

CHHATTISGARH ELECTRICITY REGULATORY COMMISSION

**(Terms and conditions for determination of generation tariff and related matters
for electricity generated by plants based on renewable energy sources)
Regulations, 2017 Dated: 04-07-2017 (Draft)**

Sl. No.	Description	Summary
1.	Control Period/Review Period	3 Years (from the April 01, 2017 to the end of the financial year 2019-20)
2.	Tariff Period	<ol style="list-style-type: none"> 1. Tariff period for various renewable energy projects commencing COD after April 01, 2012 and for whom generic tariff is applicable, shall be considered as 13 years. There will be no revision in tariff during the tariff period. 2. For existing RE plants who have achieved COD before April 01, 2012 tariff period will be same as control period i.e. five years.
3.	Project Specific Tariff	<ol style="list-style-type: none"> 1. Biomass projects/co-generation, rate for power supplied to a licensee prior to declaration of date of commercial operation (infirm power) shall be equal to energy (variable) charges and rate for non –firm power shall be equal to energy (variable) charges plus 30 paise per unit (kWh). 2. For other projects which doesn't have fuel cost component including hydro projects, during the stabilization the generator shall be entitled only for the recovery of statutory charges actually paid to State Government and cost incurred towards O&M and interest shall be part of the Capital Cost. 3. Project specific tariff would be determined for five year period.
4.	Tariff Structure	<ol style="list-style-type: none"> 1. The tariff for renewable energy technologies shall be single-part tariff consisting of the following fixed cost components: <ol style="list-style-type: none"> (a) Return on equity; (b) Interest on loan capital; (c) Depreciation; (d) .Interest on working capital; (e) Operation and maintenance expenses; 2. RE technologies having fuel cost component, like biomass power projects and non-fossil fuel based co-generation projects, single-part tariff with two components, viz., fixed cost component and fuel cost component, shall be determined.
5.	Tariff Design	<ol style="list-style-type: none"> 1. The generic tariff shall be determined on levellised basis for the Tariff Period. 2. Levellisation shall be carried out for the 'useful life' of the renewable energy project while tariff shall be specified for the period equivalent to "Tariff Period"
6.	Discount Factor for Levellised Tariff	Discount factor shall be equivalent to Post Tax weighted average cost of capital cost.
7.	Despatch Principles	<ol style="list-style-type: none"> 1. Scheduling and deviation of all renewable energy based power plants will be governed by the intra-State ABT/Deviation settlement Mechanism/UI Regulations notified by the Commission. 2. Netting of Energy: Netting of energy for those RE generating plants which are supplying power to the distribution licensee would be permitted on monthly basis against the import of start-up energy from the grid.
8.	Banking	<ol style="list-style-type: none"> 1. Banking of energy for RE generating plants would be permissible for three months for those plants which have not entered into agreements with distribution licensee for supply of electricity generated in full to the distribution licensee.

		2. 2% of the energy will be adjusted by distribution licensee while releasing the energy by distribution licensee as banking charge per month.																																		
9.	Capital Cost	Capital Cost shall be inclusive of all capital work including plant and machinery, civil work, erection and commissioning, financing costs, preliminary and pre-operative expenses, interest during construction, and evacuation infrastructure up to inter-connection point.																																		
		<table border="1"> <thead> <tr> <th>Sl. No.</th> <th>Technology</th> <th>Capacity</th> <th>Capital Cost (in Lakh/MW)</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Wind Energy Projects</td> <td></td> <td>To be determined by the Commission</td> </tr> <tr> <td rowspan="2">2.</td> <td rowspan="2">Small Hydro projects</td> <td>below 5 MW</td> <td>779</td> </tr> <tr> <td>5 MW to 25 MW</td> <td>707</td> </tr> <tr> <td>3.</td> <td>Biomass Power Projects based on Rankine Cycle Technology</td> <td>based on using water cooled condenser</td> <td>To be determined by the Commission</td> </tr> <tr> <td>4.</td> <td>Non-fossil fuel based Cogeneration Projects</td> <td></td> <td>492.5</td> </tr> <tr> <td>5.</td> <td>Solar PV Power Projects</td> <td></td> <td>To be determined by the Commission</td> </tr> <tr> <td>6.</td> <td>Solar Thermal Power Projects</td> <td></td> <td>To be determined by the Commission</td> </tr> <tr> <td>7.</td> <td>Municipal Solid Waste and Refuse Derived Fuel Projects based on Rankine Cycle Technology</td> <td></td> <td>To be determined by the Commission</td> </tr> </tbody> </table>	Sl. No.	Technology	Capacity	Capital Cost (in Lakh/MW)	1.	Wind Energy Projects		To be determined by the Commission	2.	Small Hydro projects	below 5 MW	779	5 MW to 25 MW	707	3.	Biomass Power Projects based on Rankine Cycle Technology	based on using water cooled condenser	To be determined by the Commission	4.	Non-fossil fuel based Cogeneration Projects		492.5	5.	Solar PV Power Projects		To be determined by the Commission	6.	Solar Thermal Power Projects		To be determined by the Commission	7.	Municipal Solid Waste and Refuse Derived Fuel Projects based on Rankine Cycle Technology		To be determined by the Commission
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10.	Debt Equity Ratio	70:30 For project specific tariff, If the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan.																																		
11.	Loan and Finance Charges	Loan Tenure-13 Years For the purpose of computation of tariff, the normative interest rate shall be considered as State Bank of India Marginal Cost of Funds based Lending Rate (MCLR) (one year tenor) prevalent on October 1st of the previous year of the tariff determination year plus 200 basis points.																																		
12.	Depreciation	1. 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. 2. The depreciation rate for the first 13 years of the Tariff Period shall be 5.28% per annum and the remaining depreciation shall be spread over the remaining useful life of the project from 14 th year onwards on 'Straight Line Method'.																																		
13.	Return on Equity	1. The value base for the equity shall be 30% of the capital cost. 2. 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.																																		
14.	Interest on Working Capital	Interest on Working Capital shall be at interest rate equivalent to State Bank of India Marginal Cost of Funds based Lending Rate (MCLR) (one year tenor) prevalent on October 1st of the previous year of the tariff determination year plus 300 basis points.																																		
15.	Rebate	1. For payment of bills of the generating company through letter of credit, a rebate of 2% shall be allowed. 2. Where payments are made other than through letter of credit within a period of one month of presentation of bills by the generating company, a rebate of 1% shall be allowed.																																		

