KERALA STATE ELECTRICITY REGULATORY COMMISSION

THIRUVANANTHAPURAM

NOTICE

No. 3228/ Con.Engg/ 2023/ KSERC Dated 30.05.2025

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 Sections 61, 62, 66 and clause (a), (b) and (e) of subsection (1) of Section 86 thereof, and all other powers enabling it in this behalf, the Kerala State Electricity Regulatory Commission hereby publishes the draft of the proposed Regulations, namely, '**Kerala State Electricity Regulatory Commission (Renewable Energy and Related Matters) Regulations, 2025',** for the information of the stakeholders and the persons likely to be affected thereby. Any objections or suggestions thereon may be forwarded to the Secretary, Kerala State Electricity Regulatory Commission, KPFC Bhavanam, Vellayambalam, Thiruvananthapuram-10, within one month from the date of publication of this notice. Objections, comments and suggestions received on or before the said date shall be considered by the Commission before finalization of these draft regulations. A public hearing on the same will be conducted and its date and venue shall be intimated separately.

Sd/-

Secretary

CHAPTER I

GENERAL

1. Short title, Commencement and Control period, -

1.1 These Regulations may be called the Kerala State Electricity Regulatory Commission (Renewable Energy and Related Matters) Regulations, 2025.

1.2 These Regulations extend to the whole of the State of Kerala.

1.3 It shall come into force on the date of its publication in the Official Gazette of the State of Kerala:

Provided that the energy accounting, billing and settlement specified in Chapter III under these Regulations shall come into force on the 1st day of October 2025:

Provided further that, Renewable Energy Generating Systems entering into connectivity agreement with the distribution licensee from the date of commencement of these Regulations shall opt for appropriate metering and billing system as per their eligibility as provided under Chapter II:

Provided also that, such REGS getting connectivity before 1st October 2025, shall be billed as per the provisions under KSERC (Renewable Energy and Net Metering) Regulations, 2020 till 30th September 2025 and thereafter in accordance with the provisions under these Regulations.

1.4 The Control period of these Regulations shall be five years, starting from the financial year 2025 –2026, unless reviewed earlier or extended by the Commission.

2. Scope and Application, -

2.1 These Regulations shall apply to all the existing and new:

(i) Grid Interactive Renewable Energy Systems;

(ii) Consumers and Prosumers;

(iii) Captive consumers and Captive generating plants (CPP);

(iv) Generating companies (IPP) and Distribution licensees; and

(v) Other obligated entities.

2.2 These Regulations shall apply in the matter of:

(i) Determination of Tariff of energy from Renewable Energy systems including BESS and Pumped Storage Plants;

(ii) Renewable Purchase Obligation and its compliance;

(iii) Renewable Energy Metering and Billing;

(iv) Technical feasibility, registration, connectivity, metering, energy accounting and billing of Prosumers;

(v) Storage, Banking and Open Access of Renewable Energy including inter licensee transfer of Renewable Energy;

(vi) Enhancing the capacity of RE system of the existing prosumers;

(vii) Other methods of RE injection and withdrawal and related matters.

2.3 The existing prosumers billed under net metering in the State as on the date of coming into effect of these regulations, shall be under the Net metering system as specified in these Regulations, until the occurrence of any of the following conditions:

(i) The prosumer opts for any other metering or energy accounting system under these regulations;
(ii) Enhancement of capacity of the existing RE plant;
(iii) Expiry of the useful life of the existing plant from the date of Net Metering connectivity.

3. Definitions, – In these Regulations, unless the context otherwise requires;

(1) **'Act'** means the Electricity Act, 2003 (Central Act 36 of 2003);

(2) **'Application'** means a request for feasibility/connectivity of Renewable Energy System to the State transmission and/or distribution grid, as the case may be, and as per the application form duly filled in and complete in all respects, as required by the distribution licensee, along with the copy of the receipt as proof of payment of necessary charges, and accompanied by all the necessary documents including copies of the approvals from the Statutory or other authorities:

Provided that the applicants with solar plant capacity below 5 kW and applying through the National portal for Rooftop Solar need to pay the necessary charges in the bills raised after the energisation of the plant;

(3) **'Application form'** means the application form complete in all respects, in the appropriate format specified in these Regulations, before the payment of applicable charges;

(4) **'Average Power Purchase Cost' or 'APPC'** for the control period means the weighted average price at which the Distribution licensee has purchased renewable energy through long term contracts, as trued up by the Commission in the order for the truing up of the accounts for the financial year 2023-24;

(5) **'Auxiliary energy consumption' or 'Aux'** in relation to a period in the case of a generating station means, the quantum of energy consumed by; the auxiliary equipment of the generating station and the transformer losses within the generating station, expressed as a percentage of the sum of gross energy generated at the generator terminals of all the units of the generating station;

(6) **'Banking facility'** means such facility whereby the prosumer or the captive generator of Renewable Energy System injects the surplus energy into the grid during a time block or period and have a right to draw back the energy from the grid at a subsequent different time block or period, subject to the terms and conditions of adjustment of the quantum of energy, as specified in these Regulations, as amended from time to time;

(7) **'Battery Energy Storage System' or 'BESS',** means a modular, electrochemical framework to store energy from the grid or distributed generation sources in rechargeable battery modules, with controls for appropriate management to deliver the stored energy in the form of electricity to the grid or installation as and when needed;

(8) **'Behind the Meter' or 'BtM'** means an arrangement in which the DRE system is connected behind the Consumer's meter, operating in parallel with the distribution licensee's grid, and not opting for any other metering or billing arrangement options and subject to other conditions mentioned in these Regulations;

(9) **'Beneficiary'** with respect to these Regulations means a licensee who has an agreement with a Renewable Energy Generator for purchase of power from the plant at the tariff approved/adopted by the Commission;

(10) **'Billing cycle' or 'billing period'** means the period, as specified in the Supply Code, 2014, as amended from time to time;

(11) '**Biomass'** means the wastes produced during agricultural and forestry operations (for example, straws and stalks) or produced as a by-product of processing operations of agricultural produce (e.g. husks, shells, de-oiled cakes), wood produced in dedicated energy plantations or recovered from wild bushes or weeds, and the wood waste produced in some industrial operations, including such other wastes as may be recognised by the Central Government, as being part of biomass;

(12) **'Biomass gasification'** means the process of incomplete combustion of biomass resulting in the production of combustible gases consisting of a mixture of carbon monoxide (CO), hydrogen (H2) and traces of methane (CH4);

(13) **'Biogas'** means a gas produced when organic matter like crop residues, sewage, and manure breaks down (ferments) in an oxygen-free environment;

(14) **'Buyer licensee'** means a distribution licensee in the State, who buys bulk power from another seller licensee in the State, for sale of electricity to the consumers within its area of supply;

(15) **'Capital cost'** means the capital cost as specified in these Regulations under Chapter V;

(16) **'Captive consumer**' means a consumer owning and consuming electricity generated from a captive generating plant including from the captive renewable energy sources or captive co-generation, as the case may be;

(17) **'Captive Generating Plant'** means a power plant including the renewable energy plant or co-generation plant, set up by any person to generate electricity primarily for his own use and includes a power plant set up by any co-operative society or association of persons for generating electricity primarily for use of its members and as specified in the Electricity Rules, 2005 published by the Central Government, as amended from time to time**;**

(18) **'Central Agency'** means the agency operating the National Load Despatch Centre or such other agency as the Central Commission may designate from time to time for the purpose of implementation of the schemes relating to issuance of Renewable energy certificate and for performing other functions, as assigned under the provisions of the Central Electricity Regulatory Commission (Terms and Conditions for Renewable Energy Certificates for Renewable Energy Generation) Regulations, 2022, as amended from time to time;

(19) **'Central Commission**' **or 'CERC'** means the Central Electricity Regulatory Commission referred to in sub-section (1) of Section 76 of the Act;

(20) **'Certificate'** means the Renewable Energy Certificate issued by the Central Agency in accordance with the procedures approved under the provisions of the Central Electricity Regulatory Commission (Terms and Conditions for Renewable Energy Certificates for Renewable Energy Generation) Regulations, 2022, as amended from time to time;

(21) **'Commercial Operation Date' or 'COD'** shall have the same meaning as defined in the Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2023, as amended from time to time;

(22) **'Co-generation**' means a process which simultaneously produces two or more forms of useful energy (including electricity);

(23) **'Commission' or 'KSERC'** means the Kerala State Electricity Regulatory Commission constituted under Section 82 of the Act;

(24) **'Conduct of Business Regulations'** means the Kerala State Electricity Regulatory Commission (Conduct of Business) Regulations, 2003, as amended from time to time;

(25) **'Connected load'** means the load expressed in kW or kVA as entered in the service connection agreement/deemed agreement specified in the Supply Code, 2014;

(26) **'Connection agreement'** means an agreement between the State Transmission Utility (STU), and/ or distribution licensee and an eligible entity, for connecting the renewable energy system to the intra-state transmission system and/ or distribution system, as per the provisions of the KSERC (Connectivity and Intra-state Open Access) Regulations, 2013;

(27) **'Connectivity agreement'** means an agreement between the State Transmission Utility (STU), and/ or distribution licensee and a Consumer/Prosumer, for connecting the renewable energy system to the intra-state transmission system and/ or distribution system, as per the provisions of these Regulations;

(28) **'Consumer'** means any person who is supplied with electricity for his own use by a licensee or the Government or by any other person engaged in the business of supplying electricity to the public under the Electricity Act, 2003 or any other law for the time being in force and includes any person whose premises are, for the time being, connected for the purpose of receiving electricity with the works of a distribution licensee, the Government or such other person, as the case may be;

(29) **'Contract Demand'** means the maximum demand in kW or kVA, agreed to be supplied by the distribution licensee and indicated in the agreement executed between such licensee and the consumer or the contract demand duly revised thereafter;

(30) **'Control Period' or 'Review Period'** means the period during which the norms for determination of tariff for the renewable energy generating systems specified under these Regulations shall remain valid;

(31) **'Distributed Renewable Energy' or 'DRE'** system means an electricity generation system connected at voltage level of 33 kV and below using a distributed renewable energy source with or without energy storage;

(32) **"Eligible consumer"** means a consumer getting supply of electricity from the distribution licensee in its area of supply, who intends to use a grid connected Renewable Energy generating system installed in his premises to

meet all or a part or no part of the consumer's own electrical energy requirements, and include consumers being catered under GNM or VNM, as per the provisions of these Regulations:

Provided that such renewable energy generating system may be owned and/ or operated by such consumer(s) or the Distribution licensee or a third party/RESCO providing such system to the consumer(s);

(33) **'Energy Storage Obligation' or 'ESO'** means the obligation of an obligated entity to source a portion of the energy from Energy Storage Systems established as standalone ESS or in combination with RE sources, which shall be calculated as a percentage of the total consumption of electricity and shall be treated as fulfilled only when at least 85% of the total energy stored in the ESS is procured from RE sources, on annual basis;

(34) **'Energy Storage System' or 'ESS'** means a device that stores the energy from variety of energy sources, including solar, wind and other RE sources etc., utilizing the methods and technologies like; solid state batteries, flow batteries, pumped storage, compressed air, fuel cells, hydrogen storage or any other technology to store various forms of energy, and to deliver the stored energy in the form of electricity to the grid or installation as and when needed;

(35) **'Feed-in Tariff' or 'FiT'** means the tariff specified by the Commission for the settlement/ purchase of energy injected to the grid by a prosumer:

Provided that the Commission may specify different feed-in tariff for Net Metering, Net Billing and Gross Metering;

(36) **'Financial Year**' means the period commencing from the first day of April in a Gregorian calendar year and ending on the 31st day of March of the next calendar year;

(37) **'Floating solar project'** or **'FPV'** means a solar PV power project where the arrays of photovoltaic panels on the structure of the project float on top of a body of water, such as an artificial basin or lake, with the help of a floater, anchoring, and mooring system;

(38) **'Generic tariff'** means the tariff determined or approved by the Commission for the electricity generated from the REGS, as per the norms and parameters specified in these Regulations;

(39) **'Grid Code'** means the Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2023, as amended from time to time or any subsequent re-enactment thereof;

(40) **'Grid Interactive Renewable Energy System'** means a Renewable Energy

System which is connected to the transmission or distribution system of the licensee, and is capable of injecting energy into such system;

(41) **'Grid Support Charges'** means the charges to be paid by the prosumers, CPPs and other users of the grid, for recovering the costs related to energy storage, grid balancing etc., for facilitating energy injection into the grid;

(42) **'Gross Calorific Value' or 'GCV'** in relation to a fuel used in a generating station means the heat produced in kCal by complete combustion of one kilogram of solid fuel or one litre of liquid fuel or one standard cubic metre of gaseous fuel, as the case may be;

(43) '**Gross Metering'** means a mechanism whereby the total energy generated from the renewable energy generating system of a prosumer and the total energy consumed by the prosumer are accounted separately through appropriate metering arrangements and for the billing purpose, the total energy consumed by the prosumer is accounted at the approved retail supply tariff applicable to the consumer and the total renewable energy generated is accounted at the feed in tariff for gross metering specified by the Commission;

(44) **'Gross Station Heat Rate' or 'GSHR'** means the heat energy input in kCal, required to generate one kWh of electrical energy at the generator terminals of a thermal generating station;

(45) **'Group Net metering' or 'GNM'** means an arrangement whereby energy injected from a renewable energy generating system through Net meter/ RE meter and the exported energy is adjusted in more than one electricity service connections of the same consumer under the same tariff at different premises located within the area of supply of the Distribution licensee as per the terms and conditions specified in these Regulations;

(46) **'Hydro Power Obligation' or 'HPO'** means the obligation of an entity to purchase electricity generated from Hydro Electric Projects (HEP) including Pumped Storage Projects (PSP) and Small Hydro Electric Projects (SHEP), which has come into commercial operation (COD), after 08.03.2019;

(47) '**Infirm Power'** means the power injected by a generation project into the grid prior to the Date of Commercial Operation (COD), for testing, trial run and commissioning of the project. Since power from renewable energy sources is non- firm in nature, the tariff fixed by the Commission post COD shall also be applicable for the power injected into the licensee system prior to COD for a maximum period of; one month for solar and wind projects, and six months for hydro projects, subject to the condition that the RE generator enters into an agreement with the licensee to supply power from the RE plant at the tariff determined by the Commission**:**

Provided that, if energy is injected into the system by the RE generator prior to COD without identifying a buyer or if there is no agreement with the licensee regarding the sale of power, the SLDC shall settle the transactions at the time block wise ISTS Deviation Settlement Rates, until Regulations for intra-state DSM are notified**;**

(48) **'Installed capacity' or 'IC'** means the summation of the nameplate capacities of all the units of the generating station or the capacity of the generating station (reckoned at the generator terminals). In the case of Solar PV power projects and Floating solar projects, installed capacity shall be the sum of the nameplate capacities of the inverters (nominal AC power) of the project;

(49) **'Inter-connection Point'** means the interface point of the renewable energy generating facility with the transmission system or distribution system, as the case may be, and shall include;

(i) The interface of the renewable energy generating system with the outgoing terminals of the meter/ distribution licensee's cut-outs/ switch gear fixed in the premises of the prosumer;

Explanation: The meter referred herein is:

a) the Net Meter in respect of net metering and net billing prosumers;

b) Consumer Meter in respect of behind the meter;

c) Consumer Meter/ RE meter, as applicable, in respect of gross metering consumers; and

d) RE meter in respect of group net metering and virtual net metering systems;

(ii) In relation to wind energy projects and solar photovoltaic Projects set up by CPPs/IPPs, inter-connection point shall be the line isolator on outgoing feeder on High Voltage side of the pooling substation;

(iii) In relation to solar and wind energy projects not covered in clause(ii) above, small hydro power, biomass power, non -fossil fuel- based cogeneration power projects and solar thermal Power Projects set up by CPPs/IPPs, the inter-connection point shall be the line isolator on the outgoing feeder on HV side of the generator transformer;

(50) **'kW'** means kilowatt and indicates the capacity of the REGS (AC capacity of a solar inverter is taken as the capacity of a solar generating system);

(51) **'kWp'** means kilowatt peak (indicates the DC capacity of the solar PV panels);

(52) **'Lead Person'** means a participating consumer who is also nominated by other participating consumers under the Virtual Net Metering arrangement, to act as their representative for all the correspondence and communication with the Distribution licensee;

(53) **'Licensee'** means a person who has been granted license under Section 14 of the Act and includes a person deemed to be a licensee under Section 14 of the Act;

(54) **'Local Self Government Institution' or 'LSGI'** means a Panchayat at any level constituted under Section 4 of the Kerala Panchayat Raj Act, 1994 (State Act 13 of 1994), or a Municipality constituted under Section 4 of the Kerala Municipality Act, 1994 (State Act 20 of 1994), as defined in clause (xxii) of Section 2 of the Kerala Panchayat Raj Act, 1994 (State Act 13 of 1994);

(55) **'MNRE'** means the Ministry of New and Renewable Energy of the Government of India;

(56) **'Municipal Solid Waste' or 'MSW'** means and includes commercial and residential waste generated in municipal or notified areas in either solid or semi-solid form, excluding the industrial hazardous wastes, but including the treated bio-medical waste;

(57) **'Net billing' or 'Net feed in'** means an arrangement under which the export/ import energy during the applicable billing period is recorded through a Net Meter installed at the premises of the prosumer and the surplus energy exported to the grid after in situ use, is billed as amount 'A' by the Distribution licensee at the feed-in tariff specified by the Commission and the energy imported by the prosumer from the grid while the renewable energy generation was nil/inadequate to meet the demand, is billed as amount 'B' at the approved retail supply tariff applicable to the consumer, wherein the distribution licensee raises the net bill on the prosumer on the basis of difference between the amounts 'A' and 'B';

(58) **'Net meter'** means the bi-directional meter, along with allied metering equipment, to be installed and maintained by the licensee, for reading the total import, total export, net import or net export of electrical energy by the prosumer from/ to the distribution system and shall be an integral part of the net metering and the net billing system;

(59) **'Net metering'** means an arrangement whereby surplus energy exported to the grid from DRE system of a prosumer is allowed to be adjusted against the energy imported from the grid as specified in these Regulations;

(60) **'Non fossil fuel-based co-generation project'** means a generating station

that uses the process in which more than one form of energy (such as steam and electricity) is produced in a sequential manner by use of biomass;

(61) **'Non-firm power'** means the power generated from renewable sources, the hourly variation of which is dependent upon nature's phenomenon like sun, cloud, wind etc., that cannot be accurately predicted;

(62) **'Non-solar Certificate'** means the certificate issued in respect of the electricity generated from renewable sources of energy other than solar source;

(63) **'Obligated Entity'** means the distribution licensee or the captive consumer or the open access consumer in the State of Kerala, who is mandated to fulfil the renewable purchase obligation under these Regulations;

(64) **'Off Peak hours'** means the period other than peak hours and solar hours;

(65) **'Open Access'** means the non-discriminatory provision for the use of transmission lines or distribution system or associated facilities with such lines or system by any licensee or consumer or a person engaged in generation, in accordance with the Regulations specified by the Appropriate Commission;

(66) **'Operation and maintenance expenses' or 'O&M expenses'** means the expenditure incurred on operation and maintenance of the renewable energy system or part thereof, and includes the expenditure on manpower, repairs, spares, consumables, insurance and overheads;

(67) **'Other Renewable Purchase Obligation' or 'Other RPO'** means the obligation of the entity to purchase electricity generated from RE power projects other than; Wind Power Projects accounted for WPO and Hydro Power Projects (including PSPs) accounted for HPO;

(68) **'Peak Hours'** means the period from 18:00 hours to 23:30 hours on the same day:

Provided that, the time period specified above shall be applicable wherever ABT meters or smart meters or ToD meters programmed for the above time zone are installed and in all other cases the 'peak hours' shall be zone 2 (18:00 hrs to 22:00 hrs);

(69) **'Peer-to-Peer (P2P) Platform'** means electronic platform provided by the Service Provider/ DISCOM on which peer-to-peer transactions occur;

(70) **'Peer-to-Peer (P2P) Transaction'** means a transaction, based on interconnected platform that serves as a marketplace, wherein Consumers and Prosumers transact electricity through Block chain technology or any

other technology;

(71) **‘Power Exchange’** means any licensed entity operating as an exchange for transaction of electricity in terms of the orders issued by the Central Commission;

(72) **‘Premises’** means and includes any land, building, structure which is included in the details and sketches specified in the application or in the agreement for grant of electric connection or in such other records relating to revision of connected load or contract demand;

(73) **'Project'** means a generating station and/ or the evacuation system up to inter-connection point, as the case may be, and in the case of a small hydro generating station, includes all components of the generating facility such as dam, intake water conductor system, power generating station and generating units of the scheme as apportioned to power generation and shall be known as ‘Station’ after the declaration of COD;

(74) **‘Prosumer’** means a consumer, having a renewable energy system with or without energy storage system installed at the same premise of the consumer who generates electricity and can inject the electricity generated from such renewable energy system using the same network, in accordance with the Net Metering, Net Billing or Gross Metering arrangements specified in these Regulations;

(75) **‘Pumped Storage Project’ or ‘PSP’** means a hydropower project which generates power through water stored as potential energy, pumped from a lower elevation reservoir to a higher elevation reservoir; either during lean seasons when storage/ inflow into the upstream reservoir is inadequate or on a round the year basis in the cases where catchment area is small, by having a reservoir at the downstream with adequate capacity to store water for pumping;

(76) **‘Rated capacity of the Solar generation system’** means the capacity on the AC side of the Inverter in kW**,** forming part of the solar generation system;

(77) **‘REC Regulations’** means the Central Electricity Regulatory Commission (Terms and Conditions for Renewable Energy Certificates for Renewable Energy Generation) Regulations, 2022, as amended from time to time;

(78) **‘Refuse Derived Fuel’ or ‘RDF’** means a segregated combustible fraction of solid waste other than chlorinated plastics in the form of pellets or fluff produced by drying, de-stoning, shredding, dehydrating, and compacting combustible components of solid waste that can be used as fuel;

