

**REGULATION OF THE MINISTER OF ENERGY AND MINERAL RESOURCES OF  
THE REPUBLIC OF INDONESIA  
NUMBER 19 OF 2016  
ON  
POWER PURCHASE FROM PHOTOVOLTAIC SOLAR POWER PLANT BY PT  
PERUSAHAAN LISTRIK NEGARA (PERSERO)**

**BY THE BLESSINGS OF ALMIGHTY GOD**

**THE MINISTER OF ENERGY AND MINERAL RESOURCES OF  
THE REPUBLIC OF INDONESIA,**

- Considering :**
- a. that in the framework of fulfilling the electricity demand and achieving the new and renewable energy target in accordance with the national energy policy, it is necessary to encourage the use of solar energy for power generation;**
  - b. that in order to develop transparent and competitive electricity enterprise and facilitate implementation of the power purchase from Photovoltaic Solar Power Plant by PT Perusahaan Listrik Negara (Persero), it is necessary to regulate the local contents in the photovoltaic modules, capacity quota offer mechanism, and determination of the power purchase price from Photovoltaic Solar Power Plant by PT Perusahaan Listrik Negara (Persero);**
  - c. that based on considerations as referred to in point a and point b, it is necessary to issue the Regulation of the Minister of Energy and Mineral Resources on Power**

Purchase from Photovoltaic Solar Power Plant by PT Perusahaan Listrik Negara (Persero);

- Observing :
1. Law Number 19 of 2003 on State-Owned Enterprises (State Gazette of the Republic of Indonesia of 2003 Number 70, Supplement to the State Gazette of the Republic of Indonesia Number 4297);
  2. Law Number 30 of 2007 on Energy (State Gazette of the Republic of Indonesia of 2007 Number 96, Supplement to the State Gazette of the Republic of Indonesia Number 4746);
  3. Law Number 11 of 2008 on Electronic Information and Transactions (State Gazette of the Republic of Indonesia of 2008 Number 58, Supplement to the State Gazette of the Republic of Indonesia Number 4843);
  4. Law Number 30 of 2009 on Electricity (State Gazette of the Republic of Indonesia of 2009 Number 133, Supplement to the State Gazette of the Republic of Indonesia Number 5052);
  5. Law Number 3 of 2014 on Industrial Affairs (State Gazette of the Republic of Indonesia of 2014 Number 4, Supplement to the State Gazette of the Republic of Indonesia Number 5492);
  6. Government Regulation Number 23 of 1994 on Transformation of Perusahaan Umum (Perum) Listrik Negara to become Perusahaan Perseroan (Persero) (State Gazette of the Republic of Indonesia of 1994 Number 34);
  7. Government Regulation Number 14 of 2012 on Power Supply Business Activities (State Gazette of the Republic of Indonesia of 2012 Number 28, Supplement to the State Gazette of the Republic of Indonesia Number 5281) as amended by the Government Regulation Number 23 of 2014 on the Amendment to Government Regulation Number 14 of 2012 on Power Supply Business Activities (State Gazette of the Republic of Indonesia of 2014 Number 75, Supplement

to the State Gazette of the Republic of Indonesia Number 5530);

8. Government Regulation Number 79 of 2014 on the National Energy Policy (State Gazette of the Republic of Indonesia of 2014 Number 300, Supplement to the State Gazette of the Republic of Indonesia Number 5609);
9. Presidential Regulation Number 68 of 2015 on Ministry of Energy and Mineral Resources (State Gazette of the Republic of Indonesia of 2015 Number 132);
10. Regulation of the Minister of Energy and Mineral Resources Number 13 of 2016 on Organization and Working System of the Ministry of Energy and Mineral Resources (State Bulletin of the Republic of Indonesia of 2016 Number 782);

HAS DECIDED:

To issue : REGULATION OF THE MINISTER OF ENERGY AND MINERAL RESOURCES ON POWER PURCHASE FROM PHOTOVOLTAIC SOLAR POWER PLANT BY PT PERUSAHAAN LISTRIK NEGARA (PERSERO).

## CHAPTER I

### GENERAL PROVISIONS

#### Article 1

In this Ministerial Regulation:

1. PT Perusahaan Listrik Negara (Persero), State Electricity Company, hereinafter referred to as PT PLN (Persero), means a state-owned enterprise established based on the Government Regulation Number 23 of 1994 on Transformation of Perusahaan Umum (Perum) Listrik Negara to become Perusahaan Perseroan (Persero).
2. *Pembangkit Listrik Tenaga Surya Fotovoltaik*, Photovoltaic Solar Power Plant, hereinafter referred to as PLTS Fotovoltaik means a power plant which converts solar energy into electricity by using photovoltaic modules which

are interconnected directly to the power grid owned by PT PLN (Persero).

