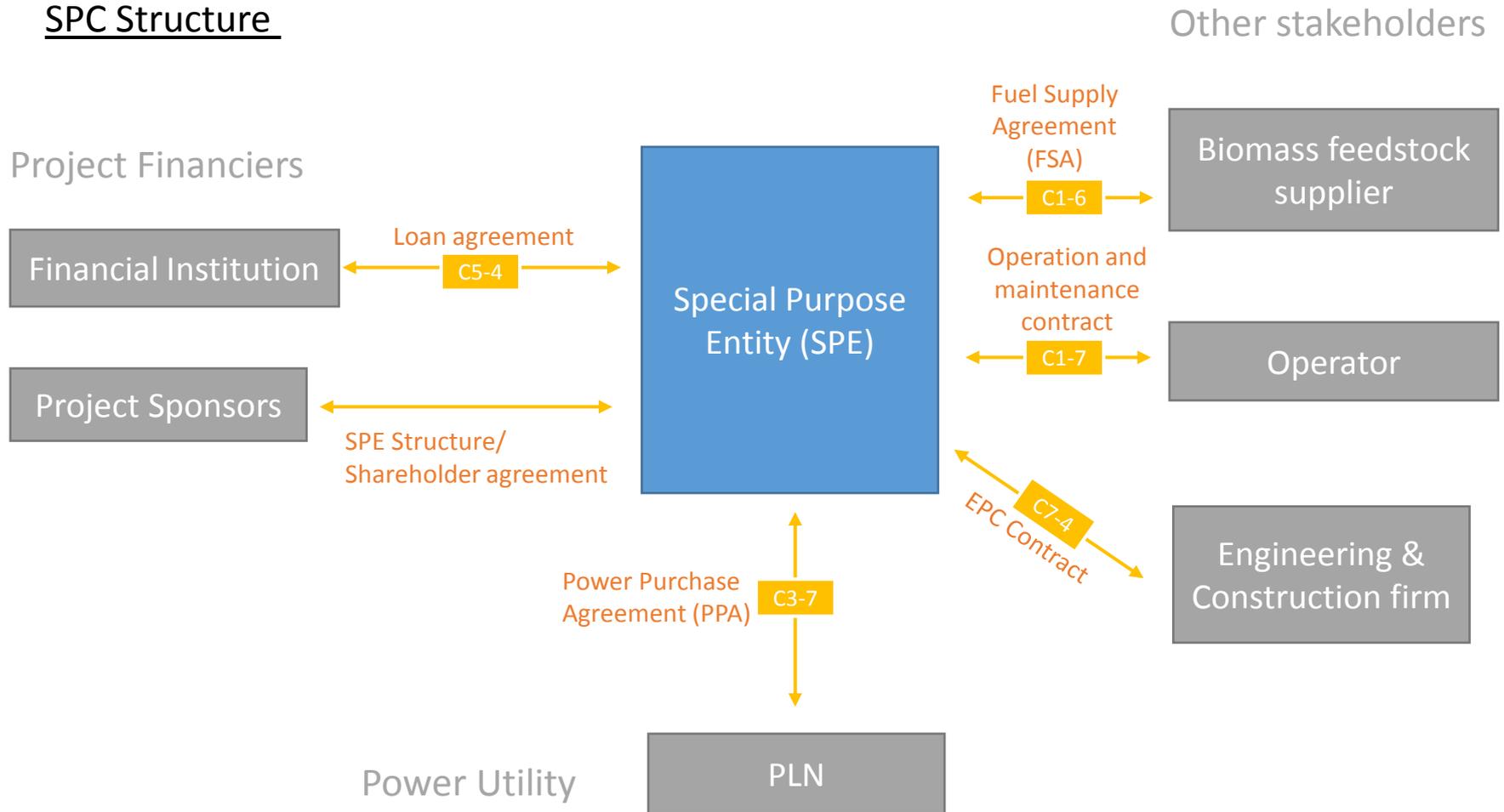
Central government	<ul style="list-style-type: none"> > Ministry of Laws and Human Rights > Ministry of Manpower > Jamsostek
Provincial	-
Regency / City	<ul style="list-style-type: none"> > Head of the village ("Lurah") at the company location > Local tax office

Establish a Special Purpose Company (SPC)

Sub-step Details

SPC's Structure

SPC Structure



Obtain an Income Tax Exemption

Sub-step Details

Corporate income tax in Indonesia is 25% (note 1). Several facilities were introduced by the government (through the [PERMEN \(Finance\) No.21/PMK.011/2010](#)) to promote investment in RE:

- net income can be reduced for 30% of the total investment;
- accelerated depreciation;
- Imposition of Income Tax on dividend paid to Foreign Taxable at 10%;
- compensation for losses in certain circumstances.

The RE business is also classified as a “pioneer business” according to the [PERMEN \(Finance\) No.130/PMK.011/2011](#). Corporate income tax can be exempted for 5 - 10 tax years. After that, the income tax can be reduced to 50% for two tax years. The corporate income tax return must be filed annually by the end of the fourth month after the book year end.

Note 1: The 25% corporate income tax is applicable as of 2013. For the official latest tax rate, please refer to Directorate General of Taxes website (www.pajak.go.id)

Related Authorities

Central government	-
Provincial	-
Regency / City	> Local tax office

Chapter 7

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Planning and Engineering

C7-1 Obtain topography plan & plant layout

C7-2 Conduct soil investigation

C7-3 Obtain an Importer Identity Number (API-P)

Principle License for Investment (C6-1)

FC

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C7-4 Finalize an EPC contract

C7-5 Detailed engineering

C7-6 Obtain a Building Permit (IMB)

Procure equipment **C7-7**

Obtain an import duty exemption **C7-8**

Abbreviations API-P: Angka Pengenal Importir-Produsen, Importer identity number; IMB: Izin Mendirikan Bangunan, Building permit

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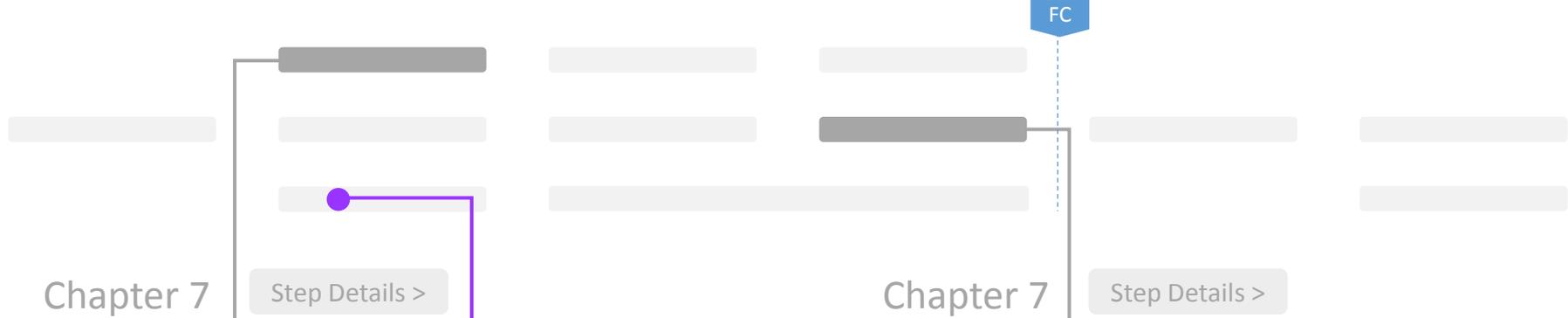
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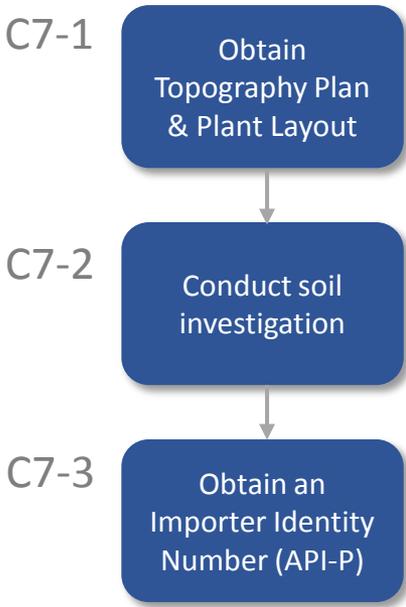
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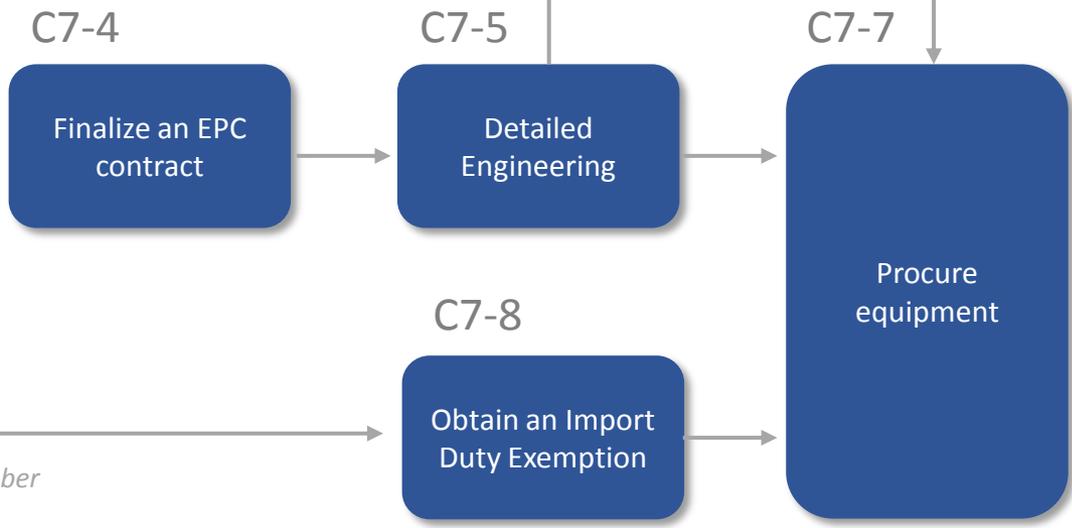


