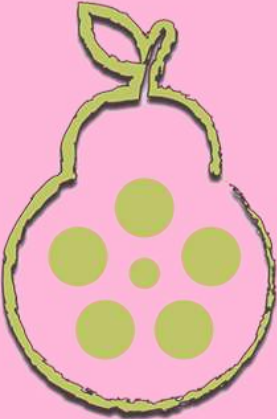


**Suggestive Power Purchase Agreement (PPA) for Solar Plants**

This is a document with indicative clauses which is to be signed between the Solar Project Developer intending to sell Solar Power, to the Distribution Licensee/ Company. The document **may be examined** and comments if any be made by various stakeholders.

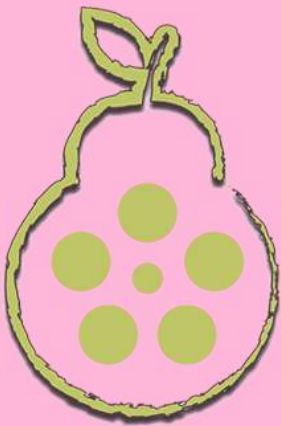


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# Solar Net Metering Agreement

Between

[•name of Distribution Licensee•]



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[•name of Solar Power Generator•]

Service Connection Number: [•number•]

[•date•], [•month•], [•year•]

(To make the PPA simpler, Clauses not applicable to Net Metering for smaller size Solar Plants may be kept blank, if not applicable)

This agreement made at [•place•] on this [•date•] day of [•month•], [•year•] between [**•name of the Solar Power Generator•**], [•address of the Solar Power Generator•], hereinafter called the "Solar Power Generator", which expression shall wherever the context so permits, mean and includes the successors in interests, executors, administrators and assigns as party of the first part and [**•name of Distribution Licensee•**] represented by [designiation of signatory] and having office at [•address•], [•city•] [•postal code•], hereinafter called the "Distribution Licensee", which expression shall wherever the context so permits, mean and include the successors in interest, administrators and assigns.

Whereas the Solar Power Generator has agreed to avail the solar net metering facility for the (rooftop) Solar Power Plant of capacity [•number•] kW, installed at [•location•] with service connection No. [•number•];

And Whereas Distribution Licensee has agreed to provide grid connectivity and solar net metering to the above mentioned Solar Power Plant on the terms and conditions as set out below;

It is hereby agreed between the parties as follows.

## 1.0 Definitions

1.1. "Act" means the Indian Electricity Act 2003.

1.2. "Applicable Rules and Regulations" shall have the meaning as defined in article 2.2.

1.3. "Authority" means the Central Electricity Authority referred to in sub-section (1) of section 70 of the Act.

1.4. "BHP" means British Horse Power (a unit of power).

1.5. "Billing cycle" means the period for which regular electricity bills as specified by the Commission, are prepared for different categories of consumers by the Distribution Licensee.

1.6. "Commissioning Date" means the date on which the Solar Power Plant is commissioned and connected to the Grid.

1.7. "Commission" or "JERC" means the Joint Electricity Regulatory Commission for the State of Goa and Union Territories of Andaman and Nicobar Islands, Chandigarh, Dadra and Nagar Haveli, Daman and Diu, Puducherry and Lakshadweep referred to in sub-section (1) of section 82 of the Act and constituted under the Act.

1.8. "Consumer" means any person who is connected to the electricity distribution system of the distribution licensee or the Government or any other person engaged in the business of supplying electricity to the public, as per the Act or any other law in force as of now and includes any person whose premises are used for receiving Power, for the time being.

1.9. "Consumer Grievances Redressal Forum" means the forum for redressal of grievance of Consumers, established under sub-section 5 of section 42 of the Act.

1.10. "Distribution Licensee" means a person granted a license under section 14 (b) of the Act. A licensed Supplier of Electricity is also covered under this definition.