3. Business Entity means legal entities in the form of state-owned enterprises, region-owned enterprises, privately-owned enterprises incorporated under Indonesian laws, or cooperatives that carry out power supply businesses.
4. *Tingkat Komponen Dalam Negeri*, Local Contents, hereinafter referred to as TKDN means the portion of local contents in a combination of goods and services in a set of goods and services in each construction of PLTS Fotovoltaik.
5. PLTS Fotovoltaik Capacity Quota hereinafter referred to as Capacity Quota means the maximum capacity of the PLTS Fotovoltaik offered to Business Entity in a certain period of time for the specified power purchase price.
6. *Perjanjian Jual Beli Tenaga Listrik*, Power Purchase Agreement, hereinafter referred to as PJBL means power purchase agreement between PLTS Fotovoltaik Developer and PT PLN (Persero).
7. PLTS Fotovoltaik Developer means the Business Entity assigned by the Minister through Dirjen EBTKE that cooperates with PT PLN (Persero) as stated in PJBL.
8. Commercial Operation Date hereinafter referred to as COD means the date PLTS Fotovoltaik begins to operate and commercially distributes electricity to the power grid owned by PT PLN (Persero).
9. Capacity Request means request for the amount of capacity submitted by PLTS Fotovoltaik Developer candidates to the offered Capacity Quota.
10. *Izin Usaha Penyediaan Tenaga Listrik*, Electricity Supply Business Permit, hereinafter referred to as IUPTL means a permit required to supply power to the public.
11. Minister means the minister administering governance in the energy and mineral resources sector.
12. *Direktur Jenderal Energi Baru, Terbarukan, dan Konservasi Energi*, Director General of New, Renewable Energy, and Energy Conservation, hereinafter referred to Dirjen EBTKE, means the director general who fulfills the duty of and is

responsible for the formulation and implementation of policies in the area of development, control, and supervision of geothermal energy, bioenergy, various new and renewable energy, and energy conservation activities.

13. *Direktur Jenderal Ketenagalistrikan*, Director General of Electricity, hereinafter referred to Dirjen Ketenagalistrikan means the director general who fulfills the duty of and is responsible for the formulation and implementation of policies in development, enterprise, technicality, occupational safety, and environment of electricity subsector.

## CHAPTER II

### ASSIGNMENT OF POWER PURCHASE FROM PLTS FOTOVOLTAIK BY PT PLN (PERSERO)

#### Article 2

- (1) Under this Ministerial Regulation, the Minister assigns PT PLN (Persero) to purchase power from PLTS Fotovoltaik managed by the Business Entities determined as PLTS Fotovoltaik Developers.
- (2) The assignment by the Minister as referred to in section (1) is acted as:
  - a. direct appointment to purchase power by PT PLN (Persero); and
  - b. approval of power purchase price by PT PLN (Persero).
- (3) Based on the assignment as referred to in section (1), PT PLN (Persero) may be granted compensation in accordance with the provisions of laws and regulations.

## CHAPTER III

### PROVISIONS ON THE USAGE OF LOCAL CONTENTS IN PLTS FOTOVOLTAIK CONSTRUCTION AND STANDARDS

#### Article 3

- (1) PLTS Fotovoltaik construction sets priority on the usage of local contents.

- (2) The usage of local contents for PLTS Fotovoltaik construction as referred to in section (1), use the TKDN minimum standard for PLTS Fotovoltaik system in accordance with the provisions of regulations of the minister administering governance in industrial affairs.

#### Article 4

- (1) Components used in PLTS Fotovoltaik system must meet international or national standards.
- (2) The construction of PLTS Fotovoltaik must meet international standards, national standards or standards applicable in PT PLN (Persero).

### CHAPTER IV

#### POWER PURCHASE PRICE FROM PLTS FOTOVOLTAIK AND CAPACITY QUOTA

#### Article 5

- (1) The power purchase price from PLTS Fotovoltaik as referred to in Article 2 section (1) is determined by taking into account the Capacity Quota for each area.
- (2) The Capacity Quota for each area as referred to in section (1) is determined by the Minister according to the power grid owned by PT PLN (Persero) with total Capacity Quota of at least 5,000 MW (five thousand megawatts) to be offered gradually, of which different power purchase price from PLTS Fotovoltaik may apply at each phase.
- (3) The Capacity Quota offer and power purchase price from PLTS Fotovoltaik as referred to in section (2) for the first phase are set by the quantity and price as listed in Annex I which is an integral part of this Ministerial Regulation.
- (4) The Capacity Quota offer and power purchase price from PLTS Fotovoltaik as referred to in section (2) for the next phase is determined by the Minister.

#### Article 6

- (1) The power purchase price from PLTS Fotovoltaik as referred to in Article 5 is:

- a. inclusive of all procurement costs for interconnection grid of PLTS Fotovoltaik with the power grid owned by PT PLN (Persero);
  - b. a price used in PJBL without negotiation and escalation; and
  - c. a valid price at the time PLTS Fotovoltaik is declared to have achieved COD in accordance with the schedule agreed in the PJBL.
- (2) The payment transaction of power purchase from PLTS Fotovoltaik between PT PLN (Persero) and PLTS Fotovoltaik Developer is carried out in rupiah currency by using the exchange rate of the Jakarta Interbank Spot Dollar Rate (JISDOR) at the time agreed in the PJBL.

