

## POWER PURCHASE AGREEMENT FOR ROOFTOP SOLAR PV PLANTS

WITH

### NET METERING ARRANGEMENT

This Power Purchase agreement is entered into at (place)..... on this ..... day of ..... between ..... Electricity Supply Company Limited (...ESCOM), a Government of Karnataka undertaking, a Company formed and incorporated in India under the Companies Act-1956, with its registered office located at ....., Karnataka State, hereinafter referred to as the "...ESCOM", (which expression shall, unless repugnant to the context or meaning thereof, include its successors and permitted assigns) as party of the first part represented by .....

AND

.....,(Name) the consumer of ...ESCOM residing at (address) ..... hereinafter referred to as the "Seller" (which expression shall, unless repugnant to the context or meaning thereof, include its successors and permitted assigns) as party of the second part.

Whereas,

- a. The Seller intends to connect and operate the Solar Roof Top Photo Voltaic (SRTPV) system with ESCOM's HT/LT Distribution system for sale of Solar Power to ESCOM in terms of the Karnataka Electricity Regulatory Commission (KERC) Order No. S/03/01/2013 dated: 10.10.2013 or as amended from time to time.
- b. The Seller intends to install/has installed a SRTPV system of ..... kWp capacity on the roof top of the premises situated at..... and connected to electricity service connection bearing number (RR. No) ..... in the same premises under ..... Sub-Division of ESCOM.
- c. The Seller intends to sell net energy exported from the SRTPV system to ESCOM as recorded in the bi-directional meter installed in the seller's premises, from the date of commissioning of the SRTPV system.
- d. ESCOM intends to purchase net energy exported by such SRTPV system at the tariff determined by the KERC.

Now therefore, in consideration of the foregoing premises the parties hereto, intending to be legally bound hereby agree as under:

## 1. Technical and Interconnection Requirements:

Seller shall ensure his SRTPV system complies with the following technical and interconnection requirement and shall:

- 1.1 Comply with the standards and conditions in respect of integrating the SRTPV system with the grid/distribution system.
- 1.2 Connect the SRTPV system to ESCOM's distribution system and shall be bound by requirements of State Grid and distribution Code as amended from time to time.
- 1.3 Install, prior to connection of SRTPV system to ESCOM's distribution system, an inverter with an automatic inbuilt isolation device.
- 1.4 Provide external manual isolation mechanism with suitable locking facility so that SRTPV system will not back-feed into the ESCOM's network in case of power outage of the ESCOM's distribution system, and it shall be accessible for ..... ESCOM to operate, if required, during maintenance / emergency conditions.
- 1.5 Install all the equipment of SRTPV system compliant with relevant International (IEEE/IEC) and Indian standards (BIS).
- 1.6 SRTPV system shall be designed, engineered and constructed and operated by the seller or on his behalf with reasonable diligence subject to all applicable Indian laws, rules, Regulations as amended from time to time and orders having the force of law.
- 1.7 Adhere to the following power quality measures as per the International and Indian standards and/or such other measures stipulated by KERC/ESCOM:
  - a. Harmonic current: Harmonic current injections from a generation unit shall not exceed the limits specified in IEEE 519.
  - b. Voltage at the injection point should be in the operating range of 80% to 110% of the nominal connected voltage.
  - c. Flicker: Operation of Photovoltaic system shouldn't cause voltage flicker in excess of the limits stated in the relevant sections of IEC standards or other equivalent Indian standards, if any.
  - d. Frequency: When the Distribution system frequency deviates outside the specified conditions (50.05 Hz on upper side and 47.5 Hz on lower side), the SRTPV system shall shift to island mode.
  - e. DC Injection: Photovoltaic system should not inject DC power more than 0.5% of full rated output at the interconnection point or 1% of rated inverter output current into distribution system under any operating conditions.
  - f. Power Factor: While the output of the inverter is greater than 50%, a lagging power factor of greater than 0.9 shall be maintained.
- 1.8 The SRTPV system in the event of voltage or frequency variations must island/disconnect itself as per IEC standards within the stipulated period.

## **2. Safety:**

The seller shall comply with the following safety measures:

- 2.1 The seller shall comply with the Central Electricity Authority (Measures Relating to Safety and Electricity Supply) Regulations 2010.
- 2.2 The seller shall ensure that, the design, installation, maintenance and operation of the SRTPV system are in a manner conducive to the safety of the SRTPV system as well as the ESCOM's distribution system.
- 2.3 If the Seller's SRTPV system either causes damage to and/or produces adverse effects on the other consumers' or ESCOM's assets, Seller will disconnect SRTPV system immediately from the distribution system by himself or upon directions from the ESCOM and rectify the same at his own cost before reconnection.

