

RAJASTHAN ELECTRICITY REGULATORY COMMISSION

NOTIFICATION

Jaipur, _____, 2020

No. RERC/Secy/Reg – ____ - In exercise of the powers conferred under Section 61 and Section 62 read with Section 86 and Section 181 of the Electricity Act, 2003 (No. 36 of 2003) and all other powers enabling it in this behalf, the Rajasthan Electricity Regulatory Commission, after previous publication, hereby makes the following Regulations, namely:

Part - I Preliminary

1 Short title, Extent and commencement

1.1 These Regulations may be called as 'Rajasthan Electricity Regulatory Commission (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2020'.

1.2 These Regulations shall extend to the whole of the State of Rajasthan. These Regulations shall be applicable for determination of tariff in cases covered under these Regulations from April 1, 2020 and onwards up to March 31, 2024:

Provided that for all purposes including tariff determination and review matters pertaining to the period till FY 2019-20, the issues related to determination of tariff shall be governed by the RERC (Terms and Conditions for Determination of Tariff) Regulations, 2004 or RERC (Terms and Conditions for Determination of Tariff) Regulations, 2009 or RERC (Terms and Conditions for Determination of Tariff for Renewable Energy Sources – Wind and Solar Energy) Regulations, 2014 or RERC (Terms and Conditions for Determination of Tariff for Renewable Energy Sources – Biomass, Biogas and Biomass Gasifier Energy) Regulations, 2015, including amendments thereto, as the case may be.

1.3 These Regulations shall come into force from 1.4.2020.

2 Definitions

2.1 In these Regulations, unless the context otherwise requires:

- (a) **“Act”** means the Electricity Act, 2003 (36 of 2003), including amendments thereto;
- (b) **“Auxiliary Energy Consumption”** means the quantum of energy consumed by auxiliary equipment of the generating station and transformer losses within the generating station, and shall be expressed as a percentage of the sum of gross energy generated at the generator terminals of all the Units of the generating station;
- (c) **“Base Rate”** means the one-year Marginal Cost of Funds-based Lending Rate ('MCLR') as declared by the State Bank of India from time to time;
- (d) **“Biomass”** means 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, etc.); wood produced in dedicated energy plantations or recovered from wild bushes/weeds; and the wood waste produced in some industrial operations;

- (e) **"Biomass Gasification"** means a process of incomplete combustion of biomass resulting in production of combustible gases consisting of a mixture of Carbon Monoxide (CO), Hydrogen (H₂) and traces of Methane (CH₄), which is called producer gas;
- (f) **"Biogas"** means a gas created when organic matter like crop residues, sewage, agro/bio-industrial effluent and manure breaks down in an oxygen-free environment (ferments);
- (g) **"COD"** or "Date of Commercial Operation" shall mean the date on which the generating plant is synchronized with the grid system;
- (h) **"CERC"** means the Central Electricity Regulatory Commission;
- (i) **"Commission"** means the Rajasthan Electricity Regulatory Commission;
- (j) **"Control Period"** means a period during which the norms for determination of tariff specified in these Regulations shall remain valid;
- (k) **"Existing Generating Station"** means a generating station, which has achieved COD prior to the coming into effect of these Regulations;
- (l) **"Extended Period"** means the tariff period of a Renewable Energy Power Plant after the expiry of Power Purchase Agreement;
- (m) **"Financial Year"** means a period commencing on 1st April of a calendar year and ending on 31st March of the subsequent calendar year;
- (n) **"Floating Solar PV project"** or "FPV" means a solar PV power project where the arrays of photovoltaic panels on a structure of the project float on top of a body of water, such as artificial basin or lake, with the help of floater, anchoring and mooring system;
- (o) **"Generation Tariff"** means tariff for ex- bus supply of electricity from a generating station;
- (p) **"Gross Calorific Value"** in relation to a generating station means the heat produced in kilo-calories by complete combustion of one kilogram of solid fuel or one litre of liquid fuel or one standard cubic meter of gaseous fuel, as the case may be;
- (q) **"Gross Station Heat Rate"** means the heat energy input in kilo-calories required to generate one kWh of electrical energy at generator terminals;
- (r) **"Inter-connection Point"** means a point at EHV substation of transmission licensee or HV sub-station of distribution licensee, as the case may be, where the electricity produced from the RE generating station is injected into the Rajasthan Grid;
- (s) **"MNRE"** means the Ministry of New and Renewable Energy of the Government of India;
- (t) **"Municipal solid waste"** or "MSW" means and includes commercial and residential wastes generated in a municipal or notified areas in either solid or semi-solid form excluding industrial hazardous wastes, but includes treated bio-medical wastes;
- (u) **"New Generating Station"** means a generating station with a COD after coming into

effect of these Regulations;

- (v) **“Non fossil fuel based co-generation plant”** means a generating station that uses the process in which more than one form of energy (such as steam and electricity) are produced in a sequential manner by use of biomass;
- (w) **“Operation and Maintenance Expenses”** or **“O&M Expenses”** means the expenditure incurred on operation and maintenance of the project, and includes the expenditure on manpower, repairs, spares, consumables, insurance and other overheads;
- (x) **“Pumped storage hydro project”** means a hydro power project which generates power through water stored as potential energy, pumped from a lower elevation reservoir to a higher elevation reservoir;
- (y) **“Refuse derived fuel”** or **“RDF”** means segregated combustible fraction of solid waste other than chlorinated plastics in the form of pellets or fluff produced by drying, destoning, shredding, dehydrating, and compacting combustible components of solid waste that can be used as fuel;
- (z) **“Renewable Energy”** or **“RE”** means the energy generated from Renewable Energy Sources;
- (aa) **“Renewable Energy Power Plants”** means the power plants other than the conventional power plants generating electricity from Renewable Energy Sources;
- (bb) **“Renewable Energy Sources”** means renewable source of energy such as water, wind, sunlight, biomass, bagasse, municipal solid waste and other such sources as approved by the MNRE;
- (cc) **“Renewable energy with storage project”** means a combination of renewable energy project with storage or a combination of renewable hybrid energy project with storage having a single point of injection or maximum two points of injection into the grid;
- (dd) **“Renewable Hybrid Energy Project”** means a renewable energy project that produces electricity from a combination of renewable energy sources having a single point of injection or maximum two points of injection into the grid;
- (ee) **“Re-powering”** means the process of replacing older wind turbines with newer ones that have either a higher name-plate capacity or higher CUF, which results in a net increase in power generated from the same site;
- (ff) **“RRECL”** means Rajasthan Renewable Energy Corporation Limited (RRECL), working as a State Nodal Agency for promoting & developing Non-conventional Energy Sources in the State;
- (gg) **“Small Hydro Projects”** means Hydro Power projects with an installed capacity up to and including 25 MW or as defined by the Government of India, from time to time at a single location;
- (hh) **“Solar PV power project”** means the Solar Photo Voltaic power project that uses sunlight for direct conversion into electricity through Photo Voltaic technology and is based on technologies such as crystalline silicon or thin film or any other technology as approved by MNRE;
- (ii) **“Solar Thermal power project”** means the Solar Thermal power project that uses sunlight for direct conversion into electricity through Concentrated Solar Power

technology based on either line focus or point focus principle;

- (jj) **“State Load Despatch Centre”** or “SLDC” means the centre established by the State Government for the purpose of exercising the powers and discharging the functions under Section 31 of the Act;
- (kk) **“Storage”** means energy storage system utilizing 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;
- (ll) **“Tariff Period”** means the period for which tariff is to be determined by the Commission on the basis of principles and norms specified under these Regulations;
- (mm) **“Useful Life”** in relation to a Unit of a generating station shall mean the following duration from the date of commercial operation (COD) of such generation facility, namely:
- | | | |
|-----|--|--|
| (a) | Wind energy power project | 25 years |
| (b) | Biomass power project with Rankine cycle technology | 25years |
| (c) | Non-fossil fuel cogeneration project | 25years |
| (d) | Small Hydro Plant | 40years |
| (e) | Municipal Solid Waste (MSW)/ and Refuse Derived Fuel (RDF) based Power project | 25years |
| (f) | Solar PV/ Floating Solar PV / and Solar thermal power project | 25 years |
| (g) | Biomass Gasifier based power project | 25years |
| (h) | Biogas based power project | 25years |
| (i) | Renewable hybrid energy project | Minimum of the Useful Life of different Renewable Energy technologies combined for RenewableHybrid Energy Project for Composite Tariff as specified in Regulation 82 |
| (j) | Renewable energy with storage project | Same as Useful Life of project assuming that there is no storage |
- (nn) **“Wheeling”** means the operation whereby the distribution system and associated facilities of a transmission licensee or distribution licensee, as the case may be, are used by another person for the conveyance of electricity on payment of charges to be determined under Section 62 of the Act;
- (oo) **“Year”** means a financial year.

Abbreviations used in these Regulations shall have the meaning as stated in **Annexure-I**.

- 2.2 The words and expressions used in these Regulations and not defined herein, but defined in the Act or any other Regulations of the Commission, shall have the meaning assigned to them under the Act or any other Regulation of the Commission.