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Planning and Engineering

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Planning and Engineering



Principle License for Investment (C6-1)



Abbreviations
 API-P: Angka Pengenal Importir-Produsen; Importer identity number
 IMB: Izin Mendirikan Bangunan; Building permit

Chapter 7 | Planning and Engineering

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During the Planning and Engineering step, the power plant is being designed and engineered. This step therefore includes basic and detailed design/engineering, equipment procurement, and construction. Acquisition of necessary building permit is also a part of this step. The later part of Planning and Engineering must be done in parallel to the Construction and Commissioning step ([Chapter 8](#))

This step is divided into two parts. The first part is about the front-end engineering design (FEED) or basic engineering. It must be performed even before the Power Purchase Agreement (PPA) step ([Chapter 3](#)). A project developer must contract an engineering firm to design the plant layout and perform soil investigation. The soil investigation will be a part of a PPA proposal submitted to PLN ([Sub-step C3-1](#)). The project developer can also obtain an importer identity number (API-P; *Angka Pengenal Importir-Produsen*) immediately after a principle license for investment is obtained ([Sub-step C6-1](#)).

The second part comprises detailed engineering and procurement of equipment. It can be commenced immediately after the PPA is signed ([Sub-step C3-7](#)) and partially in parallel to the Financing step ([Chapter 5](#)). The project developer must conclude an engineering, procurement, and construction (EPC) contract with an engineering firm. The EPC contract must be placed before financial closure ([Sub-step C5-6](#)). The output from the detailed engineering will be a part of an application for a building permit (IMB; *Izin Mendirikan Bangunan*). Procurement of equipment must be done right after their technical specifications is generated as a part of the detailed engineering. Some equipment can be exempted from import duty. In that case, the project developer must obtain an import duty exemption in parallel.

After the IMB is granted, physical construction of the power plant ([Sub-step C8-1](#)) can begin. Detailed engineering and equipment procurement are still continuing during early phase of construction.

Chapter 7 | Planning and Engineering

Related Regulations

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Regulation No.	Name
PP No. 59/2010	Governmental Regulation: Amendment of PP No. 29/2000 (<i>Perubahan atas Peraturan Pemerintah Nomor 29 Tahun 2000</i>) <i>Note: PP No. 29/2000 amends some articles of PP No. 29/2000</i>
PP No. 29/2000	Government Regulation: Implementation of Construction Services (<i>Penyelenggaraan jasa Konstruksi</i>) <i>Note: Some articles of PP No. 29/2000 are amended by PP No. 59/2010. Other articles remain in effect.</i>
PERMEN (Home Affairs) No. 32/2010	Ministerial Regulation (Home Affairs): Guidelines for Granting a Building Permit (<i>Pedoman Pemberian Izin Mendirikan Bangunan</i>)
PERMEN (Industry) No. 54/M-IND/PER/3/2012	Ministerial Regulation (Industry): Guidelines for Use of Domestic Goods/Products in Electricity Infrastructure Project Development (<i>Pedoman Penggunaan Produk dalam Negeri untuk Pembangunan Infrastruktur Ketenagalistrikan</i>)
PERMEN (Finance) No.21/PMK.011/2010	Ministerial Regulation (Finance): Regulation of tax and customs facility for renewable energy resources utilization activities (<i>Pemberian Fasilitas Perpajakan dan Kepabeanan untuk Kegiatan Pemanfaatan Sumber Energi Terbarukan</i>)

Chapter 7 | Planning and Engineering

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Time-consuming procedure

Securing permit and duty exemptions can be time-consuming, especially for import of equipment. For example, if the project developer makes any mistake in the import master list, the entire equipment import process can be considerably delayed.

Recommendation: Project developers may contract a logistic consultant to help with equipment import and import duty exemption. Alternatively, the developer can draft an EPC contract in the way that equipment import and all duty clearance are included in the EPC contractor's scope.

Obtain Topography Plan & Plant Layout

Sub-step Details

The basic design and engineering of the plant is part of the development phase. The detailed site survey is required to prepare a topography plan. An specialized consultancy firm should be contracted for this. The preliminary plant layout must be produced, allowing a subsequent soil investigation ([Sub-step C7-2](#)) to be performed.

Conduct Soil Investigation

Sub-step Details

After the plant layout is prepared, the scope of soil test can be determined. The project developer must contract a specialized expert to perform the soil test at project site. The soil test will be a part of a PPA proposal ([Sub-step C3-1](#)) submitted to PLN.



Obtain an Importer Identity Number (API-P)

[Sub-step Details](#)[Required Documents](#)

The project developer must obtain an Importer Identity Number (API-P; *Angka Pengenal Importir-Produsen*) to import goods into Indonesia. The import goods must be used by the company itself as capital goods, raw materials, auxiliary materials, and/or materials to support the production process. They cannot be sold to other parties. The API-P application can be done through a one-stop-window service at the Indonesia Investment Coordinating Board (BKPM; *Badan Koordinasi Penanaman Modal Republik Indonesia*). The API-P has to be issued under the name of the special purpose company (SPC) of the project developer.

Application for an API-P can be done after a principle license for investment is granted by BKPM ([Sub-step C6-1](#)).

Related Authorities

Central government	> Indonesia Investment Coordinating Board (BKPM)
Provincial	-
Regency / City	-

Obtain an Importer Identity Number (API-P)

[Sub-step Details](#)[Required Documents](#)

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List of required documents

> Application from for importer general identification number
(*Permohonan untuk mendapatkan angka pengenal importer umum*)

> Deed of establishment

Note: The deed must has already been approved by Ministry of Laws and Human Rights (Kementerian Hukum dan Hak Asasi Manusia)

> Principle License for investment

Note: Refer to [Sub-step C6-1](#)

> Domicile of corporation

> Tax registration code number (NPWP; *Nomor Pokok Wajib Pajak*)

> Company registration (TDP; *Tanda Daftar Perusahaan*)

> Photos of director and board of directors

(In case foreigners are to be employed by SPC)

> Expatriate employment permit (IMTA; *Ijin Mempekerjakan Tenaga Kerja Asing*)

Obtain an Importer Identity Number (API-P)

[Sub-step Details](#)[Required Documents](#)[< Page 2/2](#)

List of required documents

> Reference from foreign banks

Note: This document to be submitted only if it is applicable

(In case the signatory of API-P is not from the director)

> Power of attorney from directors

(In case the submission of documents is not done directly by the director)

> Power of attorney for application submission

Finalize an EPC Contract

Sub-step Details

Project developer must contract an engineering firm as an engineering, procurement, and construction (EPC) contractor to carry out detailed engineering, equipment procurement, construction, and installation of equipment. The project developer should award the contract to a reliable engineering firm with a proven track record on similar projects (in term of scale and technology).

A request for quotation (RFQ) package must be prepared by the project developer. Scope of work and timeframe should be clearly specified. The outputs from front-end engineering design (FEED) are parts of the RFQ package. All technical requirements according to the local regulations should be mentioned in the RFQ package.

Quotations submitted by the candidate EPC contractors must be thoroughly reviewed and compared in terms of quality and cost. Some negotiation on price and technical clarification is to be done prior to the award of EPC contract. The EPC contract is required for financial closure ([Sub-step C5-6](#))

Detailed Engineering

Sub-step Details

The EPC contractor performs detailed design and engineering of the power plant and related equipment. The developer should closely monitor the works performed by the EPC contractor. Technical specifications and data sheets are prepared as a part of the detailed engineering, allowing equipment procurement to be done ([Sub-step C7-7](#)). Usually detailed engineering and equipment procurement are done partly in parallel.

Some outputs from the detailed engineering will be required for an application for a building permit (IMB; *Izin Mendirikan Bangunan*) ([Sub-step C7-6](#))

Obtain a Building Permit (IMB)

[Sub-step Details](#)[Required Documents](#)

Building Permit (IMB; *Izin Mendirikan Bangunan*) is a license granted by the local government allowing the project developer to proceed with physical construction of power plant.