(79) **‘Renewable Energy’ or ‘RE’** means the electricity generated from any

renewable sources of energy such as; hydro, wind, and solar, including its integration with combined cycle, biomass, biofuel cogeneration, urban or municipal waste, and such other sources as recognised or approved by the Central Government;

(80) **'Renewable Energy Meter' or 'RE meter'** refers to energy meter(s), installed and used to measure the renewable energy generation from renewable energy system;

(81) **'Renewable Energy Generating System' or 'REGS'** means the power plant and connected systems, generating grid quality electricity from renewable sources of energy;

(82) **'Renewable Energy Service Company' or 'RESCO'** means an energy service company which owns a DRE plant and supplies renewable energy under different metering mechanisms provided under these Regulations;

(83) **'Renewable Hybrid Energy Projects'** means a renewable energy project that produces electricity from a combination of renewable energy sources connected at the same interconnection point;

(84) **'Renewable Purchase Obligation' or 'RPO**' means the obligation of an entity to purchase electricity generated from renewable sources of energy as per these Regulations;

(85) **'Renewable Source of Energy'** means the source for the generation of renewable electricity, such as hydro, wind and solar, including its integration with combined cycle, biomass, bio-fuel cogeneration, urban or municipal solid waste and such other sources, approved by the MNRE as renewable source;

(86) **'Residents' Association' f**or the purpose of these Regulations means an Association constituted by the residents in a specific area for the benefit and welfare of the members of the Association registered under the Travancore Cochin Literary, Scientific and Charitable Societies Registration Act, 1955 or Societies Registration Act, 1860 (Central Act 21 of 1860), or any other applicable statutory provisions. An Association constituted and registered as aforesaid by the owners of an apartment complex or by the owners including the residents of apartments, housing colony or gated community shall also be considered as Residents' Association;

(87) **'Seller Licensee'** means a distribution licensee in the State, which sells electricity to other distribution licensees in the State;

(88) **'Small Hydro'** means the Hydro Power projects with total Station capacity upto and including 25 MW;

(89) **'Solar Certificate'** means the certificate issued in respect of electricity generated from solar source;

(90) **'Solar hours'** means the period from 08:00 hours (8:00 am) to 18:00 hours (6:00 pm) on the same day and the '**non solar hours'** means the period other than solar hours:

Provided that, the time period specified above shall be applicable wherever ABT meters or smart meters or ToD meters programmed for the above time zone are installed and in all other cases the 'solar hours' shall be zone 1 (6:00 am to 6:00 pm);

(91) **'Solar PV power project' or 'SPV'** means the Solar Photovoltaic power project that uses sunlight for direct conversion into electricity through Photovoltaic technology;

(92) **'State Agency'** means the agency in the State of Kerala designated by the Commission for undertaking the functions assigned by the Commission under these Regulations;

(93) **'Supply Code'** means the 'Kerala Electricity Supply Code, 2014', as amended from time to time;

(94) **'Tariff Order'** in respect of a licensee means the retail supply tariff order issued from time to time by the Commission, stipulating the rates to be charged by the licensee from various categories of consumers for supply of electricity and for other services;

(95) **'Tariff Period'** means the period for which the tariff is determined by the Commission on the basis of the norms and the useful life of the project specified under these Regulations, for the sale of electricity from a renewable energy system;

(96) **'Time Block'** means the block of duration as specified by the Commission for which energy meters record values of specified electrical parameters with the first time block starting at 00:00 hours, presently of 15 minutes duration;

(97) **'Useful Life'** in relation to a unit of a generating station including the evacuation system shall mean the following duration from the date of commercial operation (COD) of such generation facility, namely:

(i) Wind energy power project	25 years
(ii) Bio mass power project with	
Rankine cycle technology	25 years
(iii) Non-fossil fuel based cogeneration project	25 years

(iv) Hydro Electric Plant & PSPs 40 years

(v) Municipal Solid Waste (MSW)/ and Refuse Derived Fuel (RDF) based Power project 20 years

(vi) Solar PV power project/ floating solar project/ Solar thermal power project 25 years

(vii) Biomass gasifier-based power project 25 years

(viii) Biogas based power project 25 years

(ix) Renewable hybrid energy project - Minimum of the useful life of different RE technologies combined for Renewable Hybrid Energy Project for Composite Tariff as specified above;

(x) Renewable energy with storage project - Same as the useful life of the project, assuming that there is no storage;

(xi) Grid scale standalone BESS project - 12 years.

(98) **'Vehicle to Grid' or 'V2G'** means a set of technologies which facilitates export of electrical energy stored in batteries of electric vehicles into the grid during peak hours or as required by system conditions including non availability of weather-dependent RE;

(99) **'Virtual Net Metering' or 'VNM'** means an arrangement whereby entire energy generated from a RE generating system located in the area of a distribution licensee is measured through a Renewable Energy Meter and exported to the Grid, and the energy exported is adjusted in one or more electricity service connections of, participating consumers within the area of supply of the same distribution licensee as per the terms and conditions specified in these Regulations;

(100) **'Virtual Power Plants' or 'VPP'** means the system by which small rooftop solar plant owners, storage service providers, other RE generators and demand response systems can aggregate their capacities through an aggregator and can be allowed to participate in trading in the power market or provide various ancillary services to get better value for the electricity;

(101) **'Wind power obligation' or 'WPO'** means the obligation of the obligated entity to purchase electricity generated from the Wind Power Projects

(WPPs) commissioned after 31st March, 2022.

(102) **'Zone' or 'Time Zone'** means the collective time blocks specified for billing the consumers/ prosumers under different rates of tariff. The different time zones mentioned in these Regulations are:

(i) Zone 1 - 06:00 hrs to 18:00 hrs
(ii) Zone 2 - 18:00 hrs to 22:00 hrs
(iii) Zone 3 - 22:00 hrs to 06:00 hrs
(iv) Solar hours - 08:00 hrs to 18:00 hrs
(v) Non Solar hours - 18:00 hrs to 08:00 hrs
  a) Peak hours - 18:00 hrs to 23:30 hrs
  b) Off Peak hours - 23:30 hrs to 08:00 hrs

4. Interpretations, -

4.1 These Regulations shall be interpreted and implemented in accordance with, and not at variance from, the provisions of the Act and the Rules and Regulations made thereunder.

4.2 Words, terms and expressions as defined in the Electricity Act, 2003 and in the Rules made thereunder by the Central Government, Government of Kerala, Regulations issued by the Central Electricity Authority, the Central Electricity Regulatory Commission and the Commission, which are used in these Regulations, shall have and carry the same meanings as defined and assigned to them in the said Act, Rules and Regulations, as amended from time to time, unless it has been defined in these Regulations.

4.3 In the interpretation of these Regulations, unless the context otherwise requires:

(i) Words in the singular or plural term, as the case may be, shall also be deemed to include the plural or the singular term, respectively;

(ii) Words importing the masculine gender shall be taken to include females also;

(iii) Reference to any Statute, Rule, Regulation or Guideline shall be construed as including all statutory provisions consolidating, amending or replacing such Statute, Rule, Regulation or Guideline referred to, as the case may be;

(iv) Terms "include" and "including" shall be deemed to be followed by "without limitation" or "but not limited to", regardless of whether such terms are followed by such phrases or words of like import;

(v) If a question arises relating to the interpretation of any of the provisions of these Regulations, the decision of the Commission shall be final.

5. Monitoring and review of the Energy transition process, -

5.1 The Commission shall continuously monitor and review the energy transition programmes and processes in the State, with respect to the State & Central Government policies, plans and initiatives.

5.2 Periodic comprehensive impact analysis of the Regulations will be conducted by the Commission on the; technical, regulatory, market, consumer behavioural aspects in the State context, viz. the tariff and availability of different systems, supply chain maturity, life cycle and techno economic analysis etc. and evolve necessary conducive policies.

5.3 Policy advisories to the State Government on formulating schemes to achieve the energy transition goals of the State, will be considered by the Commission on a need basis.

5.4 The Commission shall review the Resource Adequacy plans of the licensees annually to identify corrective actions if any, to ensure that the plans are commensurate with the requirements of the energy transition goals.

5.5 The Resource Adequacy plans shall have plans to mitigate the adverse effects of DRE in the Grid and shall include establishment of appropriate types of energy storage systems enabling safety and stability of the grid.

5.6 Stakeholder awareness programmes, through licensees and consumer associations, will be encouraged, to promote the use of Smart appliances and devices that automate the process of load shifting.

5.7 The Commission may review these regulations after two years and may modulate based on the identified requirements and stakeholder responses.

5.8 The Commission shall continuously monitor the emerging market conditions with a view for optimising the development of renewable energy resources in the State and thereby promote entrepreneurship.

5.9 The incentive structures for DRE system and BESS may be periodically reviewed and revised based on their contribution to grid reliability, market maturity, and cost-effectiveness.

5.10 The Commission may evaluate and implement appropriate mechanisms, such as grid contribution charges, to ensure that non-participating consumers are not unduly burdened due to the incentives provided to prosumers adopting DRE system and energy storage.

CHAPTER II

Grid interactive Renewable Energy System – General

A. Eligibility Conditions for Prosumers (Regulations 6 to 13)

6. Net Metering System (NMS), -

6.1 All consumers/ prosumers billed under Agriculture, Domestic and Industrial tariff are eligible to opt for Net Metering.

Provided that the minimum capacity of the RE generating system shall be 1 kW and the maximum capacity shall be 3 kW (AC):

Provided further that the maximum capacity of the plant can be 5 kW (AC) for consumers opting to install hybrid inverters with a minimum storage capacity of 30% of the energy generation potential of the plant;

Provided also that the maximum capacity limit as above shall not be applicable to agriculture consumers;

Provided also that the RE generating systems of the prosumers already under the Net metering facility shall continue under the Net metering system, as specified in these Regulations, till the occurrence of any of the conditions specified under Regulation 2.3.

6.2 The maximum capacity of the RE generating system that can be installed by an eligible consumer, shall not exceed the connected load in kW for the Connected load-based billing consumers and contract demand in kVA for the demand-based consumers:

Explanation: The maximum capacity of the inverter for Demand based prosumer shall be fixed as 0.95 (pf) times the contract demand of the consumer.

7. Net Billing System (NBS), -

7.1 All consumers/ prosumers are eligible to opt for Net Billing:

7.2 The minimum capacity of the RE generating system shall be 1 kW.

7.3 The maximum capacity of the RE generating system that can be installed by a prosumer, shall not exceed; the connected load in kW for the Connected load-based billing consumers and, contract demand in kVA for the demand-based consumers or 500 kW, whichever is lower.

Explanation: The maximum capacity of the inverter for Demand based prosumer shall be fixed as 0.95 (pf) times the contract demand of the consumer.

8. Gross Metering System (GMS), -

8.1 All consumers/ prosumers are eligible to opt for Gross Metering:

Provided that an applicant who is setting up a DRE plant in an area which is not within the premises of a consumer shall be eligible for Gross Metering arrangement by obtaining separate connectivity.

8.2 The minimum capacity of the RE generating system shall be 1 kW.

8.3 The maximum capacity of the RE generating system shall be 3 MW:

Provided that in cases where the renewable energy plant capacity is higher than the connected load/ contract demand or the renewable energy plant is set up in a separate premise, the expenses for augmenting the infrastructure of the distribution system for connectivity shall have to be borne by the prosumer.

8.4 The prosumers opting to install energy storage systems along with RE generating systems will be eligible for higher feed-in tariff as determined by the Commission for the energy injected during peak hours.

9. Behind the Meter system (BtM), -

9.1 All consumers/ prosumers are eligible to opt for Behind the Meter system.

9.2 The consumer shall connect the behind the meter system only after prior intimation to the respective Distribution Licensee. The model form, for intimating installation of Renewable Energy Generator behind the meter by the Eligible Consumer to the concerned Licensee, is set out at Annexure 3 of these Regulations.

9.3 In the cases where it is found that the system is connected to the consumer installation without prior intimation to the licensee, the licensee may disconnect such system after serving a notice of 24 hours:

Provided that an off grid REGS operating independently will not be considered as a BtM system under these regulations.

9.4 The maximum permissible capacity of the Renewable Energy generating system installed behind the Consumer's meter shall be limited to Connected load or Contract Demand, as applicable, of the consumer.

9.5 The Consumer shall ensure that no energy is injected into the grid from such a Renewable Energy generating system and shall install a reverse power flow relay to ensure that no energy is injected into the grid from such a RE generating system installed behind the consumer's meter.

9.6 The Distribution Licensee may inspect and verify the installation of such a Renewable Energy generating system behind the Consumer's meter as and when required.

10. Virtual Net Metering system (VNM), -

10.1 The following categories of consumers setting up a DRE plant through a Lead person/ RESCO, in the area of supply of the same distribution licensee are eligible for Virtual Net Metering system:-

(i) Domestic consumer(s) setting up DRE plant with energy storage system having capacity of not less than 30% of the energy generation potential of the plant and residing in multi storied residential buildings and residential complexes including their common connection or in the area of Residents' Associations;

(ii) Domestic consumers in the low-income group in LSGI ward(s), sponsored by the LSGI or Government or MP/ MLA-LAD schemes or NGOs or CSR fund or under any other arrangement;

(iii) Group of Government/ LSGI offices/ establishments/ institutions including institutions covered under any Government sponsored schemes setting up DRE plant in an LSGI area, with an energy storage system having capacity of not less than 20% of the energy generation potential of the DRE plant;

(iv) Agricultural consumers.

10.2 The Lead person under the VNM system shall obtain separate connectivity for the DRE plant and bear the cost for connectivity including cost of upgradation, installation of transformer etc., as applicable:

Provided that in case the proposed VNM plant seeking connectivity at LT level and having capacity of 50 kW and above or the distribution transformer where the VNM plant is proposed to be connected does not have enough hosting capacity, the feasibility may be granted by enhancing the capacity of the distribution transformer or by installing separate transformer, as required.

10.3 The minimum capacity of the DRE plant under VNM system shall be 10 kW and maximum capacity shall be the cumulative connected load/ contract demand, as applicable, subject to the maximum limit of capacity share of the participating consumers:

Provided that the maximum capacity share in respect of a participating residential consumer except for common connection shall be 5 kW, subject to the limits specified under Regulation 6.1:

Provided further that the minimum and maximum capacity limit shall not be applicable in respect of agricultural consumers.

11. Group Net Metering system (GNM), -

11.1 All consumers/ prosumers eligible for net metering as under Regulation 6.1 above shall be eligible to install RE generating system under GNM at single or multiple premises subject to the following conditions:-

(i) The right of wheeling and consumption of excess electricity shall be available to the prosumer under the same tariff category at different premises of the consumer located within the area of supply of the same Distribution licensee:

Provided that the existing prosumers using excess electricity generated from renewable sources in other premises having different tariff categories, as per provisions under KSERC (Renewable Energy and Net Metering) Regulations, 2020, shall be eligible for billing under GNM until any of the conditions under Regulation 2.3 is occured;

(ii) The share of capacity of the RE plant for each of the premises of the consumer shall not exceed the limits specified under Regulation 6.1 above and the total capacity of the RE plant shall not exceed the cumulative eligible capacity of all the premises taken together;

(iii) The quantum of electricity wheeled and adjusted shall be based on the conditions specified under Chapter III of these regulations.

11.2 The maximum capacity of the RE system in any of the premises of the participating consumer/prosumer, shall not exceed the connected load in kW for the Connected load-based billing consumers and contract demand in kVA for the demand-based consumers:

Provided that the limit for the capacity of the DRE plant can be exceeded in cases where they install a hybrid inverter with a storage facility with at least 30% of the energy generation potential of the DRE plant. In such cases, the expenses for augmenting the infrastructure of the distribution system for connectivity shall have to be borne by the prosumer.

12. Prosumers having DRE plant capacity above 100 kW, -

In respect of prosumers setting up DRE plants having capacity above 100 kW after the date of notification of the Intra State Deviation Settlement Mechanism (DSM) Regulations and who are not eligible for GNM/ VNM and/or not opting for Gross metering, the rate applicable for the surplus energy injected into the grid from the DRE plants shall be in accordance with the DSM Regulations.

13. Operation criteria for energy storage systems installed by Prosumers. -

The charging of energy storage systems installed by prosumers shall be during solar hours and its discharge shall be during peak hours, normally.

B. Connectivity requirements and procedures for Prosumers (Regulations 14 to 18**)**

14. Technical Standards and Safety, -

14.1 The Distribution Licensee shall ensure that the inter-connection of the Renewable Energy Generating System with or without storage to its Network conforms to the specifications, standards and other provisions specified in;

(i) CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations, 2013;

(ii) CEA (Measures relating to Safety and Electric Supply) Regulations, 2023;

(iii) Applicable IEEE/ IEC Standards (IEEE 1547, IEEE 1547.2, IEEE 2800(2022) , IEEE 2030(2021) , IEEE P2030.3, IEEE 2030.5, IEEE 2030.11, IEC 63401 (P 1 to 4), IEC 60904, ISO/IEC 13273-2, UL 1741, IEC 61400, IEC 62109-2, IEC 62620);

(iv) Kerala State Electricity Regulatory Commission (State Grid Code) Regulations, 2005;

(v) Kerala Electricity Supply Code, 2014; and

(vi) Kerala State Electricity Regulatory Commission (Connectivity and Intra-state Open Access) Regulations, 2013.

14.2 The Eligible Consumer shall be responsible for the safe operation, maintenance and rectification of defect in the Renewable Energy Generating System and storage, if any, up to the inter-connection point, beyond that point such responsibility, including in respect of the meter(s), shall be that of the Distribution Licensee.

14.3 The Distribution Licensee shall have the right to disconnect the Renewable Energy Generating System and storage, if any, from its network at any time in the event of any threat of accident or damage from such system to the distribution system so as to avoid any accident or damage, after serving a notice as specified in the Kerala Electricity Supply Code, 2014:

Provided that the Distribution Licensee, considering the criticality, may call upon the prosumer to rectify the defect within a reasonable time.

14.4 The Renewable Energy Generating System and storage, if any, must have appropriate protection for isolating the RE system from the network of the Distribution Licensee, with an automatic as well as manual isolation switch, to prevent any feeding into the grid in case of failure of supply or grid.

14.5 Every Renewable Energy Generating System shall be equipped with an automatic synchronization device:

Provided that the Renewable Energy Generating System using inverter shall not be required to have a separate synchronizing device, if it is inherently built into the inverter.

14.6 The inverter shall have the features of filtering out harmonics and other distortions before injecting the energy into the system of the Distribution Licensee and the Total Voltage Harmonic Distortion (THD) shall be within the limits specified in the Indian Electricity Grid Code (IEGC)/IEEE technical standards.

15. Metering Infrastructure, -

15.1 All the meters installed at the Renewable Energy Generating System shall comply with the Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006 and subsequent amendments thereof.

15.2 All the meters shall have a communication port having RS 485 (or higher) standard.

15.3 The meter at the inter connection point for Net metering, Net billing, Group Net metering and the generation meter in respect of gross metering and VNM shall be,-

(i) ABT compatible SEM meters for systems having capacity of 1 MW and above;

(ii) Smart meters for systems having capacity of and above 100 kW and below 1 MW;

(iii) Smart meters for systems having capacity less than 100 kW installed on or after 01.04.2027:

Provided that, the consumers having ABT compliant meter and smart meter shall not be required to install separate Net meter:

Provided further that the existing prosumers having DRE system of and above 1 MW shall install ABT compatible SEM meters within 6 months from the date of notification of these Regulations.

15.4 The distribution licensee shall make available Net meter to the eligible consumer who has installed RE system in his premises:

Provided that if the eligible consumer elects to purchase the said meter 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 Net meter within a period of 14 days.

15.5 The Distribution Licensee shall be responsible for the testing, installation, and maintenance of the metering equipment, and its adherence to the applicable standards and specifications.

15.6 The Eligible Consumer shall procure at his own cost, a Renewable Energy Generation Meter conforming to the applicable CEA Regulations, and install at an appropriate location to measure the energy generated from the Renewable Energy Generating System.

15.7 The Renewable Energy Generation Meter shall be tested and maintained by the Distribution Licensee.

15.8 The Net Meter and the Renewable Energy Generation Meter shall be installed at such locations in the premises of the Eligible Consumer as would enable easy access to the Distribution Licensee for meter reading.

15.9 In case of Renewable Energy Generating System with capacity of and above 100 kW set up under the Gross metering and VNM arrangement, a Check Meter of appropriate class may be installed by the Distribution Licensee for the Renewable Energy Generation Meter:

Provided that the installation of Check Meter shall be optional for Renewable Energy Generating System with capacity below 100 kW.

15.10 The licensee may collect from the eligible consumer the security deposit and rent for the renewable energy meter and net meter, at the rates approved by the Commission from time to time, if they are provided by the licensee.

16. Hosting Capacity and Capacity limits, -

16.1 The cumulative capacity of the distributed energy systems connected to the HT feeder of the distribution system shall not exceed its rated capacity.

16.2 The cumulative capacity of the distributed energy systems allowed to be interconnected with the distribution transformer shall not exceed 90% of its capacity and the DRE system on each phase of the transformer shall not exceed 30% of the capacity of the transformer:

Provided that in the case of a single phase consumer seeking connectivity to a phase which has exceeded or likely to exceed the threshold of 30% capacity in that phase, the licensee at its cost shall provide connectivity to another phase, if surplus capacity is available in any of the other phases.

16.3 The distribution licensee shall provide feasibility for the DRE systems upto a capacity of 5 kW even in the cases where the transformer hosting capacity is exhausted, in the following cases:-

(i) REGS having hybrid smart inverters providing dynamic reactive power support with BESS having a minimum storage capacity of 30% of the energy generation potential of the plant;

(ii) REGS with smart inverters along with smart meters capable of real time curtailment of generation in the event of system constraints.

16.4 The distribution licensee shall publish Section office wise, the individual transformer capacities and the cumulative capacity of Renewable Energy Systems connected to each transformer, excluding BtM systems, not later than 10th of every month in the distribution licensee's respective Section offices and also in the licensee's website.