3 Scope of Regulation and extent of application

- 3.1 These Regulations shall apply to those new generating station(s) or unit based on renewable energy sources, which fulfil the following criteria:
- (a) are commissioned in the State of Rajasthan for generation and sale of electricity to Distribution Licensee(s) in the State during the Control Period;
 - (b) are Eligible projects as per eligibility criteria specified in Regulation 4 of these Regulations;
 - (c) whose tariff is to be determined by the Commission under Section 62 read with Section 86 of the Act;
- 3.2 Notwithstanding anything contained in these Regulations, the Commission shall adopt the tariff, if such tariff has been determined through a transparent process of bidding in accordance with the guidelines issued by the Central Government, as envisaged under Section 63 of the Act.
- 3.3 The tariff and other terms and conditions applicable to existing RE projects supplying power to Distribution Licensee(s) shall be governed by the provisions of the applicable Regulations or Tariff Orders issued by the Commission from time to time.
- 3.4 The terms and conditions other than related to tariff determination as specified in these Regulations shall also be applicable for Renewable Energy based captive power plants (both co-located and supplying power under open access), Renewable Energy plants supplying power to third party under Open Access and Renewable Energy plants installed behind the meter from the date of notification of these Regulations.

4 Eligibility Criteria

- a) Wind power project – The project that uses new wind turbine generators and is located at sites, on-shore or off-shore, approved by RRECL or State Government.
- b) Solar PV power project, floating solar PV project and Solar thermal power plant – The project is based on technologies approved by MNRE:

Provided that floating solar project installed with existing renewable energy project other than ground mounted Solar PV project shall be treated as renewable hybrid energy project.
- c) Biomass power project based on Rankine Cycle Technology – The Biomass power project using new plant and machinery and having grid connected system that uses Rankine Cycle technology and using biomass fuel sources.
- d) Biogas based power project- The project shall qualify to be termed as a Biogas based power project, if it is using new plant and machinery and having grid connected system that uses 100% biogas fired engine or producer gas turbines, coupled with Biogas technology for co-digesting agriculture residues, manure and other bio waste as approved by MNRE.

- e) Biomass Gasifier based power project - The project shall qualify to be termed as a Biomass Gasifier based power project, if it is using new plant and machinery having a grid connected system that uses 100% producer gas engine or turbine, coupled with Gasifier technologies approved by MNRE.
- f) Non-fossil fuel-based co-generation project – The project that uses new plant and machinery, and is based on topping cycle mode of co-generation;

Topping cycle mode of co-generation – Any facility that uses non-fossil fuel input for the 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 cogeneration plant itself (e.g. 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.
- g) Renewable Hybrid Energy Project – The rated capacity of generation from one renewable energy source is at least 25% of the rated capacity of generation from other renewable energy source(s), having a single point of injection or maximum two points of injection into the grid;
 - h) Small Hydro Project – The project that uses new plant and machinery and is located at sites approved by RRECL or State Government.
 - i) Municipal Solid Waste based Power Projects – The project uses new plant and machinery based on Rankine cycle technology and uses municipal solid waste as fuel.
 - j) Refuse derived fuel-based power projects – The project uses new plant and machinery based on Rankine cycle technology and uses refuse derived fuel as fuel.
 - k) Renewable energy with storage project – The renewable energy project including renewable hybrid energy project that uses, partly or fully, renewable energy generated from such project to store energy into storage facility having a

single point of injection or maximum two points of injection into the grid.

- l) Renewable Energy Project during extended period- The project shall qualify to be termed as Renewable Energy Project during extended period, when its Power Purchase Agreement has expired but the Useful Life as defined in Regulation 2.1(mm) is not completed and the Distribution Company(ies) has agreed to continue availing power from such project at its discretion considering the overall energy requirement, RPO targets and reasonableness of price for procurement of power from such projects (equivalent to the latest tariff discovered through competitive bidding).

Part -II
General Principles

5 Control Period

- 5.1 The Control Period under these Regulations shall be of four (4) financial years starting from April 1, 2020 till March 31, 2024:

Provided that the tariff determined as per these Regulations for the RE projects commissioned during the Control Period, shall continue to be applicable for the entire duration of the Tariff Period as specified in Regulation 6 below:

Provided further that the tariff norms specified in these Regulations shall continue to remain applicable until notification of the revised norms through subsequent re-enactment of these Regulations.

6 Tariff Period

- 6.1 The Tariff Period for Renewable Energy power projects will be same as their Useful Life as defined in Regulation 2.1 (mm).
- 6.2 The Tariff Period shall commence from the date of commercial operation of the Generating Station or Unit, as the case may be.

7 Competitive Bidding for procurement of power generated by grid-connected RE Projects

- 7.1 The tariff shall invariably be determined through a transparent process of competitive bidding in accordance with the Guidelines issued by the Central Government under Section 63 of the Act, inter-alia for the following types of RE Projects:

- a) Wind power projects;
- b) Solar PV power projects;
- c) Solar Thermal power projects;
- d) Renewable hybrid energy projects;
- e) Renewable with Storage projects;
- f) Repowering of Wind Power Projects

- 7.2 The Commission shall adopt the tariff for a RE Power Project where such tariff has been determined through a transparent process of competitive bidding in accordance with the Guidelines issued by the Central Government under Section 63 of the Act:

Provided that, in case the Competitive Bidding Guidelines for any particular technology are not issued by the Central Government, the Competitive Bidding Guidelines issued for the other technologies issued by the Central Government with suitable deviations approved by the Commission may be followed by Distribution Licensee for procurement of power through competitive bidding:

Provided further that for Renewable Energy projects below threshold limit of eligibility specified in Competitive Bidding Guidelines issued by the Central Government, the Competitive Bidding Guidelines issued for that particular technology with suitable deviations approved by the Commission may be followed by Distribution Licensee for

procurement of power through competitive bidding:

Provided also that the Competitive Bidding for procurement of power from Re-powering of Wind Power Projects shall be carried out in accordance with the Competitive Bidding Guidelines issued by the Central Government, if any. In case the Competitive Bidding Guidelines for procurement of power from Re-powering of Wind Power Projects are not issued by the Central Government, the Distribution Licensee shall carry out the competitive bidding process in accordance with the State Government Policy after obtaining prior approval of bidding documents from the Commission.

8 Generic Tariff

8.1 The generic tariff shall be determined by the Commission on annual basis in accordance with these Regulations for the following types of renewable energy projects:

- a) Biomass power project with Rankine cycle technology;
- b) Biogas based power project; and
- c) Biomass gasifier-based power project.

Provided that the generic tariff determined for the year, in which a RE project is commissioned, shall be applicable for such RE Projects of same type and shall remain valid for the tariff period.

9 Project Specific Tariff

9.1 The Commission may determine project specific tariff, on case to case basis for the following types of new projects subject to compliance of Regulation 11.2 (e) and (f):

- a) Wind power projects (both on-shore and off-shore);
- b) Solar PV power projects and solar thermal power projects;
- c) Biomass Gasifier based projects; if a project developer opts for project specific tariff;
- d) Biogas based projects; if a project developer opts for project specific tariff;
- e) Small Hydro projects;
- f) Non-fossil fuel-based co-generation project;
- g) Floating Solar PV Projects;
- h) Municipal Solid Waste and Refuse Derived Fuel based projects with Rankine cycle technology;
- i) Renewable hybrid energy projects;
- j) Renewable Energy with Storage projects;
- k) Any other new renewable energy technologies approved by MNRE.

9.2 Financial norms and operational norms, except Capital cost, specified in these Regulations, shall be the ceiling norms while determining such project-specific tariff.

10 Procurement of Power from Renewable Energy Projects during Extended Period

10.1 The Distribution Licensee(s) at their own discretion may procure power from Renewable Energy Projects during extended period considering the following aspects:

- a) Overall Energy Requirement and Energy Availability from various sources;
- b) To meet the RPO targets for the year;
- c) Tariff for procurement of power from such projects (equivalent to the latest tariff discovered through competitive bidding for relevant technology):

Provided that for any renewable energy technology, if the latest tariff discovered through competitive bidding is not available, the Commission will determine the tariff on case to case basis, only if the Distribution Licensee(s) is willing to procure power from such project during extended period.

10.2 For procurement of power from such projects, the Distribution Licensees may enter into an agreement with Renewable Energy Project Developer during extended period at mutually agreed terms, to be approved by the Commission.

11 Petition and proceedings for determination of tariff

11.1 In case of Renewable Energy projects for which generic tariff has to be determined as per these Regulations, the Commission may determine such generic tariff on Suo-motu basis at the beginning of each year of the Control Period:

Provided that for first year of Control Period, i.e., from 1.4.2020 to 31.3.2021, the Generic Tariff Order shall be issued after notification of these Regulations.