#### Article 7

PJBL is valid for a period of 20 (twenty) years as of COD and may be extended.

### CHAPTER V

#### EXECUTION OF POWER PURCHASE FROM PLTS FOTOVOLTAIK

#### Article 8

- (1) Business Entity interested in utilizing solar energy for PLTS Fotovoltaik is first determined as PLTS Fotovoltaik Developer by the Minister through Dirjen EBTKE.
- (2) The determination of PLTS Fotovoltaik Developers as referred to in section (1) is conducted online through the following steps:
  - a. registration announcement;
  - b. registration of Business Entities as the PLTS Fotovoltaik Developer candidates;
  - c. verification of the documents submitted by the Business Entities registering as the PLTS Fotovoltaik Developer candidates;
  - d. announcement and notification to the PLTS Fotovoltaik Developer candidates that are entitled to apply;

- e. Capacity Quota offer for all PLTS Fotovoltaik Developer candidates;
- f. Capacity Request;
- g. verification of Capacity Request; and
- h. determination and announcement of PLTS Fotovoltaik Developer for each area.

#### Article 9

- (1) In the framework of registration announcement as referred to in Article 8 section (2) point a, the Minister through Dirjen EBTKE publishes PLTS Fotovoltaik Developers registration plans on the web page of the Directorate General of New, Renewable Energy, and Energy Conservation and/or daily national newspaper not later than 1 (one) month before the registration announcement of PLTS Fotovoltaik Developer candidates.
- (2) The registration announcement of PLTS Fotovoltaik Developer candidates by the Minister through Dirjen EBTKE as referred to in section (1) is posted online.

#### Article 10

- (1) Registration of Business Entities as a PLTS Fotovoltaik Developer candidates as referred to in Article 8 section (2) point b is carried out within a period of 7 (seven) days.
- (2) The registered Business Entities as referred to in section (1), must complete the required documents as follows:
  - a. Business Entity profile; and
  - b. financial capabilities certified by the financial rating or financial audit institution.
- (3) Business Entity profile as referred to in section (2) point a contains:
  - a. the Deed of Establishment or Deed of Amendment of the Company;
  - b. Taxpayer Identification Number;
  - c. Company Registration Identification; and
  - d. Investment Principle License.



- (4) Business Entity profile as referred to in section (2) point a may be supported by the proof of experience in developing PLTS Fotovoltaik for those who have.

#### Article 11

- (1) The Minister through Dirjen EBTKE verifies the documents submitted by the Business Entities registered as PLTS Fotovoltaik Developer candidates as referred to in Article 8 section (2) point c.
- (2) Verification of Business Entity documents as referred to in section (1) is conducted not later than 6 (six) work days from the date of registration.
- (3) The Minister through Dirjen EBTKE informs online the approval or refusal as PLTS Fotovoltaik Developer candidates to the verified Business Entities as referred to in section (2).

#### Article 12

- (1) The Minister through Dirjen EBTKE announces the list of PLTS Fotovoltaik Developer candidates entitled to submit online the applications as referred to in Article 8 section (2) point d.
- (2) Every PLTS Fotovoltaik Developer candidate as referred to in section (1) receives online notification along with access code (username) and password which act as the identity of PLTS Fotovoltaik Developer candidates.
- (3) The list of PLTS Fotovoltaik Developer candidates applies to all areas and phases of Capacity Quota offer.
- (4) The registration of a new Business Entity as a PLTS Fotovoltaik Developer candidate is opened for every phase of the next Capacity Quota offer.

#### Article 13

- (1) In the framework of Capacity Quota offer to the PLTS Fotovoltaik Developer candidates as referred to in Article 8 section (2) point e, the Minister through Dirjen EBTKE publishes Capacity Quota offer plan to the PLTS Fotovoltaik

Developer candidate on the web page of the Directorate General of New, Renewable Energy, and Energy Conservation and/or daily national newspaper not later than 4 (four) months before the announcement of Capacity Quota offer.

- (2) Capacity Quota offer to the PLTS Fotovoltaik Developer candidates as referred to in section (1) is carried out online.
- (3) Capacity Quota offer as referred to in section (1) is valid not later than 2 (two) months as of its announcement.
- (4) The next phase of Capacity Quota offer can be done if:
  - a. Capacity Quota being offered has reached at least 80% (eighty percent) and a Business Entity has been designated as a PLTS Fotovoltaik Developer; and/or
  - b. Capacity Quota offer period as referred to in section (3) has reached 2 (two) months.
- (5) If the Capacity Quota as referred to in section (4) is not completed within 2 (two) months, the remaining Capacity Quota will be a part of the Capacity Quota at the next phase.
- (6) The power purchase price from PLTS Fotovoltaik for the remaining Capacity Quota as referred to in section (5), complies with the power purchase price from PLTS Fotovoltaik in the next phase of Capacity Quota offer.