[PERMEN \(Home Affairs\) No. 32/2010](#) provides a guideline for the building permit procedure. However, local governments retains their authority in determining implementation procedure which might slightly differ from the PERMEN. As a result, different local regulations may be applicable in different region.

Related Authorities

Central government	-
Provincial	-
Regency / City	> Head of Regency (<i>Bupati</i>) / Mayor (<i>Kota</i>)

Obtain a Building Permit (IMB)

[Sub-step Details](#)[Required Documents](#)

List of required documents

> Filled-in IMB application

> Land certificate indicating investor's right to manage the land

> Details of the land (location and topography)

> Statement letter from National Land Office proving that the land not in the dispute status

> Environment license

Note: Refer to [Sub-step C2-3](#)

> Building architecture plan

> System structure plan

> Utility system plan

(In case there any building with two floors or more)

> Structure calculation and/or building landscape completed with land examination report

> Utility calculation for building

> Service plan data

Note: Granting of a building permit is under a jurisdiction of local government. Therefore, the exact required documents can be different from region-to-region.

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Procure Equipment

Sub-step Details

The EPC contractor procures necessary equipment for the power plant. Similar to the detailed engineering ([Sub-Step C7-5](#)), the developer should closely monitor the EPC contractor, especially for critical equipment of the plant and equipment with long delivery time.

The developer and the EPC contractor should also review applicable local content rules and requirements. For biomass/biogas power project in Indonesia, there is a requirement of minimum 68% local content for boiler and steam turbine. Electrical generators can be completely imported.

Some equipment can be exempted from import duty. In this case, import duty exemption ([Sub-step C7-8](#)) must be sought in parallel.

Obtain Import Duty Exemption

[Sub-step Details](#)[Required Documents](#)

The developer can obtain import duty exemption on some imported goods and machineries for a RE projects. The following requirements are to be met to obtain import duty exemption:

- The equipment or machinery cannot be produced domestically; or
- They can be domestically produced, but the quality does not meet the required specification; or
- They can be domestically produced but the production quantity is not sufficient.

The import of equipment can be either included as a part of EPC contract or outsourced to a reliable logistic consultant. In the latter case, the developer must ensure sufficient communication between the EPC contractor and the logistic consultant. Both parties might have different priorities, e.g. with regards to import sequence.

Related Authorities

Central government	> Indonesia Investment Coordinating Board (BKPM; <i>Badan Koordinasi Penanaman Modal</i>)
Provincial	
Regency / City	> Custom Services at the port of arrival

Obtain Import Duty Exemption

[Sub-step Details](#)[Required Documents](#)

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List of required documents

- > Filled-in application form on the import machinery facilities
(*Bentuk Surat Permohonan Persetujuan Fasilitas atas Impor Mesin*)
- > Deed of establishment
- > List of machines/equipment
- > Tax registration code number (NPWP; *Nomor Pokok Wajib Pajak*)
- > VAT number
- > Custom Identification number (NIK; *Nomor Induk Kependudukan*)
- > Importer Identity Number (API-P; *Angka Pengenal Importir-Produsen*)
Note: Refer to [Sub-step C7-3](#)
- > Production process description
Note: Process flow diagram and raw material requirements/balance must be included
- > Plan layout of facility/equipment/machinery
Note: Office facilities must be included in the plan layout as well
- > Technical data or brochure of the machine/equipment

Obtain Import Duty Exemption

[Sub-step Details](#)[Required Documents](#)[< Page 2/2](#)

List of required documents

> Principle License for Investment

Note: Refer to [Sub-step C6-1](#)

> Investment activity report (LKPM; *Laporan Kegiatan Penanaman Modal*)

Note: only submit this document if it is applicable

(In case the submission of document is not done directly by director)

> Power of attorney for application submission

FC

Building permit
(IMB) (C7-4)

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Construction & Commissioning

C8-1	Construction and Installation
	Obtain a Certificate of Operation Worthiness (SLO) C8-2
	Inspect and test the connection point C8-3
	Commercial Operation Date (COD) C8-4

Abbreviations

SLO: Sertifikat Laik Operasi; Certificate of Operation Worthiness

IMB: Izin Mendirikan Bangunan; Building permit

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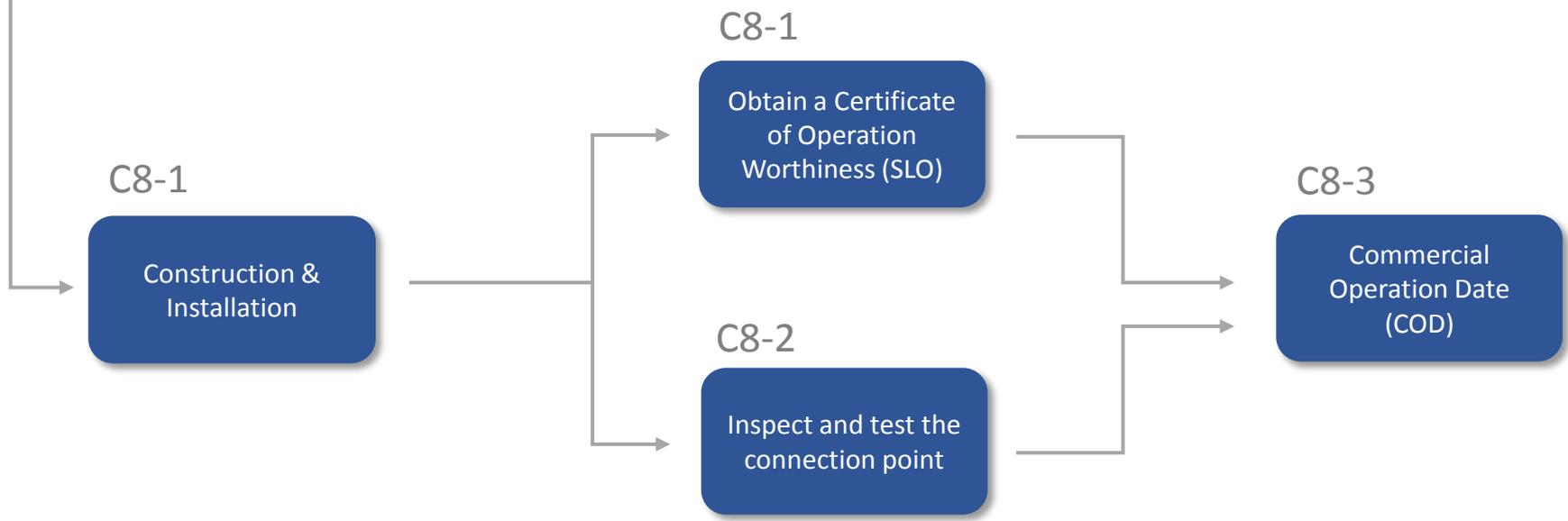
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Building permit (IMB) (C7-4)

Chapter 8

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Construction and Commissioning



Abbreviations

SLO: Sertifikat Laik Operasi; Certificate of Operation Worthiness

IMB: Izin Mendirikan Bangunan; Building permit

Chapter 8 | Construction and Commissioning

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The Construction and Commissioning step consists of physical construction of power plant, all necessary inspections and testing of both the power plant itself and the point of connection to the (PLN) power grid. The project developer must: contract a licensed certifier to perform inspection and testing of the power plant to obtain a Certificate of Operation Worthiness (SLO; *Sertifikat Laik Operasi*). A joint inspection between PLN and the developers must be arranged at the point of connection. PLN will issue a connection point certificate, allowing energizing the connection point to be made. Then, the developer discusses with PLN to agree on the commercial operation date (COD).

The inspection of licensed inspector on the power plant ([Sub-step C8-2](#)) and the inspection of PLN on the connection point ([Sub-step C8-3](#)) usually take place in parallel. The developer must carefully coordinate these inspections.

After the Construction and Commissioning step, full operation and sale of electricity can start.