16.5 The maximum capacity of a single phase inverter that can be connected to the system is 3 kW. For all the RE installations having inverter capacity greater than 3 kW, three phase inverters shall be installed:

Provided that the existing inverters will be permitted to continue in the system.

16.6 The cumulative kWp capacity of the solar PV panels connected to an inverter may be limited to 120 % of the total inverter capacity.

16.7 EHT/HT (11 kV and above) consumers opting Net Billing may install and connect Renewable Energy Generating Systems at their HT/LT Busbar System:

Provided that the Net Meter shall be installed on the EHT/HT side of the consumer/ prosumer's transformer:

Provided further that the prosumer shall make available the generation data of RE plant(s) through a meter display system installed near the net meter.

16.8 For REGS plants established by prosumers exceeding their connected load/ contract demand, as applicable and for the plants established as VNM, GMS, CPP and IPP, the maximum capacity permissible for connectivity at the respective voltage levels shall be as specified in the Kerala Electricity Supply Code, 2014, as amended from time to time.

16.9 The energy generation potential of REGS shall be reckoned as 4 kWh/kW/day, for estimating the storage requirement under these Regulations.

17. Application, feasibility and Registration for Eligible Consumers, -

17.1 The distribution licensee shall create/update a web-based portal for receiving applications from eligible consumers for feasibility, registration, connectivity

and metering of DRE system, within three months from the date of notification of these regulations.

17.2 The default mode of submitting of application for feasibility, registration and connectivity shall be online. The web portal of the licensee shall have an online tracking system that enables applicants to monitor the real-time status of their applications at various stages of processing. The web portal shall have the following details:-

(i) detailed standardized procedure for installation and commissioning of DRE system under different metering mechanism under these regulations;

(ii) a single point of contact at appropriate levels to facilitate the consumers in installation of DRE system from submission of application form to commissioning;

(iii) complete list of documents required to be furnished along with the application;

(iv) applicable charges to be deposited by the applicant;

(v) standard agreements for different metering mechanism approved by the Commission under these regulations;

(vi) MNRE empanelled list of service providers for the benefit of consumers who want to install DRE system through service providers;

(vii) financial incentives to the prosumers, as applicable under various schemes and programmes of the Central and State Governments;

(viii) feeder or distribution transformer wise balance available hosting capacity.

17.3 The distribution licensee shall grant feasibility and registration to all the eligible consumers / prosumers, who intend to install (enhance capacity of) Grid Interactive Renewable Energy Systems, on non-discriminatory basis, distribution transformer-wise or feeder-wise on ‘first come - first serve’ basis, subject to the provisions under these Regulations.

17.4 A consumer / prosumer intending to set up (enhance capacity of) a Renewable Energy Generating System shall submit the online application (Model format attached as **Annexure -1(a), 1(b) or 1(c)**) seeking feasibility through the web portal of the concerned Distribution Licensee along with all the technical details of the system and pay the non-refundable application fee as specified in Table 1 below:

Provided that for RTS installations under the PM Surya Ghar, the application fee and the registration fee shall be collected in the subsequent bills issued immediately after the commissioning of the plant.

17.5 The Distribution Licensee shall acknowledge the receipt of the application along with application reference number for tracking purpose, automatically through online mode.

17.6 The Distribution Licensee shall conduct a technical feasibility study within 15 days from the submission of the online Application, subject to the conditions specified in these Regulations:

Provided that deemed feasibility shall be granted to RTS projects with capacity upto 10 kW, registered under the PM Surya Ghar subject to online verification and satisfaction of the following conditions:-

(i) Availability of balance hosting capacity of the DTR;

(ii) The proposed capacity of the RTS project is less than or equal to the sanctioned connected load of the consumer; and

(iii) The applicant is a three phase consumer in case the proposed RTS capacity is more than 3 kW.

17.7 If found technically feasible, the Distribution Licensee shall grant feasibility approval for installing the Renewable Energy Generating System. The approval shall indicate the maximum permissible capacity of the System:

Provided that in case approval cannot be granted due to inadequate Distribution Transformer capacity or any other technical constraints, the consumer shall be informed specifying the reasons of the rejection:

Provided further that, in cases where the technical feasibility study finds that the hosting capacity is exhausted, feasibility can be granted if the applicant agrees to the conditions specified under Regulation 16.3:

Provided also that, where the application is complete in all aspects the feasibility shall be deemed to be granted, if the distribution licensee fails to provide feasibility within the timeline mentioned under Regulation 17.6 above:

Provided also that in cases where feasibility is not granted due to inadequate hosting capacity and if the same becomes available within a period of six months, the applicant shall be intimated of the availability and the applicant can file a new application for feasibility in case he intends to proceed with setting up a plant.

17.8 The Eligible Consumer shall within 45 days of receipt of technical feasibility or deemed feasibility, as applicable, apply online to the concerned Distribution

Licensee for registration of his scheme for installing the Renewable Energy Generating System having capacity less than or equal to the capacity granted in the feasibility certificate, as per the format provided in **Annexure -2**, along with the registration fee as specified in Table 1 below and with the documents and technical specifications, and the Distribution Licensee shall acknowledge receipt of such application for registration along with application reference number for tracking purpose, automatically through online mode:

Table 1

Description(non-refundable)	Amount in Rs.
Application Fee	1000.00
Registration Fee	300 per kW or part thereof

17.9 Upon receipt of the application for the registration, required documents and registration fee as per Regulation 17.8 above:

(i) The licensee shall within 3 working days verify the documents submitted by the applicant and intimate the applicant about defects, if any, noticed in the application and the applicants shall cure the defects within 7 working days;

(ii) If the applicant is not in a position to cure the defects mentioned in clause (i) above within the time specified, the applicant may surrender the capacity granted, and in such cases 50 percent of the registration fee shall be refunded by the distribution licensee;

(iii) In all other cases, licensee shall register the scheme and assign a Registration number within three days of receipt of completed application in all respects;

(iv) If the capacity registered is less than the capacity for which technical feasibility is granted, such relieved hosting capacity shall be considered for grant of feasibility to other applicants;

(v) The registration given under clause (iii) above shall be valid for a period of six months from the date of registration, unless the validity period is extended by the distribution licensee under clause (vi) below;

(vi) The distribution licensee may on application from an eligible consumer, for good and sufficient reasons, extend the validity of registration for a period not exceeding another six months, if no other application for

feasibility is pending for want of the distribution transformer capacity or the feeder capacity, as the case may be;

(vii) The registration fee shall be forfeited, if the applicant fails to install the renewable energy system within the period of validity of his registration and the distribution licensee shall consider such released capacity for grant of technical feasibility to applicants referred under fourth proviso to Regulation 17.7 and/or subsequent applicants;

17.10 The applicant shall ensure that the electrical installation works of the renewable energy system conforming to the technical specifications are carried out and the test cum completion report is submitted by a licensed Electrical Contractor.

17.11 The applicant, shall obtain from the Electrical Inspector having jurisdiction over the area, necessary sanction for energising the renewable energy system, if applicable in accordance with the provisions of 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, 2023, and submit the energisation approval to the distribution licensee.

17.12 The distribution licensee shall, within seven working days from the date of submission of report/approval as under Regulation 17.10 and 17.11 above, test the renewable energy system in accordance with the provisions of the Central Electricity Authority (Technical Standards for Connectivity of Distributed Generation Resources) Regulations, 2013.

17.13 On successful completion of the test as specified in Regulation 17.12 above, the distribution licensee and the eligible consumer shall execute a connectivity agreement in the format containing the general and specific conditions, as approved by the Commission, in accordance with the provisions of the Central Electricity Authority (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations, 2013.

17.14 The licensee shall, within seven working days from the date of execution of the agreement as specified in Regulation 17.13 above, connect the renewable energy system to the distribution system.

17.15 The maximum timelines to be followed for various activities involved in the procedure for grant of connectivity is shown in the Table below:

Table 2

Sl No	Particulars	Timeline
1	Acknowledgement of receipt on the application for feasibility	Same day through online

2	Feasibility certificate from licensee	Within 15 days from the date receipt of application
3	Submission of application for registration by the applicant	Within 45 days from the date of receipt of feasibility certificate
4	Scrutiny of the application by the licensee	Within 3 working days from the date of receipt of application
5	Registration	Within 3 working days from the date of submission of completed application and registration fee
6	Completion of the plant and submission of report/approval to the licensee	Within 6 months from the date of registration or within the extended time period
7	Testing of the RE system by the licensee	Within 7 working days from the date of submission of report/approval
8	Signing of connectivity agreement	Within 7 working days from the date of successful testing and acceptance by the licensee
9	Installation of meter and commissioning of the RE system	Within 15 days from the date of submission of the report/approval

17.16 The distribution licensee shall, without any delay or discrimination, provide grid connectivity arrangements to the prosumer, subject to provisions in these Regulations within the time limits specified above.

17.17 The distribution licensee shall provide registration to applicants who have valid feasibility as on the date of notification of these Regulations for the capacity up to which feasibility has been granted and shall provide connectivity for the capacity granted under such registration and for other valid registrations existing as on date of notification of these Regulations, if the applicant completes the installation of the plant within the timelines specified in the KSERC (Renewable Energy and Net Metering) Regulations, 2020.

18. Connectivity Agreement, -

18.1 The eligible consumer shall execute a connectivity agreement for the DRE system as a supplementary agreement to the service connection agreement executed by the consumer as per the provisions of the Supply Code:

Provided that, an applicant establishing a DRE plant in a separate location shall execute a separate connectivity agreement.

18.2 The distribution licensee shall, within two months from the date of notification of these regulations, submit a model Connectivity Agreement including the options for metering/ billing system for the eligible consumer, in accordance with Regulations 6 to 12 above, before the Commission for approval:

Provided that, the licensee shall grant connectivity based on an undertaking from eligible consumers including the metering and billing system opted by them until the model connectivity agreement is approved by the Commission.

18.3 The Distribution Licensee shall make available applicable procedure, application format and the approved Agreement formats, along with other relevant forms, on its website.

18.4 The Connectivity Agreement shall normally remain in force for twenty five years:

Provided that the prosumer may amend/ modify/ assign the agreement with the approval of the licensee during the validity of the agreement for modification of metering/ billing system, plant capacity, plant configuration, ownership change etc. by following the due procedure under the Regulations/ Code, for the balance period:

Provided further that the prosumer may modify the metering/ billing system based on eligibility specified under these regulations, once in a financial year and up to three times during the period of the agreement:

Provided also that the prosumer may terminate the Agreement at any time by giving 90 days' notice to the Distribution Licensee:

Provided also that the Distribution Licensee may terminate the Agreement by giving 30 days' notice, if the prosumer breaches any term of the Agreement and does not remedy such breach within 30 days, or such other longer period as may be provided, of receiving notice from the Licensee of such breach, or for any other valid reason to be communicated in writing:

Provided also that if the Distribution Licensee terminate the service Connection Agreement of the consumer on an application by the consumer or due to failure of the consumer/ prosumer to pay his dues in a timely manner or due to any malpractices, after following the due procedures

under the provisions of the Supply Code, the Connectivity Agreement shall also co-terminate with the service connection agreement.

18.5 The prosumer shall, upon termination of the Agreement, disconnect forthwith its Renewable Energy Generating System from the Distribution Licensee's Network.

19. Connectivity for Independent Renewable Power Generator and Captive Generating Plants, -

19.1. The distribution licensee or the State transmission utility, as the case may be, shall on demand, provide connectivity for the Independent Power Producers and Captive consumers, who intend to install Grid Interactive Renewable Energy Generation system, on non discriminatory basis subject to the conditions specified in KSERC (Connectivity and Intra State Open Access) Regulations, 2013, as amended from time to time.

19.2. 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, 2023, and other applicable regulations dealing with connectivity and safety, as amended from time to time.

19.3. The Independent Power Producers and Captive consumers have to bear the cost for upgradation of the transmission/ distribution system for connecting their REGS, as applicable.

19.4. The Captive consumers and IPPs have the right to avail Open Access for transmitting/ wheeling RE through the transmission and distribution system subject to the conditions as specified in Regulation 20 of these Regulations and KSERC (Connectivity and Intra State Open Access) Regulations, 2013, as amended from time to time.

19.5. The CPPs and IPPs setting up grid interactive renewable energy systems with capacity of and above 1 MW shall provide Special Energy Metering system (SEM) capable of recording and transmitting the metering data of every 15-minute time block. The metering system shall have remote terminal unit (RTU) to facilitate real time monitoring by the SLDC, as specified by the Commission. SEMs 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:

Provided that for RE Plants connected to a Pooling station, each RE plant shall install separate smart meters at their interface points with the

Pooling station and have the special energy meter at the interface point with the transmission/ distribution system of the Pooling station:

Provided further 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:

Provided also that such plants/ pooling station having capacity of and above 1 MW shall be liable to provide advance daily scheduling data to SLDC:

Provided also that for plants having capacity of less than 1 MW shall provide Smart meters with visibility to SLDC.

20. Open Access, –

20.1. 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,-

(i) The Prosumers/ Consumers/ DREs under Net metering/ Net billing/ Gross metering/ GNM/ VNM system require, no separate open access permission for injecting, transmitting and wheeling of RE generated by them as per the provisions of these Regulations;

(ii) Open Access shall be granted as per the provisions under KSERC (Connectivity and Intra State Open Access) Regulations, 2013 to independent RE generators and consumers, who require a supply of electricity where the maximum power to be made available at any time exceeds 100kW;

(iii) The grant of open access in respect of a consumer intending to avail RE power from an IPP or CPP shall be up to the plant capacity or share in the plant capacity or contract demand of the consumer, whichever is lower subject to the limit specified in clause(ii) above:

Provided that any form of open access already granted before the coming into force of these regulations shall remain as such for the period of such grant;

(iv) Open Access charges such as application fee, SLDC/ NLDC charges, Transmission/ distribution losses, transmission/ wheeling charges, reactive energy charges, deviations compensation charges, grid support charges, surcharges etc., as specified under these Regulations, the Connectivity and Intra- state Open Access Regulations and the

Tariff orders issued by the Commission from time to time, as the case may be, shall be applicable to the persons availing open access.

20.2. The Renewable Energy Generator shall follow the Indian Electricity Grid Code 2023, Kerala State Grid Code and the relevant CERC/ KSERC Regulations and the procedures for scheduling and despatch of renewable energy, as amended from time to time. The Intra State scheduling and dispatch of RE shall be in accordance with the regulations for forecasting, scheduling and deviation settlement from the date of notification of applicable regulations by the Commission.

21. Virtual Power Plant (VPP), -

21.1 VPP is the arrangement wherein distributed energy resources (DER) such as rooftop solar, battery storage, electric vehicles, and demand response systems are aggregated through a VPP operator, to participate in the electricity market.

21.2 The VPP shall be registered with the Distribution Licensee and shall also be allowed to provide services such as energy supply, frequency regulation, and demand response, subject to the conditions specified by the Commission.

21.3 The Distribution Licensee shall enter into a Virtual Power Plant Participation Agreement with the VPP operator, specifying the terms and conditions for market participation, ancillary services, revenue sharing and regulatory compliance as approved by the Commission.

21.4 The Distribution Licensee shall ensure that real-time data exchange and monitoring systems are in place to track VPP operations, ensuring grid stability and reliability.

21.5 The Consumers or prosumers participating in a VPP shall comply with the technical requirements specified in Regulation 14 of these Regulations. Connectivity shall be subject to network capacity, power flow considerations, and the system stability requirements of the electricity distribution network.

21.6 The Commission may specify a detailed procedure for the implementation of Virtual Power Plants, energy accounting and settlement, as and when a VPP operator or a Distribution Licensee approaches the Commission for such implementation.

22. Peer to Peer trading (P2P), -

22.1 P2P energy trading is provided for the prosumers having DRE systems, to trade surplus renewable energy after own use, without availing banking, through an online peer to peer platform using block chain or any other technology as approved by the Commission.

22.2 The P2P energy trading platform shall be operated by an authorized service provider or Distribution Licensee and must be compliant with the technical and operational requirements as specified in Regulation 14 of this Regulation.

The service provider shall create awareness and train P2P participants and distribution licensee regarding functioning of the P2P platform.

22.3 The distribution licensee shall act as the nodal agency for monitoring, regulating, and facilitating P2P energy transactions within its jurisdiction. It shall ensure grid stability, maintain power quality, and address any operational challenges arising from P2P transactions. The distribution licensee shall provide technical support to prosumers and consumers for smooth integration into the grid and ensure compliance with safety standards.

22.4 The Distribution Licensee shall enter into a Peer-to-Peer Trading Agreement with the platform operator and participants, specifying the terms and conditions for trading, settlement, and regulatory compliance as approved by the Commission. The Distribution Licensee shall ensure that real-time data exchange and monitoring systems are in place to track P2P transactions, ensuring grid stability and reliability.

22.5 Consumers interested in purchasing renewable energy through P2P transactions must register with the approved platform and comply with the technical and regulatory requirements. The distribution licensee shall facilitate the on boarding of participants and ensure seamless integration of P2P transactions within the grid.

22.6 The P2P service provider or the Distribution licensee, with the prior approval of the Commission, shall design, develop and implement pilot projects on P2P transactions and share results/findings with the Commission.

22.7 Based on a proposal of P2P service provider or a Distribution Licensee and the results/findings of the pilot implementation, the Commission may specify a detailed procedure for the implementation of P2P trading including on the;

(i) trading options;

(ii) roles and responsibilities of P2P participants, Service Providers and Distribution Licensees;

(iii) energy accounting and settlement;

(iv) charges payable by different consumer categories for use of transmission and distribution network etc.

23. Vehicle to Grid (V2G), -

23.1 V2G integration is the framework for the bidirectional flow of electricity between the electric grid and EV batteries, ensuring efficient utilization of energy storage for grid stability, and demand-side management.

23.2 All Electric Vehicle (EV) owners, Charging Station Operators (CSOs), Distribution Licensees, and other entities can participate in Vehicle-to-Grid (V2G) integration within the State.

23.3 Any EV owner shall have the right to export stored electricity from their EV battery to the grid through authorized V2G-enabled charging stations/installations, subject to the terms and conditions specified in this regulation.

23.4 Distribution Licensees shall facilitate the seamless integration of V2G-enabled EVs into the grid, subject to the following conditions:-

(i) Smart metering infrastructure shall be deployed to measure bidirectional energy flow and ensure accurate settlement;

(ii) Comply with Central Electricity Authority (CEA) Technical Standards for grid connectivity;

(iii) Comply with Guidelines issued by Ministry of Power for Installation and Operation of Electric Vehicle Charging Infrastructure from time to time;

(iv) Comply with Indian Electricity Grid Code, 2023;

(v) Comply with Kerala State Grid Code and Kerala State Electricity Supply Code, 2014.

23.5 Distribution licensees shall implement protocols for monitoring V2G operations, to ensure grid stability.

23.6 A special Time-of-Use (ToU) tariff shall be introduced to encourage V2G participation, offering incentives for energy export during peak demand periods. Dynamic pricing mechanisms shall be explored to compensate EV owners based on real-time grid conditions:

Provided that, as an initial measure, the tariff for EV Charging stations during non solar hours shall be applicable for export of energy from V2G systems during peak hours, at appropriate voltage level.

23.7 EVs shall be allowed to participate in ancillary services such as frequency regulation, voltage support, and peak sharing. V2G systems may be integrated with blockchain-based Peer-to-Peer (P2P) energy trading platforms, allowing EV owners to trade surplus energy with other consumers under a regulatory sandbox framework.

23.8 The Commission may specify a detailed procedure for the implementation of V2G participation, energy accounting and settlement, as and when Distribution Licensee approaches the Commission for the approval of the detailed procedure for the implementation of V2G participation.

CHAPTER III

Energy Accounting, Billing and Settlement for Grid interactive Renewable Energy Systems

24. The energy accounting, billing, settlement and related matters for all the existing and new; prosumers, CPPs, IPPs and other RES under each of the metering and billing systems specified under Chapter II shall be as per the regulations under this Chapter.

25. The different energy accounting systems specified under this Chapter intend to; promote consumption of electricity during solar hours and establishment of energy storage systems by prosumers and RE generators.

26. The prosumers and captive consumers are required to pay the fixed/ demand charges, meter rent and other charges as approved by the Commission from time to time along with the duty and surcharge, if any, as prescribed by the State Government. The energy charges, grid support charges, reactive energy charges and other charges payable shall be in accordance with the different metering and billing systems provided in these regulations.

27. The distribution licensee, shall within three months from the date of notification of these Regulations, modify its existing billing infrastructure to facilitate the metering, energy accounting and billing arrangements as envisaged under these Regulations.

28. Net Metering System (NMS), -

28.1 The following sub regulations specify the methodology for energy accounting, billing and settlement for prosumers, who have installed DRE systems under Net Metering System specified in Regulation 6 of these Regulations. The accounting of electricity exported and imported by the Eligible Consumer shall become effective from the date of connectivity of the Renewable Energy Generating System with the distribution network.

28.2 The Distribution Licensee shall undertake meter reading of both, the Renewable Energy Generation Meter and the Net Meter, according to the regular billing cycle.

28.3 For each Billing Period, the Distribution Licensee shall make the following information available on its bill to the prosumer:

(i) Quantum of Renewable Energy generation recorded in the Renewable Energy Generation Meter in the billing period, including opening and closing readings;

(ii) Quantum of electricity exported and imported in the billing period recorded in the Net meter, zone wise, including opening and closing readings;

(iii) Quantum of electricity units consumed by the Consumer in the billing period;

(iv) The net quantum of energy to be billed or credited after banking adjustment as per Table 3 below for the billing period;

(v) If there is net quantum of energy to be billed, the bill amount consisting of energy charges for the net billed units, fixed charges and other charges as per Regulation 26 above after adjusting carried over credits, if any;

(vi) If there is net quantum of energy in credit of the prosumer as per clause (iv) above, the credit amount arrived based on APPC or Feed in tariff as applicable along with carried over credit, if any. The balance amount payable or in the credit of the prosumer, if any, after adjusting the charges payable as per Regulation 26 above;

(vii) The detailed statement showing energy banking transactions as per Table 3 shall be provided separately;

(viii) Renewable Energy generation units accounted for RPO compliance by the Distribution Licensee.

