CENTRAL ELECTRICITY REGULATORY COMMISSION

(Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2020, dated: 23.06.2020

Sl. No.	Description	Summary
1.	**Control Period**	These regulations shall come into force on 1.7.2020, and unless reviewed earlier or extended by the Commission, shall remain in force up to 31.3.2023
2.	**Discount Factor**	For the purpose of levelized tariff computation, discount factor equivalent to post-tax weighted average cost of capital shall be considered.
3.	**Treatment for Over-Generation**	• In case a renewable energy project, in a given year, generates energy in excess of the capacity utilization factor or plant load factor, as the case may be, specified under these Regulations, the renewable energy project may sell such excess energy to any entity, provided that the first right of refusal for such excess energy shall vest with the concerned beneficiary. • In case the concerned beneficiary purchases the excess energy, the tariff for such excess energy shall be 75 percent of the tariff applicable for that year.
4.	**Debt Equity Ratio**	1. For determination of generic tariff and project specific tariff, the debt equity ratio shall be considered as 70:30. 2. 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. 3. 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.
5.	**Loan Tenure**	For determination of generic tariff and project specific tariff, loan tenure of 15 years shall be considered.
6.	**Interest on Loan**	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 based Lending Rate (MCLR) (one-year tenor) prevalent during the last available six months shall be considered.
7.	**Depreciation**	1. The value base for the purpose of depreciation shall be the capital cost of the project admitted by the Commission. 2. The salvage value of the project shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the capital cost of the project. 3. Depreciation rate of 4.67% per annum shall be considered for the first 15 years and remaining depreciation shall be evenly spread during remaining Useful Life of the project.
8.	**Return on Equity**	• The value base for equity shall be as determined under these Regulations. • 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 first 20 years of the Tariff Period and by the latest available notified Corporate Tax rate for the remaining Tariff Period.
9.	**Interest on Working Capital**	Interest on Working Capital shall be at interest rate equivalent to the normative interest rate of three hundred and fifty (350) basis points above the average State Bank of India Marginal Cost of Funds based Lending Rate (MCLR) (one-year tenor) prevalent during the last available six months.
10.	**Rebate**	1. For payment of bills of the generating company through revolving and valid letter of credit on presentation or through National Electronic Fund Transfer (NEFT) or Real Time Gross Settlement (RTGS) payment mode within a period of 5 days of presentation of bills, a rebate of 1.5% on bill amount shall be allowed. 2. Where payments are made on any day after 5 days within a period of one month from date of presentation of bills by the generating company, a rebate of 1% shall be allowed.
11.	**Late payment surcharge**	In case the payment of any bill for charges payable under these regulations is delayed beyond a period of 45 days from the date of presentation of bills, a late payment surcharge at the rate of 1.50% per month shall be levied by the generating company.
12.	**Subsidy or incentive by the Central or the State Government**	The Commission shall take into consideration any incentive, grant or subsidy from the Central or State Government, including accelerated depreciation benefit, availed by the project, while determining the tariff under these regulations:

13.	**Statutory Charges**	The renewable energy project developer shall recover from the beneficiaries, the statutory charges imposed by the State and Central Government such as water cess, electricity duty on auxiliary consumption subject to maximum of normative auxiliary consumption.			
14.	**Capital Cost**	**Sl. No.**	**RE Technology**	**Capital Cost (in Rs. lacs/MW)**	
		1.	Wind Energy	prevailing market trends	
		2.	Small Hydro Projects		
			Himachal Pradesh, Uttarakhand, West Bengal, Union Territory of Jammu and Kashmir, Union Territory of Ladakh and North Eastern States	Below 5 MW	1100
				5 MW to 25 MW	1100
			Other States	Below 5 MW	780
				5 MW to 25 MW	900
		3.	Biomass power projects based on Rankine cycle technology		
			Project [other than rice straw and juliflora (plantation) based project] with water-cooled condenser	559	
			Project [other than rice straw and Juliflora (plantation) based project] with air-cooled condenser	600	
			For rice straw and juliflora (plantation) based project with water cooled condenser	611	
			For rice straw and juliflora (plantation) based project with aircooled condenser	652	
		4.	Non-Fossil Fuel based co-generation Projects	492	
		5.	solar PV Power Projects, Solar Thermal Power Projects and Floating Solar Projects	prevailing market trends	
		6.	Biomass Gasifier based Power Projects	593	
		7.	Biogas based Power Projects	1186	
		8.	Municipal Solid Waste based Power Projects and Refuse Derived fuel based Power Projects	prevailing market trends	
		9.	Renewable Hybrid Energy Projects	prevailing market trends	
		10.	Renewable Energy with Storage Project	prevailing market trends	
15.	**Capacity Utilisation Factor**	**Sl. No.**	**RE Technology**	**CUF/PLF**	
		1.	Wind Energy		
			Upto 220	22%	
			221-275	24%	
			276-330	28%	
			331-440	33%	
			> 440	35%	
		2.	Small Hydro Projects		
			Himachal Pradesh, Uttarakhand, West Bengal, Jammu and Kashmir, Ladakh and North-Eastern States	45%	