Chapter 8 | Construction and Commissioning

Related Regulations

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Regulation No.	Name
PERMEN (ESDM) No. 4/2009	Ministerial Regulation: Power Distribution Code (<i>Aturan Distribusi Tenaga Listrik</i>)
PERMEN (ESDM) No. 37/2008	Ministerial Regulation: Sumatera Transmission (Grid) Code (<i>Aturan Jaringan Sistem Tenaga Listrik Sumatera</i>)
PERMEN (ESDM) No. 3/2007	Ministerial Regulation: Java, Madura, and Bali (“Ja-Ma-Li”) Transmission (Grid) Code (<i>Aturan Jaringan Sistem Tenaga Listrik Jawa-Madura-Bali</i>)
PERMEN (ESDM) No. 46/2006	Ministerial Regulation: Amendment of PERMEN (ESDM) No. 45/2005 (<i>Perubahan atas Peraturan Menteri Energi dan Sumber daya Mineral Nomor 0045 Tahun 2005</i>) <i>Note: PERMEN (ESDM) No. 46/2006 modifies some article of PERMEN (ESDM) No. 45/2005</i>
PERMEN (ESDM) No. 45/2005	Electrical Installation (<i>Instalasi Ketenagalistrikan</i>) <i>Note: PERMEN (ESDM) No. 45/2005 was amended by PERMEN (ESDM) No. 46/2006</i>
PERMEN (ESDM) No. 5/2014	Procedures for Electrical Accreditation and Certification (<i>Tata Cara Akreditasi Dan Sertifikasi Ketenagalistrikan</i>)

Abbreviation ESDM: Energi dan Sumber Daya Mineral; Energy and Mineral Resources

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Chapter 8 | Construction and Commissioning

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Challenges

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Time-consuming procedure	<p>It usually takes 2-4 weeks to obtain a Certificate of Operation Worthiness (SLO; <i>Sertifikat Laik Operasi</i>). However, if a test item is not approved during inspection/testing, it is pending for improvement. This can delay the entire process considerably and directly affects the commercial operation date (COD) of the plant.</p>
Revision of a construction plan as a result of poor feasibility study	<p>It occurs relatively often that a construction plan of EPC contractor must be considerably revised during the actual construction. This is due to inaccuracy of feasibility study that is a basis for the construction plan prepared by the EPC contractor. The revision of the plan during the construction may lead to delayed schedule or cost overrun.</p> <p><u>Recommendation:</u> Project developers must carefully select a local consultant to perform the (pre-)feasibility study. Only consultants with sufficient experience and a good track record should be considered.</p>

Chapter 8 | Construction and Commissioning

Identified Challenges

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Insufficient skills/ capability of EPC contractor

The local EPC contractor may not have adequate experiences, skills, or capability to perform the plant construction with good workmanship. This may be a result of an unrealistic construction schedule, mismatch between construction and engineering drawing. As a result, many on-spot correction must be done which can delay the entire project schedule. Furthermore, the plant performance can be deteriorated later on.

Recommendation: The project developer should award an EPC contract to a reliable engineering firm with proven record in similar project scale and technology. During construction, the project developer must closely monitor the quality of work. Some third party may be contracted to perform quality control at site.

Construction and Equipment Installation

Sub-step Details

After the building permit (IMB; *Izin Mendirikan Bangunan*) is granted, the EPC contractor can commence with construction works. A progress report must be prepared by the EPC contractor and reviewed by the project developer in agreed interval. The project developer should closely monitor and check the actual progress of construction. Depending on the developer's capacity and manpower, workmanship inspections can be either performed by the developer or a third certified party.

Depending on the project scale and technology used, construction of a biomass/biogas power plant can take around 1 – 2 years.

Plant Commissioning

[Sub-step Details](#)[List of Certifiers](#)

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A Certificate of Operation Worthiness (SLO; *Sertifikat Laik Operasi*) certifies technical feasibility of an electrical power system installation. Only a licensed certifier is allowed to perform inspection and testing.

The developer must request a licensed third-party inspector to conduct the inspection and test. The copy of the request must be submitted to the Directorate General of Electricity (DJK; *Direktorat Jenderal Ketenagalistrikan*), Ministry of Energy and Mineral Resources (ESDM; *Energi dan Sumber daya Mineral*). Scope and specifications of the test are determined by DJK. The certifier will conduct the test and inspection accordingly.

If the third party certifier is an accredited inspector, a SLO can be issued without further approval from DJK. The accredited certifiers only register the SLO number with DJK later. In case the certifiers is only a licensed inspector but not accredited, DJK must provide an approval before an SLO can be issued.

Related Authorities

Central government	> DJK, ESDM through a licensed certifiers; <u>or</u> > Accredited certifier
Provincial	-
Regency / City	-

Plant Commissioning

[Sub-step Details](#)[List of Certifiers](#)[< Page 2/2](#)

The duration for SLO processing is not regulated; however, it can take around two weeks to a month, depending on the installed capacity of the power plant.

The complete list of licensed certifiers is available on the DJK website (www.djlpe.esdm.go.id).

Related Authorities

Central government	> DJK, ESDM through a licensed certifiers; <u>or</u> > Accredited certifier
Provincial	-
Regency / City	-

Plant Commissioning

[Sub-step Details](#)
[List of Certifiers](#)

List of Licensed Certifiers (as of July 2012)

> PT Depriwangsa (Jakarta Selatan)	> PT Gamma Iridium (Jakarta)	> PT Kencana Andalas Riau Mandiri (Pekanbaru)
> PT Indospec Asia (Jakarta)	> PT Energy Solusi Electrindo (Jakarta)	> PT Sertifikasi Mandiri Sejahtera (Kebayoran Baru)
> PT EMI d/h PT Koneba (Jakarta)	> PT Gold Nusantara Abadi (Bekasi)	> PT Lintas Prima Energi (Jakarta Selatan)
> PT Silma Instrumentama (Jakarta Selatan)	> PT Surveyor Indonesia (Jakarta)	> KONSUIL (<i>Komite Nasional Keselamatan untuk Instalasi Listrik</i>) (Jakarta)
> PT Biro Klasifikasi Indonesia (Jakarta)	> PT Industira (Tangerang)	> PPILN (<i>Perkumpulan Perlindungan Instalasi Listrik Nasional</i>) (Jawa Tengah)
> PT Electric Power Indonesia (Malang)	> PT Sabda Duta Paramitha Konsultan (Surabaya)	
> PT Central Energy Positive (Jakarta)	> PT Sucofindo (Persero) (Jakarta)	
> PT Indo Karya Senior (Jakarta Selatan)	> PT Masaryo Gatra Nastiti (Banten)	
> PT Andalan Mutu Energi (Bandung)	> PT Trijaya Sampurna (Samarinda)	
> PT Prima Teknik System (Surabaya)	> PT Kata Utama (Jakarta Selatan)	
> PT Deteksi Instalasi Nasional (Bandung)	> PT Sanggadelima Nusantara (Jakarta Selatan)	
> PT PLN Jasa Sertifikasi (Jakarta)	> PT Multi Energytama Nusantara (Surabaya)	
> PT Wide Dan Pin (Jakarta)	> PT Fakom Hesti Labora Krida (Surabaya)	

Note: The list is valid as of July 2012. For the official latest list, please refer to Directorate General of Electricity (DJK) website

(www.djlpe.esdm.go.id -> Daftar Lembaga Inspeksi Teknik)

Inspect and test the connection point

[Sub-step Details](#)[Required Documents](#)

Project developer must refer to applicable distribution code or grid code in the respective area. All technical requirements for connection to the grid must be fulfilled.

At 30 days before energizing the connection point, the developer must notify respective PLN local office and arrange a joint inspection and testing at the connection point. This joint inspection is to be done together by PLN and the developer. Upon completion of inspection and testing, PLN will issue a connection point certificate. The project developer must then agree with PLN upon date and time of connection point energizing. The procedure for energizing the connection point will be advised by PLN in which the developer must strictly follow.

Note: Energizing the connection point means voltage provision at the connection point.

Related Authorities

Central government	-
Provincial	
Regency / City	> PLN local office

Inspect and test the connection point

[Sub-step Details](#)[Required Documents](#)

List of required documents

> Written request to PLN local office

Note: The request must clearly states the purpose of energizing the connection point and proposed time of energizing

> List of equipment in the power plant that may affect the grid

Note: e.g. transformers, reactive power regulators, protective devices etc.

> A list of personnel who act as a focal point in data correspondence.

Note: This list must include at least: name, job title, and list of responsibilities at the point of connection.

> Written confirmation from the project developer

Note: This letter must state that all equipment at the connection point is according to the grid code's requirements

Commercial Operation Date (COD)

[Sub-step Details](#)[Required Documents](#)

Commercial operation date (COD) is the date on which electricity is generated by the plant and fed into PLN's power network. The COD must be agreed between project developer and PLN. It is clearly specified in the Power Purchase Agreement (PPA) ([Sub-step C3-7](#)). The project developer must ensure that necessary licenses/certificates are obtained prior to the COD

Related Authorities

Central government	-
Provincial	
Regency / City	> PLN local office

Commercial Operation Date (COD)

[Sub-step Details](#)[Required Documents](#)

List of required documents

> The second performance bond

Note: Refer to [Sub-step C5-5](#)

> Electricity production license (IUPTL; *Ijin Usaha Penyediaan Tenaga Listrik*)

Note: Refer to [Sub-step C4-2](#)

> Certificate of Operation Worthiness (SLO; *Sertifikat Laik Operasi*)

Note: Refer to [Sub-step C8-1](#)

Operation and Maintenance

C9-1 Develop a standard operation procedure (SOP)

Update SOP (as needed)

Monitoring and evaluation the plant operation

C9-4 Assess a need for capacity building (as needed)