- 1.11. "Electricity Supply Code" means the Electricity Supply Code specified under section 50 of the Act and subsequent amendments thereof, and the Electricity Supply code of the Commission.
- 1.12. "Eligibility Criteria" means a Solar PV and of capacity equal to or more than 500 kWp, and Rooftop Solar Power of capacity equal to or more than 1 kWp but not more than 500 kWp at one location owned by one individual or entity or a house/ factory / Ware house / Government building / Panchayat Bhavan / Community centre/ School/ dispensary / hospital / parking Shed or place/ a solar plant on elevated structure / Group housing society / Resident welfare society/ market roof top or any such entity, based on the technologies approved by Ministry of New & Renewable Energy of Government of India are eligible for connecting the project with Grid under these regulations. The Rooftop projects of ratings higher than 500 kWp can be considered by the distribution licensee if the distribution system remains stable with higher rating Rooftop Solar Projects getting connected to the grid.
- 1.13. "Energy Feed-In Meter" means a bidirectional energy meter that is installed to record the quantities of Imported Energy and Exported Energy.
- 1.14. "Energy Feed-In Check Meter" means a bidirectional energy meter, which shall be connected in series with the Energy Export Meter (and in the case of CT-VT operated meters to the same core of the current transformer (CT) and voltage transformer (VT) of the Energy Export Meter) and shall be used for accounting and billing of electricity in case of failure of the Energy Feed-In Meter.
- 1.15. "Energy Feed-In Payment Advice" means a written advice from the Distribution Licensee to the Solar Energy Producer which includes the opening and closing readings of the Energy Feed-In Meter for the Energy Feed-In Payment Cycle and the Net Exported Energy quantity for which payment will be made by Distribution Licensee to Solar Power Generator.
- 1.16. "Energy Feed-In Payment Cycle" means the period for which Solar Power Generator will be paid by Distribution Licensee for the Net Exported Energy.
- 1.17. "Exported Energy" means the active energy exported to the Grid by a Solar Energy Producer.
- 1.18. "Feed in Tariff" means tariff for ex-bus supply of electricity from Solar PV generating station for the purpose of accounting.
- 1.19. "Grid" means the low voltage electrical network, the distribution and transmission network or the high voltage backbone system of inter-connected transmission lines, sub-stations and generating plants for sales of energy or wheeling of energy as defined in the "Joint Electricity Regulatory Commission for the State of Goa and Union Territories (Grid Connected Solar Power Regulations) –19/ 2015".
- 1.20. "Gross Metering" means an arrangement whereby a Solar Power Plant is connected to the Grid through an Energy Feed-In Meter and whereby the Solar Power Generator gets paid for the solar energy fed into to the Grid for the total solar power fed to the grid without accounting for self-consumption / use if any.

- 1.21. "Group Net-Metering" means adjustment of electricity consumption imported at another electricity service connection of the Prosumer within the same State or Union Territory and same licensed supplier of electricity, with the surplus energy exported to the Grid from a Solar Power Plant in excess of 100% (one hundred percent) of imported energy at the location of the Solar Plant premises.
- 1.22. "Installed Capacity" means the summation of the name plate capacities expressed in kWp of all the units of the generating station or the capacity of the project reckoned at the output terminals of the solar project approved by the Commission.
- 1.23. "Imported Energy" means the active energy imported from the Grid by a Solar Power Generator.
- 1.24. "Interconnection Point" means the interface point of a Solar Power Plant with the distribution network of the Distribution Licensees at appropriate voltage level as defined in the Applicable Rules and Regulations.
- 1.25. "kW" means kilowatt (a unit of active electrical power).
- 1.26. "kWh" means kilowatt-hour (a unit of active electrical energy).
- 1.27. "kWp" means kilowatt-peak (a unit used for the peak capacity of a Solar Power Plant).
- 1.28. "Month" means English calendar month starting with the 1st day / date of the month and ending with last day/ date of the month. A Part Month will be the applicable number of days in proportion to the total number of days in the specific month.
- 1.29. "Net Exported Energy" means the Exported Energy minus Imported Energy by the Solar Power Generator as recorded by the Energy Feed-In Meter.
- 1.30. "Ombudsman" means the person appointed in accordance with sub-section 6 of section 42 read with section 181 of the Act.
- 1.31. "Obligated Entity" means the licensed Supplier of Power, Distribution Licensee(s), captive user(s) and Open Access Consumer(s), identified under Procurement of Renewable Power Energy Regulations of the Commission and mandated under clause (e) of subsection (1) of section 86 of the Act to fulfil the renewable purchase obligations as determined by the Commission from time to time.
- 1.32. "Open Access Consumer" means a consumer permitted by the Distribution Licensee / Commission to receive supply of electricity from a person, other than the Distribution Licensee of his area of supply, and the expression(s) includes a generator and a licensee, who has availed of open access.
- 1.33. "PPA" means Power purchase agreement- for a fixed term between the Prosumer, Solar Project Generator or the Solar Power Developer as seller of Solar Power & the Distribution Licensee as buyer of the solar power.
- 1.34. "Premises" means Rooftop of a house / factory/ Ware house / Government building/ Panchayat Bhavan / Community centre/ School/ dispensary / hospital / parking place / Group housing society/ Market Society / market roof top/ / Canals / Water Reservoir/ any such place/ or vacant space and elevated area on the land, building

or the Infrastructure or part or combination thereof, or the area taken on rent or on lease, and in respect of which a separate meter or metering arrangements have been made by the licensee for supply of electricity. The premises exclude the historic structure (unless permission taken from appropriate authority).

