

JAMMU & KASHMIR STATE ELECTRICITY REGULATORY COMMISSION

**(Terms and Conditions for Tariff Determination from Renewable Energy Sources)
Regulations, 2013, Dated: 17-05-2013, with amendments Dated: 22.03.2016,
20.04.2016**

Sl. No.	Description	Summary																		
1.	Control Period or Review Period	5-Years (w.e.f. FY-2013-14) The biomass price may be reviewed at the end of the third year of the Control Period.																		
2.	Tariff Period	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Sl. No.</th> <th style="text-align: center;">Technology</th> <th style="text-align: center;">Tariff Period (in Years)</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1.</td> <td>Small hydro projects below 5 MW</td> <td style="text-align: center;">35</td> </tr> <tr> <td style="text-align: center;">2.</td> <td>Solar PV and Solar thermal power projects</td> <td style="text-align: center;">25</td> </tr> <tr> <td style="text-align: center;">3.</td> <td>Biomass Gasifier and Biogas based power projects</td> <td style="text-align: center;">20</td> </tr> <tr> <td style="text-align: center;">4.</td> <td>Municipal Solid Waste and Refuse Derived Fuel based power projects</td> <td style="text-align: center;">20</td> </tr> <tr> <td style="text-align: center;">5.</td> <td>For other RE projects</td> <td style="text-align: center;">13</td> </tr> </tbody> </table>	Sl. No.	Technology	Tariff Period (in Years)	1.	Small hydro projects below 5 MW	35	2.	Solar PV and Solar thermal power projects	25	3.	Biomass Gasifier and Biogas based power projects	20	4.	Municipal Solid Waste and Refuse Derived Fuel based power projects	20	5.	For other RE projects	13
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3.	Tariff Structure	<p>The tariff for renewable energy technologies shall be single part tariff consisting of the following fixed cost components:</p> <ul 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; <p>For renewable energy technologies having fuel cost component, like biomass power projects and non-fossil fuel based cogeneration, single part tariff with two components, fixed cost component and fuel cost component, shall be determined.</p>																		
4.	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'. 																		
5.	Despatch Principles	<ol style="list-style-type: none"> 1. All renewable energy power plants, except for biomass power plants with installed capacity of 10 MW and above and non-fossil fuel based cogeneration plants, shall be treated as 'MUST RUN' power plants and shall not be subjected to 'merit order despatch' principles. 2. The Municipal Solid Waste and Refuse Derived Fuel based power projects shall be treated as 'MUST RUN' power plants and shall not be subjected to 'merit order despatch' principles. 3. Wind power generation plants where the sum of generation capacity of such plants connected at the connection point to the transmission or distribution system is 10 MW and above and connection point is 33 KV and above shall be subjected to scheduling and dispatch. 4. Solar generating plants with capacity of 5 MW and above and connected at the connection point of 33 KV level and above shall be subjected to scheduling and dispatch. 																		

6.	Capital Cost	Capital cost shall be inclusive of all capital work including plant and machinery, civil work, setting up of flue gas treatment plant and other pollution control equipment, financing and interest during construction, and evacuation infrastructure up to inter-connection point.			
		Sl. No	Renewable Energy Source	Project Size	Capital Cost (Rs. Lakh/MW)
		1.	Wind Energy	-	575
		2.	Small Hydro Project	Below 5 MW	770
		3.	Biomass Rankine Cycle Projects	5 MW to 25 MW	700
				Project [other than rice straw and juliflora (plantation) based project] with water cooled condenser	540
				Project [other than rice straw and Juliflora(plantation) based project] with air cooled condenser	580
				For rice straw and juliflora (plantation) based project with water cooled condenser	590
				For rice straw and juliflora (plantation) based project with air cooled condenser	630
		4.	Non-fossil fuel based Cogeneration Projects		420
		5.	Solar PV Power Project		1000
		6.	Solar Thermal Power Project		1300
		7.	Biomass Gasifier Power Projects		550
8.	Biogas based Power Projects		1100		
9.	Municipal Solid Waste / Refuse Derived Fuel and based on Rankine cycle technology		1500/900		
7.	Debt Equity Ratio	70:30 If the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan.			
8.	Loan and Finance Charges	Loan Tenure-12 Years For the purpose of computation of tariff, the normative interest rate shall be considered as average Jammu and Kashmir Bank Base rate prevalent during the first six months of the previous year plus 300 basis points.			
9.	Interest on Working Capital	Interest on Working Capital shall be at interest rate equivalent to the average Jammu and Kashmir Bank Base Rate prevalent during the first six months of the previous year plus 350 basis points.			

