KERALA STATE ELECTRICITY BOARD LIMITED

(Incorporated under the Companies Act, 1956)
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ABSTRACT

KSERC (Renewable Energy & Net metering) Regulation, 2020 – Detailed procedure for connectivity, banking, Open Access, accounting and billing of Grid Interactive RE Systems- orders issued.

Corporate Office (Renewable Energy and Energy Savings)
B.O. (FTD) No.49 /2021 (CE (REES)/Re Projects/AEE6/RE Cell/2020-21/112) Thiruvananthapuram, Dated 22.01.2021.

Read: -

1. KSERC (Renewable Energy & Net metering) Regulation, 2020 dated 07.02.2020
2. Note No. KSEB/TRAC/CG/Draft Regulation/CERC Regulations/2019-20/686 dated 29.02.2020
3. BO (FTD) No. 278/2020 (KSEB/TRAC/Renewables/2020-21/ dated 20.04.2020
4. Office Order of CMD No. 710/2020 (CE (REES)/ESCOT/AEE6/RE Cell/2020-21) dated 07.05.2020
5. Note No. CE (REES)/ESCOT/AEE 6/ RE Cell/2020-21/360 dated 02.07.2020 of the Chief Engineer (REES)
6. Letter No.D(D, IT & HRM)/RE/2020-21/4 dated 09.09.2020 of the Director (Distribution, IT & HRM)
7. Note No. CE (REES)/RE Projects/Aee6/Re Cell/2020-21/786 dated 16.10.2020 of the Chief Engineer (REES) submitted to Director (Planning, Safety & REES) with full additional charge of Soura
8. Note No. CE (REES)/RE Projects/Aee6/Re Cell/2020-21/928 dated 19.11.2020 of the Chief Engineer (REES) submitted to the Chairman, KSEBL
9. Note No. CE (REES)/RE Projects/AEE6/RE Cell/2020-21/112 dated 30.12.2020 of the Chief Engineer (REES) submitted to the Full Time Directors (Agenda 14/1/21)

ORDER

The KSERC has published Renewable Energy & Net metering Regulation, 2020, read as (1st) above, for Grid Interactive Renewable Energy power plants having capacity from 1kW to Mega Watt range.

The KSERC (Renewable Energy & Net metering) Regulation, 2020 is applicable for all existing & new grid interactive RE systems, consumers, prosumers, Captive consumers, captive generating plants, generating companies, distribution licensees and oblied entities, in the matter of determination of tariff of Re systems, Renewable purchase obligation, net metering, banking generation based incentives and related matters.

As per BO read (3) above, Board accorded sanctioned to

1. implement the provisions of the KSERC (RE & Net metering) Regulation 2020 from the date of notification of the order in the Gazette.
2. Designate CE (REES) as RE Cell under the regulation to promote RE development in the State
3. entrust CE (REES) and RE cell to prepare a detailed procedure for implementing the provisions in the Regulations.
4. Entrust CE (IT & CR) to modify the billing infrastructure in accordance with the detailed procedure framed by the RE cell.
5. Authorise the Chief Engineers of Distribution wing to replace the existing meters of non domestic prosumers who have the RE generation in excess of their CL/CD with ToD meters

As per office order read (4), a committee with following members was constituted for the Renewable Energy Committee:

- Chief Engineer (Renewable Energy & Energy Savings)
- Deputy Chief Engineer (Renewable Energy & Energy Savings)
- Deputy Chief Engineer (Commercial & Planning) with full power of Chief Engineer
- Executive Engineer O/o Chief Engineer (Renewable Energy & Energy Savings)
- Executive Engineer, HRD
- Smt Kala KL Assistant Executive Engineer, O/o Chief Engineer (Renewable Energy & Energy Savings)
- Smt Latha S V, Assistant Executive Enginee, O/o Deputy Chief Engineer, TRAC
- Smt. Sabida Salam, Assistant Execeutive Engineer, O/o Chief Engineer (IT & CR)
- Smt Deepa R, Assistant Executive Engineer, O/o Deputy Chief Engineer Soura

The RE Committee formulated detailed procedure for connectivity and the draft billing formats approved by the Director (Distribution, IT & HRM) and the Chairman and Managing Director directed to place the detailed procedure for connectivity to the Full Time Directors for approval.

The matter was placed before the Full Time Directors as per note read (9) above. Having considered the matter in detail above, the Full time Directors in the meeting held on 07.01.2021

1 .Resolved to approve draft the procedure for grant of connectivity, banking, Open Access, Accounting and Billing of Grid Interactive Renewable Energy Systems prepared by the RE Committee and billing formats scrutinized and approved by the Core Committee of Distribution.

2 .Further resolved to authorize the Chief Engineer (Commercial & Planning) to submit the approved draft procedure for grant of connectivity, banking, open access, Accounting and Billing of Grid Interactive RE systems and the billing formats to the Hon'ble KSERC .

Orders are issued accordingly.

By Order of Full Time Directors

Sd/-
Lekha G
Company Secretary (In Charge)

To:

The Chief Engineer (Renewable Energy & Energy Savings)

Copy to:

The Chief Engineer (IT & CR)/The Financial Advisor/ The Chief Internal Auditor / TA to Chairman & Managing Director/ PA to Director (Finance)/ TA to Director (T&SO,Safety,CP,REES)/ TA to Director (Generation Electrical& SCM)/ TA to Director (Generation Civil/ TA to Director (Distribution, IT&HRM)/Senior CA to Secretary (Admn.)/Company Secretary/ Fair copy Section/Library/Stock File.

Forwarded /By Order

Assistant Executive Engineer

DETAILED PROCEDURE FOR GRANT OF CONNECTIVITY, BANKING, OPEN ACCESS, ACCOUNTING AND BILLING OF GRID INTERACTIVE RENEWABLE ENERGY SYSTEMS

INDEX

DETAILED PROCEDURE FOR GRANT OF CONNECTIVITY, BANKING, OPEN ACCESS, ACCOUNTING AND BILLING OF GRID INTERACTIVE RENEWABLE ENERGY SYSTEMS

1. INTRODUCTION

The Kerala State Electricity Regulatory Commission (KSERC) notified the KSERC(Renewable Energy & Net Metering) Regulations, 2020 in exercise of the powers under section 181(1) and 86(1)(e) of Electricity Act,2003 applicable to all the existing and new grid interactive renewable energy systems, consumers, prosumers, captive consumers, captive generating plants, generating companies and distribution licensees.

This detailed procedure is framed as per the provisions under Regulation 63 of the KSERC Regulations for implementing the provisions of the Regulation.

This detailed procedure shall apply to the grant of Connectivity, banking facility, open access for grid interactive renewable energy systems, accounting of renewable energy generation and billing of prosumers/captive consumers/open access consumers in the State.

The detailed procedure shall come into effect from the date of approval by KSERC.

2. CONNECTIVITY UNDER NET METERING FACILITY

2.1 Applicable to the following grid interactive RE systems installed by a prosumer at his premise:

(i) Grid interactive Distributed Solar Energy Systems.

(ii) Ground mounted solar energy systems.

(iii) Hybrid solar power plant.

(iv) Renewable energy system with battery storage facility.

(v) Any other Renewable Energy Systems, installed at the premises of a eligible consumer.

2.2 General conditions:

2.2.1(a) The Grid Interactive Renewable Energy Systems, installed by a prosumer at his premise shall be of not less than one kW and not exceeding 1000 kW capacity on AC side of the inverter connected to the

net meter of the distribution system, limited to the sanctioned connected load or contract demand as applicable to the prosumer, with the distribution licensee.

Domestic consumers with connected load up to 20 kW is permitted to install ‘Renewable Energy System’ of capacity upto 20 kW, irrespective of their connected load.

The above limit of 20 kW connected load shall not apply in the case of group housing societies and residential flats, for common services such as lift, common lighting, club house, car parking, common areas etc. i.e. the capacity of RE systems installed for meeting the load of common services of group housing societies and residential flats have to be limited to the Connected Load of such common services.

The maximum capacity that can be installed by a single phase consumer shall be limited to 5 kW

.

All types of prosumers are also permitted to install Renewable Energy System in excess of their connected load or contract demand as applicable.

But, the benefit of net metering shall not be allowed to such prosumers and such prosumers shall be treated at par with the prosumers having RE capacity more than 1 MW.

Renewable Energy Systems installed by the prosumers under net metering as on the date of notification of these Regulations shall be allowed to continue irrespective of their contract demand or connected load.

The benefit of net metering shall not be allowed to these prosumers who have RE generation in excess of their CL/CD (except domestic having plant capacity up to 20KW) and these prosumers shall be treated at par with the prosumers having RE capacity more than 1 MW.

(**b)** located within the premises of the prosumer;

(c) interconnected and operate safely in parallel with the distribution system of the licensee

2.2.2 The grid interactive renewable energy system under net metering installed at the premise of the eligible individual prosumer shall utilize the same service line and installation for injection of excess power into the grid.

But, when a prosumer install Renewable Energy System in excess of the connected load or contract demand as applicable, the expense for the augmentation of the distribution system required for connectivity shall be borne by the prosumer.

2.2.3 A prosumer having electric connections in different premises owned by him shall be eligible to install separate renewable energy system in each of such premises.

2.2.4 The specifications, capacity and output of the renewable energy system shall be in conformity with the provisions relating to the connected load or contract demand permissible at each voltage level as specified in the Kerala Electricity Supply Code, 2014, as amended from time to time.

Sl No.	Type of connection	Supply Voltage	Specification of output of the Renewable Energy System
1	Low Tension Single phase	240 V	240 V, 50 Hertz
2	Low Tension Three phase	415 V	415 V, 50 Hertz
3	High Tension	11000 V	11000 V, 50 Hertz

2.3 Technical standards for inter connection with the Grid:

(1) The interconnection of the renewable energy system with the distribution system of the licensee shall conform to the specifications and standards as provided in the Central Electricity Authority (Technical Standards for connectivity of the Distributed Generation Resources) Regulations, 2013 and to the relevant provisions of the Central Electricity Authority (Measures relating to Safety and Electric Supply) Regulations, 2010, as amended from time to time;

(2) The prosumer shall comply with the specifications and standards as provided by the licensee and shall install manually operated isolating switch and grid-tied inverter/ associated equipment with sufficient safeguards to prevent injection of electricity from the renewable energy

system to the distribution system of the licensee when the distribution system is de-energized. The schematic diagram of hybrid RE system is enclosed as **Annexure-1**.

2.4 Metering arrangement.-

(1) The net meter shall be installed at the interconnection point of the prosumer with the network of the distribution licensee.

(2) All meters installed shall comply with the CEA (Installation and Operation of Meters) Regulations, 2006 and subsequent amendments thereof. The Net meter and Renewable energy meter installed shall conform to the standards, specifications and accuracy class, as provided in the Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006, as amended from time to time and be installed in such a manner that they are accessible for reading.

Provided that, consumers having ABT compliant meters with net metering facility shall not be required to install additional Net meter.

(3) The distribution licensee shall make available correct Net meter and Renewable energy meter to the eligible consumer who proposes to install a renewable energy system in his premises.

Provided that, if the eligible consumer elects to purchase the said meter(s), he may procure and present them to the distribution licensee for testing and installation.

Provided further that, the licensee shall complete the testing and installation of the renewable energy meter and the net meter purchased by the eligible consumer, within a period of 14 calendar days from the date of presentation of such meters for testing.

(4) The distribution licensee shall undertake the testing of meters before installation to ensure accuracy of the meter. The meter(s) shall be jointly inspected by both the eligible consumer and the distribution licensee, and shall be sealed by the distribution licensee.

Provided that, the meters shall be tested, installed and sealed by the distribution licensee in accordance with the provisions of Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006, as amended from time to time, and also as per the procedure specified in the Electricity Supply Code.

(5) If the licensee provide the renewable energy meter and net meter to the eligible consumer, the licensee shall collect the security deposit and rent for the renewable energy meter and net meter, at the rates as given under **Annexure-2.** These rates are subject to revision every two years depending on variation in market price of meters. **Procedure for grant of feasibility and connectivity :**

2.5.1 An eligible consumer who proposes to install a renewable energy system in his premises shall apply in the form in **Annexure-3** to the local office of the distribution licensee, to issue feasibility certificate to connect the renewable energy system to the distribution system of the licensee along with the application fee as specified in the **Annexure-4.**

2.5.2 The licensee shall acknowledge the receipt of the application form and register the applications immediately and shall process the application in the chronological order of its receipt

2.5.3 The nodal officers of the distribution licensee authorized to issue connectivity are as given below.

Sl No.	Prosumer's CL/RE proposed Capacity		Nodal Office
1	Domestic & Commercial consumers	Up to 20KW	Assistant Engineer, Electrical Section
2	Domestic & Commercial consumers	Above 20KW	Assistant Executive Engineer, Electrical Sub Division
3	All Industrial & Agricultural consumers		Assistant Executive Engineer, Electrical Sub Division
4	Street light		Executive Engineer, Electrical Division
5	HT Consumers		Deputy Chief Engineer, Electrical Circle

2.5.4 The distribution licensee shall maintain a separate Application Register for reference and records. The format of application register is enclosed as **Schedule-1.**

2.5.5 On receipt of the application form for the feasibility certificate to connect the renewable energy system to the grid, the distribution licensee shall undertake technical feasibility, within 15 days of the date of receipt of the application and intimate the applicant the feasibility or otherwise as the case may be.

Feasibility Study by the Distribution Licensee& grant of feasibility

2.5.6 The cumulative capacity of distributed energy systems allowed to be interconnected with the distribution network shall not exceed 75% of the distribution transformer capacity as the case be.

The distribution licensee shall publish the individual transformer capacities and the Renewable Energy Systems connected to their respective transformers, section wise, not later than 5th of every month in the distribution licensees respective section offices and also in the licensee's website. The Commission may review these provisions after completion of two years from the date of notification of these Regulations.

