

RAJASTHAN ELECTRICITY REGULATORY COMMISSION

WHEREAS the Rajasthan Electricity Regulatory Commission have published in the Rajasthan Government Gazette on different dates the following, namely:-

Terms and Conditions for Determination of Tariff for Renewable Energy Sources – Biomass, Biogas and Biomass Gasifier Energy) Regulations, 2015;
(Notification No. : RERC/Secy/Reg/110, Dated: 26.02.2015)

- A. Terms and Conditions for Determination of Tariff for Renewable Energy Sources – Biomass, Biogas and Biomass Gasifier Energy) Regulations, 2015; (First Amendment), 2019
(Notification No. : RERC/Secy/Regulation, Dated: March, 2019)
- Inserted/ Replaced matter is shown as []^A at appropriate place; wordings inserted/ replaced shown within square brackets;
 - In both of above cases; -^A ; superscript A implies that change is caused by Amendment '1'.

NOTIFICATION Jaipur, 7th May, 2015

No. RERC/Secy/ Reg. 113 - In exercise of the powers conferred under Section 61 and Section 62 read with 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 and considering the views/suggestions from the stakeholders, hereby make the following Regulations specifying Terms and Conditions for Determination of Tariff for Biomass, Biogas and Biomass Gasifier based Power Plants, namely:

Part I

Preliminary

1. Short title, Extent and Commencement

- (1) These Regulations shall be called '**Rajasthan Electricity Regulatory Commission (Terms and Conditions for Determination of Tariff for Renewable Energy Sources – Biomass, Biogas and Biomass Gasifier Energy) Regulations, 2015**'.
- (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 FY 2015-16, i.e., April 1, 2015 and onwards up to ^A[~~FY 2018-19, i.e., March 31, 2019~~ FY 2019-20, i.e., March 31, 2020:]^A

Provided that for all purposes including review matters pertaining to the period till FY 2014-15, 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, including amendments thereto, as the case may be.

- (3) These Regulations shall come into force on 1.4.2015 and unless reviewed earlier or extended by the Commission, and shall remain in force for a period of ^A[~~four~~ (4) four (5)]^A years from the date of

¹ Omitted and inserted words and figures in sub-Regulation (2) of Regulation 1, vide First amendment (A), 2019.

² Omitted and inserted words and figures in sub-Regulation (3) of Regulation 1, vide First amendment (A), 2019.

commencement.

2. Definitions

(1) In these Regulations, unless the context otherwise requires:

- 1) “**Act**” means the Electricity Act, 2003 (36 of 2003), including amendments thereto;
- 2) “**Auxiliary Energy Consumption**” means the quantum of energy consumed by auxiliary equipments 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;
- 3) “**Biomass**” means wastes produced during agricultural and forestry operations (for example straws and stalks) or produced as a byproduct of processing operations of agricultural produce (e.g., husks, shells, deoiled cakes, etc); wood produced in dedicated energy plantations or recovered from wild bushes/weeds; and the wood waste produced in some industrial operations;
- 4) “**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;
- 5) “**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);
- 6) “**COD**” or “**Date of Commercial Operation**” shall mean the date on which the generating plant is synchronised with the grid system;
- 7) “**CERC**” means the Central Electricity Regulatory Commission;
- 8) “**Commission**” means the Rajasthan Electricity Regulatory Commission;
- 9) “**Control Period**” means a period during which the norms for determination of tariff specified in these Regulations shall remain valid;
- 10) “**Existing Generating Station**” means a generating station, which has achieved COD prior to the coming into effect of these Regulations;
- 11) “**Financial Year**” means a period commencing on 1st April of a calendar year and ending on 31st March of the subsequent calendar year;
- 12) “**Generation Tariff**” means tariff for ex-bus supply of electricity from a generating station;
- 13) “**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;
- 14) “**Gross Station Heat Rate**” means the heat energy input in kilo-calories required to generate one kWh of electrical energy at generator terminals;
- 15) “**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;
- 16) “**MNRE**” means the Ministry of New and Renewable Energy of the Government of India;
- 17) “**New Generating Station**” means a generating station with a COD after coming into effect of these Regulations;
- 18) “**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 overheads;