28.4 The energy generated by the REGS shall be first offset against the simultaneous energy consumption of the prosumer and surplus, if any, is allowed to be exported, banked for use in other time periods and billed in the following manner: -

(i) The energy exported to the grid and the energy imported from the grid shall be recorded in the Net Meter under the three zone wise time period;

(ii) The energy exported in each time zone shall be first adjusted against energy imported in the same time zone. If the entire exported energy is completely adjusted as above the balance imported energy shall be billed as per applicable retail supply tariff;

(iii) The surplus exported energy after adjustment as per clause (ii) above, if any, shall be utilized as per clause (iv) below;

(iv) The exported energy in each time zone remaining after settlement as per clause (ii) above, if any, shall be normalized based on the normalization factor for the three time zones as indicated in Column A in Table 3 below to arrive at the banked quantum of energy:

Table 3

Time Zone		Normalization factor to arrive at the banked quantum of energy	Normalization factor for taking back banked energy for energy offsetting
		A	**B**
Solar Hours		1.0	1.0
Non Solar Hours	Peak Hours	1.5	0.667
	Off Peak Hours	1.15	0.85

Provided that while the banked energy is taken back to offset against imported energy in any time zone the respective normalisation factor under column B shall be applied to arrive at the quantum of energy eligible for offsetting:

Provided further that the banked energy, after adjustment as per clause (ii) above and normalisation as above shall be first offset against the balance imported energy during solar hours, then against balance imported energy during off peak hours and lastly against balance imported energy during peak hours. The balance of imported energy remaining after these adjustments, if any, in each time zone, shall be billed as per applicable retail supply tariff:

Provided also that the zone-wise normalisation factor shall be 1 for all time zones in respect of Net metering REGS of capacity up to and including 2 kW:

Provided also that the capacity of the existing RE prosumers may be revised for this purpose, based on the kW capacity of the inverter, in the place of kWp capacity, if so requested by the prosumer based on sufficient technical documents.

(v) Surplus banked energy, if any, shall be monetized at the applicable rate decided by the Commission, through the electricity bill and adjusted against the fixed charges, meter rent, grid support charge, other charges, electricity duty etc. and the net amount is payable by the Prosumer or credited to the Prosumer account. The credit, if any, will be kept under the account of the prosumer as an advance for adjustment in the subsequent bills. The amount payable by the Prosumer, if any, shall be paid as per the timelines in the Kerala Electricity Supply Code, 2014, as amended from time to time.

Explanation: Normalisation factor under Column B in Table 3 shall not be applied while monetising the surplus banked energy.

(vi) The amount, if any, at the credit of the prosumer at the end of the financial year shall be paid by the distribution licensee to the prosumers before 30th April of the subsequent financial year:

Provided that, if the prosumer makes an application for carrying over the credit amount, the distribution licensee shall carry forward such credit to the next financial year for adjustment.

28.5 The rate for settlement of surplus banked energy in respect of existing prosumers shall be the APPC rate and for new prosumers shall be 75 percent of the capacity weighted average of the discovered tariffs in the SECI bids for the financial year 2024-25, for the respective energy sources.

28.6 The Commission may, in the retail Tariff Order determine the Grid Support Charges to be levied on the exported energy under the Net Metering systems which shall cover; balancing, banking and wheeling cost after adjusting the benefits if any, accruing to the Distribution Licensee. These Grid Support Charges may be determined based on consumer tariff category, on the proposal of the Distribution Licensee in its Tariff Petition[1]:

Provided that,

(i) The existing domestic prosumers with RE generating systems having capacity up to and including 10 kW shall be exempted from payment of grid support charges;

(ii) All the existing and new agricultural consumers having RE generating systems shall be exempted from the payment of grid support charges;

(iii) The grid support charges shall be Re.1/- per unit of RE exported to the grid till the Commission determine it through the Tariff Order.

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[1]*This does not form part of the Regulation but intends to provide its general purport. The normalization of energy banking under Table 3, grid support charges and the design of the feed-in tariff are expected to promote installation of decentralised storage systems by the prosumers. The prosumers can install storage systems of appropriate sizes depending upon their usage pattern to minimize/avoid normalisation and grid support charges.*

At present the per unit cost of battery energy storage systems is about Rs 4 per unit and the price differential between peak and solar hours in power markets is in the range of Rs 3 to 6 per unit. Also the cost related to wheeling of the injected energy is not recovered through tariff from prosumers presently. Further the cost related to backing down of thermal stations for grid balancing are also to be considered. The grid support charges are introduced for recovery of a portion of these associated costs. The prosumers installing energy storage systems of adequate capacity and avoiding injection of surplus energy to the grid are not required to incur these charges.

28.7 Any injection of electricity without entering into a Net Metering arrangement through the Connectivity Agreement with the Licensee shall be considered as inadvertent injection and shall not be paid for by the Licensee.

29. Net Billing System (NBS), -

29.1 The following sub regulations specify the methodology for energy accounting, billing and settlement for prosumers, who have installed DRE systems under Net Billing System specified in Regulation 7 of these Regulations. The accounting of electricity exported and imported by the prosumer shall become effective from the date of connectivity of the Renewable Energy Generating System with the distribution network.

29.2 The Distribution Licensee shall undertake meter reading of both, the Renewable Energy Generation Meter and the Consumer Net Meter, according to the regular meter reading cycle.

29.3 For each Billing Period, the Distribution Licensee shall make the following information available on its bill to the prosumer:

(i) Quantum of Renewable Energy generation recorded in the Renewable Energy Generation Meter, including opening and closing readings;

(ii) Quantum of electricity units imported and exported by the prosumer in the billing period, including opening and closing readings, zone wise, if applicable;

(iii) Quantum of electricity units consumed by the prosumer in the billing period, zone wise, if applicable;

(iv) Amount receivable by the prosumer for the energy exported, amount payable to the distribution licensee and Net bill amount for the billing period, considering the credit available, if any;

(v) Amount of billing credit, if any, in the billing period, including opening and closing balance;

(vi) Renewable Energy generation units used by the Distribution Licensee for RPO compliance.

29.4 The Distribution Licensee shall raise bill on the Consumer in accordance with the following equation:-

Energy Bill of the prosumer = Fixed Charges + other applicable charges and levies + (E_{DL} x T_{RST}) - (E_{RE} x T_{RE}) – Billing Credit (carried forward from last billing cycle);

Where:

a) Fixed Charges means the Fixed/Demand Charges as applicable to the consumer category as per the applicable retail supply Tariff Order;

b) Other charges and levies means any other charges such as meter rent, electricity duty, surcharges etc., as applicable;

c) E_{RE} means the energy units exported for the billing period by the prosumer and recorded in the Net meter;

d) T_{RE} means the Feed-in Tariff approved by the Commission for the energy injected during periods other than peak hours. For the energy injected during peak hours T_{RE} shall be 1.5 times the feed-in tariff;

e) E_{DL} means the energy units imported from the Distribution Licensee's supply system by the consumer for the billing period, as recorded in the Net meter;

f) T_{RST} means the applicable retail supply tariff of the concerned consumer category as per the applicable retail supply Tariff Order of the Commission;

g) Billing Credit is the amount by which the value of Renewable Energy generation in a particular billing cycle is more than the value of all other components of consumer bill.

h) In case the prosumer is subjected to time-of-day tariffs, energy bill (E_{DL} x T_{RST}) shall be computed in accordance with the provisions of the tariff order.

29.5 The Feed-in Tariff applicable for net billing and shall be the capacity weighted average of the discovered tariffs in the SECI bids for the financial year 2024-25, for the respective energy sources[2].

29.6 If (E_{RE} x T_{RE}) is more than {Fixed charges + other applicable charges and levies + (E_{DL} x T_{RST})}, utility shall give credit of the amount equal to the difference (Billing Credit), which shall be carried forward to the next billing cycle. In the alternative, the amount payable by the Prosumer shall be indicated in the bill with the due date as per the provisions in the Kerala Electricity Supply Code, 2014, as amended from time to time.

29.7 The amount at the credit of the prosumer at the end of the financial year shall be paid by the distribution licensee to the prosumers before 30th April of the subsequent financial year:

Provided that, if the prosumer makes an application for carrying over the credit amount, the distribution licensee shall carry forward such credit to the next financial year for adjustment.

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[2] *This does not form part of the Regulation but intends to provide its general purport. The Net Billing System and the design of the feed-in tariff is expected to promote installation of decentralised energy storage systems by prosumers. The prosumers can install storage systems of appropriate capacity based on their daily usage pattern in such a manner to store any surplus generation and use the same during periods when usage is high or generation is low.*

30. Gross metering system (GMS), -

30.1 The following sub regulations specify the methodology for energy accounting, billing and settlement for prosumers, who have installed DRE systems under Gross Metering System specified in Regulation 8 of these Regulations. The accounting of electricity exported by the prosumer shall become effective from the date of connectivity of the Renewable Energy Generating System with the distribution network.

30.2 The Distribution Licensee shall undertake meter reading of the Renewable Energy Generation Meter and consumer meter as per the billing cycle.

30.3 For each Billing cycle, the Distribution Licensee shall make the following information available on its bill to the RE generator/Prosumer in respect of the energy injected:

(i) Quantum of Renewable Energy generated and exported to the grid of the licensee as recorded in the Renewable Energy Generation Meter, including opening and closing readings;

(ii) Amount receivable by the prosumer for the energy injected during the billing period;

(iii) Quantum of energy consumed by the prosumer during the billing period including opening and closing reading in the prosumer meter;

(iv) Amount payable by the prosumer for the energy consumed during the billing period;

(v) Net amount payable/ receivable to/ by the prosumer;

(vi) Details of the payments made for the previous month transaction.

30.4 The net amount payable to the RE generator/prosumer by the licensee, if any, shall be paid within the due date and is not allowed to be carried forward to the subsequent billing cycles. In the alternative, the amount payable by the Prosumer shall be indicated in the bill with the due date as per the provisions in the Kerala Electricity Supply Code, 2014, as amended from time to time.

30.5 Feed-in Tariff applicable for gross metering shall be 125 percent of capacity weighted average of the discovered tariffs in the SECI bids for the financial year 2024-25, for the respective energy sources:

Provided that for solar plants under gross metering arrangement and supplying power during peak period using energy storage systems, the feed-in tariff applicable for the peak hours shall be Rs 7/- per kWh[3].

[3] *This does not form part of the Regulation but intends to provide its general purport. The higher tariff specified is expected to promote installation of decentralised energy storage systems by REGS.*

31. Virtual Net Metering (VNM), -

31.1 For every VNM arrangement established as per Regulation 10 of these regulations:

(i) There shall be a Lead Person, who himself is a participating consumer and is nominated by other participating consumers under the Virtual Net Metering system, for making all the correspondences on their behalf with the Distribution Licensee.

(ii) The lead person shall be the signatory to the Connectivity Agreement on behalf of the participating consumers;

(iii) The lead person shall act as a Nodal person for all the correspondences with the Distribution Licensee;

(iv) The lead person has to communicate any change regarding the Lead Person in writing, with the approval from all the participating consumers and the connectivity agreement shall be assigned to the new lead person;

(v) The lead person either directly or through RESCO shall be responsible for the establishment, upkeep and O&M of the VNM associated REGS and its associated infrastructure.

31.2 Virtual Net Metering– Energy Accounting and Settlement

(i) The energy generated from the Renewable Energy Generating System including storage, if any, in each billing cycle shall be at the credit of each participating consumers as per the ratio of procurement from Renewable Energy Generating System indicated under the schedule of the connectivity agreement as per Table 4 below:

Table 4

Sl. No	Name of Consumer (starting with Lead Person)	Consumer No.	Sharing Ratio (%)	Shared capacity in kW
1				
2				
3				
..				
	Total		100%	

(ii) The capacity of the REGS available to the participating consumer based on such ratio shall not exceed 5 kW or connected load, whichever is lower, in respect of domestic consumers and connected load/ contract demand as applicable for other consumers;

(iii) The participating consumers shall have the option to change the ratio of procurement once in a financial year by giving advance notice of two months to the Distribution Licensee through the Lead Person;

(iv) The energy generated by the RE generating station including storage, if any, shall be recorded in the RE energy Meter at the interconnection point of the REGS of the VNM system under the three time zones and will be credited to the account of each participating consumer in each of the respective time zones as per the sharing ratio in Table 4, after deducting losses, if applicable;

(v) The energy at the credit of each participating consumer in each time zone shall be first adjusted against energy consumed in the same time zone. If the entire energy at credit is completely adjusted against energy consumed as above, the balance consumed energy, if any, shall be billed as per applicable retail supply tariff;

(vi) The surplus energy at credit of each participating consumer, if any, after adjustment as per clause (v) above, shall be utilized as per clause (vii) below;

(vii) The surplus energy in each time zone remaining after settlement as per clause (v) above, if any, shall be normalized based on the normalization factor for the three time zones as indicated in Column A in Table 5 below to arrive at the banked quantum of energy in respect of each participating consumer:

Table 5

Time Zone		Normalization factor to arrive at the banked quantum of energy	Normalization factor for taking back banked energy for energy offsetting
		A	**B**
Solar Hours		1.0	1.0
Non Solar Hours	Peak Hours	1.5	0.667
	Off Peak Hours	1.15	0.85

Provided that while the banked energy is taken back to offset against energy consumed in any time zone the respective normalisation factor under column B shall be applied to arrive at the quantum of energy eligible for offsetting:

Provided further that the banked energy, after adjustment as per clause (v) above and normalisation as above shall be first offset against the balance imported energy during solar hours, then against balance imported energy during off peak hours and lastly against balance imported energy during peak hours. The balance of imported energy remaining after these adjustments, if any, in each time zone, shall be billed as per applicable retail supply tariff.

(viii) Surplus banked energy, if any, shall be monetized at the applicable rate decided by the Commission, through the electricity bill and adjusted against the fixed charges, meter rent, grid support charge, other charges, electricity duty etc. and the net amount is payable by the participating consumer or credited to the participating consumer's account. The credit, if any, will be kept under the account of the participating consumer as an advance for adjustment in the subsequent bills. The amount payable by the participating consumer, if any, shall be paid as per the timelines in the Kerala Electricity Supply Code, 2014, as amended from time to time:

Explanation: Normalisation factor under Column B in Table 5 shall not be applied while monetising the surplus banked energy.

(ix) The amount, if any, at the credit of the participating consumer at the end of the financial year shall be paid by the distribution licensee to the participating consumer before 30th April of the subsequent financial year:

Provided that, if the participating consumer makes an application for carrying over the credit amount, the distribution licensee shall carry forward such credit to the next financial year for adjustment.

(x) The rate for settlement of surplus banked energy in respect of participating consumers shall be 75 percent of capacity weighted average of the discovered tariffs in the SECI bids for the financial year 2024-25, for the respective energy sources.

(xi) The Commission may, in the retail Tariff Order determine the Grid Support Charges to be levied on the exported energy under the VNM systems which shall cover; balancing and banking cost etc. after adjusting the benefits if any, accruing to the Distribution Licensee. These Grid Support Charges may be determined based on

consumer tariff category, on the proposal of the Distribution Licensee in its Tariff Petition[4]:

Provided further that the grid support charges, till the Commission determine it through the Tariff Order, shall be Re.1/- per unit of RE exported to the grid:

Provided also that, the grid support charges shall not be applicable to consumers covered under clause (ii) and (iv) of Regulation 10.1.

(xii) The transmission charges, wheeling charges, transmission and distribution losses as determined by the Commission from time to time shall be applicable as below:

a) If both the RE generating systems and the participating consumers are within the same distribution transformer no charges and losses are applicable;

b) In case of consumers covered under clause (ii) and (iv) of Regulation 10.1, no charges and losses are applicable irrespective of the location of the REGS and participating consumers;

c) If the RE generating systems and the participating consumers, fed through different distribution transformers but located within the geographical location of an electrical division, wheeling charges and distribution losses alone shall be applicable;

d) In all other cases, transmission charges, wheeling charges, transmission losses and distribution losses shall be applicable.

(xiii) No cross subsidy surcharge shall be applicable for the participating consumers under VNM.

31.3 Renewable Energy Generating System set up under Virtual Net Metering Arrangement, having capacity above 50 kW shall install an additional Check Meter of appropriate class for the Renewable Energy Generation Meter.

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[4] *This does not form part of the Regulation but intends to provide its general purport. The normalization of energy banking under Table 5, grid support charges and the design of the feed-in tariff are expected to promote installation of decentralised storage systems by the prosumers. The prosumers can install storage systems of appropriate sizes depending upon their usage pattern to minimize/avoid normalisation and grid support charges.*

At present the per unit cost of battery energy storage systems is about Rs 4 per unit and the price differential between peak and solar hours in power markets is in the range of Rs 3 to 6 per unit. Further the cost related to backing down of thermal stations for grid balancing are also to be considered. The grid support charges are introduced for recovery of a portion of these associated costs. The prosumers installing energy storage systems of adequate capacity and avoiding injection of surplus energy to the grid are not required to incur these charges.

32. Group Net Metering (GNM), -

32.1 The following sub regulations specify the methodology for energy accounting, billing and settlement for prosumers, who have installed DRE systems under Group Net Metering System specified in Regulation 11 of these Regulations. The eligible consumer(s) 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 premises to another premise:

Provided that for DRE systems of and above 100 kW capacity transmission charges and losses shall also be applicable.

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

32.3 The Energy accounting and Settlement under GNM shall be as specified below:

(i) The export of energy during any billing period from the premises where the DRE plant is installed shall be adjusted against the energy consumed in the monthly bill of different service connection(s) of the prosumer in a sequence indicated in the priority list provided by the prosumer including the eligible capacity share for each of such electric connections:

Provided that the prosumer will be under a metering arrangement whereby entire energy generated from the DRE plant is measured and exported to the grid:

Provided further that the existing prosumers using excess electricity generated from renewable sources in another premises as per provisions under KSERC (Renewable Energy and Net Metering) Regulations, 2020, can continue with the present metering arrangement and in such cases the export energy will be considered for adjustment as per the provisions here under until any of the conditions under Regulation 2.3 is occured;

(ii) The priority list including the capacity share for adjustment of the exported energy against the electricity connection(s) may be revised by the prosumer once in a financial year with an advance notice of two months;

(iii) The energy generated/exported by the RE generating station shall be recorded in the RE Generation meter/Net Meter, as applicable, under the three time zones and will be credited to the account of each

electric connection(s) of the prosumer in each of the respective time zones as per the latest priority list and the capacity share, after deducting losses, as applicable;

(iv) The energy at the credit of each electric connection(s) of the prosumer in each time zone shall be first adjusted against energy consumed in the same time zone. If the entire energy at credit is completely adjusted against energy consumed as above, the balance consumed energy, if any, shall be billed as per applicable retail supply tariff;

(v) The surplus energy at the credit of each electric connection(s) of the prosumer, if any, after adjustment as per clause (iv) above, shall be utilized as per clause (vi) below;

(vi) The surplus energy in each time zone remaining after settlement as per clause (iv) above, if any, shall be normalized based on the normalization factor for the three time zones as indicated in Column A in Table 6 below to arrive at the banked quantum of energy in respect of each electric connection(s) of the prosumer:

Table 6

Time Zone		Normalization factor to arrive at the banked quantum of energy	Normalization factor for taking back banked energy for energy offsetting
		A	**B**
Solar Hours		1.0	1.0
Non Solar Hours	Peak Hours	1.5	0.667
	Off Peak Hours	1.15	0.85

Provided that while the banked energy is taken back to offset against energy consumed in any time zone the respective normalisation factor under column B shall be applied to arrive at the quantum of energy eligible for offsetting:

Provided further that the banked energy, after adjustment as per clause (iv) above and normalisation as above shall be first offset against the balance imported energy during solar hours, then against balance imported energy during off peak hours and lastly against balance imported energy during peak hours. The balance of imported energy remaining after these adjustments, if any, in each time zone, shall be billed as per applicable retail supply tariff;

(vii) Surplus banked energy, if any, shall be monetized at the applicable rate decided by the Commission, through the electricity bill and adjusted against the fixed charges, meter rent, grid support charge, other charges, electricity duty etc. and the net amount is payable by the Prosumer/Consumer or credited to the Prosumer/Consumer's account. The credit, if any, will be kept under the account of the prosumer/consumer as an advance for adjustment in the subsequent bills. The amount payable by the Prosumer/Consumer, if any, shall be paid as per the timelines in the Kerala Electricity Supply Code, 2014, as amended from time to time:

Explanation: Normalisation factor under Column B in Table 6 shall not be applied while monetising the surplus banked energy.

(viii) The amount if any, at the credit of the each electric connection(s) of the prosumer at the end of the financial year shall be paid by the distribution licensee to the consumer(s) before 30th April of the subsequent financial year:

Provided that, if the prosumer makes an application for carrying over the credit amount, the distribution licensee shall carry forward such credit to the next financial year for adjustment for each of the electric connection(s) of the prosumer.

(ix) The rate for settlement of surplus banked energy in respect of existing prosumers under GNM by any name, shall be APPC rate and for new prosumers under GNM shall be 75 percent of capacity weighted average of the discovered tariffs in the SECI bids for the financial year 2024-25, for the respective energy sources.

(x) The Commission may, in the retail Tariff Order determine the Grid Support Charges to be levied on the exported energy under the GNM systems which shall cover; balancing and banking cost etc. after adjusting the benefits if any, accruing to the Distribution Licensee. These Grid Support Charges may be determined based on

consumer tariff category, on the proposal of the Distribution Licensee in its Tariff Petition[5]:

Provided further that the grid support charges, till the Commission determine it through the Tariff Order, shall be Re.1/- per unit of RE exported to the grid.

33. Captive RE consumer, -

33.1 Captive RE consumer(s) is the end user(s) of the RE generated in a Captive RE Generating Plant, established in accordance with the requirements specified in Rule 3 of 'the Electricity Rules, 2005', made by the Central Government.