2.5.7 The cumulative capacity of distributed energy systems allowed to be interconnected with the High Tension feeder under a particular power transformer in the feeding substation shall be less than 80% of the average minimum load of that feeder as assessed from the data available at the substation, relating to three hundred and sixty five days preceding the date of submission of the application form

In the case of new feeders, the average minimum load of a high tension feeder for a period less than three hundred and sixty five days may also be considered for the purpose. The feasibility certificate shall be as per **Annexure-5.**

2.5.8 While intimating the feasibility for connecting the renewable energy system, the distribution licensee shall furnish to the applicant;

- the details of documents to be submitted by the applicant along with the scheme for installation of renewable energy system to the distribution system;
- the technical specifications as well as other particulars of the grid-tied inverter/equipment and manually operated isolating switch to be installed by the applicant;

- the technical specifications and other particulars of the Renewable energy meter and Net meter.

Procedure for grant of connectivity

2.5.9 The eligible consumer shall, within 30 days from the date of receipt of the intimation regarding feasibility and capacity of the RE system proposed to be connected to the distribution system, as specified above, submit a formal application in the format specified in **Annexure-6** for the registration of his scheme for installing the renewable energy system, along with the documents and technical specifications as stipulated above.

2.5.10 The distribution licensee shall, within seven working days from the date of receipt of the application, scrutinize the documents and intimate the following:

1) The particulars of defects, if any, in the application along with the instructions to cure such defects.
2) The fee for registration of the scheme for installation of the renewable energy system as specified under **Annexure-7**.

2.5.11 The distribution licensee shall, on receipt of the fee amount and on curing the defects, if any, noticed in the application and the documents submitted;

(i) Register the scheme and assign a Registration number within seven days of receipt of completed application in all respect.

(ii) The registration given under clause (i) above shall be valid for a period of one year from the date of registration, unless the validity period is extended by the distribution licensee under clause (iii) below.

(iii) The distribution licensee may on application from an eligible consumer, for good and sufficient reasons beyond the control of the applicant, extend the validity of registration for a period not exceeding another six months, if no other application for connectivity is pending for want of the distribution transformer capacity or the feeder capacity, as the case may be.

(iv) The distribution licensee may allot to other applicants, based on the date of their application seniority and in accordance with the

provisions of these Regulations, such capacity for connectivity of renewable energy system, if the eligible consumer whose scheme has been registered does not avail the connectivity within the period of validity of registration. The registration fee remitted in such cases shall not be refundable

(v) The registration fee shall be forfeited, if the applicant fails, to install the renewable energy system within the period of validity of his registration or to withdraw the application as per clause (vi) below.

(vi) The distribution licensee may, on receipt of a written request from the eligible consumer before the expiry of the validity of his registration, allow him to withdraw his application, on satisfaction of the condition that he is not able to install the renewable energy system within the period of validity of the registration, due to reasons beyond his control.

In such a case the distribution licensee shall refund eighty percent of the registration fee to the applicant.

(vii) The distribution licensee shall refund to the eligible consumer eighty percent of the registration fee collected by it, if the eligible consumer has installed the renewable energy system within the period of validity of the registration.

(viii) The distribution licensee shall maintain a Registration diary incorporating the details of the registered prosumer in the format under **Schedule-2.**

2.5.12 The applicant shall, within the period of validity of registration, procure the renewable energy system conforming to the technical specifications and standards as provided by the licensee, including manually operated isolating switch and grid-tied inverter/ associated equipment with sufficient safeguards to prevent injection of electricity from the renewable energy system to the distribution system of the licensee when the distribution system is de-energized, and get it installed by a licensed Electrical Contractor.

2.5.13 The eligible consumer shall obtain from the Electrical Inspector having jurisdiction over the area, necessary sanction for commissioning the renewable energy system and produce the sanction to the distribution licensee.

2.5.14 The Electrical Inspector, shall undertake the inspection and safety checks, within 10 working days from the submission of the work completion report, and issue safety certificate.

2.5.15 The distribution licensee shall, within seven days from the date of submission of approval of the Electrical Inspector, test the renewable energy system on receiving application from the prosumer for testing the RE system in the format in **Annexure-8**.

2.5.16 On successful completion of the test, the Distribution Licensee shall issue a test certificate as per the format in **Annexure-9**. On receiving the test certificate, the prosumer may apply for Net meter and Renewable energy meter to the distribution licensee.

2.5.17 Consumers having ABT compliant meters with net metering facility shall not be required to install additional Net meter.

2.5.18 The net meter shall be installed at the interconnection point of the prosumer with the network of the distribution licensee. The Renewable energy meter or its display shall be made available near to the net meter.

2.5.19 If the eligible consumer elects to purchase the said meter(s), he may procure and present them to the distribution licensee for testing and installation.

2.5.20 The distribution licensee shall undertake the testing of meters before installation to ensure accuracy of the meter. The meter(s) shall be jointly inspected by both the eligible consumer and the distribution licensee, and shall be sealed by the distribution licensee.

2.5.21 The licensee shall complete the testing and installation of the renewable energy meter and the net meter purchased by the eligible consumer, within a period of 14 calendar days from the date of presentation of such meters for testing.

2.5.22 The licensee may collect from the eligible consumer, the security deposit and rent for the renewable energy meter and net meter, if provided by the licensee, at the rates as given under **Annexure-2.**

These rates are subject to revision every two years depending on variation in market price of meters.

2.5.23 On successful completion of the test as specified above, the distribution licensee and the eligible consumer shall execute a connection agreement specified in **Annexure-10.**

2.5.24 The licensee shall, within seven days from the date of execution of the agreement, connect the renewable energy system to the distribution system and issue a connection report as per **Annexure- 11.**

2.5.25 The timelines for various activities involved in the procedure for grant of connectivity is tabulated below.

	Timelines	
1	Feasibility Certificate from Licensee	15 Days from the date of receipt of application
2	Application for Registration before the licensee	30 days from the date of receipt of feasibility certificate
3	Scruitiny of the application by the licensee	7 working days from the date of receipt of application
4	Registration	Within 7 working days from date of submission of completed application and registration fee
5	Inspection and safety checks by Electrical inspectorate	Within 10 working days from the date of submission of work completion report
6	Testing of RE system by the distribution licensee	Within 7 days from the date of submission of the approval of Electrical inspector
7	Net meters to be purchase by licensee	Distribution licensee shall provide the same within 10 days from the date of submission of the approval of Electrical Inspector
8	Testing of Net Meter if arranged by consumer	14 calendar days from the date of submission of meters

2.6 Energy Accounting, Banking, Billing and Settlement

2.6.1 Billing:

The distribution licensee shall take the meter reading of the 'renewable energy system' regularly for each 'billing period' and record the readings of both the renewable energy meter and the net meter. For each billing period, the distribution licensee shall make the following information available in its bill to the prosumer:

(i) Time period wise (normal hours, peak hours and off-peak hours) Renewable energy generation recorded in the energy meter for the prosumer with connected load above 20 kW, and total generation from the RE system for the prosumers with connected load 'of and below 20kW'.

(ii) Time period wise electricity consumption of the prosumer with connected load above 20 kW, and total consumption in the case of the prosumer with connected less than 20 kW.

(iii) Net billed electricity, if any, for which payment is to be made by the prosumer;

(iv) Excess energy brought forward from the last billing period;

(v) Excess energy carried forward to the next billing period.

The format for bill of a prosumer is enclosed as **Annexure-12.**

2.6.2 Banking facility for prosumers.-

(i) In case the energy injected by the prosumer from his renewable energy system exceeds the energy consumed by him from the distribution licensee during the billing period, such excess energy is allowed to be banked with the distribution licensee and to be carried forward to the subsequent billing periods of the settlement period.

(ii) The distribution licensee is permitted to account the energy generated from above such renewable energy system installed by the prosumer towards its RPO

2.6.3 Energy accounting, banking and settlement of energy generated, drawn and injected by a prosumer with connected load of and below 20 kW:

(i) The distribution licensee, during a billing period shall extend the facility to the prosumer to draw back from the grid, the electricity injected during a time block at a different time period without any restriction.

(ii) In case the electricity supplied by the distribution licensee during any billing period exceeds the electricity injected into the grid by the prosumer from his renewable energy system, the distribution licensee shall raise a bill for the net electricity consumption at the prevailing tariff, after adjusting any excess electricity banked from the previous billing period;

(ii) In case the energy injected by the prosumer from his renewable energy system exceeds the energy consumed by him from the distribution licensee during the billing period, such excess energy is allowed to be banked with the distribution licensee and to be carried forward to the subsequent billing periods of the settlement period. No banking charges are applicable.

The distribution licensee is permitted to account the energy generated from above such renewable energy system installed by the prosumer towards its RPO.

2.6.4. Accounting and settlement of energy generated, drawn and injected by the prosumer having connected load above 20 kW:

(i) The electricity injected from the renewable energy system in a time period during a billing period shall be first set off against the electricity consumed during the same time period.

(ii) Any excess generation over consumption in that time period during the billing period shall thereafter be set-off against other time period, subject to the following:

- 80% of the net energy injected in time periods other than peak hours, be allowed to adjust against peak hour consumption first.
- The net energy injected during peak hours shall be allowed to be adjusted 100% during the peak hour and the balance shall be

allowed to be adjusted 120% during other time blocks (normal hours first followed by off peak hours).

- At all other time periods, except energy injection during peak hours, 100% of the net energy injected in any time periods will be allowed to adjust against the consumption, during the time period other than peak hours.
- The priority for adjusting the excess energy of any zone will be peak, normal and off peak in sequence.

(iii) Any excess generation during a billing period, after adjusting against the consumption during the same billing period as per (i) & (ii) above, shall be banked and carried forward, to the next billing period. Banking charges are not applicable.

(iv) Such surplus energy carried forward to the next billing period shall be accounted along with the renewable energy generation during the subsequent billing period, and the same shall be settled against the energy drawn in the subsequent billing period as per the procedures specified as per (i) & (ii) above.

(iii) If the electricity injected into the system by the prosumer as measured in the net meter, is less than the total electricity drawn from the licensee, during any billing period, the licensee shall recover from such prosumer, the electricity charges at the rates applicable as per the tariff order issued by the Commission, for the net quantum of electricity drawn by him from the distribution system, after taking into account any balance electricity banked in the previous billing period.

(vi) The distribution licensee is permitted to account the energy generated from above such renewable energy system installed by the prosumer towards its RPO.

(vii) The licensee shall pay to the prosumer for the net electricity balance in his account at the end of the settlement period, at the Average Power Purchase Cost (APPC) approved by the Commission;
Provided that, in case of delay in payment of the net amount due to the prosumer beyond 30 days from the settlement date, the licensee shall pay interest to the prosumer at the FBIL rate +200 base points prevailing on 1st April of the settlement year.

(viii) The prosumer is exempted from the payment of transmission charges, wheeling charges, cross subsidy surcharges for the electricity generated and consumed at the same premises from the renewable energy system under net metering facility.

2.6.5 Use of excess energy generated from RE sources in another premise

(1) The prosumer shall have the right for wheeling the excess electricity during a billing period to another premises owned by him within the area of supply of the distribution licensee subject to the following conditions:-

(i) The right of wheeling and consumption of excess electricity shall be available to the prosumer irrespective of the category of tariff in the other premises;

(ii) Such right for wheeling the excess electricity shall be available for the use in his second premises only after the prosumer meets his full demand in the premises, where the electricity is generated using renewable energy system;

(iii) The prosumer has to bear the applicable wheeling charges, and distribution losses, as approved by the Commission from time to time for the quantum of excess renewable energy wheeled from one of his premise to another premise.

(iv) The quantum of excess electricity wheeled shall be calculated based on the above and accounted in subsequent bills of the other premise.

(v) The electricity generated by a prosumer using the renewable energy system installed in his premises and wheeled to another premise, shall be exempted from payment of cross subsidy surcharges.

(2) The prosumer shall apply to the licensee for availing the wheeling facility as above, with necessary particulars of such other premises where, such excess electricity generated by the renewable energy system installed in one of his premises, is proposed to be used. The choice of premises and

the priority among these premises for such adjustment shall be specified by the eligible consumer in the application, which shall not be allowed to change in a settlement year unless the applicant desires to not to avail the facility of wheeling.

(3) If the eligible consumer has Renewable energy systems up to 20KW in multiple premises owned by him under the supply area of the distribution licensee, the right for wheeling the excess electricity from all the Renewable energy systems shall be available as per 2.6.5 (1) above, subject to the condition that the excess energy of the second premise shall be allowed to be wheeled after utilizing the entire wheeled energy of the first premise and so on. In such cases, the applicant has to specify the order of priority of selection of premises having Renewable energy systems and priority of selection of premises for adjusting the excess energy. An illustrative example for wheeling adjustment is enclosed as **Annexure-13.**

(4) The use of wheeled energy in his other premises used by tenants are not allowed.

(5) The licensee shall after due verification of the application submitted as above and after satisfying about its genuineness, grant the permission to use the excess electricity in such other premises owned by the prosumer, within 7 calendar days of receipt of the application.

(6) The modifications, if any, required in the metering system in such other premises of the prosumer where the excess electricity is proposed to be used, shall be made by the distribution licensee at the cost of the prosumer.

(7) Alternatively the prosumer can make such modifications to the metering system at his own cost, subject to the compliance of the distribution licensee standards and technical specifications.

2.6.6 BILLING PROCEDURE OF PROSUMERS

A. Billing procedure of a prosumer with RE generation upto 20KW is enclosed as **Annexure-14**.

B. Billing procedure of a prosumer with RE generation greater than 20KW and upto 1MW is enclosed as **Annexure-15**.

3. PROSUMERS HAVING RE CAPACITY MORE THAN 1 MW INCLUDING A PROSUMER NOT COVERED UNDER NETMETERING, CAPTIVE CONSUMERS & INDEPENDENT POWER PRODUCERS

3.1 Applicable to the following RE systems:

(i) A prosumer having Renewable Energy Systems with installed capacity more than 1 MW at his premise for his own use, including a prosumer not covered under net metering.

(ii) Renewable Energy Systems installed by a Captive consumer, at a location different from the location of its usage, but within the State for his own use.

(iii) Renewable energy system installed by a Renewable Energy Generator as an Independent power producer, for third party sale using the transmission and/or distribution system of the utility.