#### Article 14

- (1) Capacity Request as referred to in Article 8 section (2) point f is submitted online by PLTS Fotovoltaik Developer candidates.
- (2) PLTS Fotovoltaik Developer candidates as referred to in section (1) must complete the following requirements:
  - a. self-declared TKDN calculation for the entire PLTS Fotovoltaik systems;
  - b. certificate of fotovoltaik solar modules and inverters test;
  - c. feasibility study; and
  - d. interconnection study.

- (3) Feasibility study documents as referred to in section (2) point c are prepared in accordance with the format set in Annex II, which is an integral part of this Ministerial Regulation.
- (4) Interconnection study documents as referred to in section (2) point d are prepared in accordance with the provisions that at least contain items as listed in Annex III which is an integral part of this Ministerial Regulation.

#### Article 15

- (1) For Capacity Quota offer more than 100 MW (one hundred megawatts) in each area, every Capacity Request made by PLTS Fotovoltaik Developer candidate is limited to 20 MW (twenty megawatts).
- (2) Capacity Quota offer from 10 MW (ten megawatts) to 100 MW (one hundred megawatts) in each area, every Capacity Request made by PLTS Fotovoltaik Developer candidate is limited to 20% (twenty percent) of the offered Capacity Quota.
- (3) Capacity Quota offer up to 10 MW (ten megawatts) in each area, Capacity Request made by PLTS Fotovoltaik Developer candidate is not limited.
- (4) For Capacity Request as referred to in section (1), section (2), and section (3), PLTS Fotovoltaik Developer candidates may get at most 3 (three) times Capacity Quota approval in the same area for each phase of Capacity Quota offers.
- (5) If Capacity Quota is still available within a period of 1 (one) month, the PLTS Fotovoltaik Developer candidate that got 3 (three) times Capacity Quota approval in the same area as referred to in section (4) may propose other Capacity Requests.

#### Article 16

- (1) The Minister forms an Integrated Team to verify the Capacity Request as referred to in Article 8 section (2) point g.

- (2) The Integrated Team as referred to in section (1) consists of representatives of Directorate General of New, Renewable Energy, and Energy Conservation, Directorate General of Electricity, and PT PLN (Persero).
- (3) The verification as referred to in section (1) is conducted on a first-come first-served basis.
- (4) The Integrated Team delivers online the results of the verification to the Minister through Dirjen EBTKE.
- (5) The Minister through Dirjen EBTKE grants approval or refusal of Capacity Request submitted online to the PLTS Fotovoltaik Developer candidates within a maximum period of 2 (two) months from the date of request listed in the online application system.
- (6) In the event that the Capacity Request is approved, the approval of Capacity Request by the Minister through Dirjen EBTKE is a determination as the PLTS Fotovoltaik Developer through the online application system.
- (7) In the event that the Capacity Request is refused, the Minister through Dirjen EBTKE conveys the refusal and its reasons through the online application system.

#### Article 17

- (1) PT PLN (Persero) and PLTS Fotovoltaik Developer are obligated to sign PJBL within a maximum period of 1 (one) month after the determination of the PLTS Fotovoltaik Developer as referred to in Article 16 section (6).
- (2) PLTS Fotovoltaik Developer is obligated to submit a copy of the PJBL as referred to in section (1) to the Minister through Dirjen EBTKE.
- (3) In the event that the PJBL has not been signed by PT PLN (Persero) and PLTS Fotovoltaik Developers in the period of 1 (one) month as referred to in section (1), then:
  - a. PT PLN (Persero) and PLTS Fotovoltaik Developer each submit a report regarding the reason for not signing the PJBL to the Minister through Dirjen EBTKE within a maximum period of 7 (seven) work days after the date as referred to in section (1) is not met;

- b. based on the reports as referred to in point a, the Minister through Dirjen EBTKE facilitates the signing of the PJBL.

#### Article 18

- (1) PT PLN (Persero) provides PJBL model of PLTS Fotovoltaik and submits the model to the Minister through Dirjen EBTKE not later than 30 (thirty) work days from the promulgation of this Ministerial Regulation.
- (2) PLTS Fotovoltaik Developer may request the PJBL model as referred to in section (1) to PT PLN (Persero) in writing with a copy to Dirjen EBTKE.

#### Article 19

PLTS Fotovoltaik Developer as referred to in Article 16 section (6) is obligated to submit report on the progress of implementation of PLTS Fotovoltaik development to the Minister through Dirjen EBTKE every 3 (three) months from the date of PJBL signing until the COD with copies submitted to Dirjen Ketenagalistrikan and Board of Directors of PT PLN (Persero) through the online application system.

