

HARYANA ELECTRICITY REGULATORY COMMISSION

(Terms and Conditions for Determination of Tariff from Renewable Energy Sources, Renewable Purchase obligation and Renewable Energy Certificate) Regulations 2010, Dated: 3rd February, 2011 with Amendments dated 05-09-2011, 25-11-2011, 15-07-2014, 12-08-2015 and 05-10-2016

Sl. No.	Description	Summary				
1.	Control Period or Review Period.	The First Control Period-3 years, of which the first year -31st march, 2011 The second Control Period – 4 years, of which the first year shall be the FY 2013-14.				
2.	Tariff Period	<ol style="list-style-type: none"> 1. Wind energy power project 25 years 2. Biomass power project, non-fossil fuel cogeneration 20 years 3. Small Hydro Plant 35 years 4. Solar PV/Solar thermal power plants 25 years 5. Municipal solid waste (MSW) WtE based power projects -20 years 				
3.	Tariff Structure	<ol style="list-style-type: none"> 1. 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 including margin money; (e) Operation and maintenance expenses; 2. For RE 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. The fuel cost component may be subjected to escalation/revision. 				
4.	Tariff Design	<ol style="list-style-type: none"> 1. The generic tariff shall be determined on levellised basis for the Tariff Period. 2. Levellised tariff shall be specified for the period equivalent to the 'Tariff Period' 				
5.	Discount Factor	Discount factor equivalent to weighted average cost of capital or by other appropriate discounting factor shall be considered.				
6.	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 biomass power generating station with an installed capacity of 10 MW and above and non-fossil fuel based co-generation projects and municipal solid waste WtE shall be subjected to scheduling and despatch code as specified under Haryana Grid Code and other relevant regulations including amendments thereto. 				
7.	Capital Cost	Sl. No	Year	Renewable Energy Source	Project Size	Capital Cost (Rs. Lakh/MW)
		1.	2013-14	Wind Energy	-	604
		2.	2010-11	Small Hydro Project	Below 5 MW	550
					5 MW to 25 MW	500

		3.	2010-11	Non-fossil fuel based Cogeneration Projects		445
		4.	2014-15	Solar PV Power Project	PV Poly Crystalline	705
					PV Thin film and Rooftop	681
					Canal top Solar PV	800
		5.	2013-14	Solar Thermal Power Project		120
		6.	2013-14	Biomass based Power Projects	With water cooled condenser	540
					With air cooled condenser	580
		7.	2016-17	Municipal Solid Waste / Refuse Derived Fuel and based on Rankine cycle technology		1500
8.		Sl. No	Year	Renewable Energy Source	Project Size	O&M Expense (Rs. Lakh / MW)
		1.	2013-14	Wind Energy		6.50
		2.	2010-11	Small Hydro Project	Below 5 MW	17.00
					5 MW to 25 MW	12.00
		3.	-	Non-fossil fuel based Cogeneration Projects	-	13.35
		4.	-	Solar PV Power Project	-	9.00
		5.	-	Solar Thermal Power Project	-	13.00
		6.	2013-14	Biomass based Power Projects	-	40.00
		7.	2016-17	Municipal Solid Waste / Refuse Derived Fuel and based on Rankine cycle technology	-	6.5%of Capital Cost
9.	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.				
10.	Loan and Finance Charges	Loan Tenure-10 Years For the purpose of computation of tariff, the normative interest rate shall be considered as average long term prime lending rate (LTPLR) / Base Rate of State Bank of India (SBI) prevalent during the previous year.				
11.	Depreciation	1. Depreciation shall be allowed up to maximum of 90% of the Capital Cost of the asset.				

		2. The depreciation rate for the first 10 years of the Tariff Period shall be 7% per annum and the remaining depreciation shall be spread over the remaining useful life of the project from 11 th year onwards.				
12.	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: (a) 16% per annum on normative equity (b) Applicable MAT/Corporate Tax shall be separately invoiced.				
13.	Interest on Working Capital	Interest on Working Capital for any financial year shall be computed at the average of the base rate of SBI prevailing during the first six months of the previous year plus 300 basis points.				
14.	Rebate	1. 2% - payment through letter of credit 2. 1% - payments are made other than through letter of credit within a period of one month of presentation of bills by the generating company.				
15.	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.				
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.	Subsidy or Incentive by the Central / State Government	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.				
18.	Capacity Utilisation Factor/ Plant Load Factor	Sl. No	Region	Renewable Energy Source	Project Size	CUF/PLF
		1.		Wind Power (Density (W/m ²))	200-250	20%
					250-300	23%
					300-400	27%
					> 400	30%
		2.		Small Hydro Project	Below 5 MW	56%
					5 MW to 25 MW	30%
		3.	Haryana	Non-fossil fuel based Cogeneration Projects		53%
			Other States			85%
		4.		Solar PV Power Project	Solar PV Projects	19%
Canal top Solar PV Projects	20%					
5.		Solar Thermal Power Project		23%		
6.	During Stabilisation	Biomass based Power Projects		60%		
	During the remaining period of the			70%		

			first year (after stabilization)			
			From 2 nd Year Onwards			80%
		7.	During Stabilisation	Municipal Solid Waste / Refuse Derived Fuel and based on Rankine cycle technology		65%
			During the remaining period of the first year (after stabilization)			65%
			From 2 nd Year Onwards			75%
19.	Auxiliary Consumption	Sl. No	Renewable Energy Source	Auxiliary Consumption		
		1.	Small Hydro Projects			
		2.	Biomass Power Projects based on Rankine Cycle Technology	Project using water cooled condenser	Project using air cooled condenser	
			During 1 st Year	11%	10%	
			2 nd year Onwards	13%	12%	
		3.	Solar Thermal Power Project	10%		
		4.	Municipal Solid Waste / Refuse Derived Fuel and based on Rankine cycle technology	15.5%		
20.	Station Heat Rate	Sl. No	Renewable Energy Source	Quantity		
		1.	Biomass based Power Projects			
			travelling-grate boiler	4200 kCal/kWh		
			with AFBC boilers	4063 kCal/kWh		
		2.	Non-fossil fuel based Cogeneration Projects	3600 kCal / kWh		
21.	Calorific Value	Sl. No	Renewable Energy Source	Quantity		
		1.	Biomass based Power Projects	3100 (kCal/kg)		
		2.	Non-fossil fuel based Cogeneration Projects	2250 kCal/kg		
22.	Fuel Cost	Sl. No	Renewable Energy Source	Quantity		
		1.	Biomass based Power Projects	3055 / MT		
		2.	Non-fossil fuel based Cogeneration Projects	600(Rs/MT)		

23.	Renewable Purchase Obligation (RPO)	Financial Year	Total RPO (As a Percentage of Total Consumption)	Solar RPO (as a percentage of total consumption)
		2013-14	3.00	0.10
		2014-15	3.25	0.25
		2015-16	3.50	0.75
		2016-17	3.75	1.0
		2017-18	4.00	1.25
		2018-19	4.50	1.50
		2019-20	4.75	2.00
		2020-21	5.00	2.50
		2021-22	5.50	3.00