- 19) **“Renewable Energy”** means the grid quality energy generated from Renewable Energy Sources;
 - 20) **“Renewable Energy Power Plants”** means the power plants other than the conventional power plants generating grid quality electricity from Renewable Energy Sources;
 - 21) **“Renewable Energy Sources”** for the purpose of these Regulations means the non-conventional renewable energy generating sources of Biomass, Biogas and Biomass Gasifier based power plants, as approved by the MNRE;
 - 22) **“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;
 - 23) **“Tariff Period”** means the period for which tariff is to be determined by the Commission on the basis of norms specified under these Regulations;
 - 24) **“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:
 - i. Biomass power plant 20 years
 - ii. Biogas power plant 20 years
 - iii. Biomass Gasifier based power plant 20 years
 - 25) **“Wheeling”** means the operation where by 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;
 - 26) **“Year”** means a financial year.
- (2) Words or expressions occurring in these Regulations and not defined shall bear the same meaning as in the Act.
- (3) Abbreviations used in these Regulations shall have the meaning as stated in **Annexure-I**.

3. Scope of Regulations and extent of application

- (1) These Regulations shall apply in cases where generic tariff for generating plants based on Biomass, Biogas and Biomass Gasifier energy is to be determined by the Commission under Section 62 read with Section 86 of the Act:

Provided that in case of Biomass, Biogas and Biomass Gasifier based power plants, these Regulations shall apply subject to the fulfilment of eligibility criteria specified in regulation 4 of these Regulations.

- (2) Notwithstanding anything contained in these Regulations, the Commission shall adopt the tariff, if such tariff has been determined through a transparent bidding process in accordance with the guidelines issued by the Central Government, as envisaged under Section 63 of the Act.

4. Eligibility Criteria

- (1) Biomass power plant based on Rankine Cycle - Biomass power plants using new plant and machinery and having grid connected system that uses Rankine Cycle technology and using biomass fuel sources, provided use of fossil fuel is restricted only upto 15% in terms of calorific value

on annual basis,^{A3} ~~from 31.03.2019 till 31.03.2020~~^A.

- (2) Biogas based power plants- The plant shall qualify to be termed as a Biogas based power plant, 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.
- (3) Biomass Gasifier based power plant - The plant shall qualify to be termed as a Biomass Gasifier based power plant, 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.

Part II

General Principles

5. Control Period

The Control Period under these Regulations shall be of ^{A4}~~four (4)~~ *four (5)*^A financial years, of which the first year shall be the financial year 2015-16: Provided also that the tariff determined as per these Regulations for Biomass, Biogas and Biomass Gasifier based power plants commissioned during the Control Period, shall continue to be applicable for the entire duration of the Tariff Period as specified in regulation 6 below.

^{A5}*Provided further that the tariff norms as per these Regulations shall continue to remain applicable until notification of the revised Regulations subject to adjustment as per revised Regulations.*^A

6. Tariff Period

The Tariff Period for Biomass, Biogas and Biomass Gasifier based power plants shall be twenty (20) years.

^{A6}6A. Project specific tariff

- (A) *The Commission may determine project specific tariff, on case to case basis, as and when situation arises for the following types of projects:*
 - (a) *Biomass Gasifier based projects, if a project developer opts for project specific tariff;*
 - (b) *Biogas based projects, if a project developer opts for project specific tariff;*
 - (c) *Municipal Solid Waste and Refuse Derived Fuel based projects with Rankine cycle technology;*
 - (d) *Other hybrid projects include renewable-renewable or renewable conventional sources; for which renewable technology is approved by MNRE;*
 - (e) *Any other new renewable energy technologies approved by MNRE.*
 - (f) *Projects covered under Central/State Government schemes.*
- (B) *Determination of project specific tariff for generation of electricity from such renewable energy sources shall be in accordance with such terms and conditions as stipulated hereunder:*

³ Omitted and inserted words and figures in sub-Regulation (1) of Regulation 4, vide First amendment (A), 2019.

⁴ Omitted and inserted words and figures in Regulation 5, vide First amendment (A), 2019.

⁵ Inserted a proviso at the end of the Regulation 5, vide First amendment (A), 2019.

⁶ Inserted a new Regulation-6A after Regulation-6, vide First amendment (A), 2019.

Provided that while determining the project specific tariff, financial and technical norms as specified under Part-III to VI of these Regulations can be deviated by the Commission by recorded reasons in the order.^A

7. Petition and Proceedings for determination of Tariff

- (1) The Commission may determine the generic tariff on suo-motu basis at the beginning of each year of the Control Period for Biomass, Biogas and Biomass Gasifier based power plants for which norms have been specified under these Regulations.
- (2) The proceedings for determination of tariff shall be in accordance with the RERC (Transaction of Business) Regulations, 2005 as amended from time to time.