- 1.35. "Renewable Energy Certificate" or "REC" means the certificate issued in accordance with the procedures approved by the Central Electricity Regulatory Commission.
- 1.36. "Renewable Purchase Obligation" or "RPO" means renewable power purchase obligation.
- 1.37. "Service Connection Meter" means an energy meter which is installed by the Distribution Licensee to measure the import and, optionally, the export of electrical energy by a Consumer from the Grid.
- 1.38. "Solar Power Plant" means a solar photo voltaic energy generating system.
- 1.39. "Solar Power Generator" or "SPG" means a person who produces solar energy with a Solar Power Plant, which maybe self-owned or third party-owned.
- 1.40. "Supplier of Electricity" means a person authorised by the Commission to supply electricity to Consumers.
- 1.41. "Solar Energy Tariff" means the price to be paid by Distribution Licensee to Solar Power Generator for the Net Exported Energy as specified in clause 6.1.7 b) of this agreement.
- 1.42. "State Agency" means the agency in the concerned state or Union Territory as may be designated by the Commission to act as the agency for accreditation and recommending the renewable energy projects for registration and to undertake such functions as may be specified under clause (e) of sub-section (1) of Section 86 of the Act.
- 1.43. "Third Party Owned" means ownership in which a developer owns a Solar Power Plant that is installed on the roof or elevated structure or land for which a commercial lease or revenue share agreement with the owner has been entered into by the developer / Solar Power Generator.
- 1.44. "Year" or "Financial Year" means a period commencing on 1st April of an English Calendar year and ending on 31st March of the subsequent calendar year.
- 1.45. All other words and expressions used in this agreement, if not specifically defined herein above, but defined in the Act, shall have the meaning assigned to them in the Act. The other words and expressions used herein but not specifically defined in this agreement, regulations or in the Act but defined under any other law passed by the Parliament applicable to the electricity industry in the State or Union Territory shall have the meaning assigned to them in such law.

In consideration of the premises and mutual covenants and conditions set forth herein, it is hereby agreed by and between the parties hereto as follows:

SPG to obtain all information with regard to the Interconnection Facilities as

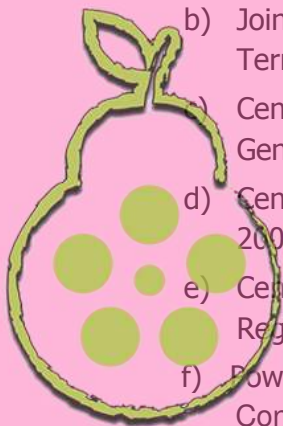
reasonably necessary to enable it to design, install and operate all interconnection plant and apparatus on the SPG's side to enable delivery of electricity at the Delivery Point and before the SPG Designs, constructs, erects, commissions, completing and test the Solar Power Project in accordance with the Prudent Utility Practices and the applicable Law, including the Grid Code, the terms and conditions of this Agreement :-

## **2.0 Rules and Regulations**

- 2.1. Eligibility for net metering shall be as specified in the "Joint Electricity Regulatory Commission for the state of Goa and Union Territories (Solar Power - Grid Connected Ground Mounted and Solar Rooftop and Metering Regulations –19/ 2015)"
- 2.2. This agreement is subject to the following rules and regulations, hereinafter collectively referred to as the "Applicable Rules and Regulations" and any amendments thereof at the time of signing PPA.
  - a) Joint Electricity Regulatory Commission for the State of Goa and Union Territories (Grid Connected Solar Power Regulations) – 19/2015;
  - b) Joint Electricity Regulatory Commission for the State of Goa and Union Territories (Supply Code and Performance Standards) Regulations 2010;
  - c) Central Electricity Authority (Technical Standards for Connectivity of Distributed Generation Resources) Regulations, 2013
  - d) Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006;
  - e) Central Electricity Authority (Measures of Safety and Electricity Supply) Regulations, 2010;
  - f) Power Quality & Protection and Controls: Power Quality & Protection and Controls shall conform to the standards specified in the CEA (Technical Standards for connectivity to the grid) Regulations, 2007 and CEA (Technical Standards for Connectivity of Distributed Generation Resources) Regulations, 2013, applicable to the distribution system as amended from time to time.
  - g) Indian Electricity Rules, 1956.
  - h) Any other provision that becomes applicable at the time of signing such an PPA as per the Regulation of the competent authority.