33.2 Any captive consumer, using the transmission and/or distribution system of the licensee for transmitting and/or wheeling the electricity 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: -

(i) Transmission charges;

(ii) Wheeling charges;

(iii) Transmission losses and Distribution losses;

(iv) Grid support charges[6] at Rs. 1/- per unit until the Commission determines the Grid support charges based on an application of the licensee; and

(v) Any other charges approved by the Commission, from time to time:

Provided that no cross-subsidy surcharge shall be applicable for the Captive consumer.

33.3 The energy accounting and settlement of existing Captive RE consumers, will be as specified below:

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[5] *This does not form part of the Regulation but intends to provide its general purport. The normalization of energy banking under Table 6, grid support charges and the design of the feed-in tariff are expected to promote installation of decentralised storage systems by the prosumers. The prosumers can install storage systems of appropriate sizes depending upon their usage pattern to minimize/avoid normalisation and grid support charges.*

At present the per unit cost of battery energy storage systems is about Rs 4 per unit and the price differential between peak and solar hours in power markets is in the range of Rs 3 to 6 per unit. Further the cost related to backing down of thermal stations for grid balancing are also to be considered. The grid support charges are introduced for recovery of a portion of these associated costs. The prosumers installing energy storage systems of adequate capacity and avoiding injection of surplus energy to the grid are not required to incur these charges.

[6] *At present the per unit cost of battery energy storage systems is about Rs 4 per unit and the price differential between peak and solar hours in power markets is in the range of Rs 3 to 6 per unit. Further the cost related to backing down of thermal stations for grid balancing are also to be considered. The grid support charges are introduced for recovery of a portion of these associated costs.*

(i) The energy generated by the Captive RE generating station including storage, if any, shall be recorded in the energy meter at the interconnection point of the CPP under the three time zones and will be credited to the account of captive consumer(s) in each of the respective time zones as per the sharing ratio, if any, after deducting transmission and distribution losses, as applicable;

(ii) The energy at the credit of captive consumer(s) in each time zone shall be first adjusted against energy consumed in the same time zone. If the entire energy at credit is completely adjusted against energy consumed as above, the balance consumed energy, if any, shall be billed as per applicable retail supply tariff;

(iii) The surplus energy at credit of captive consumer(s), if any, after adjustment as per clause (ii) above, shall be utilized as per clause (iv) below;

(iv) The surplus energy in each time zone remaining after settlement as per clause (ii) above, if any, shall be normalized based on the normalization factor for the three time zones as indicated in Column A in Table 7 below to arrive at the banked quantum of energy in respect of captive consumer(s):

Table 7

Time Zone		Normalization factor to arrive at the banked quantum of energy	Normalization factor for taking back banked energy for energy offsetting
		A	**B**
Solar Hours		1.0	1.0
Non Solar Hours	Peak Hours	1.5	0.667
	Off Peak Hours	1.15	0.85

Provided that while the banked energy is taken back to offset against energy consumed in any time zone the respective normalisation factor under column B shall be applied to arrive at the quantum of energy eligible for offsetting:

Provided further that the banked energy, after adjustment as per clause (ii) above and normalisation as above shall be first offset against the balance imported energy during solar hours, then against balance imported energy during off peak hours and lastly

against balance imported energy during peak hours. The balance of imported energy remaining after these adjustments, if any, in each time zone, shall be billed as per applicable retail supply tariff.

(v) Surplus banked energy, if any, shall be monetized at the applicable rate decided by the Commission, through the electricity bill and adjusted against the fixed charges, meter rent, grid support charge, other charges, electricity duty etc. and the net amount is payable by the Captive Consumer or credited to the Captive Consumer's account. The credit, if any, will be kept under the account of the Captive Consumer as an advance for adjustment in the subsequent bills. The amount payable by the Captive Consumer, if any, shall be paid as per the timelines in the Kerala Electricity Supply Code, 2014, as amended from time to time:

Explanation: Normalisation factor under Column B in Table 7 shall not be applied while monetising the surplus banked energy;

(vi) The amount if any, at the credit of the each electric connection(s) of the Captive Consumer at the end of the financial year shall be paid by the distribution licensee to the consumer(s) before 30th April of the subsequent financial year:

Provided that, if the Captive Consumer makes an application for carrying over the credit amount, the distribution licensee shall carry forward such credit to the next financial year for adjustment for each of the electric connection(s) of the prosumer.

(vii) The rate for settlement of surplus banked energy shall be the APPC rate.

33.4 The energy accounting and settlement of Captive RE consumers, having a CPP of capacity less than 500 kW and COD of which occurs after coming into effect of these regulations will be as specified below:

(i) The energy generated by the Captive RE generating station including storage, if any, shall be recorded in the energy meter at the interconnection point of the CPP for each of the 15 minutes time blocks of the billing period and will be credited to the account of captive consumer(s) in each of the respective time blocks based on the open access schedule after deducting transmission and distribution losses, as applicable;

(ii) The energy at the credit of captive consumer(s) in each time block shall be first adjusted against energy consumed in the same time block. If the entire energy at credit is completely adjusted against

energy consumed as above, the balance consumed energy, if any, shall be billed as per applicable retail supply tariff;

(iii) The surplus energy at credit of captive consumer(s), if any, after adjustment as per clause (ii) above, shall be allowed to be banked separately into three time zones viz, solar, peak and off peak periods and utilized as per clause (iv) below;

(iv) The energy banked during solar hours as per clause (iii) above, if any, shall be offset against the energy consumed during solar hours, the energy banked during peak hours shall be offset against the energy consumed during peak hours and the energy banked during off peak hours shall be offset against the energy consumed during off peak hours. The balance energy remaining after adjustment as above, if any, in each time zone, shall be billed as per applicable retail supply tariff;

(v) Surplus banked energy, if any, shall be monetized at the applicable rate decided by the Commission, through the electricity bill and adjusted against the fixed charges, meter rent, grid support charge, transmission charges, wheeling charges, other charges etc. and the net amount in excess, if any, will be kept under credit of the captive consumer for adjustment in the subsequent bills:

Provided that the applicable grid support charges shall be 50% of the charges specified in clause (iv) of Regulation 33.2[7];

(vi) The amount if any, at the credit of the each electric connection(s) of the prosumer at the end of the financial year shall be paid by the distribution licensee to the consumer(s) before 30th April of the subsequent financial year:

Provided that, if the prosumer makes an application for carrying over the credit amount, the distribution licensee shall carry forward such credit to the next financial year for adjustment for each of the electric connection(s) of the prosumer;

(vii) The rate for settlement of surplus banked energy shall be the capacity weighted average of the discovered tariffs in the SECI bids for the financial year 2024-25, for the respective energy sources.

33.5 The energy accounting and settlement of Captive RE consumers, having a CPP of capacity of and above 500 kW and COD of which occurs after coming into effect of these regulations will be as specified below:

[7] *The proposed grid support charges are to recover the costs related to the intra-zone banking facility only.*

(i) The energy accounting for Captive consumers with RE plant capacity of and above 500 kW will be on 15 - minute time block wise. Such RE generating plants will be under obligation for the scheduling and DSM as per the Regulations in force;

(ii) The energy generated by the Captive RE generating station including storage, if any, shall be recorded in the energy meter at the interconnection point of the CPP for each of the 15 minutes time blocks of the billing period and will be credited to the account of captive consumer(s) in each of the respective time blocks based on the open access schedule, after deducting transmission and distribution losses, as applicable;

(iii) The energy at the credit of captive consumer(s) in each time block shall be adjusted against energy consumed in the same time block. If the entire energy at credit is completely adjusted against energy consumed as above, the balance consumed energy, if any, shall be billed as per applicable retail supply tariff;

(iv) The surplus energy at the credit of captive consumer(s), if any, after adjustment as per clause (iii) above, shall be monetized at the applicable rate decided by the Commission, through the electricity bill and adjusted against the fixed charges, meter rent, grid support charge, transmission charges, wheeling charges, other charges etc. and the net amount in excess, if any, will be kept under credit of the captive consumer for adjustment in the subsequent bills:

Provided that the grid support charges are waived until the Commission determines the same based on an application by the licensee;

(v) The amount if any, at the credit of the each electric connection(s) of the prosumer at the end of the financial year shall be paid by the distribution licensee to the consumer(s) before 30th April of the subsequent financial year:

Provided that, if the prosumer makes an application for carrying over the credit amount, the distribution licensee shall carry forward such credit to the next financial year for adjustment for each of the electric connection(s) of the prosumer;

(vi) The rate for settlement of surplus banked energy shall be the capacity weighted average of the discovered tariffs in the SECI bids for the financial year 2024-25, for the respective energy sources until the Commission notifies the forecasting, scheduling and deviation settlement charges and thereafter shall be in accordance with the said regulations.

34. Independent Renewable Power Generator (IPP), -

34.1 IPPs shall have the right to open access for transmitting and/or wheeling renewable energy through the transmission and distribution system, subject to the conditions as specified in Regulation 19 and 20 of these Regulations and KSERC (Connectivity and Intra-state Open Access) Regulations, 2013.

34.2 A consumer purchasing power from an IPP supplying power to a third party by availing open access 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.

34.3 The energy accounting and settlement of open access RE consumers, availing open access for less than 500 kW from IPPs will be as specified below:

(i) The energy generated by the RE generating station including storage, if any, shall be recorded in the energy meter at the interconnection point of the IPP for each of the 15 minutes time blocks of the billing period and will be credited to the account of open access consumer(s) in each of the respective time blocks based on the open access schedule, after deducting transmission and distribution losses, as applicable;

(ii) The energy at the credit of open access consumer(s) in each time block shall be first adjusted against energy consumed in the same time block. If the entire energy at credit is completely adjusted against energy consumed as above, the balance consumed energy, if any, shall be billed as per applicable retail supply tariff;

(iii) The surplus energy at credit of open access consumer(s), if any, after adjustment as per clause (ii) above, shall be allowed to be banked separately into three time zones viz, solar, peak and off peak periods and utilized as per clause (iv) below;

(iv) The energy banked during solar hours as per clause (iii) above, if any, shall be offset against the energy consumed during solar hours, the energy banked during peak hours shall be offset against the energy consumed during peak hours and the energy banked during off peak hours shall be offset against the energy consumed during

off peak hours. The balance energy remaining after adjustment as above, if any, in each time zone, shall be billed as per applicable retail supply tariff;

(v) Surplus energy after use of the consumer after banking as above, if any, shall lapse and the distribution licensee is not under any obligation to make payments against the same:

Provided that the IPP shall be entitled to get Renewable Energy Certificates to the extent of the lapsed surplus energy.

34.4 The energy accounting and settlement of open access RE consumers, availing open access for 500 kW and above from IPPs will be as specified below:

(i) The energy generated by the RE generating station including storage, if any, shall be recorded in the energy meter at the interconnection point of the IPP for each of the 15 minutes time blocks of the billing period and will be credited to the account of open access consumer(s) in each of the respective time blocks based on the open access schedule, after deducting transmission and distribution losses, as applicable;

(ii) The energy at the credit of open access consumer(s) in each time block shall be adjusted against energy consumed in the same time block. If the entire energy at credit is completely adjusted against energy consumed as above, the balance consumed energy, if any, in each time zone, shall be billed as per applicable retail supply tariff;

(iii) The surplus energy, if any, after adjustment as per clause (ii) above, shall lapse and the distribution licensee is not under any obligation to make payments against the same until the Commission notifies Regulations for forecasting, scheduling and deviation settlement mechanism and the payments thereafter will be regulated in accordance with the said Regulations:

Provided that the IPP shall be entitled to get Renewable Energy Certificates to the extent of the lapsed surplus energy.

35. Inter-Licensee Renewable Energy (RE) Accounting, -

35.1 The small licensees in the State shall be permitted to export excess Renewable Energy, accounted for within their license area, into the KSEB Ltd grid, subject to the following conditions:-

(i) Such small licensees shall provide a Special Energy Metering system (SEM) capable of recording and transmitting the metering data of every 15-minute time block. The metering system shall have remote terminal unit (RTU) to facilitate real time monitoring by the SLDC, as specified by the Commission;

(ii) The exported surplus RE energy or the deemed export of RE energy due to open access transactions will be settled by KSEB at the capacity weighted average rate of the discovered tariffs in the SECI bids for the financial year 2024-25, for the respective energy sources;

(iii) The Small licensees may install Battery Energy Storage Systems (BESS) within their area of supply to facilitate local consumption of surplus RE generation, minimizing intra-state grid dependency and ensuring grid stability;

(iv) Once the total surplus RE injection of the small licensee to the KSEB Ltd grid exceeds 1 MW in any time block and the Commission notifies the Regulations for forecasting, scheduling and deviation settlement mechanism, the payments thereafter will be regulated in accordance with the said Regulations.

35.2 The small Licensees shall submit monthly reports to KSEB Ltd on; RE transactions, including zone wise energy exported/injected by prosumers and captive/independent RE generators, total RE generation by Prosumers, RE energy imported to licensee area by open access consumers in its area, settlement details, and the compensation provided to their consumers.

36. PM KUSUM Projects, -

36.1 These regulations shall govern the energy accounting and billing for solar plants established under the PM-KUSUM Component-C project in Kerala.

36.2 For agriculture prosumers establishing solar plants in the premises of agriculture connection for their pump house, the energy accounting system shall be as per the metering and billing system opted by the prosumer in accordance with these regulations.

36.3 If the agricultural consumer is unable to install the Solar plant in the premises of the pump house, the Solar plant may be permitted to be installed on any nearby premises owned or taken on lease by the registered agricultural consumer and having an electric connection in his name and for such plants the following sub regulations are applicable.

36.4 The grant of feasibility for the solar plant, its connectivity with the grid, technical standards and safety requirements shall strictly comply with the provisions outlined in Chapter II of these Regulations:

Provided that the connected load or contract demand, as applicable, considered for eligibility and grant of feasibility etc for the solar plant shall be that of the agriculture connection:

Provided further that, in cases where the solar plant capacity is higher than the connected load/ contract demand of the consumer in whose premises the plant is being established, the expenses for augmenting the infrastructure of the distribution system for connectivity shall have to be borne by the prosumer.

36.5 The solar generation meter installed along with the solar plant shall be connected to the input side of the existing energy meter of the consumer in whose premises the plant is being established, through an appropriate bus bar arrangement. This meter shall record the solar generation and must be calibrated at NABL-accredited meter testing laboratories or KSEB Ltd. owned TMR labs.

36.6 Metering and Billing:

(i) The reading of the RE meter shall be taken concurrently with the reading of the agricultural connection. The total solar energy generated shall be adjusted against the consumption in the agricultural connection during billing;

(ii) Transmission/wheeling charges, transmission/distribution losses, and all other charges and procedures related to open access transactions are exempted.

36.7 Energy Accounting and Settlement:

Agricultural consumers shall be eligible for net metering arrangements specified in these Regulations. However, the facility to utilize excess electricity in any other premises, including the domestic premises, shall not be available under this arrangement.

36.8 ANERT, the implementation agency, may provide KSEB Ltd with details of the beneficiaries under the scheme, including the consumer numbers and the names to the respective Electrical Sections.

37. Accounting of energy generated by the prosumers against the RPO, -

37.1 The quantum of electricity consumed by the consumer/prosumer from the Renewable Energy Generating System shall qualify towards his compliance of RPO, if such Consumer is an Obligated Entity.

37.2 The quantum of electricity generated by the Renewable Energy Generating System established under Net Metering, Net Billing, Gross Metering, Group Net Metering, Virtual Net Metering, Behind the Meter and by Captive RE plants which are not accounted against the compliance of RPO of an

Obligated Entity shall qualify towards meeting the RPO of the Distribution Licensee.

37.3 The Renewable Energy generated by a prosumer under Net Metering, GNM, VNM, Net Billing and Gross Metering arrangements under these Regulations shall not be eligible for issuance of Renewable Energy Certificate.

38. Energy Accounting during meter defect/ failure/ burnt, -

38.1 In case of defective/failure/burnt condition of any meter, the Distribution Licensee shall replace the meter as specified in the Kerala Electricity Supply Code, 2014.

38.2 The electricity generated by the Renewable Energy Generating System during the period in which the meter is defective shall be determined based on the readings of the Check Meter:

Provided that if the Check Meter is not installed, then the electricity generated shall be determined as specified in the Kerala Electricity Supply Code, 2014.

38.3 The consumption of the Consumer during the period in which the Consumer meter or Net Meter is defective shall be determined as specified in the Kerala Electricity Supply Code, 2014.

39. Reactive Energy Accounting and Billing, -

39.1 All DRE plants are expected to provide reactive energy support for voltage and system stability.

39.2 The DRE plants are required to provide local VAr compensation or generation such that they generate or absorb VAr from the grid, particularly under low and high voltage conditions. To encourage VAr compensation by DRE plants depending upon system conditions, VAr exchanges with grid shall be priced as follows:-

(i) The prosumer/generator pays for VAr drawal when voltage is below 95%;

(ii) The prosumer/generator gets paid for VAr return when voltage is below 95%;

(iii) The prosumer/generator gets paid for VAr drawal when voltage is above105%;

(iv) The prosumer/generator pays for VAr return when voltage is above 105%;

39.3 The charge for VArh shall be at the rate of 25 paise/kVArh w.e.f. the date of effect of these regulations. This rate shall be reviewed during the retail tariff determination process based on a proposal by the distribution licensee and if so determined, such rate shall be applicable thereafter.

39.4 The reactive power accounting and billing as above shall be implemented by the Distribution licensee from the date of notification of these regulations for prosumers/DRE plants having ABT meters and from the date of installation of smart meters in respect of other prosumers/DRE plants.

CHAPTER IV

Renewable Purchase Obligation, ESO and its compliance

40. Obligation to purchase RE and to establish ESS, –

40.1 The State Commission is mandated to promote cogeneration and generation of electricity from renewable sources of energy and has to specify a minimum percentage of the energy generated from such sources to be procured, on the basis of the total consumption of electricity, within the area of distribution of a Distribution Licensee. Further, due to the non- firm nature of the RE power, to maintain the quality and security of the Grid, it is necessary to have Energy Storage Systems (ESS) connected to the grid, capable of supporting the grid appropriately.

40.2 These Regulations shall apply to the obligated entities in the State of Kerala as below: -

(i) The Electricity Distribution Licensees based on the quantum of electrical energy supplied by the licensee to its consumers:

Provided that for buyer licensee(s) who procure their entire power requirement from KSEB Ltd, the RPO of such buyer licensee(s) may be met fully or partially by KSEB Ltd as agreed in writing among them within six months from the date of notification of these Regulations:

Provided further that in case no agreement as above is reached, the buyer licensee(s) shall fully meet their renewable purchase obligation:

Provided also that the energy storage obligation shall be met independently by each licensee fully.

(ii) the Captive Users of electricity using conventional fossil fuel for generation of electricity with installed capacity of 250 kW and above (based on the energy in kWh generated by the captive plant);

(iii) the Open Access Consumers having Contract demand above 1000 kVA, to the extent of his consumption by procuring electricity through open access, excluding such procurement from renewable sources, if any;

Explanation: The minimum share of consumption of non-fossil sources by designated consumers under section 14 of Energy Conservation Act, 2001 shall be governed separately in accordance with the provisions under the said Act.

40.3 For the purposes of these Regulations, energy generation from all the types of Renewable Energy ("RE") sources as recognised or approved by MNRE shall be considered:

Provided that any new technology may qualify as 'renewable', only after the Commission has approved such technology based on the approval by MNRE:

Provided further that the Energy Storage Obligation shall be calculated in energy terms as a percentage and shall be treated as fulfilled only when at least 85% of the total energy stored in the ESS, on an annual basis, as certified by SLDC, is procured from renewable energy sources.

40.4 The eligible RE sources shall include without limitation, the following:-

a) Non-fossil fuel (including bagasse) based Co-generation (both qualifying and non qualifying Co-generation);

b) Wind Energy;

c) Biomass Power based on Rankine Cycle technology;

d) Hydro Power;

e) Waste to Energy based on technologies approved by MNRE;

f) Solar Power;

g) Hybrid RE based on RE technologies and sources approved by MNRE and the Commission;

h) Power generated from co-firing of biomass in the thermal power plants;

i) Any other renewable source recognised or approved by MNRE and the Commission.

40.5 The total consumption for deciding the RPO & ESO shall be considered as follows:

(i) Distribution licensee: The total electricity sold and billed by the licensee to the consumers in the State;

(ii) Open Access Consumer: The total electricity availed through open access at their metering point, excluding the energy through open access from renewable sources;

(iii) Captive user/ consumer: The total electricity delivered by the captive fossil fuel plant after accounting for the Auxiliary consumption;

40.6 Procurement of RECs issued for RE generation shall be considered as eligible instruments for the purpose of RPO compliance by the Obligated Entities over the Control Period of these Regulations. An Obligated Entity may meet its RPO target by one or more of the following methods:

(i) Own generation from Renewable energy sources;

(ii) By procuring Renewable Energy through Open Access from any Developer either directly or through a trading licensee or through power markets:

Provided that, in respect of procurement of RE power by a Distribution Licensee at a tariff determined by the appropriate Commission or at a rate discovered through transparent process of competitive bidding under section 63 of the Act and duly approved/adopted by the appropriate Commission or through green market of the power exchanges shall be considered as eligible quantum for fulfilment of the RPO of such Distribution Licensee:

Provided further that, the distribution licensee may account the electricity generated by REGS as per Regulation 37.2 against its RPO;

(iii) By requisition from the Distribution Licensee:

a) Any consumer may elect to purchase green energy either up to a certain percentage of the consumption or its entire consumption and they may place a requisition for this with their Distribution Licensee, which shall procure such quantity of green energy and supply it;

b) The consumer may purchase on a voluntary basis, more renewable energy, than he is obligated to do and for ease of implementation, this may be in steps of Twenty-five per cent, going upto Hundred per cent;

c) The tariff for the green energy shall be determined separately by the Commission, taking into account the Average Pooled Power Purchase Cost of the renewable energy, cross subsidy charges if any, and service charges covering the prudent cost of the Distribution Licensee for balancing, storage etc for seamless delivery of the green energy;

d) Any requisition for green energy from a Distribution Licensee shall be for a minimum period of one year;

e) The quantum of green energy shall be pre-specified for at least one year;

f) The green energy purchased from Distribution Licensee or from Renewable Energy sources other than Distribution Licensee in excess of Renewable Purchase Obligation of Obligated Entity shall be counted towards Renewable Purchase Obligation compliance of the Distribution Licensee;

g) The Accounting of renewable energy supplied by Distribution Licensee level shall be on a monthly basis;

(iv) By consuming renewable energy from captive power plant;

(v) By purchasing of Renewable Energy Certificates (RECs);

(vi) Any other sources, as may be, determined by the Central Government.