^A7(3) *A petition for determination of project specific tariff shall be accompanied by such fee as may be determined by regulations and shall be accompanied by:*

- (a) *Information in forms 1.1 and 1.2 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) *Any other information that the Commission requires the petitioner to submit.^A*

8. Tariff Structure

The tariff for Biomass, Biogas and Biomass Gasifier based power plants shall be a two-part tariff consisting of fixed cost component and fuel cost component.

The fixed cost component shall have the following components:

- (a) Operation and Maintenance (O&M) Expenses;
- (b) Depreciation;
- (c) Interest on Loan Capital;
- (d) Interest on Working Capital; and
- (e) Return on Equity.

9. Tariff Design

- (1) The generic tariff shall be determined on levellised basis considering the year of commissioning of the power plant for fixed cost component for the Tariff Period while the fuel cost component shall be specified on yearly basis. However, for the purpose of computation of interest on the working capital requirement of the fixed cost component, an escalation of 5% per annum in fuel/feed stock price shall be considered.

⁷ Inserted a new sub-Regulation (3) after sub-Regulation (2) of Regulation 7, vide First amendment (A), 2019.

- (2) For the purpose of levelled tariff computation, the discount factor equivalent to post tax weighted average cost of capital shall be considered.
- (3) Levellisation shall be carried out for the Tariff Period of the Biomass, Biogas and Biomass Gasifier based power plants.

^{A8}[(4) *The above principles shall also apply for project specific tariff determination.*]^A

10. Despatch principles for electricity generated from Biomass, Biogas and Biomass Gasifier based power plants

Biomass, Biogas and Biomass Gasifier based power plants 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

11. Capital Cost

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

^{A9}*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 7.*^A

12. Debt-equity ratio

- (1) For the purpose of determination of generic tariff, debt-equity ratio shall be 70:30.

^{A10}(2) *For project specific tariff, the following provisions shall apply-If the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan:*

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

Provided further that the equity invested in foreign currency, if any, shall be designated in Indian rupees on the date of each investment.^A

13. Loan and Finance Charges

(1) Loan Tenure

~~^{A11}For the purpose of determination of generic tariff, loan tenure of 12 years shall be considered.~~^A

For the purpose of determination of generic tariff, loan tenure of 13 years shall be considered.

⁸ Inserted a new sub-Regulation (4) at the end of the Regulation 9, vide First amendment (A), 2019.

⁹ Inserted a proviso at the end of the Regulation 11, vide First amendment (A), 2019.

¹⁰ The existing provision shall be numbered as sub-regulation (1) and the new sub-regulation (2) to Regulation 12 shall be added below it, vide first amendment (A), 2019.

¹¹ Omitted and inserted sub-Regulation (1) of Regulation 13, vide First amendment (A), 2019.

(2) Interest Rate

- (a) The loan arrived at in the manner indicated in regulation 12 shall be considered as gross normative loan for calculation of 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 the previous year from the gross normative loan.
- (b) ^A~~12~~ The normative interest rate shall be considered as average State Bank of India (SBI) Base Rate prevalent during the first six months of the year previous to the relevant year plus three hundred (300) basis points.

For the purpose of computation of tariff, normative interest rate of two hundred (200) basis points above the average State Bank of India Marginal Cost of Funds Lending Rate (MCLR) (one year tenor) prevalent during the last available six months shall be considered.^A

- (c) Notwithstanding any moratorium period availed by the generating company or project, 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.

14. Depreciation

^A~~13~~ (1) The value base for the purpose of depreciation shall be the total Capital Cost determined by the Commission. The Salvage Value of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the total Capital Cost.

(2) Depreciation per annum shall be based on 'Differential Depreciation Approach' over the loan period beyond the loan tenure over the useful life computed on 'Straight Line Method'. The depreciation rate for the first 12 years of the Tariff Period shall be 5.83% of the Capital Cost per annum and the remaining depreciation shall be spread over the remaining useful life of the project from the 13th year onwards.

(1) The value base for the purpose of deprecation 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. The salvage value of the asset shall be considered as 10% and depreciation shall be allowed up to a maximum of 90% of the capital cost of the asset.

(2) Depreciation rate of 5.28% per annum for the first 13 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 project cost shall be considered.^A

(3) Depreciation shall be chargeable from the first year of commercial operation:

Provided that in case of commercial operation of the asset for part of the year, depreciation shall be charged on pro-rata basis.

15. Return on Equity

(1) The value base for the equity shall be 30% of the Capital Cost as specified under regulation 12.

(2) ^A~~14~~ The Return on Equity shall be computed at the base rate of 16% to be grossed up as per sub-regulation (3) of this regulation.