## **3.0 Technical and Interconnection Requirements**

- 3.1. All the equipment connected to the Distribution Licensee's distribution system must be compliant with relevant international (IEEE/IEC) or Indian standards (BIS) and the installation of electrical equipment must comply with the Applicable Rules and Regulations.
- 3.2. The Solar Power Generator agrees to furnish technical data of the Solar Power Plant that may be required by the Distribution Licensee.



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- 3.3. The grid-connected Solar Power Plant of Solar Power Generator shall be treated as a 'Must Run' power plant and shall not be subjected to 'merit order dispatch bases by the Distribution Licensee.
- 3.4. The Solar Power Generator agrees that the Distribution Licensee shall not be responsible for any damages to his Solar Power Plant resulting from parallel operation with the Grid and that the Distribution Licensee shall not be liable to pay any such damages.

#### **4.0 Safety and Operation Requirements**

- 4.1. The Solar Power Generator agrees that the design, installation, maintenance and operation of the photovoltaic system are performed in a manner conducive to the safety of the Solar Power Plant as well as the Distribution Licensee's distribution system.
- 4.2. The Solar Power Generator shall ensure that in case of Grid outage the Solar Power Plant will not energise Distribution Licensee's distribution system. The Solar Power Generator is solely responsible for any accident to human beings / animals whatsoever (fatal / non-fatal / departmental / non-departmental) that may occur if the Solar Power Plant energises the Grid during Grid outage.

4.3. The Distribution Licensee reserves the right to disconnect Solar Power Generator's installation at any time in the event of the Solar Power Plant damaging its Grid, meter or other equipment to prevent any accident or damage.

4.4. Solar Power Generator shall install a main switch or isolator near the Energy Feed-In Meter, which is accessible to the Distribution Licensee and with which the Solar Power Generator's Solar Power Plant can be disconnected from the Distribution Licensee's distribution system.

4.5. Due to Distribution Licensee's obligation to maintain a safe and reliable distribution system, Solar Power Generator agrees that if it is determined by Distribution Licensee that Solar Power Generator's Solar Power Plant either causes damage to and/or produces adverse effects affecting Consumers or Distribution Licensee's assets, Solar Power Generator will have to disconnect the Solar Power Plant immediately from the distribution system upon direction from the Distribution Licensee and correct the problem at his own expense prior to a reconnection.

#### **5.0 Energy Feed-In Metering**

- 5.1. To measure the solar energy fed-in of to the Grid by the Solar Power Generator an Energy Feed-In Meter with the standards and specifications as provided in the Applicable Rules and Regulations shall be installed by the Solar Power Generator.
- 5.2. For existing service connections, the Energy Feed-In Meter shall be installed as close as possible to the existing Service Connection Meter or another location as mutually agreed between the Solar Power Generator and Distribution Licensee.
- 5.3. If the Solar Power Plant is installed at a location where there is no existing electrical service connection of Distribution Licensee, the Interconnection Point and the



location of the Energy Feed-In Meter shall be mutually agreed between the Solar Power Generator and Distribution Licensee.

- 5.4. The Distribution Licensee shall arrange to test and seal the Energy Feed-In Meter for which the Solar Power Generator shall bear the testing charges.
- 5.5. Solar Power Generator may optionally install an Energy Feed-In Check Meter at his own cost.
- 5.6. The metering arrangement, including meter testing, checking and calibration shall be in accordance with the Applicable Rules and Regulations.

## **6.0 Energy Accounting and Settlement**

6.1. At the end of each Billing Cycle, the Distribution Licensee will take readings of imported and exported energy as recorded in the bi-directional Service Connection Meter. The Prosumer will be presented an Invoice / **Electricity Bill** indicating the difference between imported and exported energy (i.e. the net-imported energy). The bill will be raised at the consumer tariff applicable to the Prosumer's service connection, if the import is higher than the export of the energy,.