			other States	30%	
		3.	Biomass power projects based on Rankine cycle technology	80%	
		4.	Non-Fossil Fuel based co-generation Projects		
			Uttar Pradesh and Andhra Pradesh	45%	
			Tamil Nadu and Maharashtra	60%	
			Other States	53%	
		5.	solar PV Power Projects	21%	
			Solar Thermal Power Projects	23%	
			Floating Solar Projects	19%	
		6.	Biomass Gasifier based Power Projects	85%	
		7.	Non-fossil fuel based co-generation projects	Uttar Pradesh and Andhra Pradesh – 45%; Tamil Nadu and Maharashtra – 60% Other States – 53%	
		8.	Biogas based Power Projects	90%	
		9.	Municipal Solid Waste based Power Projects and Refuse Derived fuel based Power Projects	MSW	RDF
			During stabilisation period	65%	65%
			During the remaining period of the first year (after stabilization period)	65%	65%
			2nd year onwards	75%	80%
		10.	Renewable Hybrid Energy Projects	30%	
16.	**Operation and Maintenance Expenses**	Normative O&M expenses allowed during first year of the Control Period i.e. financial year 2020-21 under these regulations shall be escalated at the rate of 3.84% per annum for the Tariff Period.			
		Sl. No.	**RE Technology**	**O&M Expenses (in Rs. lacs/MW)**	
		1.	Wind Energy	prevailing market trends	
		2.	Small Hydro Projects		
			Himachal Pradesh, Uttarakhand, West Bengal, Jammu and Kashmir, Ladakh and North-Eastern States	Below 5 MW	41.78
				5 MW to 25 MW	31.34
			other States	Below 5 MW	33.66
				5 MW to 25 MW	24.37
		3.	Biomass power projects based on Rankine cycle technology	46.42	
		4.	Non-Fossil Fuel based co-generation Projects	24.52	
		5.	solar PV Power Projects, Solar Thermal Power Projects and Floating Solar Projects	prevailing market trends	
		6.	Biomass Gasifier based Power Projects	61.31	
		7.	Biogas based Power Projects	61.31	
		8.	Municipal Solid Waste based Power Projects and Refuse Derived fuel based Power Projects	prevailing market trends	
		9.	Renewable Hybrid Energy Projects	prevailing market trends	

		10.	Renewable Energy with Storage Project	prevailing market trends
17.	**Auxiliary Consumption**	**Sl. No.**	**RE Technology**	**Auxiliary Consumption**
		1.	Small Hydro Projects	1%
		2.	Biomass power projects based on Rankine cycle technology	
			For projects using water-cooled condenser	10%
			For projects using air-cooled condenser	12%
		3.	Non-Fossil Fuel based co-generation Projects	8.5%
		4.	solar PV Power Projects	0.75%
			Solar Thermal Power Projects	10%
			Floating Solar Projects	0.75%
		5.	Biomass Gasifier based Power Projects	10%
		6.	Biogas based Power Projects	12%
		7.	Municipal Solid Waste based Power Projects and Refuse Derived fuel based Power Projects	15%
18.	**Station Heat Rate**	**Sl. No.**	**RE Technology**	**SRH (in kCal/kWh)**
		1.	Biomass power projects based on Rankine cycle technology	
			For projects using travelling grate boilers	4200
			For projects using AFBC boilers:	4125
		2.	Non-Fossil Fuel based co-generation Projects	3600
		3.	Municipal Solid Waste based Power Projects and Refuse Derived fuel based Power Projects	4200
19.	**Gross Calorific Value**	**Sl. No.**	**RE Technology**	**GCV (in kCal/kg)**
		1.	Biomass power projects based on Rankine cycle technology	3100
		2.	Non-Fossil Fuel based co-generation Projects	2250
		3.	Refuse Derived fuel based Power Projects	2500
		4.	Municipal Solid Waste based Power Projects	det. by the Commission
20.	**Fuel Cost**	**Sl. No.**	**RE Technology**	**FC (in Rs./MT)**
		1.	Biomass power projects based on Rankine cycle technology/ Biomass Gasifier based Power Projects	
			Andhra Pradesh	3326
			Haryana	3786
			Maharashtra	3872
			Punjab	3960

			Rajasthan	3305
			Tamil Nadu	3272
			Telangana	3326
			Uttar Pradesh	3384
			Other States	3557
		2.	Non-Fossil Fuel based co-generation Projects	
			Andhra Pradesh	1878
			Haryana	2671
			Maharashtra	2632
			Punjab	2351
			Tamil Nadu	2023
			Telangana	1877
			Uttar Pradesh	2095
			Other States	2274
		3.	Biogas based Power Projects	1422
		4.	Refuse Derived fuel based Power Projects	2084
21.	**Specific fuel consumption**	Biomass Gasifier based Power Projects - 1.25 kg per kWh. Biogas based Power Projects - 3 kg of substrate mix per kWh		
22.	**Storage Efficiency**	Renewable Energy with Storage Project: • Minimum efficiency for storage based on technology of solid state batteries shall be 80%. • Minimum efficiency for storage based on technology of pumped storage shall be 75%.		