¹² Omitted and inserted clause (b) of sub-Regulation (2) of Regulation 13, vide First amendment (A), 2019.

¹³ Omitted and inserted sub-Regulation (1) & (2) of Regulation 14, vide First amendment (A), 2019.

¹⁴ Omitted and inserted sub-Regulation (2) of Regulation 15, vide First amendment (A), 2019.

The normative Return on Equity shall be 14 %, to be grossed up by prevailing Minimum Alternate Tax (MAT) as on 1st April of previous year for the entire useful life of the project.]^A

^A[¹⁵(3) ~~The rate of return on equity shall be computed by grossing up the base rate with the tax rate equivalent to Minimum Alternate Tax (MAT) for first 10 years from COD and normal tax rate for remaining years of project life.]^A~~

16. Interest on Working Capital

(1) The Working Capital requirement with respect to Biomass, Biogas and Biomass Gasifier based power plants shall be computed in accordance with the following:

- (a) Fuel cost for four months at normative PLF
- (b) Operation and Maintenance (O&M) Expenses for one month;
- (c) Receivables equivalent to one and a half (1.5) months of fixed and variable charges for sale of electricity calculated at the normative PLF;
- (d) Maintenance Spares at 20% of O&M Expenses.

^A[¹⁶(2) ~~The normative interest rate shall be considered as average SBI Base Rate prevalent during the first six months of the year previous to the relevant year plus two hundred and fifty (250) basis points.~~

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

17. Operation & Maintenance Expenses

(1) Normative O&M 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 the Control Period.

(2) Normative O&M expenses allowed during first year of the Control Period (i.e., FY 2015-16) under these Regulations shall be escalated at the rate of 5.85% per annum over the Tariff Period.

18. Rebate

(1) For payment of bills of the generating company through letter of credit or by cash/cheque within three working days of presentation of bills, a rebate of 2% shall be allowed.

(2) If payments of bills of the generating company are made through letter of credit or by cash/cheque beyond three working days of presentation of bills but within thirty days of presentation of bills, a rebate of 1% shall be allowed.

^A[¹⁷*Provided that the rebate w.e.f. 1.4.2019 for payment of bills shall be as per provisions of rebate specified In RERC (Terms and Conditions for Determination of Tariff) Regulations, 2019 as amended from time to time.]^A*

19. Late Payment Surcharge

¹⁵ Deleted sub-Regulation (3) of Regulation 15, vide First amendment (A), 2019.

¹⁶ Omitted and inserted sub-Regulation (2) of Regulation 16, vide First amendment (A), 2019.

¹⁷ Inserted a proviso at the end of the Regulation 18, vide First amendment (A), 2019.

In case the payment of any bill is delayed beyond a period of 45 days from the date of presentation of bills, a late payment surcharge of 1.25% per month calculated on a daily basis shall be levied by the generating company.

^A[¹⁸Provided that the Late Payment Surcharge w.e.f. 1.4.2019 shall be as per provisions of Late payment Surcharge specified In RERC (Terms and Conditions for Determination of Tariff) Regulations, 2019 as amended from time to time.]^A

20. Sharing of CDM Benefits

The proceeds of carbon credit from approved CDM plants during the Control Period shall be shared in the ratio of 25:75 between the distribution licensee and generating company, respectively:

Provided that the share of 25% obtained by the distribution licensee shall be passed on to the consumers. In case the distribution licensee itself is the generating company, then 75% shall be retained by the distribution licensee and balance 25% shall be passed on to the consumers.

21. Subsidy or incentive by Central/State Government

The Commission shall take into consideration any incentive or subsidy or benefit available from Central or State Government, including accelerated or higher 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 and accelerated or higher depreciation rate as per relevant provisions under Income Tax Act and Corporate Income Tax Rate;
- (b) Capitalization of Biomass, Biogas and Biomass Gasifier based power plants shall be during second half of fiscal year;
- (c) Per unit benefit shall be derived on levellised basis at discount factor determined as per regulation 9 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 further that if accelerated or higher depreciation benefit has been claimed despite submission of the undertaking, the distribution licensee shall be entitled to recover amount wrongly claimed along with penal charges @ 1.50 % per month calculated on daily basis:

Provided further that the Generation Based Incentive/Tariff Subsidy, if allowed by the Central/State Government would be governed by the terms and conditions of such scheme.

Part IV

Technology Specific Parameters for Biomass Power Plants based on Rankine Cycle Technology

22. Capital Cost

¹⁸ Inserted a proviso at the end of the Regulation 19, vide First amendment (A), 2019.