10.	Depreciation	<ol style="list-style-type: none"> 1. The value base for the purpose of depreciation shall be the Capital Cost of the asset admitted 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 Capital Cost of the asset. 2. The depreciation rate for the first 12 years of the Tariff Period shall be 5.83% per annum and the remaining depreciation shall be spread over the remaining useful life of the project from 13th year onwards. 																																																				
11.	Return on Equity	<ol style="list-style-type: none"> 1. The value base for the equity shall be 30% of the capital cost. 2. The normative Return on Equity shall be: <ol style="list-style-type: none"> (a) 18% per annum for the first 10 years. (b) 22% per annum 11th years onwards 																																																				
12.	Operation and Maintenance Expenses	<p>Normative O&M expenses allowed during first year of the Control Period (i.e. FY 2013-14) under these Regulations shall be escalated at the rate of 5.72% per annum over the Tariff Period.</p> <table border="1" data-bbox="540 653 1458 1486"> <thead> <tr> <th data-bbox="540 653 646 751">Sl. No</th> <th data-bbox="646 653 808 751">Year</th> <th data-bbox="808 653 1092 751">Renewable Energy Source</th> <th data-bbox="1092 653 1263 751">Project Size</th> <th data-bbox="1263 653 1458 751">O&M Expense (Rs. Lakh / MW)</th> </tr> </thead> <tbody> <tr> <td data-bbox="540 751 646 793">1.</td> <td data-bbox="646 751 808 793">2013-14</td> <td data-bbox="808 751 1092 793">Wind Energy</td> <td data-bbox="1092 751 1263 793"></td> <td data-bbox="1263 751 1458 793">9</td> </tr> <tr> <td data-bbox="540 793 646 905" rowspan="2">2.</td> <td data-bbox="646 793 808 905" rowspan="2">2012-13</td> <td data-bbox="808 793 1092 905" rowspan="2">Small Hydro Project</td> <td data-bbox="1092 793 1263 835">Below 5 MW</td> <td data-bbox="1263 793 1458 835">25</td> </tr> <tr> <td data-bbox="1092 835 1263 905">5 MW to 25 MW</td> <td data-bbox="1263 835 1458 905">18</td> </tr> <tr> <td data-bbox="540 905 646 1037">3.</td> <td data-bbox="646 905 808 1037"></td> <td data-bbox="808 905 1092 1037">Biomass Power Projects based on Rankine Cycle Technology</td> <td data-bbox="1092 905 1263 1037"></td> <td data-bbox="1263 905 1458 1037">40</td> </tr> <tr> <td data-bbox="540 1037 646 1108">4.</td> <td data-bbox="646 1037 808 1108">2013-14</td> <td data-bbox="808 1037 1092 1108">Non-fossil fuel based Cogeneration Projects</td> <td data-bbox="1092 1037 1263 1108"></td> <td data-bbox="1263 1037 1458 1108">16</td> </tr> <tr> <td data-bbox="540 1108 646 1150">5.</td> <td data-bbox="646 1108 808 1150">2016-18</td> <td data-bbox="808 1108 1092 1150">Solar PV Power Project</td> <td data-bbox="1092 1108 1263 1150"></td> <td data-bbox="1263 1108 1458 1150">11</td> </tr> <tr> <td data-bbox="540 1150 646 1213">6.</td> <td data-bbox="646 1150 808 1213"></td> <td data-bbox="808 1150 1092 1213">Solar Thermal Power Project</td> <td data-bbox="1092 1150 1263 1213"></td> <td data-bbox="1263 1150 1458 1213">15</td> </tr> <tr> <td data-bbox="540 1213 646 1285">7.</td> <td data-bbox="646 1213 808 1285">2013-14</td> <td data-bbox="808 1213 1092 1285">Biomass Gasifier Power Projects</td> <td data-bbox="1092 1213 1263 1285"></td> <td data-bbox="1263 1213 1458 1285">40</td> </tr> <tr> <td data-bbox="540 1285 646 1356">8.</td> <td data-bbox="646 1285 808 1356">2013-14</td> <td data-bbox="808 1285 1092 1356">Biogas based Power Projects</td> <td data-bbox="1092 1285 1263 1356"></td> <td data-bbox="1263 1285 1458 1356">40</td> </tr> <tr> <td data-bbox="540 1356 646 1486">9.</td> <td data-bbox="646 1356 808 1486">2013-14</td> <td data-bbox="808 1356 1092 1486">Municipal Solid Waste / Refuse Derived Fuel and based on Rankine cycle technology</td> <td data-bbox="1092 1356 1263 1486"></td> <td data-bbox="1263 1356 1458 1486">6% of the Capital cost</td> </tr> </tbody> </table>	Sl. No	Year	Renewable Energy Source	Project Size	O&M Expense (Rs. Lakh / MW)	1.	2013-14	Wind Energy		9	2.	2012-13	Small Hydro Project	Below 5 MW	25	5 MW to 25 MW	18	3.		Biomass Power Projects based on Rankine Cycle Technology		40	4.	2013-14	Non-fossil fuel based Cogeneration Projects		16	5.	2016-18	Solar PV Power Project		11	6.		Solar Thermal Power Project		15	7.	2013-14	Biomass Gasifier Power Projects		40	8.	2013-14	Biogas based Power Projects		40	9.	2013-14	Municipal Solid Waste / Refuse Derived Fuel and based on Rankine cycle technology		6% of the Capital cost
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13.	Rebate	<ol style="list-style-type: none"> 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. 																																																				
14.	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.																																																				
15.	Subsidy	The Commission shall take into consideration any incentive or subsidy 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 tariff under these Regulations.																																																				