The prosumers and captive consumers under the above categories are permitted to install RE generation irrespective of their connected load or contract demand to offset their energy consumption on annual basis.

3.2 CONNECTIVITY

3.2.1 The distribution licensee/State Transmission Utility, as the case may be, on demand shall provide connectivity for the Renewable Energy system as per the provisions and timelines specified in KSERC (Connectivity and Intra State Open Access) Regulations, 2013 as amended from time to time.

3.2.2 The interconnection of the renewable energy system with the transmission and/or distribution system shall conform to the provisions under the Central Electricity Authority (Technical Standards for Connectivity of Distributed Generation Resources) Regulations, 2013 and Central Electricity Authority (Measures Relating to Safety and Electric Supply) Regulations, 2010, and other applicable regulations dealing with connectivity and safety, as amended from time to time.

3.3 METERING:

3.3.1 The Renewable Energy Generator/ Captive Generating plant, the captive consumer and the open access customer as the case may be, shall install Special Energy Meters (SEM) as specified in the Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006 as amended from time to time, for accounting the quantum of energy generated, the quantum of energy injected into the transmission and/or distribution system and the quantum of energy consumed.

3.3.2 Provided that, if the RE generator/ consumer, elects to purchase his own special energy meter, he shall purchase the same from the firms empaneled by the STU/ distribution licensee, as specified in the Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006 as amended from time to time.

3.3.3 Special Energy Meters installed shall be capable of measuring the 15 minutes time-block-wise 'active energy and reactive energy', in accordance with the Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006 as amended from time to time and the provisions of State Grid Code. The metering system shall have remote terminal unit (RTU) to facilitate real time monitoring by the SLDC as and when specified by the Commission.

3.3.4 Special Energy Meters shall be open for inspection by any person authorized by the STU or the State Load Despatch Centre or the distribution licensee, as the case may be.

3.4 OPEN ACCESS

3.4.1 Any person generating electricity from renewable sources of energy, shall have the right for open access to the distribution system/ transmission system of the licensee/ STU in the State, for transmitting and/or wheeling the renewable energy, subject to the terms and conditions specified as follows:

3.4.2 Open access shall be granted as per the provisions under KSERC (Connectivity and Intra State Open Access) Regulations, 2013 as amended from time to time.

3.4.3 Open access charges such as application fee, SLDC/NLDC charges, Transmission/distribution losses, transmission/wheeling charges, reactive energy charges, deviations and grid support charges,

surcharges etc., as per Electricity Act, 2003/KSERC (Connectivity and Intra State Open Access) Regulations, 2013 and the Tariff orders issued by the Commission from time to time, as the case may be, applicable to the persons availing open access.

3.4.4 The Renewable Energy Generator shall follow the Indian Electricity Grid Code 2010, Kerala State Grid Code and the relevant CERC/ KSERC Regulations and procedures for forecasting, scheduling and dispatch of renewable energy, as amended from time to time.

3.5 Billing, Accounting and settlement

3.5.1 Billing:

(1) For each billing period, the distribution licensee shall, record the reading at the 'renewable energy meter' and the 'consumer meter' regularly for each of the time period.

(2) For each billing period, the distribution licensee shall make the following information available on its bill to prosumer/ captive consumer under these Regulations,-

(i) Time period wise details of the electricity consumption of the prosumer/ captive consumer.

(ii) Time period wise details of the electricity injected from the Renewable Energy System.

(iii) The net energy banked from the previous billing period (closing balance of the net surplus renewable energy if any available at the end of the previous billing period).

(iv) Detailed calculation statement of the time period wise adjustments, if any.

(v) Net billed electricity, if any, for which a payment is to be made by the prosumer/ captive consumer;

(vi) Excess electricity, if any, to be carried forward to the next billing period.

The billing format is enclosed as **Annexure-16**.

3.5.2 General Conditions and charges applicable for the use of the transmission and distribution system by a prosumer, having a Renewable Energy System with capacity more than 1 MW at the same premise for his own use/ a Renewable Energy System with capacity less than 1 MW but not under net metering.-

(1) 5% of the energy injected into the grid shall be accounted towards ‘grid support charges’ and the balance 95% shall be treated as ‘net energy’.

(2) The prosumer, who installed the Renewable Energy System at the same premise is exempted from the payment of transmission charges, wheeling charges, transmission losses and distribution loss for the quantum of energy generated from the RE plant and adjusted against his consumption during the settlement period, in the same premises.

(3) The prosumer is permitted to account the renewable energy injected in a time period (normal hours, peak hours and off-peak hours) during the billing period, against the consumption in a different time period during the same billing period, subject to the following conditions:

(i) 80% of the net energy injected in time periods other than peak hours, be allowed to be adjusted against peak hour consumption.

(ii) The net energy injected during peak hours shall be allowed to be adjusted 100% during the peak hour and the balance shall be allowed to be adjusted at 120% during other time blocks.

(iii) At all other time periods, except energy injection during peak hours, 100% of the net energy injected in any time periods will be allowed to be adjusted against the consumption, during the time period other than peak hours.

(4) The excess energy, if any, available at the end of the billing period is **allowed to be banked** and carried forward to the subsequent billing period of the settlement period, subject to the following:

(i) 95% of the energy so banked only will be allowed to be adjusted in the subsequent billing period of the settlement period and 5% of the banked energy shall be accounted towards **banking charges** of the distribution licensee.

(ii) Time period wise adjustment of the energy generated in a time period and accounted against the consumption in different time period during the billing period shall be followed as detailed under clause (4) above.

Note: The 5% banking charges on the energy banked at the end of billing period shall not be cumulative, i.e., once 5% energy is deducted as banking charges during a billing period, no further

banking charges will be applicable for this excess energy, if any arising out of such banked quantum of energy in the subsequent billing periods.

Clarification: For example, in the month of April, 50000 units is the surplus energy with the prosumer after making the adjustments as detailed under Sub Regulation (4) above. The energy banked in the month of April after accounting for banking charges shall be (50000x0.95) 47500 units. Thereafter in the month of May, 20000 units is the surplus energy with the prosumer after making the adjustments as detailed under Sub Regulation (4) above. Here the energy banked in the month of May shall be (20000x 0.95) 19000 units, and the total energy so banked at the prosumer account at the end of the month May shall be 47500+19000 = 66500 unit.

(5) The prosumer who wants to avail the banking facility shall enter into a banking agreement with the distribution licensee in the format under A**nnexure-17.**

(6)In case the energy drawn by the prosumer is more than the net energy injected from the RE plant after the adjustments for charges specified in these Regulations, the distribution licensee shall raise a bill for the energy drawn from the grid at the prevailing tariff, after taking into account any excess electricity carried forward from the previous billing period;

(7)The licensee shall pay, within one month, for the net surplus energy available at the credit of the prosumer at the end of the settlement period at the **Average Pooled Power Purchase Cost (APPC)** of the licensee approved by the Commission, from time to time.

Provided that, in case of delay in payment of the net amount due to the consumer beyond 30 days from the settlement date, the licensee shall pay interest to the consumer at the FBIL + 200 base points for the period of delay.

(8)No carry forward of banked electricity shall be done beyond the settlement period.

(9)The quantum of energy generated from the Renewable Energy System by a prosumer at his premise after meeting his renewable purchase obligation, if any,

shall be permitted to be **accounted towards the RPO** of the distribution licensee.

(10)The procedure for energy accounting and billing of Renewable Energy System with capacity more than 1 MW at the same premise for his own use/ a Renewable Energy System with capacity less than 1 MW but not under net metering is enclosed as **Annexure-18**.

3.5.3 General Conditions and charges applicable, for usage of the transmission and distribution system by a Captive Consumer:

(1) Any captive consumer, using the transmission and/or distribution system of the licensee for wheeling the energy generated from the Renewable Energy System to a different location within the State, shall pay the following charges approved by the Commission from time to time,-

a. Transmission charges
b. Wheeling charges
c. Transmission losses and Distribution losses, and
d. Any other charges approved by the Commission.

(2) Captive consumers who maintain the contract demand with the distribution licensee are required to pay transmission charges only on per unit basis at the rates as approved by the Commission from time to time.

(3) Captive consumers under these Regulations are permitted to install Renewable Energy System at their premise irrespective of their connected load or contract demand, to offset their energy consumption on annual basis, subject to the terms and conditions specified in these Regulations.

Provided that, as a promotional measure, such consumers are permitted to inject energy into the grid during any time period and to draw back the energy during any other time period subject to the condition specified in (5) below and without enhancing the connected load/contract demand up to the RE capacity.

Provided further that such consumers shall be required to pay 5% of the energy injected into the grid from the RE plant as **‘grid support charges’**

.

(4) If the net energy, after deducting the approved transmission and/or distribution loss, injected from the renewable energy system during a time period (normal hours, peak hours and off-peak hours) in a billing period is fully consumed by the captive consumer during the same time period (normal hours, peak hours and off-peak hours) in that billing period itself, for such quantum of electricity, the captive consumer is **exempted from the banking charges.**

(5) The captive consumer is permitted to consume the electricity injected from the Renewable Energy System during a time period (normal hours, peak hours and off-peak hours), in a different time period (normal hours, peak hours and off-peak hours) during the same billing period, subject to the following conditions:

(i) 80% of the net energy injected in time periods other than peak hours, be allowed to adjust against peak hour consumption.

(ii) The net energy injected during peak hours shall be allowed to be adjusted 100% during the peak hour and the balance shall be allowed to be adjusted 120% during other time blocks.

(iii) At all other time periods, except energy injection during peak hours, 100% of the net energy injected in any time periods will be allowed to adjust against the consumption, during the time period other than peak hours.

(6) The excess energy, if any, available at the end of the billing period is allowed to be banked and carried forward to the subsequent billing period of the settlement period, subject to the following,-

(i) 95% of the energy so banked only be allowed to be adjusted in the subsequent billing period of the settlement period and 5% of the banked energy shall be accounted towards banking charges of the distribution licensee.

(ii) Time period wise adjustment of the energy generated in a time period and accounted against the consumption in different time period during the billing period shall be followed as detailed under clause (5) above.

Note: The 5% banking charges on the energy banked at the end of billing period shall not be cumulative, i.e., once 5% energy is deducted as banking charges during a billing period, no further banking charges will be applicable for this excess energy, if any arising out of such banked quantum of energy in the subsequent billing periods.

Clarification: For example, in the month of April, 50000 units is the surplus energy with the prosumer after making the adjustments as detailed under Sub Regulation (3) above. The energy banked in the month of April after accounting for banking charges shall be (50000x0.95) 47500 units. Thereafter in the month of May, 20000 units is the surplus energy with the prosumer after making the adjustments as detailed under Sub Regulation (3) above. Here the energy banked in the month of May shall be (20000x 0.95) 19000 units, and the total energy so banked at the prosumer account at the end of the month May shall be 47500+19000 = 66500 unit.

(iii)No carry forward of banked electricity shall be done beyond the settlement period.

(7) In case the energy drawn by the captive consumer is more than the net energy injected from the RE plant after the adjustments for charges specified in these Regulations, the distribution licensee shall raise a bill for the energy drawn from the grid at the prevailing tariff, after taking into account any excess electricity carried forward from the previous billing period;

(8) Captive consumers under these Regulations shall pay applicable transmission charges and/or wheeling charges, transmission losses and distribution losses.

(9) The distribution licensee/ STU/SLDC shall raise separate bill for transmission charges, wheeling charges, transmission and distribution losses or any other charges payable by such consumers, as detailed above.

(10) The licensee shall pay for the net electricity banked by the captive consumer at the end of the settlement period, at the Average Power Purchase Cost (APPC) approved by the Commission;
Provided that, in case of delay in payment of the net amount due to the consumer beyond 30 days from the settlement date, the licensee shall pay interest to the consumer at the FBIL + 200 base points for the period of delay.

(11) The quantum of energy from the Renewable Energy System generated and consumed by the captive consumer during the settlement period after accounting for its RPO, if any, shall be permitted to be **accounted towards the RPO** of the distribution licensee.

(12) The above accounting shall be valid only till the time intra state deviation settlement mechanism put in place.
The sample billing procedure for accounting and settlement of these type of consumers is same as that under **Annexure-19**.

4.0 General Conditions and charges applicable, for usage of the transmission and distribution system by an independent renewable power generator/ open access consumer.-

(1) A consumer purchasing power from an independent renewable power generator or a Renewable Power Generator supplying power to a third party by availing open access of the distribution system of a licensee shall pay to the licensee the following charges approved by the Commission from time to time,-
(i) Transmission charges;
(ii) Wheeling charges;
(iii) Cross subsidy surcharges;
(iv) Transmission losses and Distribution losses; and
(v) Any other charges approved by the Commission.

(2) All other terms and conditions specified in the KSERC (Connectivity and Intra State Open Access) Regulations, 2013 is applicable for the IPPs and open access consumers who intent to avail open access in the transmission system and/or distribution system of the licensee.

(3) The distribution licensee is not obliged to extend the time period wise adjustment, banking facilities or any such other facility under these Regulations for open access consumers and Independent Renewable Energy Generators.

5.0 Summary of various charges applicable for Prosumers/Captive Consumers/Independent RE generators/Open access consumers are given below.

<table>
<tr><th>Category</th><th>Transmission charges</th><th>Wheeling charges</th><th>T&D loss</th><th>CSS</th><th>Grid support charges</th><th>Banking charges</th><th>Maximum RE capacity that can be installed</th></tr>
<tr><td>Prosumers with net metering facility</td><td>NA</td><td>NA</td><td>NA</td><td>NA</td><td>NA</td><td>NA</td><td>Connected load or contract demand as applicable</td></tr>
<tr><td>Prosumers with RE capacity above 1 MW</td><td>NA</td><td>NA</td><td>NA</td><td>NA</td><td rowspan="2">Yes. 5% of the energy injected into the system from the RE plant</td><td rowspan="2">For the surplus energy banked beyond billing period, 5% of energy banked is levied as banking charges.</td><td rowspan="2">No limit for RE capacity can be installed for own use</td></tr>
<tr><td>Prosumers not covered under net metering facility**</td><td>NA</td><td>NA</td><td>NA</td><td>NA</td></tr>
<tr><td>Captive consumers</td><td>Yes, @per unit basis</td><td colspan="3" rowspan="2">Yes, as per the Tariff orders issued by the Commission from time to time</td><td></td><td></td><td></td></tr>
<tr><td>Open access consumers</td><td>Yes@ per MW basis</td><td colspan="3">No such facility including banking allowed</td></tr>
</table>

6.0 Miscellaneous:

1. **Utility driven schemes**: This procedure do not preclude the right of the Distribution Licensee to undertake Renewable Energy projects as per the

schemes/policies of the State and Central Government with the prior approval of the Commission.

