

MADHYA PRADESH ELECTRICITY REGULATORY COMMISSION

**(Terms and Condition for Tariff determination of energy from
Renewable Energy Source), Regulations 2017, Dated: 06-07-2017**

Sl. No	Description	Summary			
1.	Tariff Period/Useful Life	Sl. No.	RE Technology	Useful Life/Tariff Period (in Years)	
		1.	Wind Energy project	25Years	
		2.	Small-Hydro power plant	35Years	
		3.	Solar PV/Solar thermal power project	25Years	
		4.	Biomass power project with Rankine Cycle technology	20Years	
		5.	Biogas based power project	20Years	
		6.	Bagasse based cogeneration project 20Years	20Years	
		7.	Municipal Solid waste Power Project	20Years	
2.	Control Period/Review period	5-Years w.e.f. 01-04-2017)			
3.	Tariff Structure	<p>1. The tariff for renewable energy technologies shall consists of fixed cost components:</p> <p style="margin-left: 40px;">(a) Capital Cost (b) Return on equity (c) Interest on Loan Capital (d) Depreciation (e) Interest on Working Capital (f) Operation and Maintenance expenses</p> <p>2. For biomass/MSW power projects etc. fuel cost shall be determined as variable cost component.</p>			
4.	Tariff Design	<p>1. The generic tariff shall normally be determined on levellised basis.</p> <p>2. Levelisation shall be carried out for the useful life of the Renewable Energy project.</p>			
5.	Discount Factor for Levellised Tariff	Discount factor shall be equivalent to Post tax weighted average cost of capital.			
6.	Despatch Principals	<p>1. Biomass and Bagasse based co-generation with capacity 2 MW, Wind power project with capacity 10MW and above and Solar Plants with capacity 5 MW shall be subjected to scheduling and despatch principles as well as merit order despatch.</p> <p>2. All other RE plants shall be subjected to dispatch and scheduling decided by the Commission.</p>			
7.	Capital Cost	Capital cost shall be inclusive of all capital work including plant and machinery, civil work, erection, and commissioning, financing, interest during construction, and evacuation, infrastructure upto inter-connection point.			
		Sl. No	Renewable Energy Source	Project Size	Capital Cost (Rs. Lakh/MW)
		1.	Wind Energy	-	575
		2.	Small Hydro Power Project	Below 5 MW	650
				5 MW to 25 MW	635
		3.	Solar PV Power Project	-	530
4.	Solar Thermal Power Project	-	1200		

		5.	Biomass Power Plants based on Rankine Cycle Technology		475
		6.	Bagasse based Cogeneration Plants		
		7.	Biogas based Power Plants		950
		8.	Municipal Solid waste Power Project		1500
8.	Debt Equity Ratio	70:30 If the equity deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan.			
9.	Loan Tenure	10-Yeras			
10.	Interest on Loan Tenure	Determined by the Commission			
11.	Depreciation	Depreciation rate for the first 10 years of the useful life shall be 7% per annum and the remaining depreciation shall be over the remaining useful life of the projects from 11 th year onwards.			
12.	Interest on Working Capital	Determined by the Commission			
13.	Return on Equity	The normative Return on Equity shall be at 20%per annum for the useful life of the project.			
14.	Operation and Maintenance Expenses	Sl. No.	RE Technology	O&M Expenses (in Lakh/MW)	
		1.	Wind Energy	1 % of Capital Cost per MW	
		2.	Small Hydro Power Project	3 %of Capital Cost per MW	
		3.	Solar PV Power Project	7.00	
		4.	Solar Thermal Power Project	1 % of Capital Cost per MW	
		5.	Biomass Power Plants based on Rankine Cycle Technology	4 %of Capital Cost per MW	
		6.	Bagasse based Cogeneration Plants		
		7.	Biogas based Power Plants	4 %of Capital Cost per MW	
		8.	Municipal Solid waste Power Project	5 %of Capital Cost per MW	
		During 2 nd Year onwards O&M escalated at the rate of 5.72% per annum over the useful life of the project.			
15.	Auxiliary Consumption	Sl. No	Renewable Energy Source	Auxiliary Consumption	
		1.	Wind Energy	-	
		2.	Small Hydro Power Project	1%	
		3.	Solar PV Power Project	0.25%	
		4.	Solar Thermal Power Project	6.5%	
		5.	Biomass Power Projects based on Rankine Cycle Technology	10%	
		6.	Bagasse based Cogeneration Plants		
		7.	Biogas based Power Plants	10%	
		8.	Municipal Solid waste Power Project	15%	
16.	Sharing of CDM Benefits	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.					
17.	Taxes and Duties	The taxes and duties levied by the government shall be allowed to pass through on actual incurred basis.					
16.	Capacity utilization Factor/Plant Load Factor	Sl. No	Region	Renewable Energy Source		CUF/PLF	
		1.		Wind Power		23%	
		2.		Small Hydro Power Project		30%	
		3.		Solar PV Power Project		19%	
		4.		Solar Thermal Power Project		23%	
		5.	During 1 st Year	Biomass Power Plants based on Rankine Cycle Technology		65%	
			From 2 nd Year Onwards			80%	
		6.		Bagasse based Cogeneration Plants			
		7.		Biogas based Power Plants		70% (during 1 st Year) 80% (2 nd year onwards)	
		8.	During 1 st Year	Municipal Solid waste Power Project		65%	
From 2 nd Year Onwards	75%						
17.	Fuel	Sl. No.	RE Technology	Station Heat Rate	Calorific Value	Fuel Cost	Specific Fuel Consumt.
		1.	Biomass Power Plants based on Rankine Cycle Technology	3800kCal/kWh	3600 kCal/kg	Rs. 25.00 / tonne	
		2.	Biogas based Power Plants			175/MT	10.7 kg/kWh
18.	Subsidy	The Commission shall indicate in the tariff order whether any incentive or subsidy offered by the Central or State Government is taken into consideration or not.					