11.2 A petition for determination of project specific tariff shall be accompanied by such fee as specified in applicable Regulations and shall be accompanied by:

- a) Information in forms 1.1, 1.2, 2.1, 2.2 and 2.3 as the case may be, and as appended in these Regulations;
- b) Detailed project report outlining technical and operational details, site specific aspects, premise for capital cost and financing plan, details of installation, manufacturer's/supplier's guaranteed and other technical particulars, recommended O&M practices and public safety requirements, etc.
- c) A statement of all applicable terms and conditions and expected expenditure for the period for which tariff is to be determined.
- d) A statement containing full details of calculation of any subsidy and incentive received, due or assumed to be due from the Central Government and/or State Government. This statement shall also include the proposed tariff calculated without consideration of the subsidy and incentive.
- e) Consent from Distribution Licensee or beneficiary for procurement of power from Renewable Energy Project at tariff approved by the Commission, in the form of Initialled Power Purchase Agreement:

Provided that the consent from Distribution Licensee shall also include the following:

- i) Status of compliance of RPO Obligation by Distribution Licensee
- ii) Impact of Project Specific Tariff on Distribution Licensee's overall power purchase cost

- f) Following documents in case of petition for determination of project specific tariff by renewable energy projects, where tariff from such renewable energy sources is generally determined through competitive bidding process in accordance with provisions of Section 63 of the Act:
 - i) Rationale for opting project specific tariff instead of competitive bidding
 - ii) Competitiveness of the proposed tariff vis-à-vis tariff discovered through Competitive Bidding/tariff prevalent in the market.
 - g) Any other information that the Commission requires the petitioner to submit.
- 11.3 The proceedings for determination of tariff shall be in accordance with the RERC (Transaction of Business) Regulations, 2005 as amended from time to time.

12 Tariff Structure

- 12.1 The tariff for renewable energy technologies shall be single part tariff consisting of the following fixed cost components:
- a) Return on equity;
 - b) Interest on loan capital;
 - c) Depreciation;
 - d) Interest on working capital; and
 - e) Operation and Maintenance expenses:

Provided that for renewable energy projects having fuel cost component, like biomass based power projects based on Rankine cycle technology, biomass gasifier based power projects, biogas based power projects, non-fossil fuel based co- generation projects and refuse derived fuel based power projects, single part tariff with two components, fixed cost component and fuel cost component, shall be determined.

13 Tariff Design

- 13.1 The generic tariff shall be determined, on levellised basis, considering the year of commissioning of the power project, for the tariff period of the project:
- Provided that for renewable energy projects having single part tariff with two components, fixed cost component shall be determined on levellised basis considering the year of commissioning of the project, while fuel cost component shall be determined on year of operation basis in the Tariff Order to be issued by the Commission.
- 13.2 For the purpose of levellised tariff computation, the discount factor equivalent to post tax weighted average cost of capital shall be considered.
- 13.3 The above principles shall also apply for project specific tariff determination.

14 Despatch principles for electricity generated from Renewable Energy Sources:

- 14.1 Wind, Solar, Small Hydro, Wind Solar Hybrid plants and Municipal Solid Waste based plants shall be treated as 'MUST – RUN' powerplants and shall not be subjected to 'merit order despatch' principles.
- 14.2 The despatch principles for electricity generated from wind and solar energy plants shall be as per the provisions of the Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2010, as amended from time to time, except where specific provisions have been made under the Rajasthan Electricity Regulatory Commission(Rajasthan Electricity Grid Code) Regulation, 2008 and RERC (Forecasting, Scheduling, Deviation Settlement and Related Matters of Solar and Wind Generation Sources)Regulations, 2017 and amendments thereto.
- 14.3 The despatch principles for electricity generated from other renewable energy plants shall be as per the provisions of the Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2010, as amended from time to time, except where specific provisions have been made under the Rajasthan Electricity Regulatory Commission (Rajasthan Electricity Grid Code) Regulation, 2008 and amendments thereto.
- 14.4 Biomass, Biogas and Biomass Gasifier based power plants with installed capacity of 15MW and above, commissioned after notification of these Regulations, shall not be treated as 'Must Run' power plants and shall be subjected to 'Merit Order Despatch' principles.
- 14.5 All Biomass, Biogas and Biomass Gasifier based power plants commissioned before notification of these Regulations, shall be treated as 'Must Run' power plants and shall not be subjected to 'Merit Order Despatch' principles.

Part -III
Financial principles for computing costs and return

15 Capital Cost

15.1 The normative Capital Cost shall be as specified in the subsequent technology specific chapters:

Provided that for project specific tariff determination the generating company shall submit the break-up of capital cost items along with its petitions in the manner specified under Regulation 11.

16 Debt Equity Ratio

16.1 For determination of generic tariff and project specific tariff, the debt equity ratio shall be 70:30:

Provided that, for project specific tariff, where the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan:

Provided further that for project specific tariff, where equity actually deployed is less than 30% of the capital cost, the actual equity shall be considered for determination of tariff:

Provided also that the equity invested in foreign currency, if any, shall be designated in Indian rupees on the date of each investment:

Provided also that debt equity ratio shall be considered after deducting the amount of grant or capital subsidy received for the project for arriving at the amount of debt and equity.

Explanation- The premium, if any, raised by the Generating Company, while issuing share capital and investment of internal resources created out of its free reserves, for the funding of the project, shall be reckoned as paid up capital for the purpose of computing return on equity, provided such premium amount and internal resources are actually utilised for meeting the capital expenditure of the Renewable Energy project.

17 Loan and Finance Charges

17.1 Loan Tenure

17.1.1 For the purpose of determination of generic tariff and project specific tariff, loan tenure of 15 years shall be considered.

17.2 Interest Rate

a) The loans arrived at in the manner indicated in Regulation 16 shall be considered as gross normative loan for calculation for interest on loan. The normative loan outstanding as on April 1st of every year shall be worked out by deducting the cumulative repayment up to March 31st of previous year from the gross normative loan.

- b) For the purpose of computation of tariff, normative interest rate of two hundred (200) basis points above Base Rate prevalent during the last available six months shall be considered.
- c) Notwithstanding any moratorium period availed by the generating company or project developer, the repayment of loan shall be considered from the first year of commercial operation of the project and shall be equal to the annual depreciation allowed.

18 Depreciation

- 18.1 The value base for the purpose of depreciation shall be the Capital Cost determined by the Commission (for generic tariff) or the capital cost admitted by the Commission (for project specific tariff), as the case may be.
- 18.2 The Salvage value of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the Capital Cost of the asset.
- 18.3 Depreciation rate of 4.67% per annum for first 15 years and remaining depreciation shall be spread over the remaining useful life of the project considering the salvage value of the project as 10% of the project cost shall be considered.
- 18.4 Depreciation shall be chargeable from the first year of commercial operation:
Provided that, in case of determination of project specific tariff, if commercial operation of the asset is for part of the year, depreciation shall be computed on pro rata basis.

19 Return on Equity

- 19.1 The value base for the equity shall as determined under Regulation 16.
- 19.2 The normative Return on Equity shall be 14%. The normative Return on Equity shall be grossed up by the latest available notified Minimum Alternate Tax (MAT) rate for the entire Tariff Period.

20 Interest on Working Capital

- 20.1 The Working Capital requirement in respect of wind power projects, small hydro projects, solar PV power projects, floating solar PV projects, solar thermal power projects, and renewable energy with storage projects shall be computed in accordance with the following:
 - a) Operation & Maintenance expenses for one month;
 - b) Receivables equivalent to one and half (1.5) months of tariff for sale of electricity calculated on the normative Capacity Utilisation Factor (CUF);
 - c) Maintenance spare @ 15% of operation and maintenance expenses.

- 20.2 The Working Capital requirement in respect of biomass power projects with Rankine cycle technology, biogas power projects, biomass gasifier-based power projects, non-fossil fuel-based co-generation projects, municipal solid waste based power projects and refuse derived fuel based power projects shall be computed in accordance with the following clause:
- Fuel costs for four months equivalent to normative Plant Load Factor (PLF);
 - Operation & Maintenance expenses for one month;
 - Receivables equivalent to one and half (1.5) months of tariff for sale of electricity calculated at the normative PLF;
 - Maintenance spare @ 20% of operation and maintenance expenses.
- 20.3 In case of renewable hybrid energy projects, the Working Capital requirement shall be sum of the Working Capital requirement determined as per norms applicable for renewable energy sources, in proportion to their rated capacity in the project.
- 20.4 Interest on Working Capital shall be at interest rate equivalent to the normative interest rate of three hundred (300) basis points above Base Rate prevalent during the last available six months for the determination of tariff.

21 Operation and Maintenance Expenses

- 21.1 Operation and maintenance expenses shall be determined for the Tariff Period based on the normative O&M expenses specified by the Commission subsequently in these Regulations for the first Year of Control Period.
- 21.2 Normative O&M expenses allowed during first year of the Control Period (i.e. FY 2020-21) under these Regulations shall be escalated at the rate of 3.84% per annum over the Tariff Period.

22 Rebate

- 22.1 For payment of bills of the generating company effected through letter of credit or by cash/cheque or through electronic transfer within 5 working days of presentation of bills, a rebate of 1.5 % shall be allowed.

Explanation: In case of computation of '5 days', the number of days shall be counted consecutively without considering any holiday. However, in case the last day or 5th day is official holiday, the 5th day for the purpose of Rebate shall be construed as the immediate succeeding working day (as per the official State Government's calendar, where the Office of the Authorised Signatory or Representative of the Beneficiary, for the purpose of receipt or acknowledgement of Bill is situated).

- 22.2 If payments of bills of the generating company are made beyond 5 working days through Letter of Credit or by cash/cheque or through electronic transfer but within a period of 30 days of presentation of bills, a rebate of 1% shall be allowed.