2. The energy accounting and billing of all the existing agreements of Renewable Energy generators including prosumers, captive consumers, Independent Renewable Energy generators and open access consumers shall be modified in accordance with this procedure with effect from the date of implementation of this procedure.

3. Generation based incentives for off-grid solar schemes: Generation based incentives as per the order of the Commission dated 11-11-2019 is available to the off-grid captive sola plants upto 30-9-2021.

4. Renewable Energy Advisory Committee:

(1) In order to facilitate and encourage the implementation of Renewable Energy Systems in the State under these Regulations, the Commission shall, notify the Renewable Energy Advisory Committee with the following members, for discharging the functions detailed under sub Regulations (2) below;

(i) Secretary to the Commission, Chairman of the Committee;
Director (Technical) of the Commission;

(ii) Representative from the Power Department, in State Government;

(iii) Representative from the Chief Electrical Inspector;

(iv) Representative from State Transmission Utility;

(v) Representative from SLDC;

(vi) Chief Engineer RE cell KSEB Ltd;

(vii) Each zonal Distribution Chief Engineers of KSEB Ltd, as representative;

(viii) One representative among the small licensees on rotational basis;

(ix) Representative from ANERT as State Nodal Agency; (x) One representative, each from representing domestic category, commercial category and Industrial category among their consumer associations, protesting consumer interests;

(xi) One representative from Renewable Energy Generators

(xii) One representative each from Small Scale Industries Associations, manufacturing RE companies, HT&EHT Electricity Industrial Consumers Associations and KREEPA.

(2) The Renewable Energy Committee constituted under clause (1) above, shall discharge the following functions, -

a) Address the various difficulties and issues concerning connectivity faced by the State Transmission Utility and/or distribution licensee(s) in the State.

b) Address and to develop common procedures for registering and processing the applications by the STU and /or distribution licensees.

c) Advise the distribution licensee(s) to develop consumer friendly procedures, billing systems etc.,

d) Develop technical standards for assessing the impact of the Renewable Energy in the Kerala power system.

e) Develop standards for data exchange between Renewable Energy System and the distribution licensee;

f) Promote cross-learning among the distribution licensees and other stakeholders;

g) Assist in developing common programs for facilitating Renewable Development by the incumbent distribution licensee.

5. Renewable Energy Cell.-

KSEB Ltd. vide B.O.(FTD) No.278/2020(KSEB/TRAC /Renewables/ 2020-21 dated 20-4-2020 has designated office of the Chief Engineer (REES) as the Renewable Energy Cell (RE Cell) under the Regulations to promote Renewable Energy development in the State.

6. Penalty or compensation for non-compliance by the distribution licensee.-

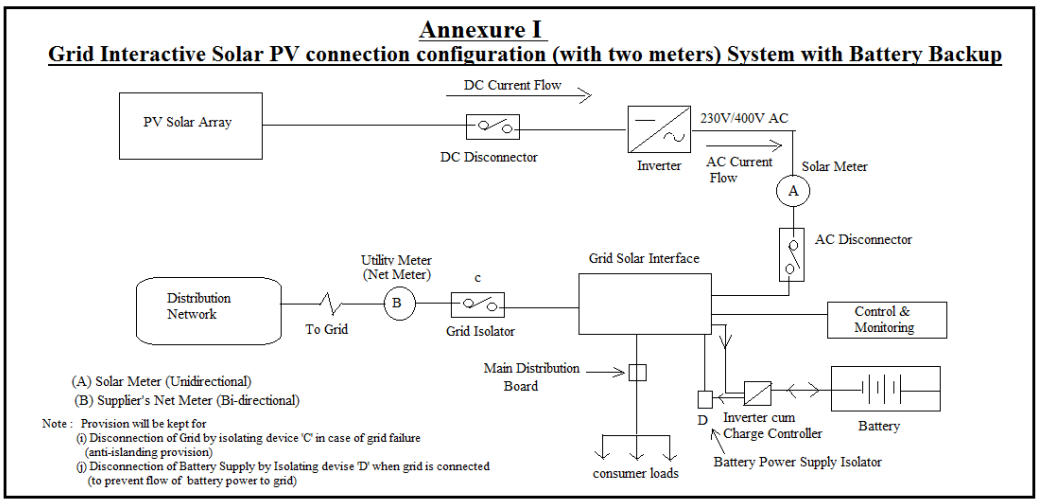
(1) In case of failure to meet timelines prescribed under this procedure, penalty of Rs. 1000 per day for each day of delay shall be levied on the distribution licensee.

(2) The penalty accrued during the year under this procedure will be deducted from the Return on Equity of the distribution licensee for that year.

Index of Formats, Annexures and Schedules

Annexure-1

Circuit Diagram of Hybrid Inverters



Annexure -2

Security Deposit and Meter Rent

Sl No	Item	Security Deposit (Rs) (@ 50% of the meter cost)	Monthly Meter Rent (Rs)
1	Renewable Energy meter - Single phase 2 wire 5-30-A,static LCD meters with TOD facility	300	10
2	Renewable Energy meter - Three phase 10-60A static LCD meters with TOD facility	600	20
3	Renewable Energy meter - LTCT Meter DLMS Class 0.5 S -/5A	1000	25
4	Renewable Energy meter - 3 Phase 4 Wire, CT/PT Operated, HT, Static Energy Meters of Class 0.2S Accuracy + GPRS Modem	8000	200
5	Renewable Energy Meter - 3 Phase 4 Wire, CT/PT Operated, EHT, Static Energy Meters of Class 0.2S Accuracy+ GPRS Modem	8000	200
6	Net Meter - single phase 5-30A class 1.0	1200	30
7	Net Meter - Three phase 10-60A class 1.0	1400	35
8	NetMeter- LTCT meter,class 0.5S,-/5A	2500	70
9	Netmeter- CTPT operated HT meter Class 0.2S	18000	435

Annexure-3

APPLICATION TO SEEK CONNECTIVITY OF RENEWABLE ENERGY SYSTEM [Regulation 18(1)]

1.	Name and Full Address of Consumer			
2.	Telephone No.	Res:	Mob:	
3.	E-mail address			
4.	Consumer No. & Category			
5.	Sanctioned Connected Load/ Contract Demand			
6.	Whether the Consumer is under ToD billing system			
7.	Capacity of Renewable Energy System proposed to be connected			
8.	Type of Renewable Energy System proposed (Solar, Wind, Biomass etc.)			
9.	Location and address of proposed Renewable Energy System (rooftop / ground mounted/ any other).			
10.	Preferred mode of communication (Post/ By Hand/Electronic)			

Place:
Date:

Signature of Consumer

Acknowledgement
Application Registration Number……

Name..... Consumer No…….
Date…… Time…….
Application fee paid Rs……. by Cash/Cheque/DD/RTGS
RE Plant Capacity…… kW

Name of Officer Signature
Office Seal (Designation)

Annexure-4

Application fee

Sl No.	Description	Amount
1	Application fee	Rs.1000/-

Annexure-5

Feasibility Certificate for Grid Connected Renewable Energy System

Name of Electrical Section:

1	No.in Application Register	
2	Date of Application	
3	Name of Applicant	
4	Address	
5	Date of Inspection	
6	Whether grid connectivity is feasible	Yes / No
7	Capacity feasible for grid connectivity	
8	Validity period of feasibility certificate	

* (Strike off the statement which is not applicable)

1. You are requested to remit Rs…… in cash/ DD as registration fee for grid connectivity for the Renewable Energy System. You may remit the fee for registration within 30 days from the date of the Feasibility Certificate; or else your feasibility certificate becomes invalid and your priority on the application will be cancelled.
2. As the feasibility certificate period has been expired; the capacity allotted in the selected feeder for connecting your Renewable Energy System is not possible now. If it is feasible after reviewing the feeder capacity in every 90 days or before, it will be communicated to you.
3. The following documents may be enclosed for registering the application for Renewable Energy System:
    - Scheme approval from Electrical Inspector
    - Single Line Schematic Diagram of the proposed Station with full technical diagram and details
    - Technical Specifications and other details of Grid Connected Inverter, Hand Operated Isolator Switch, renewable energy meter and Net meter.

- Type Test certificates of Electrical equipment's; viz., MCB, ELCB, Fuse, Inverter either from National Accreditation Board for Testing and Calibration (NABL) or from the Labs recognised by International Organizations.

(Signature)
Assistant Engineer

Place:

Date

Annexure-6

APPLICATION FOR REGISTRATION OF THE SCHEME FOR RENEWABLE ENERGY SYSTEM [Regulation 19(1)]

1.	Name	
2.	Telephone No.	
3.	E-mail	
4.	Consumer No.	
5.	Connected Load/ Contract Demand of Consumer	
6.	Application No. & Date	
7.	Renewable Energy Source	
8.	Capacity of Renewable Energy System to be connected	
9.	Technical specifications and other particulars of Renewable Panel, Grid Tied Inverter and Interlocking System etc. proposed to be installed- whether attached	Yes/No
10.	Technical specifications and other particulars of Renewable energy meter and Net meter to be installed- whether attached.	Yes/No
11.	Whether consumer opts to purchase meter himself or from Distribution Licensee	
12.	Drawings for installing the Renewable Energy System- whether attached	Yes/No
13.	Proposed date of completion of the installation	

Place:
Date:

Signature of consumer

Acknowledgement

Received the application for registration of the scheme for Renewable Energy System
Name & Address: ……
…… Date ……
Registration Number: …… Consumer Number: ……
Renewable Plant Capacity & Type: …….....
Mode of payment (Cheque/DD/NEFT/RTGS)……Amount Rs…….
Details of Cheque/DD/RTGS/NEFT…… Name of Officer

Signature

Seal (Designation of Officer)

Annexure-7

Fee for registration

Sl No.	Description	Amount
1	Registration fee	Rs.1000/KW or part thereof

Annexure-8

Application for testing of Renewable Energy System

To

(Name & Address of applicant)

Name of Electrical Section:

1	Application No in the Office Register	
2	Name of Applicant	
3	Date of Application	
4	Registration No & Date	
5	SPIN	
6	Date of Completion of Renewable Energy System	
7	Date of submission of application for testing	

Sir/Madam,

The date indicated below is decided for testing the Renewable Energy plant based on the information furnished above.

Proposed date:

Time:

(Signature)
Assistant Engineer

Annexure 9

Test Certificate for Renewable Energy System

(in duplicate)

1. Consumer Particulars:

Name and address of the solar plant owner .....

…….....

Renewable Energy Plant Identification No.(SPIN), if required ……

Capacity of RE plant ……. Consumer No.……..

Connected load……. Consumer category…….

2. Details of relay and functionality tests conducted:

No	Particulars	Test status
1	Phase unbalance	
2	Harmonic current injection, direct current injection and flicker	
3	Anti-islanding	
4	Correctness of status indicators (including that of manually operated isolator switch	

1 Name and signature of the authorized testing agency:

(Seal)

2 Name and signature of applicant:

3 Witnessed by

Name, signature & seal of the Assistant Engineer:

Annexure-10

Agreement for connecting Renewable Energy Systems to the Distribution System of the Licensee

(on stamp paper Rs.200/-)

This memorandum of Agreement is made on this (date)…… day of (Month)……..Year ……at (location) ……. Between (name of eligible consumer) …… the eligible consumer (hereinafter referred to as 'Consumer' residing at (address)…….. as first party

AND

The Kerala State Electricity Board Limited a Company under the Indian Companies Act 1956 (Central Act 1 of 1956) having its registered office at Vydyuthi Bhavanam, Pattom, Thiruvananthapuram represented by Sri. …….. …… (here enter name, designation and address of the authority) hereinafter referred to as 'KSEB Limited (which expression shall unless excluded by or repugnant to the context or meaning thereof be deemed to include its successors, representatives and assignees) as Second Party, of the agreement;

Whereas, the consumer has installed a Renewable Energy system at the premises owned and possessed by the consumer under valid lease agreement (strike out whichever is not applicable) and has requested KSEB Limited to provide connectivity to the said plant;

And whereas the KSEB Limited agrees to provide to the consumer, a Renewable Energy Plant Identification Number (REPIN) ……. ….. as scheduled in the agreement for the electricity generated from the above plant having capacity ……. kWp/MWp as per conditions of this agreement and the regulations or orders issued by the Kerala State Electricity Regulatory Commission from time to time;

And whereas the consumer has, in addition to those automatic and inbuilt isolation devices within inverter and external manual relays, installed a manually operated isolating switch and associated equipment with sufficient safeguards between the Renewable Energy Systems and the distribution system of KSEB Limited to prevent injection of electricity from his Renewable Energy System to distribution system of the licensee when the distribution system is de-energized;

And whereas, the consumer has assured that in case of a power outage in the system of KSEB Limited his/her plant will not inject power to distribution system of the licensee and has produced separately the documents substantiating this assurance which form part of this agreement, as if incorporated herein;

And whereas, the consumer has undertaken that all the equipment connected to the distribution system comply with relevant international (IEC/IEC) or Indian Standards (BIS) and that installations of electrical equipment comply with the relevant provisions of the Central Electricity Authority (Measures relating to Safety and Electric Supply) Regulations 2010;

And whereas, the consumer undertakes that he / she is in possession of all the necessary approvals and clearances including sanction from Electrical Inspector, as specified in relevant regulations for connecting Renewable Energy System to the distribution system for commissioning the Renewable Energy System;

And whereas the consumer has deposited an amount of Rs. …… (Rupees in words) by cash/ DD as per receipt/DD No……. dated …… at Electrical Section Office …….. as security deposit for the installation of Renewable Energy Meter and Net meter and shall remit the meter rent charged by the KSEB Limited at the rates approved by the Kerala state Electricity Regulatory Commission from time to time for the satisfactory fulfilment of this agreement (strike out this portion if the meter is provided by the consumer at his / her cost);

And whereas the consumer has provided the Renewable Energy meter and the net meter at his / her cost, which has been certified and installed by KSEB Limited (strike out this portion if the meter is provided by KSEB Limited);

Now, therefore, both parties hereby agree as follows;

1. This net metering connection shall be governed by the provisions contained in the Kerala State Electricity Regulatory Commission (Renewable Energy & Net metering) Regulation, 2020 as amend from time to time and also subject to the condition that the Renewable Energy system meets the requirements as per the provisions contained in Central Electricity Authority (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations, 2013.