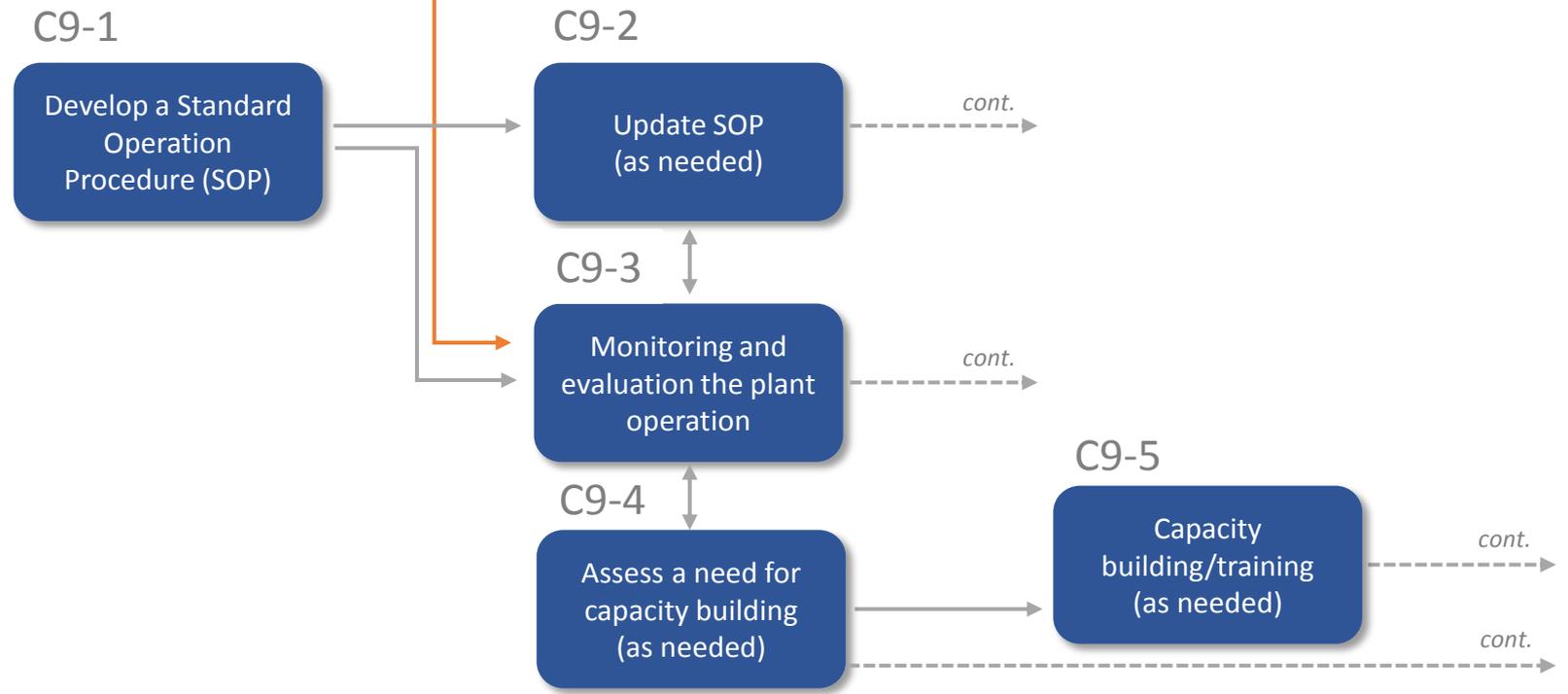
Capacity building/training (as needed)

Commercial Operation Date (COD) (C8-3)

Chapter 8

[Step Details >](#)

Operation and Maintenance



Chapter 9 | Operation and Maintenance

Step Description

Step
Description

Related
Regulations

Identified
Challenges

The Operation and Maintenance step covers entire lifetime of a power plant after the commercial operation date (COD). In this step, project developer must develop a standard operation procedure (SOP) and keep it updated, monitor day-to-day operation and maintenance activities performed by the operators, assess the need for capacity building and conduct capacity building/training activities accordingly. Updates of SOP, monitoring of plant operation, capacity building assessment, and implementing capacity building activities must be performed regularly and throughout the whole project life cycle.

The actual operation of the plant and sale of electricity can only be beginn after the COD as agreed with PLN ([sub-step C8-3](#)). However, some sub-steps such as SOP development and capacity building need assessment can and should be done earlier .

A biomass/biogas power plant which is well operated and maintained can produce more than 20 years. The Operation and Maintenance step is crucial and needs to be properly managed to ensure sustainability of the RE project. A preventive maintenance approach should be planned and implemented to ensure efficient and reliable operation of the plant in a long-run.

Chapter 9 | Operation and Maintenance

Related Regulations

?

Step
Description

Related
Regulations

Identified
Challenges

Regulation No.	Name
UU No. 36/2009	Law: Health (<i>Kesehatan</i>)
UU No. 1/1970	Law: Work Safety (<i>Keselamatan Kerja</i>)
PP No. 41/1999	Governmental Regulation: Air Pollution Control (<i>Pengendalian Pencemaran Udara</i>)

Chapter 9 | Operation and Maintenance

Identified Challenges

Step
Description

Related
Regulations

Identified
Challenges

Challenges

Description

Availability of spare parts/aftersales support

Spare parts for critical components might not be available or cannot be resupplied in time. This can cause lengthy interruption in the plant operation. If equipment is purchased from small local companies, long-term aftersales support may not be guarantee.

Recommendation: Project developer should procure equipment from reliable suppliers with proven records. Some spare parts for critical component should be kept readily available. Otherwise, a guarantee for future supply needs to be obtained from the supplier.

Lack of experience/capacity of a local operator

Local operators do not have a lot of experience with the operation of the power plants. They may operate and maintain incorrectly, leading to interruptions in plant operation and/or damage to the equipment.

Recommendation: Project developer should contract an experienced operator, at least for the first phase of the plant operation. Experienced operator can provide on-job training to local and less experienced operators before handing over tasks completely. The developer also needs to plan for regular trainings for the operating staff.

Develop a Standard Operation Procedure (SOP)

Sub-step Details

Project developer must produce a standard operation procedure (SOP). The SOP serves as a reference for the plant operator. This should be done before the commercial operation date (COD) ([Sub-step C8-4](#)). Preventive maintenance approach should be part of the plant operation.

Update SOP

Sub-step Details

This sub-step is to be performed whenever there is a need

Standard Operation Procedure (SOP) must be updated regularly, taking into account any upgrade or change of equipment in the plant. Project developer should plan from the beginning about the interval of SOP review/update and ensure that the intervals are followed.

Monitor and Evaluation the Plant Operation

Sub-step Details

Proper operation and maintenance can keep the biomass/biogas power plant running in the long-term. Typically, biomass/biogas power plant, which is well operated and maintained, can be in operation for more than 20 years.

Project developers must closely monitor the overall plant performance. For example, emission levels have to be checked regularly to ensure compliance with Indonesian laws and regulations. Residual materials from the plant operation i.e. ash, fly-ash etc. must be properly handled. The operator's performance should be regularly checked as well.

Apart from the plant performance, the working environment is another important aspect. The developer should ensure high standards in health and safety of the workers as well as in environmental matters.

Assess a need for capacity building

[Sub-step Details](#)

This sub-step is to be performed whenever there is a need

Capable operator is a key to overall success of an RE project. The developer needs to plan for necessary capacity building and training measures. This is especially important in case the local community is contracted as a plant operator. Capacity building needs assessment as well as first trainings should be done even before the operation of the plant.

A capacity building needs assessment should be done again after the plant is being operated for a certain time. Any issues identified can then be tackled by targeted training measures.

The project developer may contract a professional training institutes to conduct a capacity building needs assessment.

Capacity building/training

[Sub-step Details](#)

This sub-step is to be performed whenever there is a need

Based on the capacity building needs assessment ([Sub-step C9-4](#)), specific trainings are to be held for the plant operating staff. Project developers may contract professional training institutions to perform this task.

Feedback from the plant operator on each training should be properly collected and recorded. This will allow the developer to assess effectiveness of the trainings and to improve future capacity building activities.

How to use the Guideline



Guideline Structure

The Guideline is structured into two levels: overview layer and detailed layer. In each layer, the procedures are described in the Gantt's chart and flow chart form. Readers can easily switch to the view that suit best with their needs. Overview layers and detailed layer are linked together by the Gantt's chart and flow chart, allowing readers to navigate through the guideline.

Overview Layer

From the overview layer, readers can see the entire procedure in project development (from site selection until operation and maintenance). It gives a big picture on how biomass/biogas project development in Indonesia has to be done. Only predefined steps are shown in this layer in different color codes (e.g. site selection, administrative authorization etc.). These steps are standardized for every guidelines.

Detailed layer

The detailed layer provides more details to each steps shown in the overview layer. This allows more flexibility in providing more detailed to readers on specific phase of project development.