16.	Late payment surcharge	In case the payment of any bill for charges payable under these regulations is delayed beyond a period of 60 days from the date of billing, a late payment surcharge at the rate of 1.25% per month shall be levied by the generating company.			
17.	Subsidy	The Commission shall take into consideration any capital subsidy/ incentive/grant 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 project specific tariff under these Regulations.			
18.	Cess, Duties and Water charges/statutory charges	<ol style="list-style-type: none"> 1. Cess and duties levied by the appropriate Government shall be allowed as pass through on actual incurred basis. 2. In case of SHP, water charges as levied by the State Government shall not be included in the tariff. It is to be paid separately and shall be pass through on actual incurred basis. 			
19.	Sharing of CDM Benefits	<ol style="list-style-type: none"> 1. 100% of the gross proceeds on account of CDM benefit to be retained by the project developer in the first year after the date of commercial operation of the generating station; 2. In the second year, the share of the beneficiaries shall be 10% which shall be progressively increased by 10% every year till it reaches 50%, where after the proceeds shall be shared in equal proportion, by the generating company and the beneficiaries. 			
19.	Capacity Utilisation Factor/Plant Load Factor	Sl. No.	Technology	Capacity	CUF/PLF
		1.	Wind Energy projects	Annual Mean Wind Power Density (W/M ²)	
				Upto 200	22%
				201-250	24%
				251-300	28%
				301-400	33%
				>400	35%
		2.	Small Hydro projects		30%
		3.	Biomass Power Projects based on Rankine Cycle Technology	For Water Cooled Condenser	80%
		4.	Non-fossil fuel based Cogeneration Projects		38% (O.D.-150)
5.	Solar PV Power Projects		19%		
6.	Solar Thermal Power Projects		23%		
7.	Municipal Solid Waste and Refuse Derived Fuel Projects based on Rankine Cycle Technology		MSW-75% RDF-80%		
20.	Operation and Maintenance Expenses	Sl. No.	Technology	Capacity	O&M Expenses (in Lakh/MW)
		1.	Wind Energy project		based on the prevailing market information
		2.	Small Hydro projects	below 5 MW	29.00
				5 MW to 25 MW	21.00
		3.	Biomass Power Projects based on Rankine Cycle Technology		40.00

		4.	Non-fossil fuel based Cogeneration Projects		21.13
		5.	Solar PV Power Projects		based on the prevailing market information
		6.	Solar Thermal Power Projects		based on the prevailing market information
		7.	Municipal Solid Waste and Refuse Derived Fuel Projects based on Rankine Cycle Technology		
		<p>1. Normative O&M expenses allowed under these Regulations shall be escalated at the rate of 5.72% per annum over the tariff period to compute the tariff.</p> <p>2. Tariff for Mini/Micro Hydro Projects shall be higher by Rs 0.50/kWh or such other higher amount as may be stipulated by Commission from time to time over and above the generic tariff applicable for Small Hydro Projects as decided by the Commission.</p>			
21.	Auxiliary Consumption	Sl. No.	Technology	Auxiliary Consumption	
		1.	Small Hydro projects	1.0%	
		2.	Biomass Power Projects based on Rankine Cycle Technology	10.0%	
		3.	Non-fossil fuel based Cogeneration Projects	8.5%	
		4.	Solar PV Power Projects	0.25%	
		5.	Solar Thermal Power Projects	10%	
		6.	Municipal Solid Waste and Refuse Derived Fuel Projects based on Rankine Cycle Technology	15%	
22.	Fuel	Technology		Parameters	Quantity
		Biomass Power Projects based on Rankine Cycle Technology		Station Heat Rate	4000 kCal/kWh
				Calorific Value	3100 kCal/kg
				Fuel Cost	To be determined by the Commission
				Fossil Fuel	monthly fuel usage statement
		Non-fossil fuel based Cogeneration Projects		Station Heat Rate	3600 kCal/kWh
				Calorific Value	2250 kCal/kg
				Fuel Cost	1964.71 Rs/MT (during 1 st Yr)
				Fossil Fuel	15%
		Municipal Solid Waste and Refuse Derived Fuel Projects based on Rankine Cycle Technology		Station Heat Rate	3600 kCal/kWh
				Calorific Value	2500 kCal/kg
				Fuel Cost	1800 Rs/MT