23 Late payment surcharge

- 23.1 In case the payment of bills of renewable energy tariff is delayed beyond a period of 45 days from the date of presentation of bills, a late payment surcharge equivalent to Base Rate as on 1st April of the respective year plus 400 basis points per annum on daily basis shall be levied by the Generating Company.

24 Subsidy or incentive by the Central / State Government

24.1 The Commission shall take into consideration any incentive or subsidy offered by the Central or State Government, including accelerated depreciation benefit if availed by the generating company, for the renewable energy power plants while determining the tariff under these Regulations:

Provided that the following principles shall be considered for ascertaining income tax benefit on account of accelerated or higher depreciation, if availed, for the purpose of tariff determination:

- a) Assessment of benefit shall be based on normative capital cost, accelerated or higher depreciation rate as per relevant provisions under Income Tax Act and corporate income tax rate.
- b) Capitalization of renewable energy projects during second half of the fiscal year.
- c) Per unit benefit shall be derived on levelised basis at discount factor determined as per Regulation 13 of these Regulations:

Provided further that in case the generating company is not claiming accelerated or higher depreciation benefit, the Power Purchase Agreement entered into with the generating company shall include an undertaking by the generating company that accelerated or higher depreciation benefit would not be availed for the project:

Provided also that if accelerated or higher depreciation benefit has been claimed despite submission of the undertaking, then distribution licensee shall be entitled to recover amount wrongly claimed along with penal charges @ 1.50 % per month calculated on daily basis.

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

24.3 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.

Part - IV

Technology specific parameters for Wind Power Project

25 Capital Cost

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

26 Capacity Utilisation Factor

26.1 The minimum Capacity Utilisation Factor (CUF) for wind power plants for the purpose of determination of tariff shall be as follows:

Sr.No.	Districts	CUF
1	Jaisalmer, Jodhpur & Barmer	21%
2	Other Districts	20%

27 Operation and Maintenance (O&M) Expenses

27.1 The Commission shall determine only project specific O&M expenses considering the prevailing market trends.

28 Tariff Determination in case of Re-powering of Wind Power Project

28.1 In case of Re -powering of Wind Energy Project, the Tariff shall be governed by provisions of Regulation 7 subject to the following conditions:

- (a) Any existing wind project that have completed at least 10 years in operation shall be considered for Re-powering.
- (b) In case of power being procured by Distribution Licensee through existing PPA, the energy generated corresponding to average of last three year's generation prior to re-powering would continue to be procured on the terms of PPA in-force and remaining additional generation may be purchased by Distribution Licensee at a tariff discovered through competitive bidding in the State at the time of commissioning of the re-powering project.

Part -V

Technology specific parameters for Solar PV Power Project

29 Capital Cost

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

30 Capacity Utilisation Factor

30.1 The minimum Capacity Utilisation Factor for the purpose of determination of tariff for Solar PV plants shall be 20%.

31 Operation and Maintenance (O&M) Expenses

31.1 The Commission shall determine only project specific O&M expenses considering the prevailing market trends.

32 Auxiliary Consumption

32.1 The maximum auxiliary consumption factor shall be 0.75%.

Part -VI

Technology specific parameters for Solar Thermal Power Project

33 Capital Cost

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

34 Capacity Utilisation Factor

34.1 The minimum Capacity Utilisation Factor for the purpose of determination of tariff for Solar Thermal power plants shall be 23%.

35 Operation and Maintenance (O&M) Expenses

35.1 The Commission shall determine only project specific O&M expenses considering the prevailing market trends.

36 Auxiliary Consumption

36.1 The maximum auxiliary consumption factor shall be 10%.

Part -VII

Technology specific parameters for Biomass Power Plant based on Rankine Cycle

37 Capital Cost

- 37.1 The normative Capital Cost for Biomass power plants shall be inclusive of land cost, pre-development expenses, all capital works including plant and machinery, civil works, erection and commissioning, financing and interest during construction etc., and evacuation infrastructure up to the interconnection point.
- 37.2 The normative Capital Cost for Biomass power plants for FY 2020-21 shall be Rs. 527.78 Lakh/MW with water cooled condenser and Rs. 561.98 Lakh/MW for Biomass power plants with air cooled condenser. The capital cost is inclusive of Rs. 15 Lakh/MW towards cost of transmission system upto the interconnection point and this Rs. 15 Lakh/MW also includes Rs. 2.5 Lakh/MW for grid connectivity charges payable to Transmission Licensee and Distribution Licensee as the case may be.
- 37.3 The capital cost as specified for FY 2020-21 of the Control Period will remain valid for the entire remaining duration of Control Period unless reviewed earlier by the Commission.

38 Plant Load Factor

- 38.1 For the purpose of determination of tariff, the Plant Load Factor (PLF) shall be considered as 80%.

39 Auxiliary Consumption

- 39.1 The normative auxiliary consumption shall be as follows:
- a) For project using water- cooled condenser: 10%.
 - b) For project using air- cooled condenser: 12%.

40 Station Heat Rate

- 40.1 The normative Station Heat Rate shall be as follows:
- a) For project using travelling grate boilers: 4200 kcal/kWh.
 - b) For project using AFBC boilers: 4125 kcal/kWh

41 Calorific Value

- 41.1 The calorific value of the biomass fuel used for the purpose of determination of tariff shall be 3400 kcal/kg.

42 Operation and Maintenance (O&M) Expenses

- 42.1 The normative O&M expenses for the first year of the Control Period, i.e., FY 2020-21 shall be Rs. 46.46Lakh per MW for water cooled condenser and Rs.49.53 Lakh/MW for air cooled condenser
- 42.2 Normative O&M expenses allowed under these Regulations shall be escalated at the rate of 3.84% per annum over the Tariff Period to compute the levelled tariff.

43 Fuel Price

- 43.1 Biomass fuel price shall be Rs. 2,958.25/MT for FY 2020-21. This price shall be subject to revision prospectively during the course of the year through a separate order based on recommendation of the State Level Committee constituted by the Commission consisting of representatives of Nodal Agency, State Government, Distribution Licensee and any other organisation as decided by the Commission. The Committee shall recommend biomass fuel price once in every two years based on the fuel study conducted by RRECL. The State Level Committee shall also recommend the annual escalation in the Biomass fuel price for the year immediately following the year for which the fuel price has been recommended by it based on the fuel study conducted by RRECL. Thereafter, the fuel cost including annual escalation would again be revisited by the Committee taking into account the prevailing market conditions, and the cycle would continue till the end of the Control Period:

Provided that the fuel cost arrived at as above shall be applicable to the Biomass power plants commissioned during the current Control Period (s) and also during the earlier Control Period FY 2009-15 and FY 2015-20.

44 Use of fossil fuel or Solar Power

- 44.1 For new biomass power projects based on Rankine cycle technology installed after notification of these Regulations, use of fossil fuels or solar power shall not be allowed.
- 44.2 For existing biomass power projects based on Rankine cycle technology installed prior to notification of these Regulations, use of fossil fuels to the extent of 15% in terms of gross calorific value on annual basis or solar power within the limit of 15% of total energy generation on annual basis, shall be allowed for the Useful Life of the project from the date of commercial operation. For example, if total generation from biomass based plant in a year is 100 MU, then maximum 15MU can be generated using fossil fuel or from solar power:

Provided that in case of usage of solar power, the project developer shall furnish to the RRECL and to the distribution licensee, the details of solar power generation and consumption for each month, along with the monthly energy bill.

45 Monitoring Mechanism for use of fossil fuel

- 45.1 In case of Biomass power projects based on Rankine cycle technology commissioned on or before 31.03.2020, the Project developer shall furnish to the RRECL and to the beneficiary, a monthly fuel usage statement and monthly fuel procurement statement duly certified by Chartered Accountant (with a copy to appropriate agency appointed by the Commission for the purpose of monitoring the fossil and non-fossil fuel consumption) for each month, along with the monthly energy bill. The statement shall cover details such as –

- a) Opening fuel stock quantity (in tonne),
- b) Receipt of fuel quantity (in tonne) at the power plant site,
- c) Quantity of fuel (in tonne) for each fuel type (biomass fuels and fossil fuels) procured and consumed during the month for power generation purposes,
- d) Closing fuel stock quantity (in tonne) for each fuel type (biomass fuels and fossil fuels) available at the power plant site,
- e) Cumulative quantity (in tonne) of each fuel type procured and consumed till the end of that month during the year,

- f) Actual (gross and net) energy generation (denominated in units) during the month,
- g) Cumulative actual (gross and net) energy generation (denominated in units) until the end of that month during the year.

45.2 Non-compliance with the condition of fossil fuel usage the project developer, during any financial year, shall result in withdrawal of applicability of tariff as per these Regulations for such biomass based power project.

46 Variable Charges

46.1 The variable charges for the relevant year shall be determined as under:

$$VC = [\text{Station Heat Rate (SHR)/Gross Calorific Value (GCV)}] \times [1/(1 - \text{Aux Consum. Factor})] \times (P/ 1000)$$

P = Fuel price in Rs. per Metric Tonne applicable for the relevant year and as determined as per Regulation 43.