How to use the Guideline

Guideline Structure

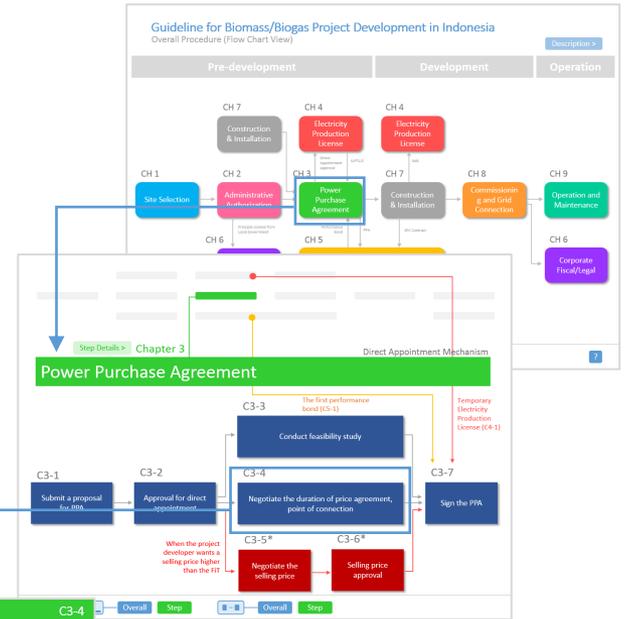
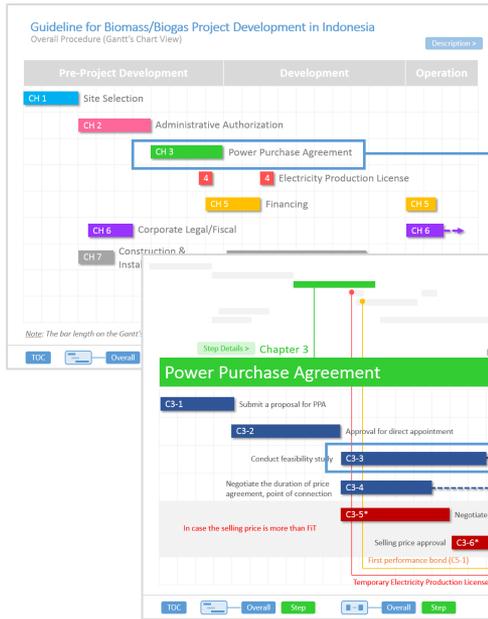


Gantt's Chart View

Flow Chart View

Overview Layer

Detailed Layer



Chapter 3 | Power Purchase Agreement C3-4

Negotiate the Duration of Selling Price and Point of Connection

Sub-step Details | Required Documents

The developer must negotiate with the PLN the duration of the selling price as well as agree on the point of connection. In addition, the costs for the transmission line connecting the power plant to the point of connection is subjected to negotiation. As a rule of thumb, when the length is more than 8 km, cost sharing is likely. In case the length is less than 8 km, the project developer most probably has to bear the costs.

In case the project value is more than 50 billion IDR (approx. 4 Mio USD, Dec 2013), the PLN local office must obtain a principal license from the board of directors of PLN Headquarters prior to PPA signing (Sub-step C3-7). For project value of less than 50 billion IDR, the general manager of PLN local office can approve the price and proceed with the PPA signature.

Remark: This principle license indicated here in an internal document of PLN. It must not be confused with the principle license from the local government or the principle license for investment

Related Authorities

Central government	PLN headquarter (Renewable Energy Division)
Provincial	
Regency / City	PLN local office

TOC Overall Step Overall Step

TOC



Overall



Overall

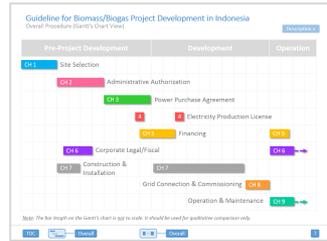
How to use the Guideline

Page types



Overview Layer

Gantt's Chart



Overall Gantt's Chart Page

Flow Chart



Overall Flow Chart Page

Details

Overall Procedure Description

The life cycle of power project development can generally be divided into three phases: 1. pre-development phase, 2. development phase, and 3. operation phase.

Pre-development Phase

In the pre-development phase, the project developer investigates the project context. Basic information and topics must be identified to determine if the project should be further developed. Necessary licenses and permits must be obtained and financial support has to be secured.

The development of Indonesia's geothermal project development in Indonesia starts from the **Site Selection**. Potential sites are to be identified about basins and investigated in detail. In the next step, the sites are to be qualified for further development.

The developer must approach the local government in the respective region to obtain overall permits/licenses. This is a part of the administrative authorization step. At the same time, the developer negotiates a Power Purchase Contract (PPA) for sale and project development and power plant operation, in addition a purchase license for treatment must be obtained. Such is included in the **Corporate Legal/Physical** step. In parallel, some technical topics are connected to the independent power purchase agreement (IPPA) application. Therefore, the developer must approach an engineering firm for a basic engineering study (BES) which is part of the **Construction and Installation** step.

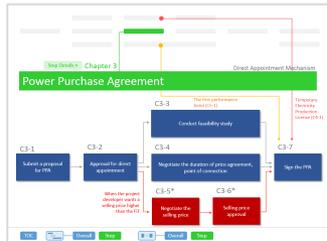
Once the agreement and support from local government is secured by the local permits and licenses, the developer must approach the relevant power plant (PPA) to obtain a power purchase agreement (PPA) and the overall consent of electricity to obtain an **electricity production license** and (4) **financial financing** to secure necessary financing.

Overall Procedure Description Page

Detailed Layer



Step's Gantt's Chart Page



Step's Flow Chart Page

Chapter 3 | Power Purchase Agreement

Step Description (1)

The Power purchase agreement (PPA) is a legally binding contract between a project developer and PLN. In this step, a project developer must prepare a PPA proposal, conduct a feasibility study (FS), negotiate with PLN on the selling price of electricity, the point of connection, and the duration of selling price agreement. The outcome of this step is signed PPA. Moreover, the project developer and PLN will be required to formalize Power Purchase Contract (PPA) and the opportunity for electricity production license (EPL) to the project developer through the administrative authorization step (Chapter 2). In parallel, the Electricity Production License step (Chapter 4) involving the EPL step must be completed.

In the first step, the developer must submit the PPA application to the respective PLN local office. After evaluation, the PPA proposal is forwarded by the PLN to offer to PLN headquarters. If PLN headquarters agrees, a "request to proceed" letter will be issued for the project developer with the proposal and the transmission line by the Ministry of Energy and Mineral Resources (EMR) for the review. Once PLN is the final partner, the review of PPA proposal is performed. After the project developer can finalize the feasibility study (FS) which will be covered by PLN signature. At the same time, the completion on selling price duration and point of connection must be done with the PLN local office.

If the project developer want to sell electricity with a higher price than the established one in tariff (EPL) zone, the price has to be negotiated with PLN local office. The agreed selling price must be then approved by the Ministry (EMR). The PPA can be signed only after the EPL is finalized, the temporary electricity production license is granted (Chapter 4), and a performance bond is obtained (sub-step C-1).

Step Description Page

Chapter 3 | Power Purchase Agreement

CS-4

Negotiate the Duration of Selling Price and Point of Connection

Overview

The developer must negotiate with the PLN the duration of the selling price as well as agree on the point of connection. In addition, the costs for the transmission line connecting the power plant to the point of connection is subject to negotiation. As a rule of thumb, when the length is more than 8 km, cost sharing is likely, in case the length is less than 8 km, the project developer most probably has to bear the costs.

In case the project value is more than 50 billion IDR (approx. 4 Mio USD, Dec 2023), the PLN local office must obtain a principal license from the Board of Director of PLN Headquarters prior to PPA signing (Sub-step C-2). For project value of less than 50 billion IDR, the general manager of PLN local office can approve the price and proceed with the PPA signature.

Remark: This principle license indicated here is an internal document of PLN; it must not be confused with the principle license from the local government or the principle license for investment.

Related Authorities

Central government	PLN headquarters (Renewable Energy Division)
Provincial	PLN local office
Regency / City	PLN local office

Sub-step Description Page

How to use the Guideline

Typical Page Structure



Page Header

Page Header help the reader to always aware of current topic/step of the page. The color code of the header is similar to the Gantt's Chart or Flow Chart.

Section Menu

The section menu is located on top of the page below the Section Header. Each section of the Guideline has different type of menu

The screenshot displays a page layout for 'Chapter 3 | Power Purchase Agreement'. At the top, a green header bar contains the chapter title and 'C3-4'. Below it, a section menu titled 'Negotiate the Duration of Selling Price and Point of Connection' includes buttons for 'Sub-step Details' and 'Required Documents'. The main content area is titled 'Step Description (1)' and contains two paragraphs of text. A 'Remark' section follows, containing a note about principle licenses. Below the text is a 'Related Authorities' table. At the bottom, a main navigation bar includes buttons for 'TOC', 'Overall', and 'Step'.