- (1) The normative Capital Cost for Biomass power plants shall be inclusive of all capital works including plant and machinery, civil works, erection and commissioning, financing and interest during construction etc., and evacuation infrastructure upto the interconnection point.
- (2) The normative Capital Cost for Biomass power plants for FY 2015-16 shall be Rs. 540 Lakh/MW with water cooled condenser and Rs. 575 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 Lakh/MW for grid connectivity charges payable to Transmission Licensee and Distribution Licensee as the case may be.
- (3) Capital Cost Indexation Mechanism as outlined at **Annexure-II** shall be applicable for determining tariffs for the plants commissioned for each subsequent year during the Control Period.

^A[¹⁹ Provided that the capital cost as specified for FY 2017-18 of the control period will remain valid for the entire remaining duration of control period unless reviewed earlier by the Commission.]^A

23. Plant Load Factor

- (1) The Plant Load Factor (PLF) for determining the fixed charges component of tariff shall be as follows:

(a) During stabilisation	60%
(b) During first year after stabilisation	70%
(c) From year-2 onwards	75%
- (2) The stabilisation period shall not be more than six months from the date of the commissioning of the plant.

24. Auxiliary Consumption

- (1) The auxiliary power consumption factor for water cooled condensers shall be considered as 10.5% (during stabilisation) and 10% (after stabilisation) for the determination of tariff.
- (2) The auxiliary power consumption factor for air cooled condensers shall be considered as 12.5% (during stabilisation) and 12% (after stabilisation) for the determination of tariff.

25. Station Heat Rate

- (1) The Station Heat Rate for water cooled condenser shall be 4300 kcal / kWh (during stabilisation) and 4200 kcal/kWh (after stabilisation).
- (2) The Station Heat Rate for air cooled condenser shall be 4540 kcal / kWh (during stabilisation) and 4440 kcal/kWh (after stabilisation).

26. Calorific Value

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

¹⁹ Inserted a proviso below the sub-Regulation (3) of Regulation 22, vide First amendment (A), 2019.

27. Operation and Maintenance (O&M) Expenses

- (1) The normative O&M expenses for the first year of the Control Period, i.e., FY 2015-16 shall be Rs. 35.64 Lakh per MW for water cooled condenser and Rs 38 Lakh/MW for air cooled condenser.
- (2) Normative O&M expenses allowed under these Regulations shall be escalated at the rate of 5.85% per annum over the Tariff Period to compute the levellised tariff.

28. Fuel Price

Biomass fuel price shall be Rs. 2550/MT for FY 2015-16. 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 RREC. 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 RREC. 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. Alternatively, the Fuel Price Indexation Mechanism as outlined at **Annexure-III** shall be applicable for adjustment of fuel prices for subsequent years of the control period ^{A[²⁰ till FY 2017-18]}^A in case developer wishes to opt for indexing mechanism.

Provided that the fuel cost arrived at as above shall be applicable to the Biomass power plants commissioned during the current control period and also during the earlier control period FY 2009-15.

29. Use of fossil fuel

The use of fossil fuels shall be limited to the extent of 15% in terms of calorific value on annual basis, ^{A[²¹ till 31.03.2019 till 31.03.2020]}^A.

^{A[²² Provided that the Biomass power generator in addition to fossil fuel may also use the solar power within the above limit of 15%.]}^A

30. Monitoring Mechanism for use of fossil fuel

- (1) The Project developer shall furnish to the State Nodal Agency 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,
 - (d) Quantity of fuel (in tonne) for each fuel type (biomass fuels and fossil fuels) procured and consumed during the month for power generation purposes,
 - (e) Closing fuel stock quantity (in tonne) for each fuel type (biomass fuels and fossil fuels) available at the power plant site,
 - (f) Cumulative quantity (in tonne) of each fuel type procured and consumed till the end of that

²⁰ Inserted words and figures in the last sentence of the Regulation 28, vide First amendment (A), 2019.

²¹ Omitted and inserted words and figures of Regulation 29, vide First amendment (A), 2019.

²² Inserted a proviso at the end of the Regulation 29, vide First amendment (A), 2019.

month during the year,

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

(2) Non-compliance with the condition of fossil fuel usage by 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.

31. Variable Charges

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 29.