Part -VIII
Technology specific parameters for Biogas Power Plant

47 Capital Cost

- 47.1 The normative Capital Cost for Biogas power plants shall be inclusive of land cost, pre-development expenses, all capital works including plant and machinery, civil works, erection and commissioning, financing and interest during construction etc., and evacuation infrastructure upto the inter-connection point.
- 47.2 The normative Capital Cost for Biogas power plants for FY 2020-21 shall be Rs. 1156.77 Lakh/MW. This capital is inclusive of evacuation of generated energy upto interconnection point and this capital cost also includes Rs.2.5Lakh/MW for grid connectivity charges payable to Transmission Licensee or Distribution Licensee as the case may be. After taking into account of capital subsidy, net project cost shall be Rs. 856.77 Lakh/MW for FY 2020-21.
- 47.3 The capital cost as specified for FY 2020-21 of the Control Period will remain valid for the entire remaining Control Period unless reviewed by the Commission.

48 Plant Load Factor

- 48.1 The Plant Load Factor (PLF) for determining the fixed charges shall be 90%.

49 Auxiliary Consumption

- 49.1 The auxiliary power consumption factor shall be 12%.

50 Specific Fuel Consumption

- 50.1 The specific fuel consumption shall be 3 kg of substrate mix per kWh.

51 Operation and Maintenance (O&M) Expenses

- 51.1 The normative O&M expenses for the first year of the Control Period, i.e., FY 2020-21 shall be Rs. 61.62 Lakh/MW.
- 51.2 Normative O&M expenses allowed under these Regulations shall be escalated at the rate of 3.84% per annum over the Tariff Period to compute the levellised tariff.

52 Fuel cost (Feed stock price)

- 52.1 Feed stock price for the first year of the Control Period (i.e. FY 2020-21) shall be Rs 1273.06/MT (net of any cost recovery from digester effluent):

Provided that for the years beyond 2020-21 of the Control Period, the biogas price for FY 2020-21 will change in the same proportion of change in Biomass fuel price determined based on the recommendations of the State Level Committee constituted under Regulation 43 of these Regulations unless specifically reviewed by the Commission.

53 Variable Charges

- 53.1 The variable charges for Biogas based power projects shall be determined as under:

$$VC = [\text{specific fuel consumption (kg/Unit)}] \times [1/(1 - \text{Aux Consum. Factor})] \times (P/1000)$$

P = Fuel cost in Rs. per Metric Tonne.

Part -IX
Technology Specific Parameters for Biomass Gasifier based Power Plants

54 Capital Cost

- 54.1 The normative Capital Cost for Biomass Gasifier based power plants shall be inclusive of land cost, pre-development expenses, all capital works including plant and machinery, civil works, erection and commissioning, financing and interest during construction etc. and evacuation infrastructure up to the inter-connection point.
- 54.2 The normative Capital Cost for Biomass Gasifier based power plants for FY 2020-21 shall be Rs. 593.49 Lakh/MW. The capital cost is inclusive of evacuation of generated energy upto interconnection point and this capital cost also includes Rs. 2.5 Lakh/MW for grid connectivity charges payable to Transmission Licensee or Distribution Licensee as the case may be. After taking into account of capital subsidy, net project cost shall be Rs. 443.49 Lakh/MW for FY 2020-21.
- 54.3 The capital cost as specified for FY 2020-21 shall be the same for subsequent years of the Control Period unless reviewed earlier by the Commission.

55 Plant Load Factor

- 55.1 The Plant Load Factor (PLF) for determining the fixed charges shall be 85%.

56 Auxiliary Consumption

- 56.1 The auxiliary power consumption factor shall be 10%.

57 Specific Fuel Consumption

- 57.1 The normative specific fuel consumption shall be 1.25 kg per kWh.

58 Operation and Maintenance (O&M) Expenses

- 58.1 The normative O&M expenses for the first year of the Control Period, i.e., FY 2020-21 shall be Rs. 61.62 Lakh/MW.
- 58.2 Normative O&M expenses allowed under these Regulations shall be escalated at the rate of 3.84% per annum over the Tariff Period to compute the levelled tariff.

59 Fuel cost (Feed stock price)

- 59.1 Feed stock price for the first year of the Control Period (i.e., FY 2020-21) shall be as per Regulation 43 of these Regulations.

60 Variable Charges

- 60.1 The variable charges for Biomass Gasifier based power plants shall be determined as under:

$$VC = [\text{specific fuel consumption (kg/Unit)}] \times [1/(1 - \text{Aux Consum. Factor})] \times (P/1000)$$

P = Fuel cost in Rs per Metric Tonne.

Part -X
Technology Specific Parameters for Small Hydro Projects

61 Capital Cost

61.1 The normative capital cost for small hydro projects during first year of Control Period i.e. financial year 2020-21 shall be as follows:

Project Size	Capital Cost (Rs. lakh/ MW)
Below 5 MW	780
5 MW to 25 MW	900

61.2 The capital cost for small hydro projects as specified for first year of the Control Period shall remain valid for the entire duration of the Control Period unless reviewed earlier by the Commission.

62 Capacity Utilisation Factor

62.1 Normative capacity utilisation factor for the small hydro projects shall be 30%.

Explanation: For the purpose of this Regulation, normative capacity utilisation factor is net of free power to the home State, if any.

63 Auxiliary Consumption

63.1 Normative auxiliary consumption for the small hydro projects shall be considered as 1.0%.

64 Operation and Maintenance expenses

64.1 The normative Operation and Maintenance expenses for small hydro projects during first year of Control Period, i.e., financial year 2020-21 shall be as follows:

Project Size	O&M Expenses (Rs. lakh/ MW)
Below 5 MW	33.66
5 MW to 25 MW	24.37

64.2 Normative O&M Expenses allowed at the commencement of the Control Period, i.e., financial year 2020-21 under these Regulations shall be escalated at the rate specified in Regulation 21 of these Regulations for Tariff Period.

Part -XI

Technology Specific Parameters for non-fossil fuel based co-generation projects

65 Capital Cost

65.1 The normative capital cost for the non-fossil fuel based co-generation projects shall be Rs. 492 lakhs/MW for the first year of Control Period i.e. financial year 2020-21 and will remain valid for the entire duration of the Control Period unless reviewed earlier by the Commission.

66 Plant Load Factor

66.1 The Plant Load Factor (PLF) for determining the fixed charges shall be 53%.

67 Auxiliary Consumption

67.1 The auxiliary consumption shall be considered as 8.5% for the computation of tariff.

68 Station Heat Rate

68.1 The Station Heat Rate of 3600 kcal/ kWh for power generation component alone shall be considered for computation of tariff for non-fossil fuel based co-generation projects.

69 Gross Calorific Value

69.1 The gross calorific value for bagasse shall be considered as 2250 kcal/kg. For the use of biomass fuels other than bagasse, gross calorific value as specified under Regulation 41 shall be applicable.

70 Fuel Cost

70.1 The price of bagasse for first year of the Control Period, i.e., financial year 2020-21 shall be Rs. 2274 per MT and shall be escalated at the rate of 5% per annum to arrive at the base price for subsequent years of the Control Period, unless specifically reviewed by Commission. For the purpose of determining levelised tariff, a normative escalation factor of 5% per annum shall be applicable on bagasse prices.

70.2 For use of biomass other than bagasse in non-fossil fuel based co-generation projects, the biomass prices as specified under Regulation 43 shall be applicable.

71 Operation and Maintenance expenses

71.1 The normative O&M expenses during the first year of the Control Period, i.e. financial year 2020-21, shall be Rs. 24.52 lakhs per MW and shall be escalated at the rate of 3.84% per annum for the Tariff Period.

Part -XII

Technology Specific Parameters for municipal solid waste based power projects and refuse derived fuel based power projects

72 Capital Cost

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

73 Plant Load Factor

73.1 Plant load factor for determining tariff for municipal solid waste based power projects and refuse derived fuel based power projects shall be:

Sl. No.	Plant Load Factor	MSW	RDF
a)	During Stabilisation Period	65%	65%
b)	During the remaining period of the first year (after stabilization period)	65%	65%
c)	2 nd year onwards	75%	80%

73.2 The stabilisation period shall not be more than 6 months from the date of commercial operation of the project.

74 Auxiliary Consumption

74.1 The auxiliary consumption for determination of tariff shall be considered as 15%.

75 Station Heat Rate

75.1 The Station Heat Rate for determination of tariff shall be considered as 4200 kcal/kWh.

76 Operation and Maintenance Expenses

76.1 The Commission shall determine only project specific O&M expenses considering the prevailing market trends.

77 Gross Calorific Value

77.1 The gross calorific value of RDF for the purpose of determination of tariff shall be at 2500 kcal/kg.

77.2 The gross calorific value of MSW shall be determined by the Commission on a case to case basis while determining the project specific tariff.

78 Fuel Cost

78.1 Price of refuse derived fuel during financial year 2020-21 shall be considered as Rs.2084 per MT and shall be escalated at the rate of 5% per annum to arrive at the base price for subsequent years of the Control Period, unless specifically reviewed by Commission. For the purpose of determining levellised tariff, a normative escalation factor of 5% per annum shall be applicable.