#### Article 20

- (1) PLTS Fotovoltaik Developer is obligated to draw to a financial close for the physical construction needs of PLTS Fotovoltaik and submits the proof to the Minister through Dirjen EBTKE through the online application system within a maximum period of 6 (six) months from the signing of the PJBL.
- (2) In the event that after a period of 6 (six) months from the signing of the PJBL, the PLTS Fotovoltaik Developer does not draw to a financial close, its determination as PLTS Fotovoltaik Developer is repealed.

#### Article 21

- (1) PLTS Fotovoltaik Developers which have signed the PJBL and fulfilled the financial close are obligated to apply for the

IUPTL in accordance with the provisions of laws and regulations.

- (2) In a maximum period of 3 (three) work days after obtaining the IUPTL as referred to in section (1), the PLTS Fotovoltaik Developer must submit online a copy of IUPTL to Dirjen EBTKE and Board of Directors of PT PLN (Persero).

#### Article 22

- (1) PLTS Fotovoltaik Developer is obligated to submit the verification results of its self-declared TKDN calculation of PLTS Fotovoltaik to Dirjen EBTKE with a copy submitted to PT PLN (Persero) not sooner than 30 (thirty) days before the COD.
- (2) The verification of self-declared TKDN calculation of PLTS Fotovoltaik as referred to in section (1) is performed by an authorized body appointed by the Ministry administering governance affairs in industrial sector.
- (3) In the event that TKDN verification results performed by authorized body as referred to in section (1) and section (2) do not comply with the provisions of the Minister administering governance affairs in industrial sector, the PLTS Fotovoltaik Developer is obligated to replace the goods and/or services in order to achieve the set minimum TKDN percentage not later than 60 (sixty) days.
- (4) In the event that the PLTS Fotovoltaik Developer does not fulfill the obligation as referred to in section (3), sanction is imposed by reducing the power purchase price equal to the difference between verified TKDN percentage and set TKDN percentage in accordance with the provisions of regulation of the minister administering governance affairs in industrial sector.
- (5) The difference between the verified TKDN percentage and the set TKDN percentage as referred to in section (4) is used as the basis for calculating the reduction in the power purchase price that is listed in the PJBL by using formula:  

$$c = (a - b)/a, \text{ with } c \leq 1 \text{ or } 100\%$$

$$d' = d \times (1 - c)$$

where:

a = minimum percentage of TKDN according to regulations of the minister administering governance affairs in industrial sector

b = percentage of TKDN verified by authorized body assigned by the minister administering governance affairs in industrial sector

c = percentage of sanction by reducing the power purchase price

d = power purchase price

d' = corrected power purchase price

- (6) Reduction in power purchase price due to the difference between the verified TKDN percentages and the set TKDN percentages as referred to in section (4) is stated in the PJBL.
- (7) The Minister through Dirjen EBTKE guides and supervises the TKDN in accordance with his/her authority.

#### Article 23

- (1) The construction of PLTS Fotovoltaik by PLTS Fotovoltaik Developer is required to reach COD not later than 12 (twelve) months for a capacity up to 10 MW (ten megawatts) and 24 (twenty four) months for a capacity above 10 MW (ten megawatts), as of the issuance of IUPTL.
- (2) The construction of PLTS Fotovoltaik that does not reach COD as referred to in section (1), is subject to reduction in the power purchase price from PLTS Fotovoltaik with the following conditions:
- a. delay of up to 3 (three) months, is subject to reduction in prices by 3% (three percent);
  - b. delay of more than 3 (three) months to 6 (six) months, is subject to reduction in price by 5% (five percent);
  - c. delay of more than 6 (six) months to 12 (twelve) months, is subject to reduction in price by 8% (eight percent).
- (3) The power purchase price as referred to in section (2) excludes the provisions of price reduction on fulfillment of

TKDN requirements as referred to in Article 22 section (4).

- (4) In the event that PLTS Fotovoltaik Developer is subject to price reduction as referred to in Article 22 section (4), the reduction in the power purchase price under the provision as referred to in section (2) is applied after calculating price reduction sanction due to the non-compliance with TKDN provisions as referred to in Article 22 section (4).
- (5) Further provisions on sanction due to delay in COD as referred to in section (2) is stated in the PJBL.
- (6) In the event that COD is not reached within the period as referred to in section (1) and section (2), the determination as PLTS Fotovoltaik Developer is repealed.

#### Article 24

In the event of repeal of a Business Entity as a PLTS Fotovoltaik Developer as referred to in Article 20 section (2) and Article 23 section (6), the Business Entity is prohibited to submit a similar request for a period of 2 (two) consecutive years since the repeal.