Part - V

Technology Specific Parameters for Biogas Power Plants

32. Capital Cost

- (1) The normative Capital Cost for Biogas power plants shall be inclusive of 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.
- (2) The normative Capital Cost for Biogas power plants for FY 2015-16 shall be Rs. 1183.62 Lakh/MW. This capital is inclusive of evacuation of generated energy upto interconnection point and this capital cost also includes Rs. 2 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. 883.62 Lakh/MW for FY 2015-16.
- (3) Capital Cost Indexation Mechanism as outlined at **Annexure-II** shall be applicable for determining tariffs for the plants commissioned for each subsequent year during the Control Period.

^A[²³ Provided that the capital cost as specified for FY 2017-18 of the control period will remain valid for the entire remaining control period unless reviewed by the Commission.]^A

33. Plant Load Factor

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

34. Auxiliary Consumption

The auxiliary power consumption factor shall be 12%.

²³ Inserted a proviso below the r sub-Regulation (3) of Regulation 32, vide First amendment (A), 2019.

35. Specific Fuel Consumption

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

36. Operation and Maintenance (O&M) Expenses

- (1) The normative O&M expenses for the first year of the control period, i.e., FY 2015-16 shall be Rs. 47.27 Lakh/MW.
- (2) Normative O&M expenses allowed under these Regulations shall be escalated at the rate of 5.85% per annum over the Tariff Period to compute the levellised tariff.

37. Fuel cost (Feed stock price)

Feed stock price for the first year of the control period (i.e. FY 2015-16) shall be Rs 1269/MT (net of any cost recovery from digester effluent). The feed stock price for subsequent years shall be linked to the Fuel Price Indexation Mechanism outlined at **Annexure-III** of these Regulations.

^A²⁴ Provided for the years beyond 2017-18 of the control period, the biogas price for FY 2017-18 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 28 of these Regulations unless specifically reviewed by the Commission.^A

38. Variable Charges

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 VIII

Technology Specific Parameters for Biomass Gasifier based Power Plants

39. Capital Cost

- (1) The normative Capital Cost for Biomass Gasifier based power plants shall be inclusive of 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.
- (2) The normative Capital Cost for Biomass Gasifier based power plants for FY 2015-16 shall be Rs. 607.24 Lakh/MW. The capital cost is inclusive of evacuation of generated energy upto interconnection point and this capital cost also includes Rs. 2 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. 457.24 Lakh/MW for FY 2015-16.
- (3) Capital Cost Indexation Mechanism as outlined at **Annexure-II** shall be applicable for determining tariffs for the plants commissioned for each subsequent year during the Control Period.

^A²⁵ Provided that the capital cost as specified for FY 2017-18 shall be the same for subsequent years of the control period unless reviewed earlier by the Commission.^A

²⁴ Inserted a proviso below the Regulation 37, vide First amendment (A), 2019.

²⁵ Inserted a proviso below the sub-Regulation (3) of Regulation 37, vide First amendment (A), 2019.

40. Plant Load Factor

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

41. Auxiliary Consumption

The auxiliary power consumption factor shall be 10%.

42. Specific Fuel Consumption

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

43. Operation and Maintenance (O&M) Expenses

- (1) The normative O&M expenses for the first year of the control period i.e. FY 2015-16 shall be Rs. 47.27 Lakh/MW.
- (2) Normative O&M expenses allowed under these Regulations shall be escalated at the rate of 5.85% per annum over the Tariff Period to compute the levellised tariff.

44. Fuel cost (Feed stock price)

Feed stock price for the first year of the control period (i.e. FY 2015-16) shall be as per regulation 28 of these Regulations.

45. Variable Charges

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 – VII

Others

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

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 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.	1998-99	2.7500
2.	1999-00	2.8875
3.	2000-01	3.0319

4.	2001-02	3.1835
5.	2002-03	3.3426
6.	2003-04	3.5098
7.	2004-05	3.6853
8.	2005-06	3.8695
9.	2006-07	4.0630
10.	2007-08	4.2662
11.	2008-09	4.4795
12.	2009-10	4.7034
13.	2010-11	4.9386
14.	2011-12	5.1855
15.	2012-13	5.4448
16.	2013-14	5.7171
17.	2014-15	6.0029
18.	2015-16	6.3030
19.	2016-17	6.6182
20.	2017-18	6.9491
21.	2018-19	7.2966
^A 22.	2019-20	7.6614 ^A