78.2 Fuel cost shall be considered as nil for municipal solid waste:

Provided that the Commission may consider allowing transportation cost of such fuel while determining the project specific tariff:

Provided further that the tipping fee/ Royalty received by the project shall be adjusted in the fuel price while working out the tariff:

Provided also that the grant/ capital subsidy received shall be adjusted in accordance with the provision of Regulation 24.

Part -XIII
Technology Specific Parameters for Renewable Hybrid Energy Projects

79 Capital Cost

79.1 The capital cost shall be determined on project specific basis considering the prevailing market trends.

80 Capacity Utilisation Factor

80.1 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 source, as the case may be:

Provided that the minimum capacity utilisation factor for renewable hybrid energy project shall be 30% when measured at the inter-connection point, where the energy is injected into the grid.

81 Operation and Maintenance expenses

81.1 The Commission shall determine only project specific O&M expenses considering the prevailing market trends.

82 Tariff

82.1 The tariff for a renewable hybrid energy project shall be a composite levelled tariff for the project as a whole by factoring in the tariff components upto 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 RE hybrid project is left with further useful life, the levelled tariff for remaining useful life of such RE technology shall be determined separately, by factoring in the tariff components for the remaining useful life.

Part -XIV

Technology Specific Parameters for Renewable Energy with Storage project

83 Capital Cost

- 83.1 The Commission shall determine only project specific capital cost for renewable energy with storage project considering the prevailing market trends.

84 Rated Capacity of Energy Storage System (ESS)

- 84.1 The minimum rated energy capacity of an Energy Storage System (ESS) shall be equal to 'X/2' MWh, where 'X' is the installed capacity of the Project in MW.

For example: In case, the installed capacity of a Project is 20 MW, then minimum energy rating of ESS installed shall be 10 MWh.

85 Storage Efficiency

- 85.1 The Commission shall approve the storage efficiency only for project specific tariff:

Provided that the minimum efficiency for storage based on technology of solid-state batteries shall be 80%:

Provided further that the minimum efficiency for storage based on technology of pumped storage shall be 75%:

- 85.2 Efficiency of storage component of renewable energy with storage project shall be measured as ratio of output energy received from storage and input energy supplied to the storage component of such project, on annual basis.

86 Operation and Maintenance expenses

- 86.1 The Commission shall determine only project specific O&M expenses considering the prevailing market trends.

87 Tariff determination for Energy Storage

- 87.1 The tariff for renewable energy with storage project shall be a composite tariff or differential tariff based on 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 supply of power on round the clock basis or for time periods as agreed by Project Developer and Beneficiary.

Part – XV
Others

88 Tariff for existing Plants set up as per Government of Rajasthan and Government of India Policies

- 88.1 Tariff for electricity supply to the distribution licensee by wind energy plants, for which Power Purchase Agreements (PPA) have been executed under GoR policy of 1999 & 2000 and commissioned before 31.03.2007 for the Control Period shall be as hereunder:

Sr. No.	Renewable Energy Generation during the year	Tariff in Rs. Per kWh for plants under GoR policy of	
		11.3.99	4.2.2000
1	2020-21	5.7171	5.7135
2	2021-22	5.7171	5.7135
3	2022-23	5.7171	5.7135
4	2023-24	5.7171	5.7135

Provided that the above tariff shall be applicable if the energy is being supplied from these plants under the PPA period. For period beyond PPA period, the Tariff for Renewable Projects during extended period as per Regulation 10 shall be applicable.

- 88.2 Tariff for electricity supply to the distribution licensee by Biomass power plants, for which Power Purchase Agreements (PPA) have been executed under GoR Policy of 1999 and commissioned before 30.09.2008 for the Control Period shall be as under:

Sr. No.	Renewable Energy Generation during the year	Tariff in Rs. Per kWh for plants under GoR policy of 11.3.99
1	2020-21	8.0445
2	2021-22	8.4467
3	2022-23	8.8690
4	2023-24	9.3124

Provided that the above tariff shall be applicable if the energy is being supplied from these plants under the PPA period. For period beyond PPA period, the Tariff for Renewable Projects during extended period as per Regulation 10 shall be applicable.

- 88.3 The tariff for electricity supply to the Distribution Licensee by renewable energy power plants other than those covered by sub regulation 88.1 and which are commissioned up to 31.3.07 (for wind power plant) under GoR policies of 2003 & 2004 (original as well as revised) shall be as hereunder, being the same as was applicable for twenty years as per the said Policy:

Sr. No.	Renewable energy generation during the year	Tariff in (Rs. per kWh) as per policy dated		
		30.4.03	25.10.04	25.10.04
		For wind power plant	For wind power plant	For wind power plant (amended on 24.2.06)
1	2020-21	3.92	3.36	3.79
2	2021-22	3.92	3.36	3.79
3	2022-23	3.92	3.36	3.79
4	2023-24	3.92	3.36	3.79

Provided that the above tariff shall be applicable if the energy is being supplied from these plants under the PPA period. For period beyond PPA period, the Tariff for Renewable Projects during extended period as per Regulation 10 shall be applicable.

88.4 Solar Power Projects (For projects commissioned under Generation based incentive scheme of Govt of India)

The total tariff payable by Discoms to the solar power producer for projects commissioned under Generation Based Incentive of Govt of India shall be as under:

A. Tariff for first 10 years from COD

Sr. No.	Particulars	SPV Technology	CSP Technology
1.	Solar power plants eligible for full GBI as per Gol scheme	Rs.15.78 /kWh	Rs.13.78 /kWh
2.	Solar power plants eligible for reduced GBI as per Gol scheme	Rs.15.18 /kWh	Rs.13.18 /kWh

B. Tariff after 10 years from COD

The tariff after 10 years from COD shall be equivalent to the tariff paid by Distribution Licensee for procurement of power during 10th year of operation from COD of the project excluding GBI Incentive i.e., Rs. 4.81/kWh (Rs. 4.03/kWh + Additional Rs. 0.78/kWh) for the remaining tenure of PPA. In case the Solar Project Developer does not want to supply power to Distribution Licensees at this tariff, Solar Project Developer is free to sell power to any other entity.

89 Grid Connectivity

89.1 Grid connectivity charges of Rs. 2.5Lakh per MW shall be payable by the Renewable Energy Projects to Transmission Licensee or Distribution Licensee, as the case may be.

89.2 The power injection into the State grid shall be limited to the capacity indicated below.

Sr. No.	Total Power fed through a feeder (in MW)					
		11 kV	33 kV	132 kV	220 kV	400 kV
1	ACSR Raccoon	1 MW	2 MW	-	-	-
2	ACSR Dog	2 MW	6 MW	-	-	-
3	ACSR Panther	Above 2 MW & up to 6 MW	Above 6 MW & up to 15 MW	Above 15 MW & up to 70 MW	-	-
4	ACSR Zebra	-	-	-	Above 70 MW & up to 200 MW	-
5	ACSR Single Moose	-	-	-	Above 200 MW & up to 225 MW	-
6	ACSR Twin Moose	-	-	-	-	Above 225 MW & up to 800 MW
7	ACSR Quad Moose	-	-	-	-	Above 800 MW & up to 1600 MW
8	AL 59	-	-	Above 70 MW & up to 120 MW	Above 120 MW & up to 300 MW	Above 300 MW & up to 1250 MW
9	HTLS	-	-	Above 70 MW & up to 150 MW	Above 150 MW & up to 300 MW	Above 300 MW & up to 1800 MW

90 Metering

90.1 In respect of sale of energy to the Distribution Licensee, the metering for the purpose of energy accounting shall be as under:

- For Solar PV and solar thermal plants, the metering shall be at the line isolator on the outgoing feeder on HV side of the generator transformer.
- For wind power plants supplying power through pooling arrangement, the metering shall be at the grid substation of the licensee:

Provided that for the said metering at the grid substation of licensee, the following losses shall be considered:

- Losses of 1% for metering up to 33 kV.

(b) Losses of 2.5 % for metering at 132 kV and above.

- 90.2 In respect of sale of energy to the Distribution Licensee, from Biomass, Biogas, Biomass Gasifier based power plants, Non-fossil fuel based cogeneration plants, Municipal solid waste based plants and any other technologies approved by MNRE which does not use pooling arrangement for the supply of power, the metering for the purpose of accounting shall be at the line isolator on the outgoing feeder on HV side of the generator transformer.
- 90.3 All the metering installations shall comply with the Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006 and its amendments thereof:
Provided that if the metering installations of existing Renewable Energy based Generating Stations are not compliant with the Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006 and its amendments thereof, these Generating Stations should install the meters complying with Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006 and its amendments thereof within one year from the date of notification of these Regulations.
- 90.4 Biomass power plants, covered under GoR Policy, 1999, shall also be allowed to shift their meters to the line isolator of the outgoing feeder on HV side of the generator, if it opts so, subject to the technical feasibility and acceptance by the Distribution Licensee. However, the cost of shifting shall be borne by the concerned generator.
- 90.5 In case of open access for renewable energy and in case of sale of electricity under REC mechanism, the metering would be at EHV substation of transmission licensee or HV station of distribution licensee as the case may be, and the provision of losses, as specified above, shall not be applicable.

