

BERC (Terms and Conditions for Tariff Determination from Renewable Energy Sources) Regulations, 2017, including First Amendment 2018

HIGHLIGHTS

Tariff Period	Technology	No. of Years
	Wind, solar PV, solar thermal.	25
	Biomass Rankine cycle, biomass gasifier, biogas, non-fossil fuel based co-generation, municipal solid waste and refuse derived fuel based projects.	20
	Small hydro power projects.	35
Control Period	Three years, of which the first year shall be FY 2017-18.	
Useful Life of a Plant	Technology	No. of Years
	Wind, solar PV, solar thermal.	25
	Biomass Rankine cycle, biomass gasifier, biogas, non-fossil fuel based co-generation, municipal solid waste and refuse derived fuel based projects.	20
	Small hydro power projects.	35

Technology-wise Tariff	Technology	Net Tariff (Rs./kWh)	
		Case I*	Case II**
	Solar PV (less than 5 MW).	3.91	3.89
	Solar thermal (less than 5 MW).	9.66	9.62
	Biomass gasifier.	6.669	6.663
	Bagasse based power projects.	5.76	5.75
	Municipal solid waste based on Rankine cycle.	5.91	5.88
	Refuse derived fuel based on Rankine cycle.	7.20	7.18
	Biomass [other than rice straw and juliflora (plantation)] based projects with air cooled condenser.	7.25	7.24
	Biomass [for rice straw and juliflora (plantation)] based projects with air cooled condenser.	7.33	7.32
	Biomass [other than rice straw and juliflora (plantation)] based projects with water cooled condenser.	7.07	7.06
	Biomass [for rice straw and juliflora (plantation)] based projects with water cooled condenser.	7.18	7.17
	*If a project is not located in a specified area as per Income Tax Notification No. 71/2015/F and No.142/13/2015-TPL, vide notification dated 17 Aug 2015, additional depreciation allowable is 20%. **If a project is located in a specified area as per Income Tax Notification No. 71/2015/F and No.142/13/2015-TPL, vide notification dated 17 Aug 2015, additional depreciation allowable is 35% instead of 20%.		
	• Tariff for all other technologies is project specific.		

Capacity Utilization Factor (CUF)/Plant Load Factor (PLF)	Technology	CUF/PLF		
	Biomass based on Rankine cycle (water cooled condenser).	Stages	PLF (%)	
		Stabilization period - maximum up to 6 months.	60	
		After stabilization - up to 1 year.	70	
		Beyond 1 year.	80	
	Bagasse based co-generation	Based on 210 operating days and load factor of 92%.		
	Biomass gasifier.	85		
	Solar PV (less than 5 MW).*	19		
	Solar thermal (less than 5 MW).*	23		
	MSW/RDF based on Rankine cycle	Stages	PLF (%)	
			MSW	RDF
		Stabilization period - maximum up to 6 months.	65	65
		After stabilization - up to 1 year.	65	65
		Beyond 1 year.	75	80
	* Commission may deviate in case of project specific tariff.			

Auxiliary Consumption	Technology	Aux. Cons. (%)	
	Biomass based on Rankine cycle (water cooled condenser).	Stages	Aux. Con. (%)
		1 st year	11
		2 nd year onwards	10
	Non-fossil fuel based co-generation.	8.50	
	Solar PV and rooftop solar PV (less than 5 MW).*	0.25	
	Solar thermal (less than 5 MW).*	10.00	
	Biomass gasifier.	10.00	
	MSW/RDF based on Rankine cycle.	15.00	
	*Commission may deviate in case of project specific tariff.		

Capital Cost	Technology	Capital Cost (in Rs. lakh/MW)
	Biomass [other than rice straw and juliflora (plantation)] based projects with air cooled condenser.	600.44
	Biomass [for rice straw and juliflora (plantation)] based projects with air cooled condenser.	652.20
	Biomass [other than rice straw and juliflora (plantation)] based projects with water cooled condenser.	559.03
	Biomass [for rice straw and juliflora (plantation)] based projects with water cooled condenser.	610.80
	Non-fossil fuel based co-generation	492.50
	Solar PV including rooftop (less than 5 MW).	442.18
	Biomass gasifier based on Rankine cycle.	442.88 (net for FY 2017-18)
	MSW based on Rankine cycle.	1500.00
	RDF based on Rankine cycle.	900.00

Operation and Maintenance (O&M) Expenses	Technology	O&M Expenses (Rs. lakh/MW) FY 2017-18
	Solar PV including rooftop (less than 5 MW).	07.40
	Biomass based on Rankine cycle.	40.00
	Biomass gasifier.	52.83
	Non-fossil fuel based co-generation.	21.13
	MSW based on Rankine cycle.	90.00
	RDF based on Rankine cycle.	54.00
	• O&M cost shall be escalated @ of 5.72% per annum.	
Interest Rate on Loan	• 200 basis points above the average State Bank of India MCLR (1-year tenor) prevalent during the last available six months. • 9.983% (FY 2017-18).	
Depreciation	7% for the first 10 years and balance depreciation spread over the remaining useful life of the project.	
Return on Equity	• 14% grossed up by prevailing MAT as on 1 April of the previous year. • 17.56% for FY 2017-18.	
Interest on Working Capital	• 300 basis points above the average State Bank of India MCLR (1-year tenor) prevalent during the last available six months. • 10.983%	
Station Heat Rate (SHR)	Technology	SHR (kCal/kWh)
	Biomass with Rankine cycle.	3174
	Non-fossil fuel based co-generation.	2250
	MSW/RDF.	4200

Gross Calorific Value (GCV)	Technology	GCV (kCal/kg)
	Biomass.	3200
	Bagasse based co-generation.	2250
	MSW/RDF.	2500
Specific Fuel Consumption (SFC)	Technology	SFC (kg/kWh)
	Biomass gasifier.	1.25
Fuel Cost	Technology	Fuel Cost (Rs./MT) (FY 2017-18)
	Biomass.	3073.05
	Bagasse.	1964.71
	RDF.	1800.00
	- Fuel cost shall be escalated @ 5% per annum. - No fuel cost shall be allowed for MSW based projects.	

OTHER PROVISIONS

Tariff Structure and Design	- Single part, levelised tariff with two components for projects having fuel cost component. - Single part, levelised tariff for all other technologies.
Merit Order Dispatch Principle	All power plants, except biomass power plants, with capacity of 10 MW and above and non-fossil fuel based co-generation plants.
Subsidy or/and Incentives by Government	Any incentives or subsidy offered by the government, including accelerated depreciation benefit, shall be considered.

Taxes and Duties	Allowable as a pass-through on actual basis.
Rebate	• 2% for payment through Letter of Credit. • 1% for payment within 1 month of bill presentation not through Letter of Credit.
Late Payment Interest	• 1.25% if bill is paid after 60 days from the billing date.
Links	https://berc.co.in/rules-regulations/regulations/individual-regulation https://berc.co.in/orders/other-orders
References	https://berc.co.in/rules-regulations/regulations/individual-regulation/1313-terms-and-conditions-for-tariff-determination-from-renewable-energy-sources-regulations-2017 https://berc.co.in/orders/other-orders/1412-in-the-matter-of-suo-motu-proceeding-for-determination-of-generic-levellised-tariff-of-power-generated-from-renewable-energy-sources-for-fy-2017-18 https://berc.co.in/rules-regulations/regulations/individual-regulation/1580-1st-amendment-to-terms-and-conditions-for-tariff-determination-from-renewable-energy-sources-regulations-2018