6.2. If during a Billing Cycle including any export surplus already available to the credit of the Prosumer at the beginning of the billing cycle or a credit of banked energy available, the energy exported exceeds the energy imported, the export surplus will be carried over to the next Billing Cycle in kWh (electricity units) as a credit to be adjusted in the next Billing Cycle(s) for the unadjusted exported units in terms of energy units.

6.3. The surplus Solar Power generated during peak tariff timings at the credit of the Prosumer will be adjusted against peak tariff rates ( if applicable) and balance credit units will be adjusted against energy imports at non-peak rates.

6.4. A final settlement energy bill shall be prepared by the Distribution Licensee at the end of each Settlement Period, after crediting the Exported Energy Surplus (in kWh) in other service connections of the Prosumer under the Group Net Metering facility or Net Metering (as applicable), if the Prosumer opts for using this facility.

6.5. The Exported Energy Surplus which has not been adjusted in another service connection of Prosumer under the Group Net Metering facility shall be paid for by the Distribution Licensee at the applicable Solar Tariff for which Distribution Licensee shall issue an Energy Export Payment Advice within 15 (Fifteen) days from the end of a Settlement Period. If Distribution Licensee fails to issue an Energy Export Payment Advice within the stipulated time of 15 (Fifteen days), Prosumer is entitled to receive payment for the Exported Energy Surplus on the basis of a payment demand letter issued by the Prosumer to the Distribution Licensee. In case such an energy export advice is not issued by the Distribution Licensee in time, then the Prosumer can raise such an invoice. Payment for such Exported Energy Surplus shall be made by the Distribution Licensee to the Prosumer within 30 (thirty) days from the date of the receipt of Energy Export Payment Advice along with interest for the delayed payment through a payment authorisation letter by direct transfer to the bank account of the Prosumer.

- 6.6. The energy exported to the Grid (measured in kWh) can only be utilized to offset the electricity consumption (measured in kWh) and not for adjustment of any other fees or charges levied by the Distribution Licensee.
- 6.7. The settlement of overall export **energy surplus** may be done twice a year i.e. by 30<sup>th</sup> September and 31<sup>st</sup> March or once a year i.e. 31<sup>st</sup> March (if opted by the Prosumer), and payments released not later than 31<sup>st</sup> October (if applicable) and 30<sup>th</sup> April of the next financial year and payments released in electricity bill for export of Solar Energy (if any) at the feed in Tariff rates (with applicable peak and non-peak tariffs, if applicable) announced by the Commission for the year the Plant was Commissioned. The mode of payment can be a cheque or bank transfer.

6.8. The Solar Energy Tariff agreed upon between Distribution Licensee and Solar Power Generator under this agreement is as detailed below:

- a) Reference to Solar Power Tariff order of the Commission: [•solar energy tariff order number and date•]
- b) Price per kilowatt-hour: Rs. [•number•].
- c) Validity: For the term of this agreement as provided for in clause 9.1 of this agreement.
- d) Tariff of Solar Power Plant with Accelerated Depreciation / Without Accelerated Depreciation (Strike out the not applicable) shall be applicable.
- e) Part Financial Year Depreciation: Provided that in case of the commercial operation of the asset for a part of the year, depreciation if to be claimed by SPG, shall be charged on pro-rata basis by the SPG.

6.9. The Distribution Licensee will make payment to the Solar Power Generator for each Energy Feed-In Payment Cycle within 15 (fifteen) days from the date of the Energy Feed-In Payment Advice or the payment demand letter of Solar Power Generator by direct transfer to the bank account of the Solar Power Generator.

6.10. The Solar Power Generator shall be exempted from charges in respect of electricity banking, wheeling, line losses and cross subsidy to the extent of the solar energy produced.

6.11. If the Energy Feed-In Meter becomes defective Net Exported Energy for the days during which the meter is defective shall be computed as follows:

- a) If the Solar Power Generator has installed an Energy Feed-In Check Meter, the readings of that meter will be used.
- b) In the absence of an Energy Feed-In Check Meter or if that meter is also defective, the computation will be as follows:
  - If the solar net-metering facility has been in service for more than 12 months the Net Exported Energy readings of the corresponding period of the previous year will be taken.
  - If the solar net metering facility has been in service for less than 12 months the Net Exported Energy for each day shall be computed as follows: x 4.00,