### CHAPTER VI

#### TRANSITIONAL PROVISIONS

#### Article 25

- (1) At the time this Ministerial Regulation is promulgated, Business Entity which has been determined as the winner of the PLTS Fotovoltaik Capacity Quota bidding in accordance with the Regulation of the Minister of Energy and Mineral Resources Number 17 of 2013 on the Power Purchase by PT Perusahaan Listrik Negara (Persero) from Photovoltaic Power Plant is obligated to sign the PJBL not later than 3 (three) months from the promulgation of this Ministerial Regulation.
- (2) If the Business Entity which has been determined as the winner of the PLTS Fotovoltaik Capacity Quota bidding in accordance with the Regulation of the Minister of Energy and Mineral Resources Number 17 of 2013 on the Power Purchase by PT Perusahaan Listrik Negara (Persero) from



Photovoltaic Power Plant has not signed the PJBL in the period of 3 (three) months as referred to in section (1), the determination of the winner of the PLTS Fotovoltaik Capacity Quota bidding is repealed.

- (3) In the event of the repeal of the winner of the PLTS Fotovoltaik Capacity Quota bidding as referred to in section (2), the letter of assignment to purchase power from PLTS Fotovoltaik to PT PLN (Persero) issued by the Minister before the promulgation of this Minister Regulation, is declared ineffective.

#### Article 26

Business Entity which conducts trading of power from PLTS Fotovoltaik on a business to business process with PT PLN (Persero) and has not signed the PJBL may continue the process of procurement and the signing of the PJBL with PT PLN (Persero).

### CHAPTER VII CLOSING PROVISIONS

#### Article 27

At the time when this Ministerial Regulation comes into force, the Regulation of the Minister of Energy and Mineral Resources Number 17 of 2013 on Power Purchase by PT Perusahaan Listrik Negara (Persero) from Photovoltaic Solar Power Plant, is repealed and declared ineffective.

#### Article 28

This Ministerial Regulation comes into force on the date of its promulgation.

In order that every person may know hereof, it is ordered to promulgate this Ministerial Regulation by its placement in the State Bulletin of the Republic of Indonesia.

Issued in Jakarta  
on 28 June 2016

MINISTER OF ENERGY AND MINERAL  
RESOURCES OF THE REPUBLIC OF INDONESIA,

Signed

SUDIRMAN SAID

Promulgated in Jakarta  
on 12 July 2016

DIRECTOR GENERAL OF LEGISLATION  
OF MINISTRY OF LAW AND HUMAN RIGHTS  
OF THE REPUBLIC OF INDONESIA,

Signed

WIDODO EKATJAHJANA

STATE BULLETIN OF THE REPUBLIC OF INDONESIA OF 2016 NUMBER 1013

Jakarta, 19 October 2016

Has been translated as an Official Translation  
on behalf of Minister of Law and Human Rights  
of the Republic of Indonesia

DIRECTOR GENERAL OF LEGISLATION,

  
WIDODO EKATJAHJANA



ANNEX I  
 REGULATION OF THE MINISTER OF ENERGY AND MINERAL  
 RESOURCES OF THE REPUBLIC OF INDONESIA  
 NUMBER 19 OF 2016  
 ON  
 POWER PURCHASE FROM PHOTOVOLTAIC SOLAR POWER  
 PLANT BY PT PERUSAHAAN LISTRIK NEGARA (PERSERO)

CAPACITY QUOTA OFFER AND POWER PURCHASE PRICE FROM PLTS  
 PHOTOVOLTAIC FOR FIRST PHASE

No.	State	Capacity Quota (MWp)	Purchase Price (cent USD/kWh)
1.	Jakarta	150.0	14.5
2.	West Java		
3.	Banten		
4.	Central Java and Yogyakarta		
5.	East Java		
6.	Bali	5.0	16.0
7.	Lampung	5.0	15.0
8.	South Sumatra, Jambi, and Bengkulu	10.0	15.0
9.	Aceh	5.0	17.0
10.	North Sumatra	25.0	16.0
11.	West Sumatra	5.0	15.5
12.	Riau and Riau Islands	4.0	17.0
13.	Bangka-Belitung	5.0	17.0
14.	West Kalimantan	5.0	17.0
15.	South Kalimantan and Central Kalimantan	4.0	16.0
16.	East Kalimantan and North Kalimantan	3.0	16.5
17.	North Sulawesi, Central Sulawesi, and Gorontalo	5.0	17.0
18.	South Sulawesi, Southeast Sulawesi, and West Sulawesi	5.0	16.0
19.	West Nusa Tenggara	5.0	18.0
20.	East Nusa Tenggara	3.5	23.0
21.	Maluku and North Maluku	3.0	23.0
22.	Papua and West Papua	2.5	25.0

MINISTER OF ENERGY AND MINERAL  
 RESOURCES OF THE REPUBLIC OF INDONESIA,

Signed

SUDIRMAN SAID

ANNEX II  
REGULATION OF THE MINISTER OF ENERGY AND MINERAL  
RESOURCES OF REPUBLIC OF INDONESIA  
NUMBER 19 OF 2016  
ON  
POWER PURCHASE FROM PHOTOVOLTAIC SOLAR POWER  
PLANT BY PT PERUSAHAAN LISTRIK NEGARA (PERSERO)