2. KSEB Limited shall have the sole authority to decide based on the results of necessary studies, the interface/ interconnection point to the Renewable Energy System.
3. If the consumer's Renewable Energy System either causes damage to and / or produces adverse effects affecting other consumers or assets of KSEB Limited the consumer will have to disconnect the Renewable Energy System immediately from the distribution system upon direction from KSEB Limited and correct the defect at his own expenses prior to reconnection.

4. KSEB Limited shall have access to the metering equipment and disconnecting means for Renewable Energy System in all required situations.

5. KSEB Limited shall have the right to disconnect Renewable Energy System from the distribution system of the licensee in emergency, if it is found that at that point in time providing service through the net metering system is not safe to grid as a whole.

6. (a) The consumer indemnifies KSEB Limited for the damages or adverse effects, if any from the negligence or internal defective operation in the connection -.

   (b).The KSEB Limited indemnifies the consumer for the damages or adverse effects, if any from the negligence or internal defective operation in the connection and operation of the distribution system of KSEB Limited

7. KSEB Limited shall not be liable for delivery to or realization by eligible consumer of any fiscal or other incentives provided by the Central / State Government or any other authority;
8. All the commercial settlements under this agreement shall follow the provisions of the Kerala State Electricity Regulatory Commission (Renewable Energy and Net metering) Regulations 2020.

9. The consumer may terminate this agreement after giving thirty days' (30 days) clear notice in writing to the authorised authority of the Licensee.
10. KSEB Limited has the right to terminate this agreement at any time after giving 30 days' prior notice. If consumer breaches any terms of this agreement and in cases where such breaches could be rectified and

the same are not provided / informed within 30 days of written notice from KSEB Limited about breach.

11. The consumer agrees that upon termination of this agreement, he must disconnected the Renewable Energy system from the distribution system of KSEB Limited in a timely manner to the satisfaction of KSEB Limited.

12. The consumer shall have the right to bank and use the electricity generated and injected in excess over his / her full consumption into the distribution system of the licensee by the Renewable energy system subject to the conditions specified in the Kerala Stet Electricity Regulatory Commission (Renewable Energy and Net metering) Regulation 2020.

13. The consumer shall have the right to open access for wheeling the electricity generated in excess by 500 units over the consumption by the Renewable energy system installed in the premises of the consumer detailed under item II of this schedule attached and shall be used in the premises owned by the consumer and in the order of preference as detailed under item no III of the attached schedule.

14. The licensee shall within seven days from the date of execution of this agreement commission of the solar energy system
15. The licensee shall pay for the net energy banked by the consumer at the end of the settlement period at the Average Pooled Purchase Cost of electricity approved by the Commission for that year as provided for in the Kerala State electricity Regulatory Commission (Renewable Energy and Net metering) Regulations 2020.

In witness whereof the said …… (1st Party) and the said ……. (2nd Party) have herewith signed at the day and year first above written.

Sd/- …….. (1st Party)

Witness 1 ……

Witness 2 ……

Sd/- …… (2nd Party)

Witness 1 ……

Witness 2 ……

Annexure-11

Solar Plant Connection Report

Name of Electrical Section: ……

Consumer No.: ……..…. (13 digits)

Name of consumer: ……

SPIN No. ……..

Solar Capacity …….. kWp

Date of Connection ……

Solar meter Initial Reading …….

Net meter Initial Reading ……..

Date: Name of Assistant Engineer: ……..

Signature …….

Copy to: Deputy Chief Engineer……

Executive Engineer ……

ANNEXURE 12

(a).Bill Format for < =20 KW Domestic +consumers having RE=CD/CL

Con. Code/Number		Bill Date		Due Date		Bill.No					
Tariff & Phase		Date of Meter reading		Last Date		CD(cash)		BG			
Name of consumer				Name of Circle		Name of Division					
Address											
				Bill Period							
Email ID				Area code							
Mobile No.				Pole Number							
Arrears as on (date)				Date of Previous Reading		Supply Voltage		CT ratio			
Disputed bill amount				Date of Present Reading							
Contract Demand(kVA)	NA	Connected Load KW		Average		Billing Type	Monthly/Bimonthly				
				Gross Consumption (kWh) = (Generation + Import - Export)		Name of section					
						RE Plant Capacity	.....KWp				

Reading Details of meter Sl.No .....Net meter- (KVA,KWh,KVAh & KVArh) | Status of meter

1. a 1) Energy (KWh) Import/Drawal

Zone	*FR*	*IR*	*MF*	*Units*
ALL			1.00	

1.a.2) Energy (KWh) Export /Injection

Zone	*FR*	*IR*	*MF*	*Units*
ALL			1.00	

RE Generation

b)RE meter, Sl.No..... status

Net Consumption from KSEB grid in KWh (Import- Export)

A. Reading current BP (I)

Zone	FR	IR	MF	Generation Units
ALL				

Details of other premises of the consumer to which banked energy to be wheeled

Sl.no	Name of section	Consumer No.	tariff	Units adjusted
1				
2				
3				
4				

c)Excess energy brought forwarded from previous billing period IF ANY

D) Excess energy wheeled from other premises if any

Distribution loss

Wheeled energy after deducting distribution loss

d) Billed energy in Kwh (Drawal- Injection- carried forwarded from previou BP- Wheeled energy if any))

e)Energy carried forwarded to next billing period in Kwh (Injection -Drawal + carried forwarded from previous BP)

Security deposit interest @...% _ Rs.....
Last Paid Amount :.....
Last Payment date:....
Credit if any::.....
security deposit RE meter if any

Security deposit Net meter if any

INVOICE

	Unit	*Rate (Rs)*	*Amount (Rs)*		
1. Fxed charge				**11..Other Charges**	**Amount**
2.Energy charge				**a.Installment pending**	
3.Surcharge				**b.ACD to be paid pending**	
4.Reconnection fees				**c.LED lamp installment if any**	
5.Less already paid if any				**d.Any other dues**	
6. Advance/ rebate /subsidy if any				**12.GST if applicable**	
7.Electricity Duty				**13.Rebate for online payment**	
8.RE meter rent				**14. Refunds if any**	
9.Net meter rent				**15. Arrears to be paid**	
Current Month bill					
				16.Wheeling charges if any	
Net payable Amount Rs					

Rupees..... Only

(b).Bill Format for < =20 KW Domestic +consumers takes energy form RE

Con. Code/Number		Bill Date		Due Date		Bill.No	
Tariff & Phase				Last Date		CD(cash)	

Name of consumer		Name of Circle	Name of Division
Address			
		Bill Period	
Email ID		Area code	
Mobile No.		Pole Number	

Arrears as on (date)		Date of Previous Reading		Supply Voltage	
Disputed bill amount		Date of Present Reading			
Connected Load KW KW		Average		Billing Type	Monthly/Bimonthly
		Consumption		Name of section	
Assigned RE consumer No		Assigned solar consumer No.			
Status of Premises		DL/DC/CL			

Reading Details of meter Sl.No .....Energy meter- Status of meter

1. a 1) Energy (KWh) reading				**Units wheeled to the premises**	
Zone	***FR***	***IR***	***Units***	***Kwh***	
ALL					

units billed excess /less in prevous bills due to

d) Billed energy in Kwh (Drawal- wheeeled energy from RE+ or _ adjustments)	
	Security deposit interest @...% _ Rs..... Last Paid Amount :..... Last Payment date:.... Credit if any::..... security deposit RE meter if any Security deposit Net meter if any

INVOICE

	Unit	***Rate (Rs)***	***Amount (Rs)***		
1. Fxed charge				**11..Other Charges**	**Amount**
2.Energy charge				**a.Installment pending**	
3.Surcharge				**b.ACD to be paid pending**	
4.Reconnection fees				**c.LED lamp installment if any**	
5.Less already paid if any				**d.Any other dues**	
6. Advance/ rebate /subsidy if any				**12.GST if applicable**	
7.Electricity Duty				**13.Rebate for online payment**	
8.Energy meter rent				**15. Arrears to be paid**	
Current Month bill					
Net payable Amount Rs					

Rupees..... Only

Annexure-13

Procedure for wheeling adjustment

Premise owned	**RE generation in the premise for the month**	**Consumption at the premise for the month**	**Excess energy available in the premise for the month**	**Excess energy available for wheeling after accounting distribution loss (L %)**
	(units)	(units)	(units)	(units)
A	G1	C1	G1-C1	E1 = (G1-C1)*(1-L%)
B	G2	C2	G2-C2	E2 = (G2-C2)*(1-L%)
C	G3	C3	G3-C3	E3 = (G3-C3)*(1-L%)
D	G4	C4	G4-C4	E4 = (G4-C4)*(1-L%)
E	G5	C5	G5-C5	E5 = (G5-C5)*(1-L%)
F	G6	C6	G6-C6	E6 = (G6-C6)*(1-L%)

Let priority specified by prosumer for RE generation to be considered be A, B, C, D, E, F
Let priority specified by prosumer for adjustment of consumption be C, A, D, F, B, E

Then E1 shall be adjusted against the consumption of 'C' first, if reqd at that premise, balance E1 if any to be wheeled for adjustment in premises D,F,B,E in sequential order depending on the requirement at each of these premises.

If there is net consumption in these premises even after offsetting with wheeled E1 units, then E2 shall be used as above for adjustment, followed by E3, E4, E5 and E6 in sequential order.

Sample calculation of Wheeling adjustment

Premise owned	RE generation in the premise for the month	Consumption at the premise for the month	Excess energy available in the premise for the month	Priority specified by the prosumer for RE generation	Priority specified by the prosumer for consumption adjustment	Excess energy available for wheeling after accounting distribution loss assuming 5% loss	Adjusted consumption of the premises
	(units)	(units)	(units)			(units)	(units)
A	1200	200	1000	1	6	950	0
B	0	400	0		4	0	(400-380-437=0)
C	0	170	0		3	0	(170-550=0)
D	0	180	0		2	0	(180-730=0)
E	600	140	460	2	5	437	0
F	0	220	0		1	0	(220-950 = 0)

Annexure-14

Billing procedure of Domestic + Consumer with Renewable Energy capacity <=- 20KW

Net injection as recorded in the net meter (total of all zone readings) at the end of the billing period	I units
Net drawal as recorded in the net meter (total of all zone readings)at the end of the billing period	D units
Net consumption from the grid	D-I units
Energy injection of the prosumer carried forwarded from the previous billing period of the same premise	Cf units
Surplus energy injection during the current billing period	I-D units
Total energy injection in credit (units)	B= Cf + I-D
	If B>0, BILLED ENERGY = 0 UNITS
Energy wheeled from other premises owned by the prosumer, if any for adjustment at the premise as per the procedure for wheeling	W units
	If B <0, Billed energy = D-I-Cf-W
Balance energy of the same premise available for carry forward to next billing cycle /other premises if any	= B If B<0, B=0
Balance wheeled energy for adj in other premises	W-(D-I-Cf)

SAMPLE BILLING OF A PROSUMER WITH 5KW RE PLANT:

Illustration:

Let total injection from the RE system for the billing period be 1200 units. Let carried forwarded banked energy of the previous month = 100 units.

Let total drawal of the prosumer from the grid in the billing period is 600 units.

Net billed electricity = (600)-(1200+100) = 0 units.

Excess energy carried forward to the next billing period/available for adjustment in the prosumer's own other premises if any = (1200+100)-(600)=700 units.

If the prosumer wants to wheel the excess RE generation to his another premise having consumption of 800 units for adjustment in the subsequent billing period, then,

Renewable energy considered for adjustment is second premise =

700 *(1- distribution loss %) units.

Wheeling charges payable by the prosumer =

700 units * prevailing wheeling charge approved by KSERC

Balance banked energy of the prosumer for the first premise in the next billing period will be after taking the balance after adjustment in his other premises, if any.

Annexure 15

Billing format for consumers greater than 20KW up to 1MW

Con. Code/Number		Bill Date		Due Date		Bill.No			
Tariff		Date of Meter reading		Last Date		CD(cash)		BG	

Name of consumer	
Address,	
E-mail ID	Mob.No

Name of Circle

Arrears as on ……..	Date of Previous Reading		Name of Division	
Disputed bill amount	Undisputed bill amount	Date of Present Reading	Supply Voltage	CT ratio -

Contract Demand(kVA)	75% of CD (KVA)	130% of CD (KVA)	Connected Load (KW)	Average MD (kVA)	Average Consumption (kWh)	Average PF	Billing Type	
MF=……							Section	
							RE consumer No	

Reading Details of Energy meter Sl.No ……. (KVA,KWh,KVAh & KVArh) — **status**

1. a) Energy in KWh

Zone	*FR*	*IR*	*MF*	*Units*
1				
2				
3				
			Total	

2 aEnergy meter reading details KVAh

Zone	FR	IR	MF	units
1				
2				
3				

3 Billed energy details

b)Wheeled energy from other premises if any after dedutcing distribution loss — units

Zone	
1	
2	
3	

2. energy to be billed after all adjustments

Zone	*Units*
1	
2	
3	
Total energy used in all Zones	

Ave.PF= KWh/ KVAh

3. a)Energy meter reading details (KVArh) Lag and kVARh (Lead)

Zone	*MF*	*FR*	*IR*	*Units*	*FR*	*IR*	*Units*
1							
2							
3							
Total kVArh(Lag)					**kVArh(Lead)**		

Excess /less in units due to avareaging in prevous billing period

Zone	Units
1	
2	
3	

4. MD in (KVA)

	Readings	*MF*	*KVA*
1			
2			
3			

5.Factory Lighting

6.Colony Lighting

7.Generator

INVOICE

	Unit	*Rate (Rs)*	*Amount (Rs)*
1.Total Demand Charge			
a. Demand Charge - Normal			
b. Demand Charge - Peak			
c. Demand Charge - Off peak			
d. Excess Demand Charge (Normal)			
e. Excess Demand Charge(Peak)			
f. Excess Demand Charge (Off peak)			
Sub Total (a+b+c+d+e+f)			
2.Total Energy Charges			
a. Energy charges - Normal			
b. Energy charges - Peak			
c. Energy charges - Off peak			
Sub Total(a+b+c)			
3.PF Incentive / Disincentive			
Total Energy Charge			
4.Energy Charges on Lighting load			
a.Factory Lighting			
b.Colony Lighting			
Sub Total(a+b)			
5.Electricity Duty			
6.Ele. Surcharge			
7.Duty on self generated energy			
8.Penalty for non-segn. of light load			

9.Other Charges	**Amount**

Security deposit interest @...% Rs…….