41. Renewable Purchase Obligation (RPO) & ESO Target, -

41.1 Every Obligated Entity in the State shall; procure electricity generated from eligible RE sources and install/procure Electricity Storage System capable of delivering the energy, as a percentage of the quantum of electrical energy specified in Regulations 40.5 above, in each financial year as set out in the following Table: -

Table 8

Financial Year	Quantum *of generation and/or purchase from RES and the quantum of energy to be sourced from ESS as a percentage (%) of the total consumption (in terms of the energy in kWh)*				
	HPO	**WPO**	**Other RPO**	**Total RPO**	**ESO**
2025 – 26	2.40	1.75	37.85	**42.00**	**0.15**
2026 – 27	2.80	1.80	41.40	**46.00**	**1.50**
2027 – 28	3.50	1.90	42.60	**48.00**	**2.50**
2028 – 29	3.90	2.00	49.00	**49.00**	**3.50**
2029 – 30	4.20	2.20	50.00	**50.00**	**4.00**

41.2 The extent of energy stored in ESS from RE sources, as part of ESO, shall be considered as a part of fulfilment of the total RPO indicated in the Table above.

41.3 RPO targets stipulated above are the minimum target to be achieved. The Obligated Entity shall endeavour to achieve a higher quantum than the RPO target notified by the Commission. However, fungibility of the targets to the extent specified in the sub regulations below shall be permitted.

41.4 The RE, if any, generated by the Obligated Entity and consumed or supplied to the grid shall be accounted towards its RPO compliance.

41.5 The Hydro power generated or purchased by the Obligated Entity, in excess of its HPO may be accounted towards meeting any deficit in achieving the 'WPO' or 'Other RPO' or partially to each, in respect of the entity for the year.

41.6 Any shortfall in achieving the 'HPO' in a year by an Obligated entity, can be met from the excess energy available, if any, beyond the 'WPO or Other RPO' or partially from each, in respect of the entity for the year.

41.7 Any shortfall in achieving the 'WPO' in a year by an Obligated entity, can be met from the excess energy available, if any, beyond the 'HPO or Other RPO' or partially from each, in respect of the entity for the year.

41.8 Any variation in the fulfilment of RPO targets by the Obligated Entity within a band of +/-10% of the applicable RPO target (in terms of Energy Units in kWh) for the respective years shall be allowed for carry forward to subsequent year under exceptional circumstances subject to detailed scrutiny.

41.9 Each Distribution Licensee shall include in its Resource Adequacy Plan the target specified for procurement of power from RE sources and initiate its power procurement plan for each year in advance.

41.10 The distribution licensees shall submit to the Commission, within six months from the date of notification of these Regulations, the RE Procurement Plan proposing the quantum of purchase of renewable energy from the different RE sources separately based on Resource Adequacy studies, for each financial year of the control period. The RE Procurement Plan approved by the Commission would be duly factored in the mid term review of the Aggregate Revenue Requirement and Expected Revenue from Charges under the KSERC (Terms and Conditions for determination of Tariff) Regulations, 2021 and ARR & ERC for the subsequent control period, appropriately.

Provided that the distribution licensees shall also obtain approval of the calendar for RE procurement required based on such approved plan.

42. Preference for the purchase from the renewable energy generation units within the State, -

42.1 Every distribution licensee shall purchase the quantum of renewable energy required to meet its renewable purchase obligation preferentially from the renewable energy generating units within the State, if available, with the prior approval of the Commission, and at the tariff approved/adopted by the Commission.

42.2 Considering the environmental concerns, the distribution licensee shall necessarily purchase the electricity generated from municipal solid waste set up within the State, with the prior approval of the Commission at the tariff approved/adopted by the Commission.

43. State Agency and its functions, –

43.1 Within three months from the notification of these Regulations, the Commission may designate an entity such as Government Agency, Start-up, NGO, Co-operative etc. as the State Agency for undertaking the monitoring and enforcement functions under these Regulations.

43.2 The State Agency shall function in accordance with the directions and the procedures issued by the Commission from time to time.

43.3 The State Load Despatch Centre and the Chief Electrical Inspector are required to provide necessary guidance and data support to the State Agency for verification of the RPO compliance of Distribution Licensees & Open Access Consumers and Captive Consumers respectively.

43.4 The Commission may from time to time fix the remuneration and charges payable to the State Agency for the discharge of its functions under these Regulations.

43.5 If the Commission is satisfied that the State Agency is not able to discharge its functions efficiently, it may by order with reasons in writing, designate any other agency to function as the State Agency.

44. Monitoring and Implementation Framework, -

44.1 Within three months from the date of designating the State Agency, the State Agency shall develop the RE Web-portal for dissemination of information on RE development in the State, guidance to eligible consumers and the compliance reporting of RPO by obligated entities in the State:

Provided that, within one month from the date of designation, the State Agency shall submit to the Commission the design formats for various data collection, the scheme for sanitising the data and ensuring data integrity and the overall design of the RE Web portal, for approval.

44.2 Immediately on launch of the RE Web-portal, all the Obligated entities, the State Transmission Utility and the Chief Electrical Inspector shall register themselves on the RE Web-portal and start submitting the requisite information monthly, or for any other specified period, in the RE Web-portal for further processing by the State Agency.

44.3 The Distribution Licensees and the State Transmission Utility, as the case may be, shall furnish within 10th day of the subsequent month through the RE portal:

(i) the RE capacity established by prosumers/consumers in the month and the cumulative capacity as on the last day of the month, source wise;

(ii) The details of connectivity granted for new RE plants during the month;

(iii) The details of Captive and Independent RE plants commissioned during the month and the cumulative capacity as on the last day of the month, source wise;

(iv) The details of distribution transformers and feeders who's hosting capacity has exhausted and the measures taken for enhancing the hosting capacity;

(v) The details of bids invited during the month as per approved calendar for procurement of RE;

(vi) The details of new RE procurement arrangements made during the month to meet the RPO.

44.4 Every Obligated entity shall submit its electricity consumption, captive fossil fuel based electricity generation, details of open access transactions and details of RE procured in a month, within 30 days from the end of the month, on the web based RPO portal.

44.5 Details submitted by the Obligated Entities shall be verified by the SLDC, respective Distribution licensee or Electrical Inspector, as applicable:

Provided that such verification of the web-based data shall be completed within 45 days from the end of each month.

44.6 Within 60 days from the end of each quarter, the State Agency shall publish the RPO compliance status of the Obligated Entities for the previous quarter on the RPO Web-portal.

44.7 The State Agency shall also submit quarterly reports to the Commission in respect of compliance or otherwise of the renewable purchase obligation by

the obligated entities in the format as approved by the Commission along with proposals as found required, for enforcement of the compliance of the renewable purchase obligation by the obligated entities.

44.8 At the end of each Financial Year, the Obligated Entities shall upload/submit documentary evidence of procurement of RE or REC for the financial year to the State Agency through the RPO Web-portal:

Provided that such document shall be submitted within 45 days from the end of the Financial Year:

Provided further that the State Agency shall complete the verification process within 60 days from the end of the Financial Year with the assistance of SLDC, Distribution licensees and Chief Electrical Inspector.

44.9 Any delay in performing the activities stipulated in the sub regulations above shall attract penalty of Rs. 1,000/- per day of delay:

Provided that continuous or repeated default or delay in performing the activities shall be treated as non-compliance of the Regulations and may attract action under Section 142 of the Act.

44.10 Subsequent to completion of the verification process, the State Agency shall publish RPO compliance status of each of the Obligated Entity on the RPO Web-portal.

44.11 The State agency, on completion of the annual verification process of the RPO shall submit to the Commission the status of compliance and failures, if any, along with suggestions as found necessary.

44.12 The Commission, based on the proposal of the State Agency, initiate proceedings to address the non-compliance of RPO and after examining the reasons furnished by each of the Obligated entities for non-achievement of the targets, may issue orders to:

(i) procure RECs to meet the deficits within specific time limits, or;

(ii) carry forward deficit to be met within a specific period, or;

(iii) relax the obligation to an extent as found justifiable;

Provided that, in respect of the Distribution licensees, the above proceedings shall be part of the true up process for the respective financial year.

44.13 The State Agency, with the approval of the Commission, shall evolve and implement a scheme for guidance to eligible consumers and prosumers on various aspects of RE and storage development including new technological

developments, indicative cost of major components of RE and storage plants, details of vendors in RE sector including user reviews of vender performance etc.

44.14 The State Agency shall consolidate various protocols and standards related to harmonics injection, LVRT etc.for various types of inverters and impart training and capacity building to licensed contractors and officers of implementing agencies like Electrical Inspectorate and distribution licensees.

44.15 The State Agency shall provide a data dashboard in the RE Web-portal containing up to date consolidated details related to RE development in the State based on the monthly reports submitted by the obligated entities, for wider information dissemination and in the interest of transparency.

CHAPTER V

Determination of Tariff for the Electricity generated from Renewable Energy Sources

45. Scope, extent of application and the Tariff period, –

45.1 Tariff Based Competitive Bidding (TBCB) under section 63 of the Act shall be the preferred mode for power procurement by the Distribution licensees for all RE sources (other than DRE system) and ESS for which guidelines have been notified by the Central Government. The norms under these Regulations primarily serve the projects developed by Distribution licensees. The norms are also applicable to IPPs seeking generic or project specific tariff and in such cases the Distribution licensee shall provide necessary and sufficient reasons to justify the action of not following the TBCB route, to the satisfaction of the Commission.

45.2 The provisions under these Regulations shall be applicable for determining the project specific tariff/ generic tariff as determined by the Commission for the electricity generated from Renewable Sources of Energy plants including ESS, commissioned during the Control Period specified in these Regulations, under Section 62 read with Section 86 of the Electricity Act, 2003.

45.3 The tariff determined as per these Regulations for the Renewable Energy Projects commissioned during the Control Period, shall continue to be applicable for the entire duration of the Tariff Period as specified in Regulation 45.5 below.

45.4 In case the Regulations for the next Control Period are not notified until the commencement of the next Control Period, the Commission may provisionally adopt the principles, norms and parameters notified by the Central Commission for the period concerned:

Provided that if the principles, norms and parameters for the next control period are not notified until the commencement of the next control period by the Commission or by the Central Commission, the norms as applicable for the just concluded Control period shall be provisionally adopted for determination of tariff:

Provided further that, as soon as the principles, norms and parameters are notified for the next control period, the Commission shall firm up the tariff for such renewable projects which have declared commercial operation in the control period. The firmed-up tariff shall be applicable from the date of commercial operation of such projects, for which provisional tariff was assigned as per the proviso above.

45.5 The Tariff Period for Renewable Energy power projects will be the same as

that of their Useful Life as specified in Regulation 3 in Chapter 1 of these Regulations.

45.6 The Tariff period for a renewable energy generating station under these Regulations shall be applicable from the date of declaration of commercial operation (COD) of the renewable energy generating station. However, considering the non-firm nature of the renewable energy, power injected into the grid prior to the COD of a project shall also be paid at the same tariff as determined for the project, for a maximum period specified in these Regulations.

45.7 Tariff determined for a Renewable Energy Project, which declared COD during the current control period as mentioned in Regulation 1.4, shall be applicable for the entire Tariff period of the RE project.

46. Eligibility Criteria, -

46.1 Wind power project – The project that uses new wind turbine generators and located at on-shore or off-shore sites, approved by the State Nodal Agency or the State Government.

46.2 Hydro power project including Pumped Storage Project– The project that uses new plant and machinery and located at sites approved by the State Government.

46.3 Biomass power project with Rankine cycle technology – The project that uses new plant and machinery, based on Rankine cycle technology and does not use any fossil fuel.

46.4 Non-fossil fuel-based co-generation project – The project that uses new plant and machinery and based on the topping cycle mode of co-generation:

Topping cycle mode of co-generation – Any facility that uses non-fossil fuel input for power generation and also utilizes the thermal energy generated for useful heat applications in other industrial activities simultaneously:

Provided that for the co-generation facility to qualify under topping cycle mode, the sum of useful power output and one-half the useful thermal output be greater than 45% of the facility's energy consumption during crushing season.

Explanation- For the purposes of this clause;

(a) **'Useful power output'** is the gross electrical output from the generator. There will be an auxiliary consumption in the co-generation plant itself (Example: the boiler feed pump and the FD/ID fans). In order to compute the net power output, it would be necessary to subtract the auxiliary consumption from the gross output. For simplicity of calculation, the useful

power output is defined as the gross electricity (kWh) output from the generator.

(b) **'Useful Thermal Output'** is the useful heat (steam) that is provided to the process by the cogeneration facility;

(c) **'Energy** Consumption' of the facility is the useful energy input that is supplied by the fuel (normally bagasse or other such biomass);

(d) **'Topping Cycle'** means a co-generation process in which thermal energy produces electricity, followed by useful heat application.

46.5 Solar PV power project, floating solar project and solar thermal power project using new plant and machinery, based on technologies approved by MNRE.

46.6 Renewable hybrid energy project – The rated capacity of generation from one type of renewable energy source is at least 33% of the total installed capacity of the renewable hybrid energy project, which operates at the same point of interconnection:

Provided that the energy is injected into the grid at the same interconnection point and metering is done at such a common interconnection point accordingly.

46.7 Biomass gasifier-based power project – The project uses a new plant and machinery and has a grid connected system that uses a 100% producer gas engine, coupled with gasifier technologies approved by MNRE.

46.8 Biogas based power project – The project uses new plant and machinery and has a grid connected system that uses a 100% biogas fired engine, coupled with biogas technology for co-digesting agriculture residues, manure and other biowaste as approved by MNRE.

46.9 Municipal solid waste-based power projects – The project uses new plant and machinery based on Rankine cycle or Brayton cycle technology and uses municipal solid waste as fuel.

46.10 Refuse derived fuel based municipal solid waste power projects – The project uses new plant and machinery based on Rankine cycle technology and uses refuse derived fuel as fuel.

46.11 Renewable energy with storage project – The renewable energy project including a renewable hybrid energy project that uses, partly or fully, renewable energy generated from such project to store the energy in a storage facility, which is connected at the same point of interconnection as the renewable energy project.

46.12 Stand alone grid scale BESS projects using new equipment.

47. Norms for determination of tariff, –

47.1 The principles, norms and parameters specified in these Regulations are applicable for determination of tariff for the electricity generated from the Renewable Source of Energy plants that have declared commercial operation during the control period specified in these Regulations.

47.2 While determining the principles, norms and parameters for determination of tariff, the Commission have considered appropriate operational and financial parameters of each category of renewable source of energy and to the extent possible, provides an allowance, based on technology, fuel, market risk, social and environmental benefits and other relevant factors.

47.3 The Commission, while formulating and notifying the principles, norms and parameters for determination of tariff for the renewable energy from various categories of renewable source of energy, is guided by the National Electricity Policy and Tariff Policy published under Section 3 of the Act and the principles, norms and parameters specified by the Central Commission for this purpose.

47.4 Until separate principles, norms and parameters are specified by the Commission for the control period, the principles, norms and parameters specified by the Central Commission for the purpose of determination of tariff for the electricity generated from various categories of renewable sources of energy, as specified in the Central Electricity Regulatory Commission (Terms and Conditions for Tariff Determination from Renewable Energy Sources) Regulations, 2024, as amended from time to time, shall be adopted by the Commission for the purpose of determination of tariff under these Regulations.

47.5 The norms and parameters specified in these Regulations shall be the ceiling norms and shall not prevent the generator and the distribution licensee from mutually agreeing for more economic norms than that specified in these Regulations. In case the improved norms result in a better economy and lower tariffs are agreed to, such improved norms shall be applicable for determination of tariff.

47.6 These Regulations do not preclude the right of a Distribution licensee to undertake RE projects as per the schemes/ policies of the State and Central Government with the prior approval of the Commission.

48. Generic Tariff for the Electricity generated from Renewable Sources of Energy, –

48.1 The Commission may, if considered necessary, determine the generic tariff for each financial year(s) or for the control period, for the electricity generated from the renewable sources of energy, in accordance with the; principles, norms and parameters, specified or adopted by the Commission in these Regulations and considering the normative values of; capital cost, rate of

interest and other parameters notified under these Regulations, by an order published in the official Gazette.

48.2 The generic tariff so determined shall be the upper ceiling limit and shall not prevent the generator and distribution licensee from agreeing to a lower tariff than the generic tariff determined by the Commission.

48.3 The generic tariff determined by the Commission shall not prevent the right of the generator to get a project specific tariff determined, if they so desire, by the Commission as per the provisions of these Regulations. However, the distribution licensee/ purchaser of electricity from RE sources under these Regulations shall pay only the lower of the 'generic tariff of the year of COD or the project specific tariff', as determined by the Commission.

48.4 The generic tariff determined by the Commission shall not prevent the right of the distribution licensee to procure power from the renewable energy sources through competitive bidding route as per Section 63 of the Electricity Act, 2003.

48.5 The generic tariff determined by the Commission for a financial year or the control period under these Regulations, shall be applicable to the renewable energy projects which declares commercial operation (COD) during that financial year or the control period, as applicable.

48.6 The generic tariff determined by the Commission for a financial year or the control period shall be applicable provisionally to the renewable energy projects which are commissioned after the close of that financial year or the control period, as applicable, till such time, the tariff is revised by the Commission:

Provided that, as soon as the generic tariff is revised by the Commission for the financial year/control period in which the renewable energy project was commissioned, the revised generic tariff shall be assigned to such renewable energy projects, for which provisional tariff is assigned, from the date of declaration of its Commercial Operation.

48.7 For claiming the generic tariff applicable to the wind energy projects in a wind zone, the project developer shall submit necessary and sufficient details for classification of the project into a particular Capacity Utilization Factor (CUF) based on Annual Mean Wind Power Density (W/m^2) validated by the National Institute of Wind Energy.

49. Project specific tariff for the Electricity generated from Renewable Sources of Energy, -

49.1 The Commission may, based on a petition for determination of tariff as per the provisions of the Electricity Act 2003, determine by an order the project

specific tariff, on a case-to-case basis, for the Renewable Energy projects. This shall be done in accordance with the principles, norms and parameters specified or adopted by the Commission as per these Regulations.

49.2 The financial norms as specified under these Regulations, shall be the ceiling norms, while determining the project specific tariff for such Renewable projects.

49.3 A petition for determination of project specific tariff shall be accompanied by such fees as specified and be accompanied by:

(i) Detailed Project Report outlining technical and operational details, site specific aspects, premise for capital cost, financing plan, project economic viability etc.;

(ii) Estimates of cost of all major components for the project with evidence to its reliability;

(iii) A statement indicating the project completion cost, evidence for all major expenditures incurred, sources of financing with its terms/ conditions etc for the period, for which tariff is to be determined;

(iv) A statement containing cost/time overruns, if any, and detailed justifications for the same;

(v) A statement containing full details of any subsidy and incentive available, claimed and received, due or assumed to be due from the Central Government and/or the State Government;

(vi) Any other information as decided by the Commission, for determining the project specific tariff for the project.

49.4 For the determination of project specific tariff, the generating company shall submit the break-up of all the capital cost items accompanied by relevant paid vouchers/ tax receipts and other verifiable documents with its petition in the manner specified above:

Provided that, the project specific tariff so determined shall be limited to the generic tariff determined by the Commission for the particular year of COD, if it exceeds the generic tariff for that year and shall be based on the norms and parameters specified in these Regulations.

50. Tariff Structure and Design. -

50.1 The tariff for renewable energy technologies shall be a single part tariff consisting of the following cost components: -

(i) Return on equity; wherein maximum equity allowable for RoE shall be limited to 30% of the capital cost;

(ii) Interest on loan capital;

(iii) Depreciation;

(iv) Interest on working capital;

(v) Operation and maintenance expenses.

50.2 The generic tariff or the project specific tariff, as the case may be, shall be determined from the year of commercial operation of the project, on levelized basis:

Provided that, the levelling shall be carried out over the 'useful life' of the Renewable Energy project, specified under these Regulations:

m'Provided further that, for the purpose of levelized tariff computation, the discounting factor equivalent to pre-tax weighted average cost of capital shall be considered.

50.3 Treatment for Generation beyond CUF considered:

In case a renewable energy project, in a given year, generates energy in excess of the capacity utilization factor or plant load factor, as the case may be specified under these Regulations, the renewable energy project may sell such excess energy in the market under bilateral or collective transactions, provided that the first right of refusal for such excess energy shall vest with the concerned beneficiary. In case the concerned beneficiary purchases the excess energy, the tariff for such excess energy shall be equal to eighty percent of the project/generic tariff as applicable.

51. Financial Principles. –

51.1 **Capital Cost, -**

The norms for the capital cost, specified in these Regulations, shall be inclusive of the costs for all capital works including plant and machinery, civil works, erection and commissioning charges, financing and interest costs during construction, and evacuation infrastructural costs up to the licensee's inter-connection point.

51.2 **Debt - Equity Ratio, -**

(i) For all the renewable energy projects, the debt-equity ratio shall normally be 70:30 of the capital cost, as approved by the Commission as on the date of commercial operation, and shall be considered for tariff determination;

(ii) While determining the project specific tariff under these Regulations, if the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan;

(iii) If the equity actually deployed is less than 30% of the capital cost, the

actual equity deployed shall be considered for determination of project specific tariff;

(iv) The equity invested in foreign currency shall be designated in Indian Rupees on the date of each investment. The overnight MIBOR notified by FBIL for that particular date shall be the exchange rate for such conversion to Indian Rupees.

51.3 **Loan Tenure and Finance Charges, -**

(i) **Loan Tenure:** A normative loan tenure of 15 years shall be considered for the purpose of determination of tariff under these Regulations.