91 Other Charges

91.1 The following charges shall be applicable for existing as well as upcoming Renewable energy projects:

91.2 kVARh charges

91.2.1 Net kVARh drawal by generating plants from the Grid shall be billed at 15.00 paise / kVARh w.e.f.01.04.2020 escalated annually at 0.50 paise / kVARh, till the same are specified in any Regulation or in any Order issued by the Commission.

91.3 Import of power by Generating Stations

91.3.1 Energy drawn by the generating station from the grid during shutdown and outages, and for restarting after shut down, shall be set off against the energy sold to the Distribution Licensee within the State on a quarterly basis:

Provided that in case of drawal by the generating station is more than its injection in a month, the excess drawal during the month shall be carried forward to the subsequent month and so on. Such cumulative excess drawal, if any, shall be settled on quarterly basis at tariff applicable to a Large Industrial consumer. The first quarter would begin from April 1 of the relevant year:

Provided further that where sale to Distribution Licensee is not being effected or where sale to distribution licensee is under REC mechanism, such drawal from the grid shall be

billed at tariff for temporary supply applicable to HT Industrial consumer (tariff category HT-5) on daily basis.

91.4 **Transmission & wheeling charges**

91.4.1 In case of third party sale or for captive use both within the State or outside the State, the transmission charges and wheeling charges shall be recovered in cash and transmission losses and wheeling losses shall be recovered in kind as under:

- (a) For use of transmission network, transmission charges and losses as determined by the Commission in respect of open access transactions would be applicable.
- (b) For use of distribution licensee's network, the wheeling charges and losses as determined by the Commission in respect of open access transactions at respective voltage levels at which electricity is supplied, would be applicable:

Provided that, notwithstanding, anything contrary mentioned in other Regulations, time being in force, Wheeling Charges for Renewable Energy Projects shall be applicable on per unit basis on the total energy wheeled and not on the basis of open access contracted capacity.

- (c) For use of both EHV and distribution network, both transmission and wheeling charges as well as losses, as applicable, shall be payable:

Provided that in case of Power Purchase Agreements executed and plants commissioned up to 31.03.2007 under the State Government Policies specified in Regulation 88, the charges as per Policy shall be applicable unless RE power plant opts otherwise:

Provided further that there shall be an exemption of 75% in Intra-State transmission charges and wheeling charges for the Renewable Energy with Storage projects installed after the date of notification of these Regulations and before 31.03.2023 either set up as Captive Project or supplying power to third party under Open Access. This exemption shall be applicable for first seven years of operation from the date of commissioning of the Project:

Provided also that there shall be an exemption of 100% in Intra State transmission charges and wheeling charges for Solar Power Project set up after the date of notification of these Regulations and before 31.03.2023 for supplying power to Electric Vehicle charging stations either under Captive route or through open access. This exemption shall be applicable for first ten years from the date of establishing of Electric Vehicle charging stations:

Provided also that, the above exemptions shall be applicable for projects with individual plant capacity of maximum 25 MW and for the total capacity of 500 MW.

91.5 **SLDC Fees and Charges**

91.5.1 SLDC fees and charges shall be as specified in RERC (Levy of fee and charges by the State Load Despatch Centre) Regulations, 2004, as amended from time to time.

91.6 Cross-Subsidy Surcharge and Additional Surcharge

91.6.1 The Cross-subsidy surcharge and Additional Surcharge as determined by the Commission from time to time shall be applicable for following transactions based on renewable energy power stations:

- a) Supply of power to third party under open access utilising the network of transmission or distribution licensee
- b) Supply of power by third party for renewable energy based co-located plants
- c) Supply of power by third party from renewable energy based plants installed behind the meter

Provided that the Cross-Subsidy Surcharge and Additional Surcharge shall not be applicable for Renewable Energy based Captive Power Plants.

92 Renewable Energy Based Captive Power Plants

92.1 The maximum permissible capacity of eligible individual new renewable energy-based captive powerplant including renewable energy based plant installed behind the meter shall be limited to 100% of the Contract Demand:

Provided that eligible co-located individual renewable energy based captive powerplant shall utilise the same service line and installation for injection of power into the grid as well as drawal of power from the distribution licensee.

92.2 The maximum permissible energy to be consumed and banked from new renewable energy captive generating plant shall be limited to the energy corresponding to the minimum Capacity Utilisation Factor/Plant Load Factor in percent as applicable for respective technology as specified in these Regulations plus 5 percent:

Provided the energy consumed in excess of the above limit shall be treated as deemed drawl from the distribution licensee and will be billed accordingly.

93 Banking

93.1 The terms and conditions of Banking specified in these Regulations shall be applicable for both existing Renewable Energy based plants and new Renewable Energy based plants.

93.2 For availing the banking facility, the Renewable Energy based captive power plant shall install ABT compliant Special Energy Meters (SEMs), capable of energy accounting for each block of 15 minutes.

93.3 Banking of Energy subject to a maximum ceiling of 25% of the energy injected by Renewable Energy Captive Generating Station during 15-minute time block basis at consumption end shall be allowed only for captive consumption within the State:

Provided that no banking facility shall be allowed for Renewable Energy plants supplying power to third party under open access and for consumption from the Renewable Energy plant installed behind the meter without any bi-directional meter in the same premises:

Provided also that for availing Banking Facility, Renewable Energy Captive Generating Station will enter into Wheeling and Banking Agreement with Distribution Licensee.

93.4 Period of banking:

93.4.1 The banking shall be allowed on annual basis for the financial year.

93.5 Energy Accounting for Banking:

93.5.1 Notwithstanding anything contrary contained in any other Regulations time being in force the Energy Accounting shall be as under.

The banking as well as withdrawal of banked energy shall be subject to scheduling as required.

If in any 15-minute time block, injected energy is more than the energy drawn, the excess energy subject to maximum of 25% of energy injected during the time block shall be computed and cumulated till the end of the month. The excess energy so computed shall be set off after adjusting the banking charges against the cumulative drawal of energy from Discoms in the same month except drawal during peak hours.

Illustration: If in any time block, 100 units of energy have been injected and 60 units of energy are drawn, the excess injected energy to be considered for the particular time block shall be 40 units of which 25 units shall be banked and remaining 15 units shall lapse and no compensation shall be applicable on excess energy injected beyond 25% of energy generated during the time block.

- (a) The remaining excess injected energy, if any, at the end of the respective month shall be considered as energy banked and carried forward to the next month.
- (b) The drawal of banked energy shall not be permitted during peak hours as determined by the Distribution Licensee. The cumulative energy banked till the end of particular month after adjusting the banking charges shall be set off against the cumulative drawal during the month excluding drawal during peak hours.
- (c) Unutilized banked energy at the end of financial year shall lapse and no compensation shall be applicable on unutilized banked energy at the end of the financial year.

93.6 Banking charges at the rate of 10% of banked energy would be payable in kind and shall be adjusted against the banked energy before withdrawal.

Illustration: If 100 Units of energy have been banked by Captive Generator, Captive Generator will be able to draw 90 units of banked energy and 10 units will be deducted as banking charges.

93.7 Optional Monthly Banking for Existing Renewable Energy based Captive Generating Stations

93.7.1 The existing Renewable Energy based Captive Generating Stations installed before notification of these Regulations will have an option to avail the banking facility either as per terms and conditions mentioned at Regulations 93.1 to 93.6 or monthly banking as per following terms and conditions:

- a) Energy shall be allowed to be banked at consumption end for only captive consumption within the State.
- b) The banking shall be on monthly basis.

c) Energy Accounting:

Notwithstanding anything contrary contained in any other Regulations for the time being in force, the Energy Accounting shall be as under:

- i. If in any block, injected energy is more than the energy drawn, the excess energy shall be computed. The excess energy of each time block shall be cumulated till the end of the month and shall be set off against the cumulative drawal of Discom's energy in the same month except drawal during peak hours as determined by the Distribution Licensee after adjusting the banking charges.
- ii. Unutilized banked energy at the end of the month shall lapse and no compensation shall be applicable on unutilized banked energy at the end of the month.

d) Banking charges at the rate of 10% of banked energy in each month would be payable in kind.

94 Parallel Operation Charges

94.1 The connectivity of Renewable Energy Based Captive Power Plant to the Grid or State transmission system shall be governed by the connection conditions stipulated under State Grid Code and Connectivity Regulations of Central Electricity Authority notified in accordance with sub-section (b) of Section 73 of the Act.

94.2 The Commission may stipulate from time to time the 'Parallel Operation Charges' based on Petition filed by Distribution Licensee to be applicable for parallel operation of the Renewable Energy based Captive Power Plant (with co-located loads) or Renewable Energy based Co-Generating plants with the grid separately.

Provided that where Renewable Energy based Captive Power Plant is located at different place and part load of consumer is connected at place of CPP and part of load receives power through open access from Captive Power Plant located at different place, parallel operation charges shall be applicable on part load which is co-located with Renewable Energy based Captive Power Plant.

Illustration: If an industry has 10000 kW Captive Power Plant at Location A and feeds 3000 kW (part load) at co-located industrial load at Location A and transmits the remaining power of 7000 kW to an industry at Location B, then the parallel operation charges will be applicable on 3000 kW.