FEASIBILITY STUDY DOCUMENT FORMAT

Chapter 1.	Executive Summary
Chapter 2.	Introduction and Project Background
Chapter 2.1	Need for Project
Chapter 2.2	Potential Benefits of Project
Chapter 2.3	Project participants (Owner, Utility, Government, Investor, etc)
Chapter 3	Technology Description and Background
Chapter 3.1	Overview – Photovoltaic
Chapter 3.1.1	Global Photovoltaic Market
Chapter 3.2	Technologies – Thin Film, Crystalline
Chapter 3.3	Inverters – String, Central
Chapter 3.3.1	Grid Connection Features
Chapter 3.3.2	Lifetime
Chapter 3.4	Control System
Chapter 4	National Electricity Sector in the Country/Area/Region
Chapter 4.1	Installed Generation, including Renewable Energy
Chapter 4.2	Renewable Energy Targets, and how project will help meet those targets
Chapter 4.3	Ownership/Market Structure (e.g. Single Utility, Deregulated)
Chapter 4.4	Local Content Requirements
Chapter 4.5	Discussion on Impact of Renewable Project to Reduce Diesel Consumption
Chapter 4.6	Indonesian Policy Guidelines and Incentive Availability
Chapter 5	Site Information
Chapter 5.1	Map/Photos/Site Location
Chapter 5.2	Site Ownership Details
Chapter 5.3	Proximity to Transportation, Nearest Town, Nearest Transmission
Chapter 5.4	Climatic conditions
Chapter 5.5	Vegetation Details and Analysis
Chapter 6.	Site Assessment
Chapter 6.1	Site Survey, with Detailed Topographic Map
Chapter 6.2	Site Visit Report
Chapter 6.3	Preliminary Geotechnical Analysis
Chapter 6.4	Hydrology Report and/or Flooding Assessment
Chapter 6.5	Assessment of Geology and Seismic Hazard
Chapter 6.6	Constructability Assessment

Chapter 6.6.1	Water, Power, Laydown Area, Parking for Workers, Local Labor Availability, etc.
Chapter 6.7	Logistics Assessment
Chapter 6.8	Security and Safety
Chapter 7	Environmental and Social Impact Assessment
Chapter 7.1	Initial Environmental Assessment
Chapter 7.2	Environmental and Social Assessment
Chapter 8	Engineering Design
Chapter 8.1	Major Equipment Selection/Assumptions
Chapter 8.2	Block Design
Chapter 8.3	Electrical Single Line Diagram (AC and DC)
Chapter 8.4	Site Layout
Chapter 8.5	Control and Monitoring System
Chapter 8.6	Drawing List
Chapter 9	Grid Interconnection Study
Chapter 9.1	Connection Agreement
Chapter 9.2	Easement Arrangement
Chapter 9.3	Substation Characteristics – Voltage, Lines, Local Load, Plans for Expansion, etc.
Chapter 9.4	System Impact Study Results
Chapter 10	Energy Yield Assessment
Chapter 10.1	Solar Resource Assessment
Chapter 10.2	Site Assessment
Chapter 10.3	Solar Model Input and Assumptions
Chapter 10.4	Energy Yield Results
Chapter 10.4.1	Gain and Loss Results
Chapter 10.4.2	Uncertainty Analysis – P50/P90 Results
Chapter 11	Project Schedule
Chapter 12	Construction and Implementation
Chapter 12.1	Contract Structure
Chapter 12.2	Construction Approach and Plan
Chapter 12.3	Local Content Approach
Chapter 12.4	Handover
Chapter 13	Capital and Operating Cost Estimate
Chapter 13.1	Capital Expenditures
Chapter 13.1.1	Potential Equipment Suppliers
Chapter 13.2	Operational Expenditures
Chapter 13.2.1	Soft Cost such as Insurance, Administration, etc
Chapter 14	Financial Assessment
Chapter 14.1	Assumptions
Chapter 14.2	EPC Turnkey Cost
Chapter 14.3	Commissioning Cost
Chapter 15	Risk Assessment

Chapter 15.1	Risks from PT PLN (Persero) Perspective
Chapter 15.2	Risks from PLTS Fotovoltaik Developer Candidate's Perspective
Chapter 15.3	Risk Mitigation
Chapter 16	Operation and Maintenance
Chapter 16.1	Control System and Monitoring
Chapter 16.2	Scheduled and Unscheduled Maintenance
Chapter 16.3	Frequency of Component Failure
Chapter 16.4	Onsite Required Spare Part
Chapter 16.5	Time Required to Replace/Repair Major Components
Chapter 17	Decommissioning
Chapter 18	Warranty Service

MINISTER OF ENERGY AND MINERAL  
RESOURCES OF THE REPUBLIC OF INDONESIA,

Signed

SUDIRMAN SAID

ANNEX III  
REGULATION OF THE MINISTER OF ENERGY AND MINERAL  
RESOURCES OF REPUBLIC OF INDONESIA  
NUMBER 19 OF 2016  
ON  
POWER PURCHASE FROM PHOTOVOLTAIC SOLAR POWER  
PLANT BY PT PERUSAHAAN LISTRIK NEGARA (PERSERO)