(ii) **Interest Rate:**

(a) The loans arrived at under Regulation 51.2 shall be considered as the gross normative loan for calculation of the interest on loan. The normative loan outstanding as on April 1st of every year shall be worked out by deducting the cumulative depreciation up to March 31st of previous year from the gross normative loan;

(b) A normative interest rate of two hundred (200) basis points above the average State Bank of India Marginal Cost of Funds based Lending Rate (one-year tenure) prevalent during the last available six months shall be considered for allowing interest during the tenure of the loan;

(c) Notwithstanding any moratorium period availed by the generating company, the repayment of loan shall be considered from the first year of date of commercial operation of the project.

51.4 **Depreciation, -**

(i) The Capital Cost of the asset approved by the Commission shall be the basis for calculation of depreciation. The salvage value of the asset shall be considered as 10% and depreciation shall be allowed up to a maximum of 90% of the capital cost of the asset;

(ii) Depreciation rate of 4.67% per annum for first 15 years and remaining depreciation to be spread over the remaining useful life of the RE assets considering the salvage value of the project as 10% of the project cost shall be considered;

(iii) Depreciation shall be charged from the first year of commercial operation:

Provided that, if the commercial operation of the asset was only for part of the first year of commercial operation, depreciation shall be charged on a pro rata basis.

51.5 **Return on Equity (RoE), -**

The normative Return on Equity shall be 15% for Hydro Electric Project including PSPs and 14% for other RE projects, on the normative equity under Regulation 51.2 above. Income Tax/ Minimum Alternate Tax (MAT) on approved ROE, if any paid by the generator, shall be reimbursed separately by the distribution licensee on production of documentary evidence of remittance, annually for the entire useful life of the project.

51.6 **Interest on Working Capital, -**

(i) The Working Capital requirement in respect of Wind energy projects, Hydro Power projects including PSPs, Solar PV and Solar thermal power projects, projects based on Municipal Solid Waste, BESS etc. shall be computed in accordance with the following: -

a) Normative Operation & Maintenance expenses for one month;

b) Receivables equivalent to two months energy charges for sale of electricity calculated on the normative Capacity Utilization Factor (CUF);

c) Maintenance spare @ 15% of the operation and maintenance expenses.

(ii) Interest on Working Capital shall be at the interest rate equivalent to the normative interest rate of three hundred (300) basis points above the average State Bank of India MCLR (One Year Tenor) prevalent during the last available six months, for the determination of tariff.

(iii) The Working Capital requirement in respect of biomass power projects with Rankine cycle technology, biogas power projects, biomass gasifier based power projects and non-fossil fuel based co-generation projects shall be computed in accordance with the following:

(a) Fuel costs for four months equivalent to normative Plant Load Factor;

(b) Operation and Maintenance expenses for one month;

(c) Receivables equivalent to 45 days of tariff for the sale of electricity calculated on the plant load factor; and

(d) Maintenance spares equivalent to 15% of Operation and Maintenance expenses.

51.7 **Calculation of CUF and PLF, -**

The number of hours for calculation of Capacity Utilisation Factor (CUF) / Plant Load Factor (PLF), as applicable for various RE technologies, shall be 8766 in a year.

51.8 **Operation and Maintenance Expenses, -**

(i) 'Operation and Maintenance or O&M expenses' shall comprise of; the repair and maintenance (R&M) costs, establishment costs including; the employee expenses and the administrative and general expenses;

(ii) Operation and maintenance expenses shall be determined for the Tariff Period based on normative O&M expenses specified by the Commission in these Regulations for the first year of the Control Period;

(iii) Normative O&M expenses allowed during the first year of the Control Period (i.e. financial year 2025-26) under these Regulations shall be escalated at the rate of 5.25% per annum over the Tariff Period.

52. Rebate, subsidy, taxes & Statutory charges, –

52.1 **Rebate, -**

(i) If the payment of bills for charges payable under these Regulations is made by the distribution licensee to the renewable generator within five calendar days of presentation of the bills by the renewable generator, a rebate of 1.5% shall be allowed to the licensee;

(ii) Where payments are made by the distribution licensee to the RE generator on any day after five calendar days within a period of one month of presentation of the bills by the generating company, a rebate of 1% shall be allowed to the licensee.

52.2 **Late payment surcharge, -**

In case the payment of any bill for charges payable under these Regulations is delayed beyond a period of 45 days from the date of billing, a late payment surcharge at the rate of 1.25% per month shall be levied by the renewable energy generator.

52.3 **Sharing of Clean Development Mechanism (CDM) Benefits, -**

The proceeds of carbon credit from approved CDM project shall be shared between the generating company and the concerned beneficiaries in the following manner, namely:

(i) 100% of the gross proceeds on account of CDM benefit to be retained by the project developer in the first year after the date of commercial operation of the generating station;

(ii) In the second year, 10% of the CDM benefit shall be shared with the beneficiaries and the balance 90% of the benefit shall be retained by the project developer.

(iii) In the third year onwards, the share of the beneficiaries shall be progressively increased by 10% every year till it reaches 50%, thereafter the proceeds shall be shared in equal proportion, by the generating company and the beneficiaries.

52.4 **Subsidy or Incentive by the Central / State Government, -**

(i) The Commission shall take into consideration any incentive or subsidy offered by the Central or State Government, including accelerated depreciation benefit, for the renewable energy power plants, while determining the tariff under these Regulations.

Provided that the principles specified below shall be considered for ascertaining the income tax benefit on account of accelerated depreciation, for the purpose of tariff determination:

(a) Assessment of benefit shall be based on the Commission approved capital cost, accelerated depreciation available at the rate as per the relevant provisions under the Income Tax Act and the corporate income tax rate, as amended from time to time.

(b) Capitalization of RE Projects for the full financial year;

(c) Per unit benefit shall be derived on levelized basis at a discounting rate equivalent to weighted average cost of capital.

(ii) Any grant, subsidy or incentive availed by renewable energy project, which is not considered at the time of determination of tariff, shall be deducted by the beneficiary in subsequent bills after receipt of such grant, subsidy or incentive in suitable installments or within such period as may be stipulated by the Commission;

(iii) In case the Central or State Government or their agencies provide any generation-based incentive, which is specifically over and above the tariff, such incentive shall neither be taken into account while determining the tariff nor be deducted by the beneficiary in subsequent bills raised by the particular Renewable energy project.

52.5 **Taxes and Duties, -**

Tariff determined under these Regulations shall be exclusive of taxes and duties , as may be levied by the appropriate Government, after COD of the project:

Provided that the taxes and duties levied by the appropriate Government shall be allowed as “pass through” on actual incurred basis, subject to proof of payment.

52.6 **Statutory Charges, -**

The renewable energy project developer shall recover from the beneficiaries

the statutory charges imposed by the State and Central Government, such as; electricity duty on the auxiliary consumption, subject to the maximum of the normative auxiliary consumption specified.

52.7 **Deviation from norms, -**

Tariff for electricity generated from a generating station based on renewable energy sources may also be agreed upon between the generating company and beneficiary, in deviation from the norms specified in these regulations:

Provided that the levelized tariff of the project calculated on the basis of the norms specified in these regulations shall be the ceiling levelized tariff.

C. Technology specific parameters for different category projects (Regulations 53 to 60)

53. Wind Energy Project. -

53.1 **Capital cost:**

The Commission shall determine only the project specific capital cost, considering the prevailing market trends.

53.2 **Capacity Utilization Factor (CUF):**

(i) The normative CUF for this control period shall be as follows: -

Table 9

Wind zone	***Annual mean Wind Power Density in W/ m²***	**CUF %**
1	Upto 220	22
2	221 to 275	24
3	276 to 330	28
4	331 to 440	33
5	>440	35

(ii) The *Annual mean Wind Power Density specified above* shall be measured at a hub height of 100 metre;

(iii) For the purpose of classification of wind energy project into particular wind zone class, as per MNRE guidelines for wind measurement, wind mast either put-up by NIWE or a private developer and validated by NIWE, would normally be extended upto 10 kms from the mast point in all directions for uniform terrain, and limited to appropriate distance in

complex terrain with regard to complexity of the site;

(iv) Wind power projects shall be classified into particular wind zone sites as per MNRE guidelines for wind measurement. Based on the validation of the wind mast by the National Institute of Wind Energy, the State Nodal Agency should certify the zoning of the proposed wind farm complex.

53.3 **Operation and Maintenance (O&M) expenses**: The Commission shall determine only the project specific O&M cost, considering the prevailing market trends.

53.4 **Auxiliary Consumption:** NIL

54. Small Hydro Electric Projects (SHEP), -

54.1 **Capital Cost:**

(i) The normative capital cost for small hydro projects during the Control Period shall be as given below:

Table 10

Project Size	**Capital Cost (Rs. lakh/ MW)**
Below 5 MW	890
5 MW to 25 MW	1027
SHPs Upto 25 MW having pumped storage operation during lean season	1200

(ii) The Capital Cost for SHEP as specified above will remain valid for the entire duration of the control period, unless reviewed by the Commission.

54.2 **Capacity Utilization Factor:**

The normative capacity utilization factor (CUF) for the small hydro projects shall be considered as 30% excluding pump mode operation if any.

54.3 **Operation & Maintenance expenses:**

i) Normative O&M expenses for the first year of the Control period (2025 – 26) shall be as given below;

Table 11

Project Size	O&M Expenses for the first year of the control period (Rs. Lakh/MW)
Below 5 MW	41.74
5 MW to 25 MW	30.23

ii) The O&M Expenses in respect of PSPs will be determined separately by the Commission on an application by the project developer.

54.4 Auxiliary Consumption: Normative Auxiliary Consumption for small hydro projects shall be 1%.

54.5 All the SHEPs planned after the effective date of these Regulations shall be designed with adequate storage capacity either independently or through PSP mode to supply power to the grid for a minimum of 4 hours during the peak hours of summer months.

54.6 As a promotional measure for SHEPs designed to operate in PSP mode also, the energy supplied by such projects during non-solar hours in lean season will be granted a tariff of 125% of the project or generic tariff as applicable.

55. Solar PV/ Solar thermal/ Floating Solar power projects, -

55.1 Capital Cost:

The Commission shall determine only project specific capital costs considering the prevailing market trends.

55.2 Capacity Utilisation Factor & Auxiliary consumption:

(i) The Commission shall approve capacity utilisation factor & auxiliary consumption for project specific tariffs only;

(ii) The minimum capacity utilization factor and the maximum auxiliary consumption for different types of Solar projects are specified in the Table below:

Table 12

	Type of Solar project	CUF %	Aux. con %
1	Solar PV power projects	21	0.75

2	floating solar projects	21	0.75
3	solar thermal power projects	23	10.0

55.3 Operation and Maintenance expenses:

The Commission shall determine only project specific O&M expenses considering the prevailing market trends.

56. Refuse derived fuel (RFD) based Municipal solid waste (MSW) power projects, -

56.1 Capital Cost:

The Commission shall determine only project specific capital costs considering the prevailing market trends.

56.2 Plant Load Factor:

Plant load factor for determining tariff for refuse derived fuel based municipal solid waste power projects shall be:

Table 13

	Plant load factor	RDF
1	During the first year	65%
2	Second year onwards	80%

56.3 Operation and Maintenance Expenses:

Normative O&M expenses for the first year of the Control Period shall be 8.5% of the Capital Cost of RDF based MSW power project.

56.4 Auxiliary Consumption:

The auxiliary consumption for determination of tariff shall be considered as 15%.

56.5 Fuel Cost:

No Fuel Cost shall be considered for the determination of tariffs for RDF power projects:

Provided that for the purpose of start-up and shut down activity and temperature stabilisation during monsoon, alternate fuel from any other renewable energy source up to a ceiling of 5% of RDF consumed annually, shall be allowed without any additional impact on tariff.

57. Renewable Hybrid Energy Projects,-

57.1 Capital cost:

The capital cost shall be determined on a project specific basis considering the prevailing market trends.

57.2 Capacity Utilisation Factor:

The Commission shall determine only project specific capacity utilisation factor in respect of renewable hybrid energy projects, taking into consideration the proportion of rated capacity of each renewable energy source, as the case may be, and applicable capacity utilisation factor for such renewable energy sources, as the case may be:

Provided that the minimum capacity utilization factor for renewable hybrid energy projects shall be 30% when measured at the inter-connection point, where the energy is injected into the grid.

57.3 Operation and Maintenance expenses:

The Commission shall determine only project specific O&M expenses considering the prevailing market trends.

57.4 Tariff:

The tariff for a renewable hybrid energy project shall be a composite levelized tariff for the project as a whole by factoring in the tariff components up to the minimum of the useful life of the RE technologies combined for such RE hybrid Project:

Provided that, in case any of the RE technologies combined for the RE hybrid project is left with a further useful life, the levelized tariff for the remaining useful life of such RE technology shall be determined separately by factoring in the tariff components for the remaining useful life.

58. Renewable energy with storage project, -

58.1 Capital Cost:

The Commission shall determine only project specific capital costs for renewable energy with storage projects considering the prevailing market trends.

58.2 Storage Efficiency:

(i) The Commission shall approve the storage efficiency only for project specific tariffs:

Provided that the minimum efficiency for storage based on the technology of solid- state batteries shall be 85%:

(ii) Efficiency of the storage component of renewable energy with a storage project shall be measured as the ratio of output energy received from storage and input energy supplied to the storage component of such project on an annual basis.

58.3 Operation and Maintenance expenses:

The Commission shall determine only project specific O&M expenses considering the prevailing market trends.

58.4 Tariff determination for Energy Storage:

The tariff for renewable energy with storage project shall be a composite tariff or differential tariff based on the time of day, determined for energy supplied from the Project, including the energy supplied from the storage facility:

Provided that such tariff may be determined for the supply of power on round the clock basis or for time periods as agreed by the Project Developer and the Beneficiary.

59. Grid scale standalone BESS project, -

59.1 Capital Cost:

The Commission shall determine only project specific capital costs for grid scale standalone BESS projects considering the prevailing market trends.

59.2 Round trip Efficiency:

(i) The minimum round trip efficiency for grid scale standalone BESS projects shall be 85%;

(ii) Round trip efficiency of the grid scale BESS projects shall be measured as the ratio of output energy received from storage and input energy supplied to such project on an annual basis.

59.3 Operation and Maintenance expenses:

The Commission shall determine only project specific O&M expenses considering the prevailing market trends.

59.4 Auxiliary Consumption: NIL

59.5 Annual availability:

The minimum annual availability shall be 95%.

59.6 Annual Degradation Factor:

The maximum annual degradation factor shall be 2.5% per annum.

59.7 Tariff determination for Energy Storage:

The tariff for grid scale BESS projects shall be capacity charge or energy charge based on the capacity or energy made available from the project.

60. Other types of RE power projects, -

The Commission shall generally follow the parameters specified by the Central Commission on capital cost, PLF, O&M, Aux. consumption, Station Heat Rate, GCV, fuel cost etc., for the determination of tariff of the following power projects:-

(i) Biomass power projects based on Rankine cycle technology;

(ii) Non-fossil fuel-based co-generation projects;

(iii) Biomass gasifier - based power projects;

(iv) Biogas based power projects;

(v) Any other type of RE projects approved by the Central Government.

61. Considerations for better monetization of hydro and PSP resources, -

61.1 The Commission shall in future, consider providing monetary compensation for projects that significantly contribute to the stability and reliability of the power grid by providing ancillary services such as:

(i) PRAS and SRAS, to the intra state hydro/ PSP plants;

(ii) Frequency control, required to maintain the grid frequency;

(iii) Voltage support, provided to maintain near constant voltage over a wide range of load conditions;

(iv) System restart or Black start, support capability for the system.

61.2 Promote Hydro Tourism recreational activities such as; boating, fishing, nature tours etc. in reservoirs of Hydro and PSP plants, as an additional revenue source. In order to encourage hydro generating companies to strengthen eco-tourism, the Commission shall consider provision for sharing the non-tariff income from ecotourism between the generating company and the beneficiaries, in the ratio 1:1.

61.3 Further additional revenue can be generated by sale of silt/ sediments from the reservoir beds of hydro/ PSP plants. This will also contribute to environmental sustainability while generating financial returns.

61.4 KSEB Ltd being the owner of large hydro projects established in the State, shall within one year from the date of notification of these Regulations, prepare a comprehensive proposal for leveraging the potential of existing large reservoirs associated with the Hydro projects for establishing PSPs or additional generation units to enhance the power and energy availability during the summer months. The proposal shall be submitted before the Commission within the time specified herein, which shall include the different options examined along with detailed scenario analysis and the most optimum project configuration identified in respect of each of the reservoirs, for in-principle approval.

62. Templates of Forms, -

The template of **Forms 1 and 2** of tariff components and for arriving the tariff for different types of RE generation projects is provided as **Appendix** to these Regulations.

CHAPTER VI

MISCELLANEOUS PROVISIONS

63. Power to give directions, -

The Commission may from time to time issue such directions and orders as considered appropriate for implementation of these Regulations.

64. Power to relax, -

The Commission may by general or special order, for reasons to be recorded in writing, and after giving an opportunity of hearing to the parties likely to be affected, relax any of the provisions of these Regulations on its own motion or on an application made before it by an interested person.

65. Power to amend, -

The Commission may from time to time add, vary, alter, suspend, modify, amend or repeal any provisions of these Regulations.

66. Power to remove difficulties, -

If any difficulty arises in giving effect to any of the provisions of these Regulations, the Commission may, by an order, make such provisions, not inconsistent to the provision of the Act and these Regulations, as may appear to be necessary for removing the difficulty.

67. Repeal and Savings, -

67.1 Save as otherwise provided in these regulations, the Kerala State Electricity Regulatory Commission (Renewable Energy and Net Metering) Regulations, 2020 is hereby repealed;

67.2 Notwithstanding such repeal, anything done or any action taken under the above Regulations shall be deemed to have been done or taken under the corresponding provisions of these Regulations.

By the order of the Commission

Sd/-

Secretary

Explanatory Note on the proposed draft Regulations

Section 86(1) (e) of the Electricity Act, 2003 authorizes the State Electricity Regulatory Commission to promote co-generation and generation of electricity from Renewable Sources of Energy by providing suitable measures for connectivity with the grid and sale of electricity to any person and also specify for the purchase of electricity from such sources a percentage of the total consumption of electricity within the area of the distribution licensee. Accordingly, the Commission has notified the KSERC (Renewable Energy and Net Metering) Regulations, 2020 on 07th February, 2020. Further, it was amended as per notifications dated 15th July, 2022 and 17th August, 2024. The Control period of the said Regulations is upto financial year 2024-25. In view of the approaching conclusion of the current control period, the Commission has resolved to formulate a new regulation for the Control Period commencing from financial year 2025-26. This initiative aims to promote renewable energy in Kerala in alignment with the National and State Renewable Energy (RE) targets and Net Zero commitments. To facilitate this, the Commission has undertaken the preparation of a discussion paper to guide the development of the new regulation.

To ensure a comprehensive and informed approach, the Commission constituted an Evaluation Committee on 8th August, 2024. The Committee, comprising of the experts and professionals in the field, has been tasked with the preparation of a discussion paper on Renewable Energy after studying the renewable energy regulations across regions, identifying the challenges faced by licensees and prosumers, analysing global trends and emerging technologies, and addressing pressing issues in the renewable energy sector. The Commission has published the discussion paper prepared by the Committee on the website of the Commission on 13.01.2025.

The Committee recommends several strategic measures to accelerate Renewable Energy (RE) development in Kerala by integrating key policy suggestions from Chapter 9 and the recommendations outlined in Chapter 10 into the new RE regulations. The discussion paper emphasizes the need for recalibrating net metering policies to ensure a balanced approach between grid stability and consumer benefits. The proposed rationalization includes transitioning larger solar energy systems towards net billing or gross metering, thereby fostering a more equitable and sustainable energy pricing structure. To further promote solar energy consumption and optimize consumer load patterns, the introduction of Time-of-Use (ToU) tariffs is suggested. These tariffs would encourage electricity usage during solar generation hours when supply is abundant, thereby enhancing grid efficiency and maximizing renewable energy utilization. Additionally, the revision of the banking framework, with a gradual increase in banking charges on exported energy, aims to incentivize self-consumption and drive investment in battery storage solutions, reducing dependency on the grid during non-solar hours.

Beyond net metering adjustments, the discussion paper highlights the need for expanding Virtual Net Metering (VNM) and Group Net Metering (GNM) to enhance accessibility for community and institutional solar projects. These frameworks will allow multiple consumers to benefit from a single solar installation, increasing participation in renewable energy adoption. Furthermore, the Committee envisions a more consumer-driven energy market by empowering prosumers with advanced options such as Peer-to-Peer (P2P) energy trading, Vehicle-to-Grid (V2G) integration, and Demand Response (DR) programs. These initiatives will enable greater flexibility, allowing consumers to trade surplus energy, contribute to grid stability, and optimize energy use based on demand fluctuations.

A time period until February 28, 2025, was provided for stakeholders to submit their views and suggestions on the discussion paper. To ensure a comprehensive and inclusive consultation process, the Commission conducted six interactive meetings with various stakeholders, including officials from KSEB Ltd, trade union representatives, the State Advisory Committee, the State Coordination Forum, solar entrepreneurs, battery manufacturers, and technical experts in the renewable energy sector. These meetings were held on 13th, 14th and 17th February, 2025, which facilitated meaningful discussions and allowed stakeholders to present their insights, concerns, and recommendations. The minutes of these meetings were subsequently uploaded on the Commission's website to ensure transparency and accessibility.

These stakeholder meetings provided a critical platform for industry representatives, developers, regulatory bodies, and technical experts to engage in discussions on the proposed regulatory framework. The deliberations focused on shaping a balanced and effective policy for the Control Period commencing from financial year 2025-26. In addition to the interactive meetings, a total of 18 stakeholders submitted their written suggestions on the discussion paper. To further promote transparency and stakeholder engagement, all comments received were uploaded to the Commission's website, ensuring that the regulatory development process remained open and participatory.