Last Paid Amount :…..

Last Payment date:….

Credit if any::……..

Security deposit Energy meter if any

10.Total

Arrears if any	
Plus/Minus (Round off)	
UnDisputed Arrear Amount	
Less 1. Advance / Credit	
2. CD Interest	
3. CD Refund	
Net Payable	

Rupees……. Only

GENERAL INSTRUCTIONS (For HT Service Connection)

1 Payment of Monthly Energy Charges can be made through the following modes

i) Through RTGS/NEFT to SBI Virtual Account Number allotted to each consumer maintained at SBI KSEB Administrative Complex Branch, Pattom (IFS Code SBIN0070493)

ii) Online Payment can be made through ht.kseb.in Login with registered User Name and Password.For online payment related support contact E-Mail: htbillsupport@kseb.in

iii) Through RTGS/NEFT to the A/c No 57065480091 of SO(R) maintained at SBI,KSEB Admin. Complex Branch, Pattom, Thiruvananthapuram-4 (IFS Code SBIN0070493) . Please insist your bankers to note your consumer code (LCN) on such fund transfer and the details of such remittance may please be forwarded to this office for verification and reconciliation.

iv) Through DD drawn in favour of Special Officer(Revenue) payable at Thiruvananthapuram.In all cases of remittance, the date of credit in the non-operative collection account of the SO(R) by the bank will only be treated as the date of remittance.

2 Incentive will be given for payments 5 days before due date at the rates fixed from time to time.

3 Non receipt of invoice cannot be a plea for non payment of bills in time. Bills are being mailed to the registered email id and SMS send to the registered mobile no. Please login our web site ht.kseb.in to view your bill. Information regarding dues should be obtained from the O/o the Special Officer (Revenue) if the invoice is not received before 10th of the month succeeding the month of consumption.

4 Always quote the consumer code number (LCN) in all your correspondences.

5 Rebate is allowable on advance remittance of Electricity Charges for SIX months or ONE year.

6 For belated payments charges will be levied at the rate fixed from time to time.

7 Address and Phone nos of

State Electricity Ombudsman, Pallikkavil Building, Mammangalam- Anchumana Temple Road, Edapally Kochi-682024
Phone: 0484 2346488
Mobile:9567414885
CGRF- CENTRAL - Chairperson, CGRF, Power House Buildings, Ernakulam-682018
Phone 0484 2394288
CGRF-SOUTH-Chairperson,CGRF,KSEB, Vydyuthi Bhavanam, Kottarakkara- 691506
Ph:0474 2060220

8 Any changes in installation wattage shall only be done with the approval of licensee.

Differential Pricing Method
Time Zone-1 Normal 6.00 hrs to 18.00 hrs
Time Zone-2 Peak 18.00 hrs to 22.00 hrs
Time Zone-3 Off Peak 22.00 hrs to 06.00 hrs
Demand Charge (DC) = Billing Demand X Rate
Billing Demand = Recorded Maximum Demand in Zone-1, Zone-2, Zone-3 or 75% of Contract Demand whichever is higher.
Exces Demand shall be
In Time Zone-1 ED1 = (RMD1-CD)
In Time Zone-2 ED2= (RMD2-CD)
In Time Zone-3 ED3= (RMD3-(1.3XCD))
Excess Demand Charge EDC = ED1,ED2 or ED3 whichever is higher X 0.5 X Rate
Total Demand Charge = DC+EDC
Energy Charge in each Time Zone will be (For all consumers except Domestic)
In Time Zone-1 EC1= Consumption in Zone-1 X Rate
In Time Zone-2 EC2= Consumption in Zone-2 X Rate X 1.5
In Time Zone-3 EC3= Consumption in Zone-3 X Rate X 0.75
For Domestic Consumers
In Time Zone-1 EC1= Consumption in Zone-1 X Rate
In Time Zone-2 EC2= Consumption in Zone-2 X Rate X 1.2
In Time Zone-3 EC3= Consumption in Zone-3 X Rate X 0.90
Total Energy Charge EC = EC1+EC2+EC3
Power Factor Incentive and Disincentive

Power factor between 0.95 to 1.00 incentive at 0.50% of energy charges for every increase of 0.01 fron 0.95 and disincentive at 0.50% of energy charges for each 0.01 fall from 0.95 upto 0.90 and at 1% of energy charges for every drop of 0.01 from 0.90. No PF Incentive/ Disincentive for consumers with leading power factor

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For more clarification of invoice/Payment/Bank Guarantee please contact

The Special Officer (Revenue),
Kerala State Electricity Board Ltd, Vydyuthi Bhavanam, Pattom, Thiruvananthapuram 695004
Phone 0471 2514315 E-mail : sorkseb@kseb.in

For Billing Details contact

LCN 2/,3/,7/,20/,21/,33/	0471 251 4612
LCN 17/,18/,19/,27/,31/,32/	0471 251 4423
LCN 1/,5/,8/,13/,23/,28/,29/,30/,35/(KWA/Minor Irrigation)	0471 251 4314
LCN 9/,15/,26/,34/(BSNL)	0471 251 4246
LCN 4/,6/,10/,11/,12/,16/,24/,25/	0471 251 4438
Centralized Govt LT Billing	0471 251 4315 CUG 949 601 1912
For Collection & Accounting related details	0471 251 4371 CUG 949 601 8456
For Bank Guarantee related details	0471 251 4271

Annexure

Billing format for prosumers greater than 1MW/Captive consumers

Con. Code/Number		Bill Date		Due Date		Bill.No	
Tariff		Date of Meter reading		Last Date		CD(cash)	BG
Name of consumer							
Address,							
E-mail ID		Mob.No		Name of Circle			
Arrears as on ……..			Date of Previous Reading		Name of Division		
Disputed bill amount		Undisputed bill amount		Date of Present Reading		Supply Voltage	CT ratio -

Contract Demand(kVA)	75% of CD (KVA)	130% of CD (KVA)	Connected Load (KW)	Average MD (kVA)	Average Consumption (kWh) = (Generation all zones + Import all zones - Export all zones)	Average PF	Billing Type	
MF=……							Section	
							RE Plant capacity	

Reading Details of Net meter Sl.No ……. (KVA,KWh,KVAh & KVArh) — **status**

1. a) Energy in KWh Import/Drawal

Zone	*FR*	*IR*	*MF*	*Units*
1				
2				
3				

1 b) Energy in KWh Export/injection

Zone	*FR*	*IR*	*MF*	*Units*
1				
2				
3				

1 d)Energy import (KVArh) Lag and kVARh (Lead)

Zone	*MF*	*FR*	*IR*	*Units*	*FR*	*IR*	*Units*
1							
2							
3							

1 c) Net injection in kWh after deducting Grid support charge (Net injection)

Zone				*Units*
1				
2				
3				

Energy import (KVArh) Lag and kVARh (Lead)

1 Net Energy recorded in net meter

Zone	FR	IR	MF	KWh
1				
2				
3				
Total Net energy				

2 a)RE meter reading (RE generation in current billing period)

Zone	FR	IR	MF	Generation Units
1				
2				
3				

Net billed energy

3 a)Net injection after deducting Transmission & distribution loss if any (1c - 1c * Trans & dist loss)	Units	**3 b)Net energy after deducitng drawal (3 a - 1a)**	Units
Zone		Zone	
1		1	
2		2	
3		3	

3 c)Excess energy brought forwarded from previous BP	Units	**3 d)Net billed energy (3b- 3c)**	
Zone		Zone	Units
1		1	
2		2	
3		3	

3 e)Excess energy at the end of the billing period (Injection -Drawal + carried forwarded from previous BP)		**3 f)Banking charges (5% * (3e-3c))**	
Zone	units	Zone	units
1		1	
2		2	
3		3	

3 e)Excess energy carried forwarded to the next billing period (3e- 3f)			
Zone	units		
1			
2			
3			

2. Energy import (KVAh)

Zone	*FR*	*IR*	*MF*	*Units*
1				
2				
3				
			Total	

Ave.PF= Import KWh/ Import KVAh

4. MD (Import) in (KVA)

	Readings	*MF*	*KVA*
1			
2			
3			

5.Factory Lighting

6.Colony Lighting

7.Generator

INVOICE

	Unit	*Rate (Rs)*	*Amount (Rs)*		
1.Total Demand Charge				**9.Other Charges**	**Amount**
a. Demand Charge - Normal					
b. Demand Charge - Peak				**b.Net meter rent if any**	
c. Demand Charge - Off peak				**c.Transmission charges**	
d. Excess Demand Charge (Normal)				**d.wheeling charges**	
e. Excess Demand Charge(Peak)					
f. Excess Demand Charge (Off peak)				**e. transmission Development charges**	
Sub Total (a+b+c+d+e+f)					
2.Total Energy Charges				**Security deposit interest @...% Rs…….**	
a. Energy charges - Normal				**Last Paid Amount :…..**	

b. Energy charges - Peak				**Last Payment date:….**	
c. Energy charges - Off peak				**Credit if any::……..**	
Sub Total(a+b+c)				**Security deposit Net meter if any**	
3.PF Incentive / Disincentive				**security deposit RE meter if any**	
Total Energy Charge					
4.Energy Charges on Lighting load					
a.Factory Lighting				**10.Total(add 1 to 9)**	
b.Colony Lighting				Plus/Minus (Round off)	
Sub Total(a+b)				UnDisputed Arrear Amount	
5.Electricity Duty				Less 1. Advance / Credit	
6.Ele. Surcharge				2. CD Interest	
7.Duty on self generated energy				3. CD Refund	
8.Penalty for non-segn. of light load				**Net Payable**	
Rupees…….. Only					

GENERAL INSTRUCTIONS

Payment of Monthly Energy Charges can be made through the following modes

i) Through RTGS/NEFT to SBI Virtual Account Number allotted to each consumer maintained at SBI KSEB Administrative Complex Branch, Pattom (IFS Code SBIN0070493)

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Always quote the consumer code number (LCN) in all your correspondences.

Rebate is allowable on advance remittance of Electricity Charges for SIX months or ONE year.

For belated payments charges will be levied at the rate fixed from time to time.

Address and Phone nos of

State Electricity Ombudsman, Pallikkavil Building, Mammangalam- Anchumana Temple Road, Edapally Kochi-682024

Phone: 0484 2346488

Mobile:9567414885

CGRF- CENTRAL - Chairperson, CGRF, Power House Buildings, Ernakulam-682018

Phone 0484 2394288

CGRF-SOUTH-Chairperson,CGRF,KSEB, Vydyuthi Bhavanam, Kottarakkara- 691506

Ph:0474 2060220

Any changes in installation wattage shall only be done with the approval of licensee.

Differential Pricing Method

Time Zone-1 Normal 6.00 hrs to 18.00 hrs

Time Zone-2 Peak 18.00 hrs to 22.00 hrs

Time Zone-3 Off Peak 22.00 hrs to 06.00 hrs

Demand Charge (DC) = Billing Demand X Rate

Billing Demand = Recorded Maximum Demand in Zone-1, Zone-2, Zone-3 or 75% of Contract Demand whichever is higher.

Exces Demand shall be

In Time Zone-1 ED1 = (RMD1-CD)

In Time Zone-2 ED2= (RMD2-CD)

In Time Zone-3 ED3= (RMD3-(1.3XCD))

Excess Demand Charge EDC = ED1,ED2 or ED3 whichever is higher X 0.5 X Rate

Total Demand Charge = DC+EDC

Energy Charge in each Time Zone will be (For all consumers except Domestic)

In Time Zone-1 EC1= Consumption in Zone-1 X Rate

In Time Zone-2 EC2= Consumption in Zone-2 X Rate X 1.5

In Time Zone-3 EC3= Consumption in Zone-3 X Rate X 0.75

For Domestic Consumers

In Time Zone-1 EC1= Consumption in Zone-1 X Rate

In Time Zone-2 EC2= Consumption in Zone-2 X Rate X 1.2

In Time Zone-3 EC3= Consumption in Zone-3 X Rate X 0.90

Total Energy Charge EC = EC1+EC2+EC3

Power Factor Incentive and Disincentive

Power factor between 0.95 to 1.00 incentive at 0.50% of energy charges for every increase of 0.01 fron 0.95 and disincentive at 0.50% of energy charges for each 0.01 fall from 0.95 upto 0.90 and at 1% of energy charges for every drop of 0.01 from 0.90. No PF Incentive/ Disincentive for consumers with leading power factor

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For more clarification of invoice/Payment/Bank Guarantee please contact

The Special Officer (Revenue),

Kerala State Electricity Board Ltd, Vydyuthi Bhavanam, Pattom, Thiruvananthapuram 695004

Phone 0471 2514315 E-mail : sorkseb@kseb.in

For Billing Details contact

LCN 2/,3/,7/,20/,21/,33/	0471 251 4612
LCN 17/,18/,19/,27/,31/,32/	0471 251 4423
LCN 1/,5/,8/,13/,23/,28/,29/,30/,35/(KWA/Minor Irrigation)	0471 251 4314
LCN 9/,15/,26/,34/(BSNL)	0471 251 4246
LCN 4/,6/,10/,11/,12/,16/,24/,25/	0471 251 4438
Centralized Govt LT Billing	0471 251 4315 CUG 949 601 1912
For Collection & Accounting related details	0471 251 4371 CUG 949 601 8456
For Bank Guarantee related details	0471 251 4271

Annexure-17

Banking Agreement

(On Rs. 500 Non Judicial Stamp Paper)
Banking Agreement No. .. ..