Central government	PLN headquarter (Renewable Energy Division)
Provincial	
Regency / City	PLN local office

Main Navigation Bar

The navigation bar which will be shown at the bottom of every pages. The bar consists of three main parts: (1) TOC button – Click to go to the Table of Content Page; (2) Gantt's Chart Navigation – Click to jump to the overall Gantt's Chart page or Gantt's Chart of each respective step; and (3) Flow Chart Navigation - Click to jump to the overall Flow Chart page or Flow Chart of each respective step

Page's Content

The content of each page is located in the middle part



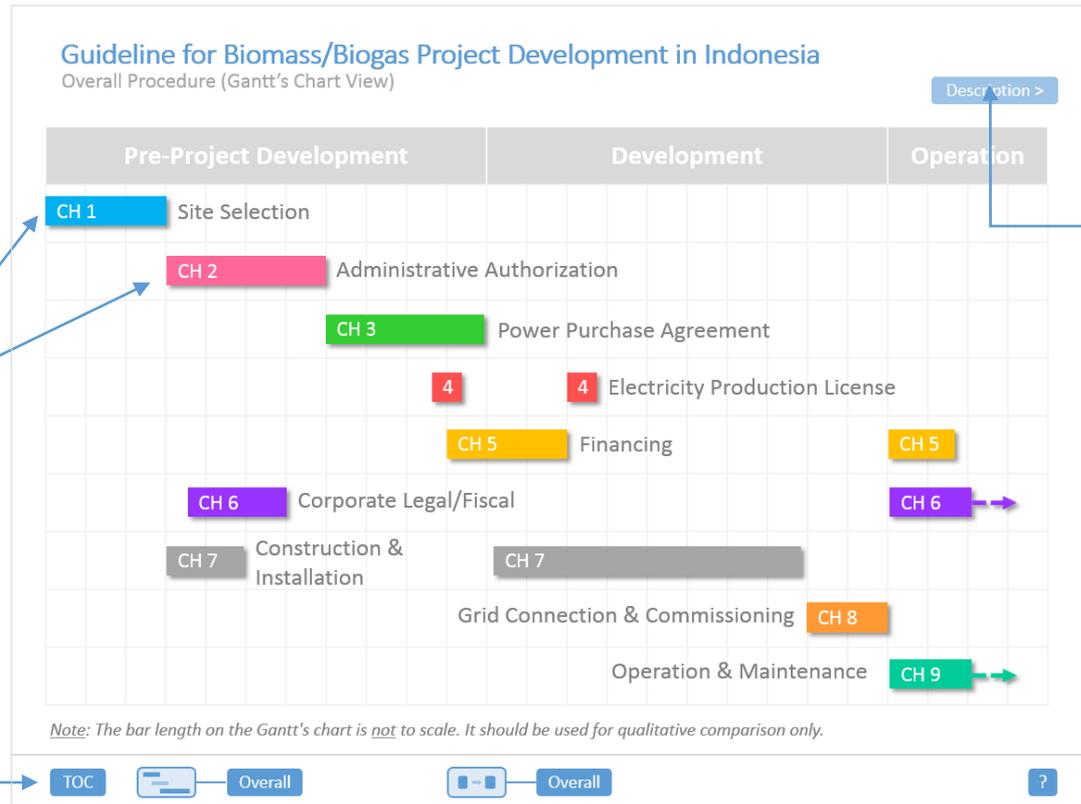
Overall



Overall

How to use the Guideline

Overall Gantt's Chart Page



Go to Step
Click on any colored bar to jump to each respective step

Overall Procedure Description
Explanation on the Gantt's Chart

Table of Content
Click and jump to Table of Content page

Overall Gantt's Chart
Click and jump to Overall Gantt's Chart page that describes the entire project development cycle

Overall Flow Chart
Click and jump to Overall Flow Chart page that describes the entire project development cycle



How to use the Guideline

Overall Flow Chart



Go to Step
Click on any colored bar to jump to each respective step

Overall Procedure Description
Explanation on the Gantt's Chart

Table of Content
Click and jump to Table of Content page

Overall Gantt's Chart
Click and jump to Overall Gantt's Chart page that describes the entire project development cycle

Overall Flow Chart
Click and jump to Overall Flow Chart page that describes the entire project development cycle

How to use the Guideline

Gantt's Chart of each step

Step Details

Go to see the description of the step including related regulations and challenges

Go to Sub-step

Click on any bar to jump to each respective Sub-step

Table of Content

Click and jump to Table of Content page

Overall Gantt's Chart

Jump to Overall Gantt's Chart page that describes the entire project development cycle

Step's Gantt's Chart

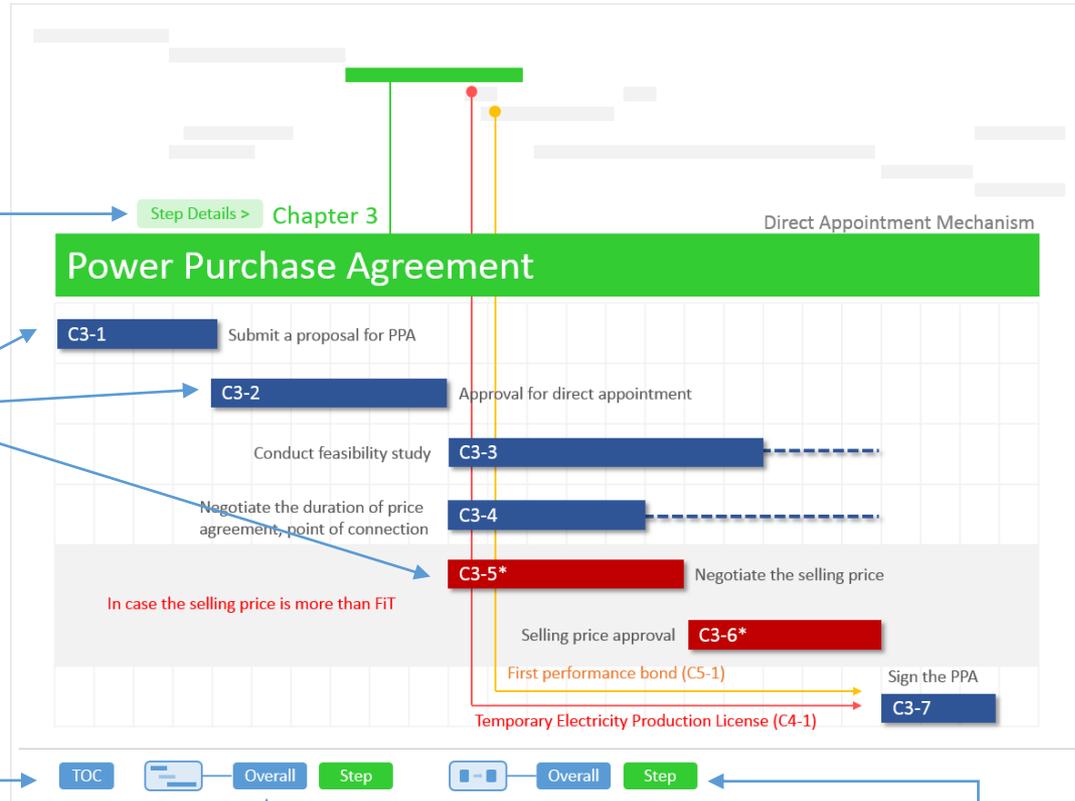
Jump to Gantt's Chart of the current step

Overall Flow Chart

Jump to Overall Flow Chart page that describes the entire project development cycle

Step's Flow Chart

Jump to Flow Chart of the current step



Gantt's Chart Navigation

This part shows the location of the current step on the overall Gantt's Chart. Relations to other parallel step are also shown. Click on any bar to jump to respective step.

TOC



Overall



Overall

How to use the Guideline

Gantt's Chart of each step



Step Details

Go to see the description of the step including related regulations and challenges

Go to Sub-step

Click on any bar to jump to each respective Sub-step

Table of Content

Click and jump to Table of Content page

Overall Gantt's Chart

Jump to Overall Gantt's Chart page that describes the entire project development cycle