16.	Sharing of CDM Benefits	<p>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;</p> <p>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.</p> <p>The sharing would however, be done on actual receipt of such revenue in the proportion specified for the year to which this revenue relates.</p>				
17.	Capacity Utilisation Factor/Plant Load Factor	Sl No.	Region	Renewable Energy Source	Project Size	CUF/PLF
		1.	Wind Power (Density (W/m ²))		Upto 200	20%
					201-250	22%
					251-300	25%
					301-400	30%
					>400	32%
		2.	Small Hydro Project		45%	
		3.	During Stabilisation	Biomass Power Projects based on Rankine Cycle Technology	60%	
			During the remaining period of the first year (after stabilization):		70%	
			From 2 Year onwards		80%	
		4.	Non-fossil fuel based Cogeneration Projects		53%	
		5.	Solar PV Power Project		19%	
		6.	Solar Thermal Power Project		23%	
		7.	Biomass Gasifier Power Projects		85%	
		8.	Biogas based Power Projects		90%	
		9.	During Stabilisation	Municipal Solid Waste / Refuse Derived Fuel and based on Rankine cycle technology	65% (for both MSW & RDF)	
			During the remaining period of the first year (after stabilization)		65%(for both MSW & RDF)	
			From 2 nd Year Onwards		75% (MSW) and 80% (RDF)	

18.	Auxiliary Consumption	Sl. No	Renewable Energy Source	Auxiliary Consumption		
		1.	Small Hydro Project	1.%		
		2.	Biomass Power Projects based on Rankine Cycle Technology	During 1 st Year	2 nd year Onwards	
				Project using water cooled condenser	11%	10%
				Project using air cooled condenser)	13%	12%
		3.	Non-fossil fuel based Cogeneration Projects	8.5%		
		4.	Solar PV Power Project			
		5.	Solar Thermal Power Project	10%		
		6.	Biomass Gasifier Power Projects	10%		
		8.	Biogas based Power Projects	12%		
9.	Municipal Solid Waste / Refuse Derived Fuel and based on Rankine cycle technology	15%				
19.	Taxes and Duties	The taxes and duties levied by the appropriate Government shall be allowed as pass through on actual incurred basis.				
20.	Station Heat Rate	S. No.	RE Technology	Quantity		
		1.	Biomass Power Projects based on Rankine Cycle Technology			
				For project using travelling grate boilers	4126 kcal/kWh	
				for project using AFBC boilers	4063 kcal/kWh	
		2.	Municipal Solid Waste/Refuse Derived Fuel and based on Rankine Cycle Technology	4200 kcal/kWh		
3.	Non-fossil fuel based Cogeneration Projects	3600 kCal/kWh				
21.	Calorific Value	S. No.	RE Technology	Quantity		
		1.	Biomass Power Projects based on Rankine Cycle Technology	3174 kcal/kg		
		2.	Refuse Derived Fuel and based on Rankine Cycle Technology	2500 kcal/kg		
		3.	Non-fossil fuel based Cogeneration Projects	2250 kCal/kg		
22.	Fuel Cost	S. No.	RE Technology	Quantity		
		1.	Biomass Power Projects based on Rankine Cycle Technology	2500 per Tonne		
		2.	Refuse Derived Fuel and based on Rankine Cycle Technology	1,800 per MT		
		3.	Non-fossil fuel based Cogeneration Projects (Bagasse)	1600 per Tonne		
		4.	Biogas Power Projects	990/MT		
		5.	Biomass gasifier power projects	2500/MT		
23.	Specific Fuel consumption	S. No.	RE Technology	Quantity		
		1.	Biomass Gasifier Power Projects	1.25 kg per kWh		
		2.	Biogas Power Projects	3 kg of substrate mix per kWh		