This Memorandum of Agreement is made on this …….. [Insert date] day ..... of [Insert month] …… [Insert year] at …….. [Insert place]
Between
M/s …….. [name of the Eligible applicant with address]represented by …….. (here enter name and designation) hereinafter referred to as 'the Applicant' (which expression shall, unless repugnant to the context or meaning thereof, be deemed to include its successors and assignees) as Party of the FIRST PART.
AND
The Kerala State Electricity Board Limited, a company incorporated under the Indian Companies Act 1956 (Central Act 1 of 1956) having its registered office at Vydyuthi Bhavanam. Pattom, Thiruvananthapuram represented by Shri …… (here enter name, designation, address) hereinafter referred to as 'KSEB Ltd' (which expression shall unless excluded by or repugnant to the context or meaning thereof be deemed to include its successors, representatives and assignees) as Party of the SECOND PART of the agreement;
"Applicant" and "KSEB Ltd" are individually referred to as "Party" and collectively referred to as "Parties".
WHEREAS
1. The Kerala State Electricity Regulatory Commission(herein after called KSERC or Commission), in exercise of the powers conferred by Sub-Section (1) of Section 181 of the Electricity Act, 2003 (Central Act 36 of 2003) read with clause (e) of Sub – Section (1) of Section 86 thereof and all other powers enabling it in this behalf, has issued the KSERC (Renewable Energy & Net Metering) Regulations, 2020on 7-2-2020.

2. The Applicant intends to install / has installed the Renewable Energy plant of ……MW [insert capacity] at the premises owned and possessed by M/s…….. at ……[enter Village], ……[enter Thaluk], …… [enter district] to deliver Renewable Energy to the STU Grid at ….. kV [enter Voltage Level] at .. .. [enter Substation Name] (hereinafter referred to as 'the Project') and connected to KSEB Ltd service connection bearing (Consumer No……) in the same premises/…… and intend to deliver surplus power generated at its premises into KSEBL's network for banking of energy in terms with the said regulations.
3. The Applicant has requested KSEB Ltd to provide banking facility to the said plant as per the provisions in KSERC (Renewable Energy & Net Metering) Regulations 2020 dated 7-2-2020 and its amendments issued from time to time and upon mutually agreed terms and conditions.
4. And whereas, the KSEB Ltd agrees to provide banking facility for the electricity generated as per conditions of this agreement and the Kerala State Electricity Regulatory Commission (Renewable Energy & Net Metering) Regulations, 2020 and its amendments from time to time.
5. The Applicant has agreed to sign this banking agreement with KSEB Ltd as per the terms and conditions of this agreement and the regulations or orders issued by the Kerala State Electricity Regulatory Commission from time to time;
Now therefore, in consideration of the premises and mutual agreements, covenants and conditions set forth herein, it is hereby agreed by and between the Parties as follows:
1. Eligibility

1.1. The Applicant has constructed and commissioned Renewable plant of capacity ……..MW

1.2. Eligibility for banking shall be as specified in the KSERC (Renewable Energy & Net Metering) Regulations, 2020 and its amendments. The Applicant is required to be aware, in advance, of the standards and conditions his system be required to be eligible for being integrated into grid/distribution system.

1.3. The Applicant agrees that the connection of Renewable Energy system to KSEB Ltd's transmission/distribution system shall be bound by requirements of KSEB Ltd's conditions of service, duly approved by KSERC.

2. Technical and Interconnection Requirements

2.1. The Applicant agrees that his renewable energy generation plant and net metering system will confirm to the standards and requirements specified in KSERC (Renewable Energy & Net Metering) Regulations, 2020 and its amendments and confirming to following Regulations and codes, as amended from time to time.

i. Central Electricity Authority (Technical Standards for Connectivity to the grid) Regulations, 2007 as amended

ii. Central Electricity Authority (Installation and Operation of Meters) Regulations 2010 as amended

iii. Central Electricity Authority (Measures relating to Safety and Electric Supply) Regulations 2010 as amended

2.2. The Applicant agrees that he has installed or will install, prior to connection of REc system to KSEB Ltd's distribution / transmission system, an isolation device (both automatic and inbuilt within inverter and external manual isolation switch) and agrees for KSEB Ltd to have access for and operation of the plant and Balance of Equipment (BOE) at any time.

2.3. The Applicant agrees that in case of a power outage on KSEB Ltd 's system, RE system will shut down, unless special transfer and isolating capabilities have been installed on photovoltaic system.

2.4. All the equipment connected to utility Grid system must comply with relevant international (IEEE/IEC) or Indian standards (BIS) and installations of electrical equipment must comply with Central Electricity Authority (Measures of Safety and Electricity Supply) Regulations, 2010.

2.5. The Applicant agrees that KSEB Ltd shall have the sole authority to decide the interface /interconnection point, metering point and settings of the inverter based on the results of necessary studies in accordance with the standards of CEA & Regulations of CERC/KSERC approved from time to time.

2.6. The interconnection point is the interface point at which the generating plant/electrical plant and/or electric line, including inter-connection facilities of the Applicant or the Open access customer or the intra-state transmission licensee other than the STU, is connected to the intra-state transmission system and /or distribution system.

2.7. The Applicant agrees to adhere to following power quality measures as per Central Electricity Authority (Technical Standards for Connectivity to the grid) Regulations, 2007 and/or other such measures provided by KSERC and its amendments.

a. Harmonic current: Harmonic current injections from a generating station shall not exceed the limits specified in IEEE 519.

b. Synchronization: Photovoltaic system must be equipped with a grid frequency synchronization device. Every time the generating station is synchronized to the electricity system it shall not cause voltage fluctuation greater than ±5% at point of connection.

c. Voltage: The voltage-operating window should minimize nuisance tripping and should be under operating range of 80% to 110% of the nominal connected voltage.

i. RE generating units / stations connected to the grid shall remain connected to the grid when the voltage at the interconnection point (measured on HV side of interconnection) on any or all phases

dip to levels as mentioned in the relevant regulations. Over voltage (pu) between 1.1 to 1.3 is remaining connected to 3 sec and in between 1.3 to 1.4 is remaining connected to 1 sec.

ii. Provided that during the voltage dip, RE generating units / station shall generate active power in proportion to the rated voltage.

iii. Provided further that during the voltage dip, up to 15% of nominal voltage, the inverter shall not get disconnected and shall maximize supply of reactive current till the time voltage starts recovering or for 300ms, whichever is lower.

d. Flicker: Operation of RE system shouldn't cause voltage flicker in excess of the limits stated in the relevant Sections of IEC standard 61000 or other equivalent Indian standards, as per Central Electricity Authority (Technical Standards for Connectivity to the grid) Regulations, 2007 and its amendments.

e. Frequency: When the Distribution system frequency deviates outside the specified conditions (50.5 Hz on upper side and 47.5 Hz on lower side with clearing time up to 0.2 seconds), the RE system shouldn't energize the grid and should shift to island mode. The generating units shall be capable of operating in the frequency range of 47.5 Hz to 52 Hz and shall be able to deliver rated output in the frequency range of 49.5 Hz to 50.5 Hz.

f. DC Injection: RE 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.

g. Power Factor: The generating station shall be capable of supplying dynamically varying reactive power support so as to maintain power factor within the limits of 0.95 lagging to 0.95 leading under all conditions of generation and drawal from the grid.

h. Islanding and Disconnection: In the event of grid failure, the PV system shall disconnect from the grid.

i. Paralleling device: Paralleling device of Photovoltaic system shall be capable of withstanding 220% of the nominal voltage at the interconnection point as per clause 7(c) of CEA (Technical Standards of Connectivity of the Distributed Generation Resources) Regulations, 2013.

2.8. The Applicant shall adopt various technical solutions such as LVRT, HVRT, reactive power support, power- frequency droop characteristics etc.

2.9. The Applicant shall make adequate arrangements to provide necessary infrastructure to capture real time data regarding Voltage, Current, MW, MVAR, Breaker Status etc as per KSEGC to SLDC as per the specifications given by SLDC for integration with SLDC SCADA. The Communication medium shall be arranged by the Applicant. The communication medium shall be OFC/ MPLS.

2.10. The Applicant shall engage necessary field staff to facilitate daily forecasting & scheduling of power. The power from the plant will be scheduled as per KSERC Regulation. In the absence of KSERC Regulation, the CERC Regulations regarding forecasting & Scheduling shall be followed. All charges and fees relating to scheduling and dispatch of electricity shall be borne by the Applicant as per applicable Regulation & this Agreement;

3. Synchronization, Commissioning and Commercial Operation.

3.1. The Power Project synchronized by the Applicant to the Grid System shall be considered on commercial operation from the date of grant of connectivity by the STU when it meets all the connection conditions prescribed in applicable Grid Code and otherwise meets all other Indian legal requirements for synchronization to the Grid System.

3.2. The tenure of this agreement shall commence from the date of execution of this agreement. This agreement shall remain valid for a period of twenty years from the date of execution of the agreement and the provisions of banking may be reviewed every ten years. Provided that at any time,

three months prior to the expiry of the Contract Period specified hereinabove, the Parties may with mutual agreement extend the Contract Period for such further period as they may determine.

3.3. All amendments/ modifications/ notifications of new rules by MoP, CEA and regulations by CERC and KSERC applicable to renewable energy shall be binding on the parties to the agreement with immediate effect and this agreement shall be deemed to be amended to the extent required from the date of notification of such rules or regulations.

4. Clearances

The Applicant undertakes that he/she is in possession of all the necessary approvals and clearances including sanction from Electrical Inspector, as specified in the relevant regulations for connecting the solar energy system to the distribution/ transmission system for commissioning the solar energy system.

5. Safety

5.1. The Applicant shall comply with the Central Electricity Authority (Measures Relating to Safety and Electricity Supply) Regulations 2010 and amendments thereof.
5.2. The Applicant agrees that the design, installation, maintenance and operation of the photovoltaic system are performed in a manner conducive to the safety of the photovoltaic system as well as the KSEB Ltd 's distribution / transmission system.
5.3. Due to KSEB Ltd 's obligation to maintain a safe and reliable distribution / transmission system, the applicant agrees that if it is determined by KSEB Ltd that the Applicant's RE system either causes damage to and/or produces adverse effects affecting other distribution systems' consumers or KSEB Ltd 's assets, the Applicant will have to disconnect photovoltaic system immediately from the distribution / transmission system upon direction from the KSEB Ltd and correct the problem at his own expense prior to a reconnection. If the damages are of grave nature and if it causes damages to the KSEB Ltd's installations, this shall be got replaced by the Applicant.

6. Metering :

6.1 The Metering shall be on ABT platform. A set of Main Meter and Check Meter of 0.2S accuracy class, as per CEA (Installation & operation of meters) Regulations 2006 / IEGC as applicable, shall be procured and installed by the Applicant at the Interconnection Point of the Project based on specifications provided by KSEBL. A standby meter shall also be installed at the Interconnection Point. All meters (main, check &standby) and the associated equipment (CT & PT) shall be of 0.2S accuracy. The interconnection point is the interface point at which the generating plant/electrical plant and/or electric line, including inter-connection facilities of the Applicant or the Open access customer or the intra-state transmission licensee other than the STU, is connected to the intra-state transmission system and /or distribution system.

6.2 The Applicant shall also install solar meters [accuracy class as specified in the CEA (Installation & operation of meters) Regulations 2006 / IEGC as applicable] after the inverters for accounting the solar energy generated.

6.3 The Main, Check and Standby Meters shall be checked and sealed jointly at the time of installation as per the CEA (Installation & Operation of Meters) Regulations 2006 as amended from time to time. If the main meter is found to be not working at the time of meter readings or at any other time, the Applicant shall inform the SLDC of the same.

6.4 Main meter shall have facility to communicate automatically its reading to the State Load Dispatch Centre (SLDC) concerned as per section 29(3) of Kerala State Grid Code and Regulation 5.2(u) of IEGC.

6.5 Regular cross checking and analysis of meter readings and meter failure or discrepancies shall be reckoned as per CEA (Installation and Operation of Meters) Regulations, 2006 as amended from time to time.

6.6 In case of failure of meters, energy accounting for the period shall be as per procedure stipulated in CEA (Installation and Operation of Meters) Regulations 2006 and amendments thereon. In case of dispute, the decision of KSERC would be final and binding. If meter(s) fail to record or if any of the PT fuses is blown out, energy shall be computed based on standby meters. In case of dispute, resolution shall be as per provision of Article 11.

6.7 Periodic testing of Main, Check and Standby Meters shall be carried out in the presence of representatives of the applicant and KSEBL as per procedure laid out in CEA (Installation and Operation of Meters) Regulations, 2006. For any testing and/ or replacement, notice of seven days will be given.

Operation, Energy Accounting and Commercial Settlement

7.1 Monthly bill/s shall be based on joint meter readings of the meters at the interconnection point taken together by the authorized representative of KSEBL and representative of the applicant on the first day of every month.

7.2 The authorized person for accounting of energy shall be Special Officer (Revenue), KSEBL.

7.3 The methodology for accounting and billing the banked energy would be as envisaged under KSERC (Renewable Energy & Net Metering) Regulation 2020 and its amendments

7.4 Any change in the methodology of Energy Account shall be done only based on prevailing Regulations.

7.5 KSEBL shall provide banking as per provisions of Regulation 26 and 27 of KSERC (Renewable Energy & Net Metering) 2020 and its amendments. The accounting and settlement of energy shall be as per Regulation 26 and 27 of the KSERC (Renewable Energy & Net Metering) Regulations, 2020 and its amendments.