47. Tariff for Plants under the REC mechanism

~~^A27 In case a Biomass , Biogas or Biomass Gasifier generator desires to switch over from the REC mechanism to preferential tariff mechanism under regulation 12(2) of RERC (Renewable Energy Certificate and Renewable Purchase Obligation Compliance Framework) Regulations, 2010, and if the Discom agrees to purchase considering the scope to accommodate the same in RPO target, the levellised tariff determined in accordance with these Regulations for sale to Distribution Licensee in respect of the year in which the plant was commissioned, shall be applicable. However, in case purchase by the Discom in the same year in which such plants have been commissioned has been at a rate lower than the levellised tariff determined for that year, the lowest rate of such purchase would be applicable. The same principle would be applicable to the plants commissioned during the previous MYT Control Period ending on 31.03.2015.~~

The tariff of projects set up under REC Mechanism shall be governed by the RERC (Renewable Energy Certificate and Renewable Purchase Obligation Compliance Framework) Regulations, 2010 and amendments thereto.^A

²⁶ Inserted a new row in table appearing in Regulation 46, vide First amendment (A), 2019.

²⁷ Omitted and inserted Regulation 47, vide First amendment (A), 2019.

48. Grid Connectivity

- (1) Grid connectivity charges of Rs. 2 Lakh per MW shall be payable by the Biomass, Biogas and Biomass Gasifier power plants to Transmission Licensee or Distribution Licensee, as the case may be.
- (2) The power injection into the State Grid shall be limited to the capacity indicated below:

S. No.	Total Power fed through a feeder (in MW)				
		11 kV	33 kV	132 kV	220 kV
1.	ACSR Panther conductor	3 MW	12 MW	50 MW	-
2.	ACSR Dog conductor	2 MW	6 MW	-	-
3.	ACSR Racocon conductor	1 MW	2 MW	-	-
4.	ACSR Zebra	-	-	-	Above 50 MW & up to 150 MW

Provided that for short line length, the envisaged capacity of the line may be considered about 1.2 to 2.0 times the Surge Impedance Loading (SIL) of the line.

49. Metering

- (1) In respect of sale of energy to the Distribution Licensee, from Biomass, Biogas and Biomass Gasifier based power plants, the metering for the purpose of accounting shall be at the line isolator on the outgoing feeder on HV side of the generator transformer. 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.
- (2) In case of open access for Biomass, Biogas and Biomass Gasifier based power plants and in case of sale of electricity under REC mechanism, the metering for the purpose of accounting shall be at EHV substation of transmission licensee or HV station of distribution licensee as the case may be.

50. Other Charges

(1) kVArh charges

Net kVArh drawal by generating plants from the Grid shall be billed at 12.50 paise / kVArh w.e.f 01.04.2015 escalated annually at 0.50 paise / kVArh, unless otherwise revised by the Commission by Order.

(2) Import of power by Generating Stations

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

Provided that in case 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 energy charges of 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.

(3) Transmission & wheeling charges

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.
- 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 upto 31.03.2007 under the State Government Policies specified in regulation 33, the charges as per Policy shall be applicable unless RE power plant opts otherwise.

(4) SLDC Fees and Charges

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.

(5) Surcharge

The Cross-subsidy surcharge as determined by the Commission from time to time shall not be applicable in case of open access transactions involving biomass, Biogas and Biomass Gasifier based power stations.

51. Banking

- (1) Energy shall be allowed to be banked at consumption end for only captive consumption within the State.
- (2) Period of banking:
The banking shall be on monthly basis.

(3) Energy Accounting:

^A_r²⁸(a) ~~RE Power Generator/Developer shall intimate to SLDC and to the concerned Distribution Licensee on first day of every month, out of available energy for that particular month, the quantum of energy it wishes to bank for captive consumption within the State:~~

~~Provided that where no such intimation is received on or before first day of the month, the intimation last received would become applicable for the month.~~

~~(b) The banked energy in a month shall not exceed the quantum of energy injected in the grid in the month. In case the energy injected in the month is lower than indicated banked energy, the banked energy would be deemed to get restricted upto the energy injected.~~

~~(c) The RE Power Generator/Developer would be entitled to get payment @60% of energy charges applicable for large industrial power tariff, excluding fuel surcharge, if any, in respect of 10% of unutilized banked energy after the end of month of banking. Unutilized banked energy, in excess of 10% shall lapse.~~

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

- (a) *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 drawl of Discom energy in the same month.*
- (b) *For remaining excess injected energy, if any at the end of the month, the RE Power Generator/Developer would be entitled to get payment @60% of energy charges applicable for large industrial power tariff, excluding fuel surcharge, if any, in respect of 10% of unutilized banked energy after the end of the same month. Unutilized banked energy, in excess of 10% shall lapse.^A*
- (4) The RE Generator shall raise the monthly bill and after raising bill, the Distribution Licensee shall make the payment within 30 days from date of receipt of bill, beyond which, the Late Payment Surcharge (LPS) at the rate of 1.25% per month, calculated on a daily basis would become applicable.
- (5) Banking charges at the rate of 2% of banked energy in each month would be payable in kind.