Based on the recommendations and policy options suggested by the Evaluation Committee, insights from the interactive meetings, and the comments submitted by various stakeholders, the Commission has formulated this draft regulation. The draft aims to incorporate these collective inputs, aligning with the broader objectives of fostering renewable energy development, ensuring grid stability, and promoting sustainable energy practices.

The draft regulations envisage to classify the prosumers under different methods of billing and settlement, based on the eligibility criteria specified in Chapter II of these draft regulations. Further the detailed methodology for accounting and settlement of each type of prosumer are specified under Chapter III of these draft regulations. For settlement of the accounts of different prosumers, the Commission envisages

introduction of different feed in tariff for each type of prosumer viz. Net Metering, Net Billing, Gross Metering, based on the capacity weighted average of the discovered tariffs in the SECI bids for the financial year 2024-25. The details of discovered tariffs in the SECI bids and weighted average tariff is attached as Annexure 4(a) of these draft regulations. Further for existing prosumers under Net Metering APPC rates of the renewable energy procured by KSEB Ltd during financial year 2023-24 is proposed for the whole control period of these regulations as APPC rate for settlement. The details of the renewable energy procured by KSEB Ltd for financial year 2023-24 including the quantum and cost is attached as Annexure 4(b).

These draft regulations are prepared incorporating the above objectives and is now published, seeking the stakeholder comments, suggestions and objections on the draft.

Annexure 1(a)

APPLICATION TO SEEK FEASIBILITY OF RENEWABLE ENERGY SYSTEM

(**Applicable in respect of Net Metering, Net billing, GNM and Gross metering not covered under Annexure 1(c)**)

[see Regulation 17.4]

Sl No.	Details		
1	Consumer No.		To be verified by sending OTP to the registered phone number, if any. In case there is no phone number registered against the consumer number, the phone number used by the applicant shall be authenticated using OTP
2	Name of applicant		To be auto filled
3	Full Address of Consumer		To be auto filled with the facility for editing by the applicant
4	Telephone No.	Mobile No	To be auto filled with the facility for editing by the applicant
		Alternate Mob No, if any	
5	E-mail address		To be auto filled with the facility for editing by the applicant
6	Tariff Category		To be auto filled
7	Sanctioned Connected Load/ Contract Demand		To be auto filled
8	Type of metering/ billing system opted by the applicant		To be selected from drop down menu
9	Name of distribution transformer		To be auto filled
10	Name of HT feeder		To be auto filled
11	Balance hosting capacity available (in kVA)	Distribution transforme	To be auto filled
		Feeder	To be auto filled
12	Capacity of existing RE plant, if any		To be auto filled
13	Capacity of Renewable Energy System in kW, proposed to be connected/ additionally connected to the grid		

14	Type of Renewable Energy System proposed (Solar, Wind, Hybrid, Biomass, etc.)		
15	If there is no spare hosting capacity and for the plants having capacity upto 5 kW, whether the consumer is willing to get feasibility by installing either	RE plants with hybrid smart inverters providing dynamic reactive power support with BESS having a minimum storage capacity of 30% of the energy generation potential of the plant; OR	Yes/No
		RE plants with smart inverters along with smart meters capable of real time curtailment of generation in the event of system constraints.	Yes/No

Place: Signature of Consumer

Date:

* *See Note(1) on Annexure 2(a)*

Annexure 1(b)

APPLICATION TO SEEK FEASIBILITY OF RENEWABLE ENERGY SYSTEM

(**Applicable in respect of VNM**)

[Regulation 17.4]

1	Name of Lead Person		
2	Full Address of Lead Person		
3	Telephone No.	Mobile No (to be verified through OTP)	
		Alternate Mob No, if any	
4	E-mail address		
5	Details of RESCO, if engaged		Name:
			Full Address:
			Mobile No:
			Email :
6	Type of Renewable Energy System proposed (Solar, Wind, Hybrid, Biomass, etc.)		
7	Consumer numbers of participating consumers.		System should automatically verify and confirm the eligibility of each consumer.
8	Maximum eligible capacity of the DRE plant (in kW), and the minimum storage capacity required in (in kWh)		System should provide the maximum eligible capacity for the VNM plant.
9	Capacity of the plant required by the applicant (in kW) and BESS (in kWh)		
10.	Location of the VNM plant		GPS coordinates/ the consumer number of a consumer located adjacent to the proposed plant location.

Place: Signature of Consumer

Date:

* *See Note on Annexure 2(a)*

Annexure 1(c)

APPLICATION TO SEEK FEASIBILITY OF RENEWABLE ENERGY SYSTEM

(**Applicable in respect of Gross Metering under proviso to Regulation 8.1**)

[Regulation 17.4]

1	Name of applicant		
2	Full Address of applicant		
3	Telephone No.	Mobile No (to be verified through OTP)	
		Alternate Mob No, if any	
4	E-mail address		
5	Capacity of existing DRE plant, if any (in kW)		
6	Capacity of the proposed DRE plant (in kW)/ additionally connected to the grid		
7	Location of the plant		GPS coordinates/ the consumer number of a consumer located adjacent to the proposed plant location.
8	Type of Renewable Energy System proposed (Solar, Wind, Hybrid, Biomass, etc.)		
9	Capacity of BESS proposed, if any		

Place: Signature of Consumer

Date:

* *See Note(1) on Annexure 2(a)*

Annexure - 2

APPLICATION FOR REGISTRATION OF THE SCHEME FOR RENEWABLE ENERGY SYSTEM

[Regulation 17.8 **]**

1	Reference No of technical feasibility granted		
2	Name		To be autofilled
3	Telephone No.		To be autofilled
4	E-mail		To be autofilled
5	Consumer No.*		To be autofilled
6	Connected Load/ Contract Demand of Consumer		To be autofilled
7	Type of Renewable Energy System proposed (Solar, Wind, Hybrid, Biomass, etc.)		
8	Type of metering/ billing system opted by the applicant		To be autofilled
9	Capacity of RE system to be connected	DC capacity of plant, in case of solar plants	
		AC capacity of the inverter/ plant	
10	Capacity of storage system proposed, if any		
11	Technical specifications and other particulars of REGS proposed to be installed including storage system, if any		Provision for uploading all the documents
12	Whether consumer opts to purchase meter himself		Yes/No
13	Drawings for installing the Renewable Energy System including energy storage system as applicable		Provision for uploading all the documents
14	Proposed date of completion of the installation		

Place:

Date: Signature of the Consumer

* *See Note(2) on Annexure 2(a)*

Annexure - 2(a)

Note (1): Applicable for Annexure 1(a), 1(b) and 1(c)

(1) On successful submission of the application, the system shall provide a facility to take a print of the filled up application. The signed copy of the filled up application shall be uploaded by the applicant.

(2) On submission of the uploaded application form, facility to remit the application fee online shall be provided to the applicant, except for applicants under PM Surya Ghar. On remittance of the application fee or on successful uploading of application by an applicant under PM Surya Ghar, the system shall generate the fee receipt and application reference number for tracking purpose and communicate to the applicant through email and sms along with acknowledgement.

Note (2): Applicable for Annexure 2

(1) On successful submission of the application, the system shall provide a facility to take a print of the filled up application. The signed copy of the filled up application shall be uploaded by the applicant.

(2) On submission of the uploaded application form, facility to remit the registration fee online shall be provided to the applicant, except for applicants under PM Surya Ghar. On remittance of the registration fee or on successful uploading of application by an applicant under PM Surya Ghar, the system shall generate the fee receipt, if applicable, and application reference number for tracking purpose and communicate to the applicant through email and sms along with acknowledgement.

(3) In the case of the VNM system, the lead person has to provide the details of the participating consumers in the format provided in Table 4 of these Regulations.

Annexure – 3

Prior Intimation for Installation of Renewable Energy Generator behind the Consumer's Meter

[Regulation 9.2]

Date ……

Place ..…….

[To be addressed to the concerned Authority of Distribution Licensee]

To,

…….
…….
…….

Subject: Prior Intimation for Installation of Renewable Energy Generator facility Behind the meter

Sir/Madam,

I undersigned …… [Name of consumer]……, having Consumer No. …… , is giving the prior intimation, as per Kerala State Electricity Regulatory Commission (Renewable Energy and Related Matters) Regulations, 2025, for installation of Renewable Energy system to be connected behind my meter

I hereby submit the following details:

(a) Consumer No. : ……..

(b) Mobile No : ……..

(c) E-mail : ……..

(d) Consumer Category : ……..

(e) Connected Load (kW)/ Contract Demand (kVA) : ……..

(f) Capacity of Renewable Energy System (in kW) : ……..

(g) Type of Renewable Energy System : ……..

(Solar/Wind/Biomass, Hybrid etc.)

(h) Interconnection point :……..

(i) Whether the Renewable Energy System feeds the entire load or critical load : ……..

(j) Whether the Renewable Energy system is to be connected in parallel to Distribution system : (Yes/ No)

(Signature)

Name :……..

Address : ……..

Annexure 4(a)

I. Details of SECI finalized bids in financial year 2024-25 for procurement of RE from Solar projects

Month-Year	Tender ID	Tender Ref No.	Bidder	Bidder's Quantity (MW)	Tariff (INR/kWh)	Awarded Capacity (in MW)
May-24	SECI000154	SECI/C&P/IPP/11/0004/24-25	SAEL Industries Limited	250	2.48	250
			NTPC Renewable Energy Limited	200	2.48	200
Sep-24	SECI000186	SECI/C&P/IPP/11/0014/24-25	ReNew Solar Power Private Limited	250	3.04	250
			ACME Solar Holdings Limited	300	3.05	300
					Weighted Average Unit Price	**Rs 2.79/kWh**

II. Details of SECI finalized bids in financial yea 2024-25 for procurement of RE from Wind projects

Month-Year	Tender ID	Tender Ref No.	Bidder	Bidder's Quantity (MW)	Tariff (INR/kWh)	Awarded Capacity (in MW)
May-24	SECI000155	SECI/C&P/IPP/12/0002/24-25	Powerica Limited	50	3.81	50
			Adyant Enersol Private Limited	70	3.82	50
					Weighted Average Unit Price	**Rs 3.82/kWh**

Note: Weighted Average Unit Price = (Sum of tariff multiplied by Capacity)/ Total Capacity

Annexure 4(b)

Weighted Average Price for RE
Power Purchased for the year 2023-24

	Sl No	Station	Based on the Trued up data (2023-24)		
			Energy (MU)	Rate (Rs/kWh)	Cost (Rs Cr)
Power Purchase from RE IPPs within the State	1	**Wind**			
	1a	Ramakkalmedu	25.02	3.14	7.86
	1b	Koundikkal	9.72	3.14	3.05
	1c	Agali	26.82	3.14	8.42
	1d	Ahalya	18.29	4.7	8.60
	1e	INOX	34.59	4.09	14.15
	1f	Kosamattom	1.47	3.93	0.58
	2	**SHEP**			
	2a	Ullunkal (EDCL)	17.78	2.44	4.34
	2b	Iruttukanam Stage-I&II (Viyyat)	23.61	2.07/2.94	5.39
	2c	Karikkayam HEP (AHPL)	39.74	4.16	16.53
	2d	Meenvallom (PSHCL)	6.85	4.88	3.34
	2e	Minar RE Projects	18.13	3.96	7.18
	2f	Anakkampoil	22.59	4	9.04
	2g	Arippara	10.59	4.3	4.55
	2h	Mukkadom	2.14	4.15	0.89

	3	**Solar**			
	3a	Solar IREDA	77.81	3.83	29.80
	3b	Solar IPP ANERT	2.5	2.69	0.67
	3c	THDCIL	95.77	3.1	29.69
	3d	NTPC Solar	212.91	2.94	62.60
	3e	CIAL Ettukudukka	16.03	2.37	3.80
Wind Power Purchase from sources outside the State	4	**Wind Power through SECI**	212.23	2.89	61.33
Solar Power Purchase from sources outside the State	5	**TP Sourya**	193.49	2.44	47.21
		Total	1068.08		329.01
		Weighted Average Unit Price (Rs/ unit)			**3.08**

Note: Weighted average unit price = Total Cost/ Total Energy

APPENDIX

(Template of Forms for tariff determination)

Form-1.1

(Applicable for Wind/SHEP/Solar/RE hybrid/RE Storage/RDF projects)

Sl. No.	Assumption Head	Sub-head	Sub-head (2)	Unit	Parameter
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	
			Capacity Utilization Factor (CUF)	%	
			Auxiliary Consumption	%	
			Commercial Operation Date (COD)	dd/mm/yyyy	
			Useful Life	Years	
2	Project Cost	Capital Cost	Normative Capital Cost	Rs. Crore/ MW	
			Capital Cost	Rs. Crore	
			Capital Subsidy, if any	Rs. Crore	
			Net Capital Cost	Rs. Crore	
3	Financial Assumption	Debt Equity	Tariff Period	Years	
			Debt	%	
			Equity	%	
		Debt Component	Total debt amount	Rs. Crore	
			Total equity amount	Rs. Crore	
			Loan Amount	Rs. Crore	
			Moratorium Period	Years	
			Repayment Period (incl moratorium)	Years	
			Interest Rate	%	
		Equity Component	Equity Amount	Rs. Crore	
			Return on Equity for First 20 years	% p.a.	
			Return on Equity after 20 years	% p.a.	
			Discount Rate	%	
		Depreciation	Dep Rate for 1st 15 years	%	
			Dep rate 16th year onwards	%	
		Incentives	GBI, if any	Rs. Crore	
			Period for GBI	Years	
4	O& M Expenses	Normative O&M Expense		Rs. Lakh/MW	
		O&M Expenses p.a.		Rs. Crore	
		Escalation Factor		%	
5	Working Capital	O&M Expenses		Month	
		Maintenance Spares	% of O&M Expenses	%	
		Receivables		Days	
		Interest on Woking Capital		% per annum	

Form-1.2

(Applicable for Biomass projects)

Sl. No.	Assumption Head	Sub-head	Sub-head (2)	Unit	Parameter
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	
			Aux Consumption	%	
			PLF (1st year)	%	
			PLF (2nd year onwards)	%	
			Commercial Operation Date	dd/mm/yyyy	
			Useful Life	Years	
2	Project Cost	Capital Cost/ MW	Normative Capital Cost	Rs. Crore /MW	
			Capital Cost	Rs. Crore	
			Capital Subsidy, if any	Rs. Crore	
			Net Capital Cost	Rs. Crore	
3	Financial Assumption	Debt Equity	Tariff Period	Years	
			Debt	%	
			Equity	%	
		Debt Component	Total debt amount	Rs. Crore	
			Total equity amount	Rs. Crore	
			Loan Amount	Rs. Crore	
			Moratorium Period	Years	
			Repayment Period (including moratorium)	Years	
			Interest Rate	%	
		Equity Component	Equity Amount	Rs. Crore	
			Return on Equity for First 20 years	% p.a.	
			Return on Equity after 20 years	% p. a.	
			Discount Rate	%	
		Depreciation	Dep Rate for 1st 15 years	%	
			Dep rate 16th year onwards	%	
		Incentives	GBI, if any	Rs. Crore	
			Period for GBI	Years	
4	O&M Expenses	Normative O&M Expenses		Rs. Lakh/MW	
		O&M Expenses p.a.		Rs. Crore	
		Escalation Factor		%	
5	Working Capital	O&M Expenses		Month	
		Maintenance Spares	% of O&M Expenses	%	
		Receivables		Days	
		Interest on WC		%	

Form-1.2 (continued..)

Sl. No.	Assumption Head	Sub-head	Sub-head (2)	Unit	Parameter
6	Fuel Related assumptions	Station Heat Rate	During 1st year	kcal/kWh	
			2nd year onwards	kcal/kWh	
		Fuel Type and mix	Biomass Fuel Type-1	%	
			Biomass Fuel Type-2	%	
			Fossil Fuel (Coal)	%	
			GCV of Biomass Fuel Type-1	kcal/kWh	
			GCV of Biomass Fuel Type-2	kcal/kWh	
			GCV of Fossil Fuel (Coal)	kcal/kWh	
			Biomass Price (Fuel Type-1)/ Yr 1	Rs./MT	
			Biomass Price (Fuel Type-2)/ Yr 1	Rs./MT	
			Fossil Fuel (Coal) Price)/ Yr 1	Rs./MT	
			Fuel Price Escalation Factor	% p.a.	

Form-2.1

(Applicable for Wind/Solar/RDF projects)

Units Generation	Unit	Yr-1	Yr-2	Yr-3	Yr-4	Yr-5	Yr-6	Yr-7	Yr-8	Yr-9	Yr-10-23	Yr-24	Yr-25
Installed Capacity	MW												
xNet Generation	MU												

Tariff Components (Fixed charge)	Unit	Yr-1	Yr-2	Yr-3	Yr-4	Yr-5	Yr-6	Yr-7	Yr-8	Yr-9	Yr-10-23	Yr-24	Yr-25
O&M Expenses	Rs Lakh												
Depreciation	Rs Lakh												
Interest on term loan	Rs Lakh												
Interest on working Capital	Rs Lakh												
Return on Equity	Rs Lakh												
Total Fixed Cost	Rs Lakh												

Per Unit Tariff components	Unit	Yr-1	Yr-2	Yr-3	Yr-4	Yr-5	Yr-6	Yr-7	Yr-8	Yr-9	Yr-10-23	Yr-24	Yr-25
PU O&M expenses	Rs/kWh												
PU Depreciation	Rs/kWh												
PU Interest on term loan	Rs/kWh												
PU Interest on working capital	Rs/kWh												
PU Return on Equity	Rs/kWh												
PU Tariff Components	Rs/kWh												

Levelized Tariff	Unit	Yr-1	Yr-2	Yr-3	Yr-4	Yr-5	Yr-6	Yr-7	Yr-8	Yr-9	Yr-10-23	Yr-24	Yr-25
Discount Factors													
Discounted Tariff components	Rs/kWh												
Levelized Tariff	Rs/kWh												

Form-2.2

(Applicable for Biomass/ Non fossil based Cogeneration projects)

Units Generation	Unit	Yr-1	Yr-2	Yr-3	Yr-4	Yr-5	Yr-6	Yr-7	Yr-8	Yr-9	Yr-10-23	Yr-24	Yr-25
Installed Capacity	MW												
Net Generation	MU												

Tariff Components (Fixed charge)	Unit	Yr-1	Yr-2	Yr-3	Yr-4	Yr-5	Yr-6	Yr-7	Yr-8	Yr-9	Yr-10-23	Yr-24	Yr-25
O&M Expenses	Rs Lakh												
Depreciation	Rs Lakh												
Interest on term loan	Rs Lakh												
Interest on working Capital	Rs Lakh												
Return on Equity	Rs Lakh												
Total Fixed Cost	Rs Lakh												

Tariff Components (Variable Charge)	Unit	Yr-1	Yr-2	Yr-3	Yr-4	Yr-5	Yr-6	Yr-7	Yr-8	Yr-9	Yr-10-23	Yr-24	Yr-25
Biomass Fuel Type-1	Rs Lakh												
Biomass Fuel Type-2	Rs Lakh												
Fossil Fuel (coal)	Rs Lakh												
Municipal Solid Waste	Rs Lakh												
Refuse Derived Fuel	Rs Lakh												
Sub-total (Fuel Costs)	Rs Lakh												
Fuel cost allocable to power	%												
Total Fuel Costs	Rs Lakh												

Per Unit Tariff components (Fixed)	Unit	Yr-1	Yr-2	Yr-3	Yr-4	Yr-5	Yr-6	Yr-7	Yr-8	Yr-9	Yr-10-23	Yr-24	Yr-25
PU O&M expenses	Rs/kWh												
PU Depreciation	Rs/kWh												
PU Interest on term loan	Rs/kWh												
PU Interest on working capital	Rs/kWh												
PU Return on Equity	Rs/kWh												
PU Tariff Components (Fixed)	Rs/kWh												
PU Tariff Components (Variable)	Rs/kWh												
PU Tariff Components (Total)	Rs/kWh												

Levelized Tariff	Unit	Yr-1	Yr-2	Yr-3	Yr-4	Yr-5	Yr-6	Yr-7	Yr-8	Yr-9	Yr-10-23	Yr-24	Yr-25
Discount Factors													
Discounted Tariff components (Fixed)	Rs/kWh												
Discounted Tariff components (Variable)	Rs/kWh												
Discounted Tariff components (Total)	Rs/kWh												
Levelized Tariff (Fixed)	Rs/kWh												
Levelized Tariff (Variable)	Rs/kWh												

Form-2.3

(Applicable for SHEPs)

Units Generation	Unit	Yr-1	Yr-2	Yr-3	Yr-4	Yr-5	Yr-6	Yr-7	Yr-8	Yr-9	Yr-10	Yr-11 -38	Yr-39	Yr-40
Installed Capacity	MW													
Net Generation	MU													

Tariff Components (Fixed charge)	Unit	Yr-1	Yr-2	Yr-3	Yr-4	Yr-5	Yr-6	Yr-7	Yr-8	Yr-9	Yr-10	Yr-11 -38	Yr-39	Yr-40
O&M Expenses	Rs Lakh													
Depreciation	Rs Lakh													
Interest on term loan	Rs Lakh													
Interest on working Capital	Rs Lakh													
Return on Equity	Rs Lakh													
Total Fixed Cost	Rs Lakh													

Per Unit Tariff components	Unit	Yr-1	Yr-2	Yr-3	Yr-4	Yr-5	Yr-6	Yr-7	Yr-8	Yr-9	Yr-10	Yr-11 -38	Yr-39	Yr-40
PU O&M expenses	Rs/kWh													
PU Depreciation	Rs/kWh													
PU Interest on term loan	Rs/kWh													
PU Interest on working capital	Rs/kWh													
PU Return on Equity	Rs/kWh													
PU Tariff Components	Rs/kWh													

Levelized Tariff	Unit	Yr-1	Yr-2	Yr-3	Yr-4	Yr-5	Yr-6	Yr-7	Yr-8	Yr-9	Yr-10	Yr-11 -38	Yr-39	Yr-40
Discount Factors														
Discounted Tariff components	Rs/kWh													
Levelized Tariff	Rs/kWh													