7.6 The Applicant agrees to pay banking charges, connectivity charges or any other charges as decided by KSERC from time to time.

7.7 Joint meter readings of the solar meter shall also be taken for energy accounting in accordance with the Clause 12.0 of this agreement.

7.8 The Applicant shall ensure reactive power generation/absorption as per the terms laid out in Kerala State Electricity Grid Code (KSEGC). In the event of any conditions not specified in KSEGC, the relevant clauses of Indian Electricity Grid Code shall be applicable. Reactive power transaction shall be billed as per the KSERC regulations and its amendments.

7.9 The Applicant agrees to operate the solar PV plant in accordance with the regulation of SERC/CERC. The forecast generation on day ahead basis shall be furnished to SLDC by 9.30am all day (including holidays). The Applicant is free to revise the availability in real time which will be admissible after 6 time block starting from the block in which revision is sent to SLDC. The deviation from the schedule and actual generation will be treated as per KSERC regulations in force.

7.10 The applicant shall immediately after each synchronization/ tripping of the solar plant, inform the sub-station to which the Power Project is electrically connected in accordance with applicable Grid Code.

8 Access and Disconnection

8.1. The Applicant shall provide to KSEB Ltd access to metering equipment and disconnecting means of photovoltaic system, both automatic and manual, at all times.
8.2. In emergency or outage situation, where there is no access to a disconnecting means, both automatic and manual, such as a switch or breaker, KSEB Ltd may disconnect service to the premise.

9 Liabilities

9.1 KSEB Ltd shall not be liable for any delivery or realization for any fiscal or other incentive provided by the Central government to the applicant.

10. Connection Costs

10.1 All costs shall be borne by the applicant related to setting up of photovoltaic system including metering and interconnection costs. The applicant agrees to pay the actual cost of modifications and upgrades to the transmission / distribution facilities required to connect photovoltaic system in case it is required.
10.2 Cost for interconnection equipment including the isolators, meters etc. are also to be borne by the applicant.
11. Settlement of Disputes
If any dispute, controversy, claim or difference of any kind whatsoever arises between the parties to this agreement, it shall, in the first instance be settled amicably by the parties, failing which the same shall be dealt with as per the provisions of the Electricity Act, 2003

12. Renewable Purchase Obligation rights over the energy from the Project
Solar energy generated from the grid integrated solar plant shall be accounted to meet the RPO of the KSEB Ltd in view of the banking facility provided by KSEBL to the applicant. The applicant shall not have any rights whatsoever to accredit the Project under REC or to make use of the energy against its own Obligation, in case it is an obligated entity.

13. Sharing of clean development mechanism (CDM) benefits

The benefits, if any, received under Clean Development Mechanism (CDM) or such other programme shall be shared mutually as per provisions contained under Regulation 30 of KSERC (Renewable Energy & Net Metering) Regulation 2020 and its amendments thereof.

14. Force Majeure

Neither party shall be liable for any claim for any loss or damage whatsoever arising out of failure to carry out the terms of the agreement to the extent that such a failure is due to force majeure events such as natural disasters (earthquakes, Hurricane, Floods), wars, riots, civil commotions and other upheavals, grid / KSEB Ltd’s failure not attributable to parties hereto. Generation/ drawal of power shall be started as soon as practicable by the parties concerned after such eventuality has come to an end or ceased to exist.

15. Termination

15.1. The parties of this agreement are free enough to terminate the agreement at any time after providing the other party 30 days prior written notice.

IN WITNESS whereof the duly authorized representatives of the said ..... (1st party) and the said .... (2nd party) have hereunto signed at Thiruvananthapuram on the day and year first above written.

Sdl- ..... (1st party)
Witness 1……..
Witness 2 .....

Sdl- ..... (2nd party)
Witness 1……..
Witness 2 ……

Annexure-18

Billing procedure of a prosumer having a Renewable Energy System with capacity more than 1 MW at the same premise for his own use/ a Renewable Energy System with capacity less than 1 MW but not under net metering.

	Zone-1	**Zone-2**	**Zone-3**
Net injection as recorded in the net meter at the end of the billing period (A)	I1 units	I2 units	I3 units
Grid support charges = 5%* (A)	G1 Units	G2 units	G3 units
Net energy after accounting grid support charges	I1' Units =I1- G1 units	I2' units = I2 – G2 units	I3' units = I3-G3 units
Net drawal as recorded in the net meter at the end of the billing period	D1 units	D2 units	D3 units
Net consumption from the grid	D1-I1' units	D2-I2' units	D3-I3' units
Energy injection of the prosumer carried forwarded from the previous billing period	Cfp1 units	Cfp2 units	Cfp3 units
Surplus energy injection during the current billing period	I1'-D1 units	I2'-D2 units	I3'-D3 units
Net surplus energy (units)	B1= Cfp1 + (I1'-D1)	B2 = cfp2 + (I2'-D2)	B3= cfp3 + (I3'-D3)
	If B1>0, Billed energy = 0 Units, else go for adjustment through surplus energy of other zones, if any.	If B2>0, Billed energy = 0 Units else go for adjustment through surplus energy of other zones, if any.	If B3>0, Billed Energy = 0 Units else go for adjustment of surplus energy of other zones, if any.
Adjustment of surplus energy from other zones (applicable if net drawal is more than net injection in any zone and surplus energy is available in other zones)			
Case-1 : Excess energy only in Zone-1 & net consumption in Zone-2 & Zone-3 not zero			
Net drawal in zone-2 after accounting banked energy of Zone-1=		D_{2net1}=(D2-I2'-Cfp2)-B1*0.80	

(units)			
Balance energy of zone-1 available for adjusting against drawal in Zone3 (units)	‘$B1_{net}$’ = (-1)* D_{2net1} /0.80		
Net drawal in zone-3 after accounting banked energy of Zone-1 (units) =			$D3_{net1}$ = (D3-I3’-Cfp3)–[‘$B1_{net}$’]
Balance energy at the end of the current billing period	Cf1’= -1 * $D3_{net1}$	Cf2’ = 0	Cf3’ = 0
Energy charges of the prosumer	= 0 if B1>0 else Tariff of Zone-1 * (D1-I1’-Cfp1)	= Tariff of Zone-2 * $D2_{net1}$	= Tariff of Zone-3 * $D3_{net\ 1}$
Surplus energy carried forwarded from the previous billing period	Cfp1	Cfp2	Cfp3
Banking charges (D)	(Cf1’-Cfp1)*0.05 if (Cf1’-Cfp1) >0	(Cf2’-Cfp2)*0.05 if (Cf2’-Cfp2) >0	(Cf3’-Cfp3)*0.05 if (Cf3’-Cfp3) >0
Surplus energy carried forward to next billing period after accounting 5% banking charges	= (Cf1’-D)	= (Cf2’-D)	= (Cf3’-D)
Note: Surplus energy in Zone-1 is adjusted first against peak consumption and balance for adjusting off peak consumption)			
Case-2 : Excess energy only in Zone-2 & net consumption in Zone-1 & Zone-3 not zero			
Net drawal in zone-1 after accounting banked energy of Zone-2= (units)	D_{1net1}=(D1-I1’-Cfp1)- B2*1.20		
Balance energy of zone-2 available for adjusting against drawal in Zone3 (units)	‘	$B2_{net}$’ = (-1)* D_{1net1} / 1.20	
Net drawal in zone-3 after accounting banked energy of Zone-2(units) =			$D3_{net1}$ = (D3-I3’-Cfp3)–[‘$B2_{net}$’ *1.20]
Balance energy available at the end of	Cf1’ = 0	Cf2’ = -1* $D3_{net1}$/1.20	Cf3’ = 0

current billing period			
Energy charges of the prosumer	= Tariff of Zone-1 * $D1_{net1}$	= 0 if B2>0 else Tariff of Zone-2 * (D2-I2'-Cfp2)	= Tariff of Zone-3 * $D3_{net\ 1}$
Surplus energy carried forwarded from the previous billing period	Cfp1	Cfp2	Cfp3
Banking charges (D)	(Cf1'-Cfp1)*0.05 if (Cf1'-Cfp1) >0	(Cf2'-Cfp2')*0.05 if (Cf2'-Cfp2) >0	(Cf3'-Cfp3')*0.05 if (Cf3'-Cfp3) >0
Surplus energy carried forward to next billing period after accounting 5% banking charges	Cf1 = (Cf1'-D)	Cf2 = (Cf2'-D)	Cf3 = (Cf3'-D)
Note: Surplus energy in Zone-2 is adjusted first against normal hour consumption and balance for adjusting off peak consumption)			
Case-3 : Excess energy only in Zone-3 & net consumption in Zone-1 & Zone-2 not zero			
Net drawal in zone-2 after accounting banked energy of Zone-3= (units)		D_{2net1}=(D2-I2'-Cfp2)-B3*0.80	
Balance energy of zone-3 available for adjusting against drawal in Zone1 (units)			'$B3_{net}$' = (-1)* D_{2net1} /0.80
Net drawal in zone-1 after accounting banked energy of Zone-3(units) =	$D1_{net1}$ = (D1-I1'-Cfp1)– ['$B3_{net}$']		
Balance energy available at the end of current billing period	Cf1' = 0	Cf2' = 0	Cf3'= (-1)* $D1_{net\ 1}$
Energy charges of the prosumer	= Tariff of Zone-1 * $D1_{net1}$	= Tariff of Zone-2 * $D2_{net\ 1}$	= 0 if B3>0 else Tariff of Zone-3 * (D3-I3'-Cfp3)
Surplus energy carried forwarded from the previous billing period	Cfp1	Cfp2	Cfp3
Banking charges (D)	(Cf1'-Cfp1)*0.05 if (Cf1'-Cfp1) >0	(Cf2'-Cfp2)*0.05 if (Cf2'-Cfp2) >0	(Cf3'-Cfp3)*0.05 if (Cf3'-Cfp3) >0
Surplus energy carried forward to next billing period after accounting 5% banking charges	Cf1 = (Cf1'-D)	Cf2 = (Cf2'-D)	Cf3 = (Cf3'-D)
Note: Surplus energy in Zone-3 is adjusted first against peak hour consumption and			

balance for adjusting normal hour consumption)
Surplus energy of more than one zone can be adjusted with appropriate ratio as above against the consumption of a zone.

Sample billing of a prosumer having a Renewable Energy System with capacity more than 1 MW at the same premise for his own use/ a Renewable Energy System with capacity less than 1 MW but not under net metering.

	Zone-1	Zone-2	Zone-3
	(units)	(units)	(units)
Net injection as recorded in the net meter at the end of the billing period (A)	120000	0	0
Grid support charges = 5%* (A)	6000	0	0
Net energy after accounting grid support charges	114000	0	0
Net drawal as recorded in the net meter at the end of the billing period	25000	50000	10000
Net consumption from the grid	0	50000	10000
Energy injection of the prosumer carried forwarded from the previous billing period	10000	0	0
Surplus energy injection during the current billing period	89000	0	0
Net surplus energy (units)	99000	0	0
Billed energy	0	50000	10000
Adjustment of surplus energy from other zones			
Net drawal in zone-2 after accounting banked energy of Zone-1		0	
Balance energy of zone-1 available for adjusting against drawal in Zone3 (units)	36500		
Net drawal in zone-3 after accounting banked energy of Zone-1 (units) =			0
Balance energy at the end of the current billing period	26500	0	0
Energy charges of the prosumer	0	0	0

Surplus energy carried forwarded from the previous billing period	10000	0	0
Banking charges (D)	825	0	0
Surplus energy carried forward to next billing period after accounting 5% banking charges	25675	0	0

Annexure-19

Billing procedure of captive consumers

	Zone-1	Zone-2	Zone-3
Net injection as recorded in the net meter at the end of the billing period (A)	I1 units	I2 units	I3 units
Grid support charges = 5%* (A)	G1 Units	G2 units	G3 units
Net energy after accounting grid support charges (A')	I1' Units =I1- G1 units	I2' units = I2 – G2 units	I3' units = I3-G3 units
Net injection after accounting transmission loss &distribution loss/ distribution loss as applicable, assuming x% as the approved loss	=I1'*(1-X%) units	=I2'*(1-X%) units	=I3'*(1-X%) units

The net injection as calculated above is used for adjusting against the consumption of the captive consumer. The energy accounting and billing of the consumer in the various zones shall be as given under **Annexure-13** with the above net energy injection taken for adjustment.

Further, the captive consumer is to be billed for the transmission and wheeling charges as follows:

- At the transmission tariff in Rs/unit approved by KSERC for I1', I2' and I3' units if the captive consumer maintains contract demand with the Licensee, OR
- Transmission charges at Rs/MW/day approved by KSERC for the Open Access capacity in MW, if the consumer does not maintain contract demand with the Licensee.
- Wheeling charges at the wheeling charge approved by KSERC IN Rs/unit for I1'/I2'/I3'*(1-transmission loss %) units.

****

SCHEDULE 1

RENEWABLE ENERGY APPLICATION REGISTER

1	Application Number								
2	Name of Applicant								
3	Date of Application								
4	Details fees remitted (Cash/DD)								
5	Capacity of Renewable Energy Plant								
6	Consumer No.								
7	Consumer Category								
8	Connected load								
9	Voltage & Phase								
10	Name of Transformer								
11	Name Feeder (HT/LT)								
12	Feasibility issued date								
13	Whether connection is possible (YES/NO)								
14	Assistant Engineer (Signature/Seal)								

SCHEDULE 2

RENEWABLE ENERGY REGISTRATION DIARY

1	Serial Number of Application	
2	Registration Number	
3	Renewable Power Identification Number (RPIN)	
4	Consumer Number.	
5	Consumer Category	
6	Capacity of Solar Plant (Kilowatts)	
7	Date of feasibility	
8	Date of registration fees remitted	
9	Whether Renewable Energy is proposed to be utilized in other places (Based on Annexure 1 (4))	
10	Name of Lt Feeder	
11	Details of Transformer	
12	Plant tested date	
13	Connection Contract date	
14	Details of Solar meter (Capacity/Serial No./Make)	
15	Details of Net meter	
16	Meter owner (KSEBL/Applicant)	
17	Meter installed date	
18	Date plant connected	