Step's Gantt's Chart

Jump to Gantt's Chart of the current step

Overall Flow Chart

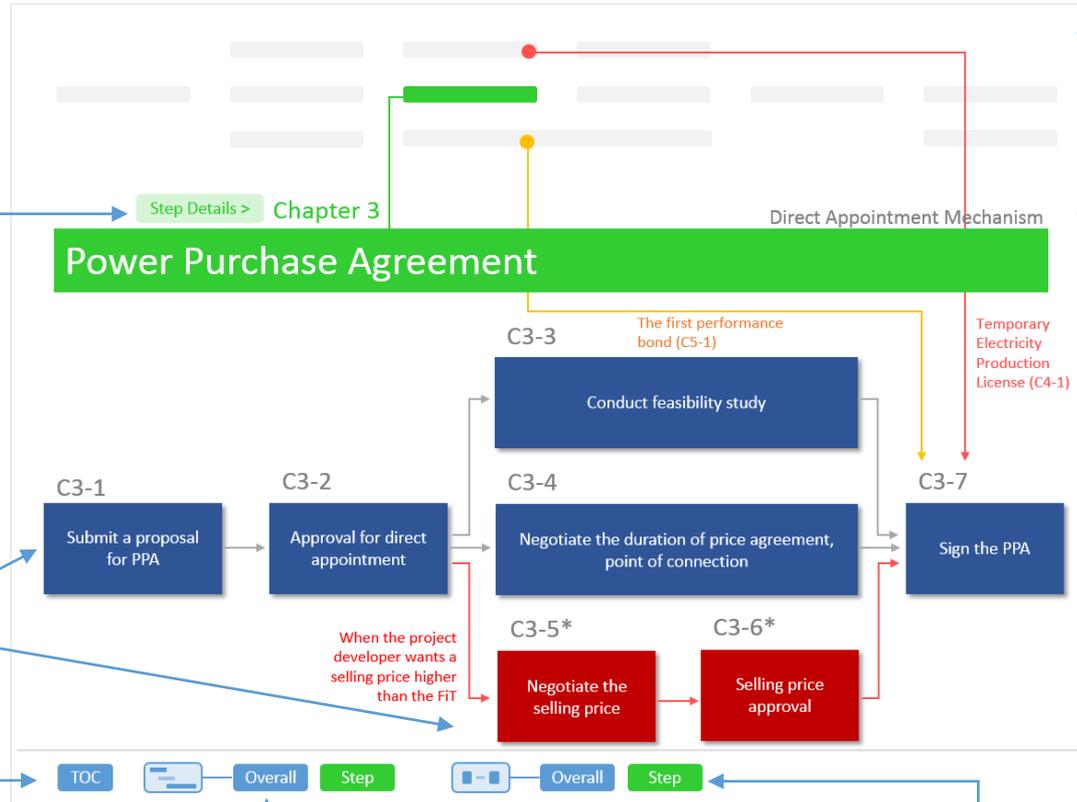
Jump to Overall Flow Chart page that describes the entire project development cycle

Step's Flow Chart

Jump to Flow Chart of the current step

Flow Chart Navigation

This part shows the location of the current step on the overall Flow Chart. Relations to other parallel step are also shown. Click on any bar to jump to respective step.



TOC



Overall



Overall

How to use the Guideline



Chapter 3 | Power Purchase Agreement

Step Description (1)

Step Description Related Regulations Identified Challenges Page 1/2 >

The Power purchase agreement (PPA) is a legally binding contract between a project developer and PLN. In this step, a project developer must prepare a PPA proposal, finalize a feasibility study (F/S), negotiate with PLN on the selling price (if applicable), the point of connection, and the duration of selling price agreement. The outcome of this step is a signed PPA between the project developer and PLN. It will be required for financial closure (Sub-step C5-5) and the application for the electricity production license (Sub-step C4-2). The project developer should perform the PPA step immediately after completion of the Administrative Authorization step (Chapter 2). In parallel, the Electricity Production License step (Chapter 4) and Financing step (Chapter 5) must be undertaken.

In a first step, the developer must submit the PPA application to the respective PLN local office. After evaluation, the PPA proposal is forwarded by the PLN local office to PLN headquarters. If PLN headquarter agrees, a "willingness-to-purchase" letter will be issued to the project developer while the proposal will be forwarded to the Ministry of Energy and Mineral Resources (ESDM; *Energi dan Sumber Daya Mineral*) for final approval. Upon receipt of "willingness-to-purchase" letter, the project developer can finalize the feasibility study (F/S) which will be needed for PPA signature. At the same time, the negotiations on selling price duration and point of connection must be done with the PLN local office.

If the project developer want to sell electricity with a higher price than the established feed-in tariff (FiT) rate, this price has to be negotiated with PLN local office. The agreed selling price must be then approved by the Ministry (ESDM). The PPA can be signed only after the F/S is finalized, the temporary electricity production license is granted (Sub-step C4-1), and a performance bond is obtained (Sub-step C5-1).

TOC Overall Step Overall Step

Section Menu
Step Details page consists of three parts: Step Description, Related Regulations, and Identified Challenges. Click the Section Menu to switch between different parts of the page.

Table of Content
Click and jump to Table of Content page

Overall Gantt's Chart
Jump to Overall Gantt's Chart page that describes the entire project development cycle

Step's Gantt's Chart
Jump to Gantt's Chart of the current step

Overall Flow Chart
Jump to Overall Flow Chart page that describes the entire project development cycle

Step's Flow Chart
Jump to Flow Chart of the current step



How to use the Guideline

Sub-step Details Page

Sub-step ID

Number of the respective sub-step



Chapter 3 | Power Purchase Agreement

C3-4

Negotiate the Duration of Selling Price and Point of Connection

Sub-step Details

Required Documents

The developer must negotiate with the PLN the duration of the selling price as well as agree on the point of connection. In addition, the costs for the transmission line connecting the power plant to the point of connection is subjected to negotiation. As a rule of thumb, when the length is more than 8 km, cost sharing is likely. In case the length is less than 8 km, the project developer most probably has to bear the costs.

In case the project value is more than 50 billion IDR (approx. 4 Mio USD, Dec 2013), the PLN local office must obtain a principal license from the board of directors of PLN Headquarters prior to PPA signing (Sub-step C3-7). For project value of less than 50 billion IDR, the general manager of PLN local office can approve the price and proceed with the PPA signature.

Remark: This principle license indicated here in an internal document of PLN. It must not be confused with the principle license from the local government or the principle license for investment

Sub-step Description

A description on the typical procedures which the project developer must perform during this sub-step

Related Authorities

Central government	PLN headquarter (Renewable Energy Division)
Provincial	PLN local office
Regency / City	

TOC



Overall

Step



Overall

Step

Table of Content

Click and jump to Table of Content page

Overall Gantt's Chart

Jump to Overall Gantt's Chart page that describes the entire project development cycle

Step's Gantt's Chart

Jump to Gantt's Chart of the current step

Overall Flow Chart

Jump to Overall Flow Chart page that describes the entire project development cycle

Step's Flow Chart

Jump to Flow Chart of the current step

TOC



Overall



Overall

Appendix: Indonesian Guaranteed Price (Feed-in Tariff)

The Guaranteed Price was announced in the PERMEN (ESDM; *Energi dan Sumber daya Mineral*) No. 4/2012. Two prices are applicable, according to the grid voltage level the power plant is connected to. In addition, the prices vary depending on the region where the power plant is situated (F factor). An exception is a power plant using municipal solid waste as feedstock, here a standard price is applied regardless the location. The regulation does not specify duration of the Guaranteed Price. This has to be negotiated with PLN.

The Guaranteed Price for geothermal power plants was introduced separately in the PERMEN (ESDM) No. 2/2011. Other RE technologies are subject to the general price for any RE technology.

General RE Technology (except for biomass/biogas, geothermal, and municipal solid waste)

Guaranteed Price	Point of connection
656 IDR/kWh x F (5.6 cent USD/kWh)	Medium voltage level
1,004 IDR/kWh x F (8.6 cent USD/kWh)	Low voltage level

Location	F
Java and Bali	1.0
Sumatera and Sulawesi	1.2
Kalimantan, West Nusa Tenggara, and East Nusa Tenggara	1.3
Maluku and Papua	1.5

Biomass/Biogas

Guaranteed Price	Point of connection
975 IDR/kWh x F (8.4 cent USD/kWh)	Medium voltage level
1,325 IDR/kWh x F (11.4 cent USD/kWh)	Low voltage level

Location	F
Java, Madura, Bali and Sumatera	1.0
Sulawesi, Kalimantan, West Nusa Tenggara, and East Nusa Tenggara	1.2
Maluku and Papua	1.3

Note: Currency conversion rate is 11,590 Indonesian Rupiah (IDR) / US Dollar (USD), as of April 2014

Appendix: Indonesia Legal Structure

The hierarchy of Indonesia legal system is according to the UU No. 10/2004. The following table summarizes the list of laws and regulations in different layer of the government. It should be noted that the objective of the table is not to contain the complete list of laws and regulations. It focuses on the ones which are closely related to the Guideline.

Level	Law/Regulation
National level	<ul style="list-style-type: none">• Constitution (UUD; <i>Undang-Undang Dasar</i>)• Law (UU; <i>Undang-Undang</i>)• Government Regulation in lieu of a law or interim law (<i>Peraturan Pemerintah Pengganti Undang-Undang</i>)• Government Regulation (PP; <i>Peraturan Pemerintha</i>)
Presidential level	<ul style="list-style-type: none">• Presidential Regulation (PERPRES; <i>Peraturan Presiden</i>)• Presidential Decree (KEPPRES; <i>Keputusan Presiden</i>)• Presidential Instruction (INPRES; <i>Instruksi Presiden</i>)
Ministerial level	<ul style="list-style-type: none">• Ministerial Regulation (PERMEN; <i>Peraturan Menteri</i>)• Ministerial Decree (KEPMEN; <i>Keputusan Menteri</i>)• Ministerial Instruction (INMEN; <i>Instruksi Menteri</i>)
Directorate General Level	<ul style="list-style-type: none">• Directorate General Regulation (<i>Peraturan Direktur Jeneral</i>)• Directorate General Decree (<i>Keputusan Direktur Jeneral</i>)
Agency Level	<ul style="list-style-type: none">• Agency Regulation (PERKA; <i>Peraturan Kepala Badan</i>)
Regional level	<ul style="list-style-type: none">• Regional Regulation (<i>Peraturan Daerah</i>)

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