Part – XVI
Miscellaneous

95 Deviation from provisions of these Regulations

95.1 The Commission may deviate from any of the provisions contained in these Regulations on a suo-motu basis having regard to the circumstances of the case:

Provided that the reasons for such deviation shall be recorded in writing.

96 Power to amend

96.1 The Commission may, at any time, vary, alter, modify or amend any provisions of these Regulations.

97 Power to Relax

97.1 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, may relax any of the provisions of these Regulations suo-motu or on an application made before it by an interested person.

98 Power to remove difficulties

98.1 If any difficulty arises in giving effect to the provisions of these Regulations, the Commission may either suo-motu or on a petition, by general or specific order, make such provisions not inconsistent with the provisions of the Act as may appear to be necessary for removing the difficulty.

By Order of the Commission,

Secretary

Abbreviations

COD	:	Commercial Operation Date
CPP	:	Captive Power Plant
CUF	:	Capacity Utilisation Factor
EHV	:	Extra High Voltage
FY	:	Financial Year
GOI	:	Government of India
GOR	:	Government of Rajasthan
IEGC	:	Indian Electricity Grid Code
kV	:	Kilo Volt
kVARh	:	Kilo Volt Ampere Reactive hour
kWh	:	Kilo Watt Hour
MNRE	:	Ministry of New and Renewable Energy
MW	:	Mega Watt
NLDC	:	National Load Despatch Centre
O&M	:	Operation and Maintenance
PLF	:	Plant Load Factor
PPA	:	Power Purchase Agreement
RDF	:	Refused Derived Fuel
RE	:	Renewable Energy
RERC	:	Rajasthan Electricity Regulatory Commission
RPO	:	Renewable Purchase Obligation
RRECL	:	Rajasthan Renewable Energy Corporation Limited
RVPN	:	Rajasthan Rajya Vidyut Prasaran Nigam Limited
R&M	:	Repair and Maintenance
SLDC	:	State Load Despatch Centre

Form-1.1: Template for (Wind/ Small hydro/Solar PV/ Solar Thermal/RE Hybrid/RE with Storage)

Sl. No.	Assumption Head	Sub-head	Sub-head (2)	Unit	Parameter
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	
			Capacity Utilisation 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	Month		
		Interest on Working Capital	% per annum		

Form-1.2: Template for (Biomass/MSW/RDF)

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	Month		
		Fuel Cost	Month		

Sl. No.	Assumption Head	Sub-head	Sub-head (2)	Unit	Parameter
		Interest on WC		%	
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	%	
			Municipal Solid Waste	%	
			Refuse Derived Fuel	%	
			GCV of Biomass Fuel Type-1	kcal/kWh	
			GCV of Biomass Fuel Type-2	kcal/kWh	
			GCV of MSW	kcal/kWh	
			GCV of RDF	kcal/kWh	
			Biomass Price (Fuel Type-1)/ Yr 1	Rs./MT	
			Biomass Price (Fuel Type-2)/ Yr 1	Rs./MT	
			MSW Price/ Yr 1	Rs./MT	
			RDF Price/ Yr 1	Rs./MT	
			Fuel Price Escalation Factor	% p.a.	

**Form-2.1: Form Template for (Wind Power, Solar PV/Solar thermal, RE Hybrid Energy Project, Renewable Energy With Storage Project):
Determination of Tariff Components**

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	Yr-12	
Installed Capacity	MW													
Net Generation	MU													
Units Generation	Unit	Yr-13	Yr-14	Yr-15	Yr-16	Yr-17	Yr-18	Yr-19	Yr-20	Yr-21	Yr-22	Yr-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	Yr-11	Yr-12	
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 (Fixed charge)	Unit	Yr-13	Yr-14	Yr-15	Yr-16	Yr-17	Yr-18	Yr-19	Yr-20	Yr-21	Yr-22	Yr-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	Yr-11	Yr-12	
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													

Per Unit Tariff components	Unit	Yr-13	Yr-14	Yr-15	Yr-16	Yr-17	Yr-18	Yr-19	Yr-20	Yr-21	Yr-22	Yr-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													
Levelling Tariff	Unit	Yr-1	Yr-2	Yr-3	Yr-4	Yr-5	Yr-6	Yr-7	Yr-8	Yr-9	Yr-10	Yr-11	Yr-12	
Discount Factors														
Discounted Tariff components	Rs/kWh													
Levelling Tariff	Rs/kWh													
Levelling Tariff	Unit	Yr-13	Yr-14	Yr-15	Yr-16	Yr-17	Yr-18	Yr-19	Yr-20	Yr-21	Yr-22	Yr-23	Yr-24	Yr-25
Discount Factors														
Discounted Tariff components	Rs/kWh													
Levelling Tariff	Rs/kWh													

Form-2.2: Form Template for (Biomass -Rankine Technology, Biogas, Biomass Gasifier, Municipal Solid Waste, Refuse Derived Fuel or Non-fossil fuel based Cogeneration): Determination of Tariff Components

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	Yr-12
Installed Capacity	MW												
Net Generation	MU												

Units Generation	Unit	Yr-13	Yr-14	Yr-15	Yr-16	Yr-17	Yr-18	Yr-19	Yr-20	Yr-21	Yr-22	Yr-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	Yr-11	Yr-12
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 (Fixed charge)	Unit	Yr-13	Yr-14	Yr-15	Yr-16	Yr-17	Yr-18	Yr-19	Yr-20	Yr-21	Yr-22	Yr-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	Yr-11	Yr-12	
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													
Tariff Components (Variable Charge)	Unit	Yr-13	Yr-14	Yr-15	Yr-16	Yr-17	Yr-18	Yr-19	Yr-20	Yr-21	Yr-22	Yr-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	Yr-11	Yr-12	
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													

Per Unit Tariff components (Fixed)	Unit	Yr-13	Yr-14	Yr-15	Yr-16	Yr-17	Yr-18	Yr-19	Yr-20	Yr-21	Yr-22	Yr-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													

Levelling Tariff	Unit	Yr-1	Yr-2	Yr-3	Yr-4	Yr-5	Yr-6	Yr-7	Yr-8	Yr-9	Yr-10	Yr-11	Yr-12
Discount Factors													
Discounted Tariff components (Fixed)	Rs/kWh												
Discounted Tariff components (Variable)	Rs/kWh												
Discounted Tariff components (Total)	Rs/kWh												
Levelling Tariff (Fixed)	Rs/kWh												
Levelling Tariff (Variable)	Rs/kWh												
Levelling Tariff (Total)	Rs/kWh												

Levelling Tariff	Unit	Yr-13	Yr-14	Yr-15	Yr-16	Yr-17	Yr-18	Yr-19	Yr-20	Yr-21	Yr-22	Yr-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													
Levelling Tariff (Fixed)	Rs/kWh													
Levelling Tariff (Variable)	Rs/kWh													
Levelling Tariff (Total)	Rs/kWh													

Form-2.3: Form Template for (Small Hydro Power Projects): Determination of Tariff Components

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	Yr-12	Yr-13	Yr-14	Yr-15	Yr-16	Yr-17	Yr-18	Yr-19	Yr-20	
Installed Capacity	MW																					
Net Generation	MU																					

Units Generation	Unit	Yr-21	Yr-22	Yr-23	Yr-24	Yr-25	Yr-26	Yr-27	Yr-28	Yr-29	Yr-30	Yr-31	Yr-32	Yr-33	Yr-34	Yr-35	Yr-36	Yr-37	Yr-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	Yr-12	Yr-13	Yr-14	Yr-15	Yr-16	Yr-17	Yr-18	Yr-19	Yr-20	
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 (Fixed charge)	Unit	Yr-21	Yr-22	Yr-23	Yr-24	Yr-25	Yr-26	Yr-27	Yr-28	Yr-29	Yr-30	Yr-31	Yr-32	Yr-33	Yr-34	Yr-35	Yr-36	Yr-37	Yr-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	Yr-12	Yr-13	Yr-14	Yr-15	Yr-16	Yr-17	Yr-18	Yr-19	Yr-20
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																				

Per Unit Tariff components	Unit	Yr-21	Yr-22	Yr-23	Yr-24	Yr-25	Yr-26	Yr-27	Yr-28	Yr-29	Yr-30	Yr-31	Yr-32	Yr-33	Yr-34	Yr-35	Yr-36	Yr-37	Yr-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																					

Levelling Tariff	Unit	Yr-1	Yr-2	Yr-3	Yr-4	Yr-5	Yr-6	Yr-7	Yr-8	Yr-9	Yr-10	Yr-11	Yr-12	Yr-13	Yr-14	Yr-15	Yr-16	Yr-17	Yr-18	Yr-19	Yr-20	
Discount Factors																						
Discounted Tariff components	Rs/kWh																					
Levelling Tariff	Rs/kWh																					

Levelling Tariff	Unit	Yr-21	Yr-22	Yr-23	Yr-24	Yr-25	Yr-26	Yr-27	Yr-28	Yr-29	Yr-30	Yr-31	Yr-32	Yr-33	Yr-34	Yr-35	Yr-36	Yr-37	Yr-38	Yr-39	Yr-40	
Discount Factors																						
Discounted Tariff components	Rs/kWh																					
Levelling Tariff	Rs/kWh																					