Part - VIII

Miscellaneous

52. Deviation from provisions of these Regulations

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.

53. Power to amend

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

²⁸ Omitted and inserted sub-Regulation (3) of Regulation 51, vide First amendment (A), 2019.

54. Power to remove difficulties

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

CDM	:	Clean Development Mechanism
COD	:	Commercial Operation Date
CUF	:	Capacity Utilisation Factor
EHV	:	Extra High Voltage
FY	:	Financial Year
GOI	:	Government of India
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
O&M	:	Operation and Maintenance
PPA	:	Power Purchase Agreement
RE	:	Renewable Energy
RVPN	:	Rajasthan Rajya Vidyut Prasaran Nigam Limited
R&M	:	Repair and Maintenance
SLDC	:	State Load Despatch Centre
WPI	:	Wholesale Price Index

Capital Cost Indexation Mechanism

The following indexation mechanism shall be applicable in case of Biomass/Biogas/Biomass gasifier power plants for adjustments in Capital Cost over the Control Period with the changes in Wholesale Price Index for Steel and Electrical Machinery:

$$CC(n) = P\&M(n) * (1+F1+F2+F3)$$

$$P\&M(n) = P\&M(0) * (1+d(n))$$

$$d(n) = [a * \{(SI(n-1)/SI(0)) - 1\} + b * \{(EI(n-1)/EI(0)) - 1\}] / (a+b)$$

Where,

CC (n) = Capital Cost for nth year

P&M (n) = Plant and Machinery Cost for nth year

P&M (0) = Plant and Machinery Cost for the base year

Note: P&M (0) is to be computed by dividing the base Capital Cost (for the first year of the Control Period) by (1+F1+F2+F3)

d (n) = Capital Cost escalation factor for year (n) of Control Period

SI (n-1) = Average WPI Steel Index prevalent for calendar year ending in (n-1) financial year of the Control Period

SI (0) = Average WPI Steel Index prevalent for calendar year ending in financial year (0) at the beginning of the Control Period, i.e., January 2014 to December 2014

EI (n-1) = Average WPI Electrical Machinery Index prevalent for calendar year ending in (n-1) financial year of the Control Period

EI(0) = Average WPI Electrical Machinery Index prevalent for calendar year ending in financial year (0) at the beginning of the Control Period, i.e., January, 2014 to December, 2014

a = Constant to be determined by the Commission from time to time, (In default it is 0.6), for weightage to Steel Index

b = Constant to be determined by Commission from time to time, (In default it is 0.4), for weightage to Electrical Machinery Index

F1 = Factor for Land and Civil Works (0.10)

F2 = Factor for Erection and Commissioning (0.09)

F3 = Factor for IDC and Financing Cost (0.14)

Fuel Price Indexation Mechanism

In case of Biomass/Biogas/Biomass Gasifier projects, the following indexation mechanism for adjustment of fuel price for each year of the control period will be applicable for determination of variable charge component of tariff, in case developer wishes for indexing mechanism

$$P(n) = P(n-1) \{ a * (WPI(n)/WPI(n-1)) + b * (1 + IRC(n-1)) + c * (Pd(n)/Pd(n-1)) \}$$

Where

$P(n)$ = Price per tonne for Biomass for the nth year to be considered for tariff determination.

$P(n-1)$ = Price per tonne of Biomass for the (n-1)th year to be considered for tariff determination. P_1 shall be the Fuel Price for FY 2015-16 as specified under regulations 28 and 37.

a: Factor representing fuel handling cost.

b: Factor representing fuel cost

c: Factor representing transportation cost

$IRC(n-1)$ = Average Annual Inflation Rate for indexed energy charge component in case of captive coal mine source (in %) to be applicable for (n-1)th year, as may be specified by CERC for payment purpose.

As per competitive bidding guidelines:

$Pd(n)$ = Weighted average price of HSD for nth year.

$Pd(n-1)$ = Weighted average price of HSD for (n-1)th year.

$WPI(n)$ = Wholesale price index for the month of April of nth year.

$WPI(n-1)$ = Wholesale price index for the month of April of (n-1)th year.

Where a, b and c will be specified by the Commission from time to time. In default, these factors shall be 0.2, 0.6 and 0.2 respectively.