PROVISIONS OF PREPARATION OF INTERCONNECTION STUDY DOCUMENT

Purpose	To ensure the connection and parallel operation of PLTS Fotovoltaik do not lead to negative impact on the safety, power reliability and power as well as continuity of power grid of PT PLN (Persero) distribution system.
Requirements	<p>Must meet the following requirements:</p> <ul style="list-style-type: none"> <li>a. PLTS Fotovoltaik capacity does not exceed 25% (twenty five percent) of the feeder capacity during peak load;</li> <li>b. Short circuit level (SCL) does not exceed 10% (ten percent) of the maximum feeder short circuit current;</li> <li>c. PLTS Fotovoltaik must fulfill: <ul style="list-style-type: none"> <li>1. Protection function requirements <ul style="list-style-type: none"> <li>a) overvoltage or undervoltage and frequency;</li> <li>b) voltage and frequency sensing function and time delay;</li> <li>c) anti islanding;</li> <li>d) distribution system failure detection;</li> <li>e) transfer trip;</li> <li>f) manual interconnection breaker;</li> <li>g) surge withstand capability;</li> <li>h) parallel equipment;</li> <li>i) reclose blocking;</li> <li>j) required additional equipment; and</li> <li>k) backup protection;</li> </ul> </li> <li>2. Requirements for system interference prevention function <ul style="list-style-type: none"> <li>a) Voltage regulation;</li> <li>b) Abnormal voltage response;</li> <li>c) Abnormal frequency response;</li> <li>d) Synchronization;</li> <li>e) Flicker;</li> <li>f) Harmonics; and</li> <li>g) Power factor;</li> </ul> </li> <li>3. Specific plant engineering requirements <ul style="list-style-type: none"> <li>a) Synchronous generator;</li> <li>b) Induction generator; and</li> <li>c) Inverter met international standards;</li> </ul> </li> <li>4. In low load and cloudy conditions:</li> </ul> </li> </ul>

	<ul style="list-style-type: none"> <li>a) Limit the inverter ramp (up or down) at the rate of 10% (ten percent) per minute from the inverter capacity, applicable for startup and shut down, normal operation, and limiting command, except for a decline in solar radiation; and</li> <li>b) Set the restart time for double inverters restarts to 15 (fifteen) seconds or more;</li> <li>c) Communication and metering requirements;</li> <li>d) Testing, certification and commissioning; and</li> <li>e) Additional requirements for system stability.</li> </ul>
<b>Interconnection Study and Scope</b>	<p>Review of interconnection study covers 3 (three) parts, namely:</p> <ul style="list-style-type: none"> <li>a. Interconnection Feasibility Study;</li> <li>b. Distribution System Impact Study; and</li> <li>c. Interconnection Facility Study.</li> </ul>
	<p><b>Scope of Interconnection Feasibility Study:</b></p> <ul style="list-style-type: none"> <li>a. Identifying the beginning of the thermal overload, reverse power flow problem, and voltage limit violations arising from the proposed interconnection;</li> <li>b. Early identification of any excess of the short circuit capacity limit;</li> <li>c. Initial Review of Protection and Earthing Systems Requirements; and</li> <li>d. Initial cost explanation and estimation of the facilities required to interconnect the proposed PLTS Fotovoltaik to power grid owned by PT PLN (Persero).</li> </ul>
	<p><b>Scope of Distribution System Impact Study:</b></p> <p>Provide early identification of funding and the time required to fix problems identified and to provide identification of funding responsibility for interconnecting facility</p> <ul style="list-style-type: none"> <li>a. Power Flow Analysis of Distribution System;</li> <li>b. Short Circuit Analysis;</li> <li>c. Circuit Breaker Rating Analysis;</li> <li>d. Protection Study and Set Point Coordination;</li> <li>e. Voltage Drop Study, and/or Earthing Review;</li> <li>f. Impact Analysis of Distribution System Operations; and</li> <li>g. Stability Analysis of Distribution System.</li> </ul>



	<p><b>Scope of Interconnection Facility Study:</b></p> <p>Determine the estimated equipment cost of equipment and EPC required to complete the proposed PLTS Fotovoltaik interconnection as well as to provide design in accordance with the technical requirements and estimated cost for:</p> <ol style="list-style-type: none"><li>a. Facility of interconnection of PLTS Fotovoltaik and interconnection point;</li><li>b. Facility of interconnection of PT PLN (Persero) from Distribution System of PT PLN (Persero) to the point of interconnection; and</li><li>c. Repairing/upgrading the distribution system of PT PLN (Persero) due to proposed interconnection of PLTS Fotovoltaik.</li></ol>
--	--

MINISTER OF ENERGY AND MINERAL  
RESOURCES OF THE REPUBLIC OF INDONESIA,

Signed

SUDIRMAN SAID