## **3. Clearances and Approvals**

The Seller shall obtain ESCOM's and other statutory approvals and clearances before connecting the SRTPV system to the distribution system.

## **4. Access and Disconnection**

- 4.1 ....ESCOM shall have access to metering equipment and disconnecting device of SRTPV system, both automatic and manual, at all times.
- 4.2 In emergency or outage situation, where there is no access to a disconnecting device either automatic or manual, the ...ESCOM shall have the right to disconnect power supply to the premise.

## **5. Liabilities**

The Seller shall be solely responsible for availing any fiscal or other incentive provided by the State/ Central government, at his own expenses.

## **6. Commercial Settlement-**

### **6.1 Tariff:**

- a. The ...ESCOM shall pay for the net metered energy at Rs. ---per KWh as determined by the KERC for the term of the agreement.
- b. The Seller shall pay the Electricity tax and other statutory levies, pertaining to SRTPV generation, as may be levied from time to time.
- c. The seller shall not have any claim for compensation, if the Solar power generated by his SRTPV system could not be absorbed by the distribution system due to failure of power supply in the grid/ distribution system for the reasons, such as line clear, load shedding and line faults, whatsoever.

## **7. Metering:**

7.1 The parties shall arrange to shift the existing meter to the generation side of SRTPV to measure solar power generation and install Bi-directional meter (whole current/CT operated) for recording export and import of energy at the point of interconnection to the distribution system. The bi directional meter shall comply with the Central Electricity Authority (Installation and operation of meters) Regulations, 2006 and shall have the following features:

- i. Separate registers for recording export and import energy with facility to download by Meter Reading Instrument (MRI).
- ii. kVA, kW and kVAR measuring registers for both import and export.
- iii. Meter shall have RS232 (or higher) communication optical port / Radio Frequency (RF) port to support Automatic Meter Reading (AMR).

7.2 The seller shall install the meter of SRTPV system and bi directional meter in separate meter boxes in the same proximity or at a suitable place in the premises accessible for the purpose of recording the reading whenever necessary.

## **8. BILLING AND PAYMENT:**

8.1 ESCOM shall issue monthly electricity bill for the net metered energy on the scheduled date of meter reading.

8.2 In case, the exported energy is more than the imported energy, ESCOM shall pay for the net energy exported as per Tariff agreed in this agreement within 30 days of issue of bills duly adjusting the fixed charges and electricity duty if any.

8.3 In case, the exported energy is less than the imported energy, the seller shall pay ...ESCOM for the net imported energy as per the prevailing retail supply tariff determined by the Commission from time to time.

8.4 ESCOM shall pay interest at the same rates as is being levied on the consumers for late payment charges in case of any delay in payment for the net energy exported beyond 30 (thirty) days period from the date of issue of bill.

**Explanation: Net metered energy means the difference of meter readings of energy injected by the SRTPV system into the grid (export) and the energy drawn from the grid for use by the seller (import) recorded in the bi-directional meter.**

## **9. Term and Termination of the Agreement**

9.1 This agreement shall be in force for a period of 25 years from the date of commissioning of the SRTPV system unless terminated otherwise as provided here under.

9.2 The Seller shall have the right to terminate this agreement at any time by serving a written notice 60 (sixty) days in advance to ESCOM.

9.3 if the Seller commits any breach of the terms of the Agreement, ESCOM shall serve a written notice specifying the breach and calling upon the seller to remedy/ rectify the same within 30 (thirty) days or at such other period and at the expiry of 30 (Thirty) days or such other period from the delivery of the notice,

ESCOM may terminate the agreement by delivering the termination notice, if the seller fails to remedy/ rectify.

9.4 Upon termination of this Agreement, seller shall disconnect the SRTPV system from the distribution system and intimate the same to ESCOM.

**10. Dispute Resolution:**

All the disputes between the parties arising out of or in connection with this agreement shall be first tried to be settled through mutual negotiation. The parties shall resolve the dispute in good faith and in equitable manner. In case of failure to resolve the dispute, either of the parties may approach the appropriate Forum of law.

IN WITNESS WHEREOF, the Seller and the ...ESCOM have entered into this Agreement executed on the date and year first set forth above.

<b>For AND ON BEHALF OF ..... Electricity Supply Company Limited</b>	<b>For AND ON BEHALF OF SELLER</b>
By: (Name) Designation: Address:	By: (Name) RR No: Address:
WITNESS In Presence of Name: Designation:	WITNESS In Presence of Name:
WITNESS In Presence of Name: Designation:	WITNESS In Presence of Name: