

CENTRAL ELECTRICITY REGULATORY COMMISSION

(Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulation 2012 Notification dated 06-02-2012 with Amendments Dated 18.3.2014, 5.1.2015, Third Amendment Regulation 2015 dated 10.7.2015 and Fourth Amendment Regulations, 2015 dated 7.10.2015

Sl. No.	Description	Summary
1.	Short Title and Commencement	<p>(i) Central Electricity Regulatory Commission (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulation 2012.</p> <p>(ii) First Amendment notified on 18-03-2014</p> <p>(iii) Second Amendment notified on 05-01-2015</p> <p>(iv) Third Amendment Regulations, 2015-Draft Notification dated 10.7.2015.</p> <p>(v) Fourth Amendment Regulations, 2015 dated 7.10.2015</p> <p>Regulations to come into force from the date of publication in the Official Gazette and remain valid till 31.03.2017.</p>
2.	Definitions and Interpretation	<p>Definitions and Interpretation as detailed in the Regulations</p> <p>'Useful Life' in relation to a unit of a generating station including evacuation system shall mean the following duration from the date of commercial operation (COD) of such generation facility namely;</p> <p>(i) Wind Energy Power Project – 25 years</p> <p>(ii) Biomass Power Project with Rankine Cycle Technology – 20 years</p> <p>(iii) Non-Fossil Fuel Co-generation Plant – 20 years</p> <p>(iv) Small Hydro Plant – 35 years</p> <p>(v) Solar PV /Solar Thermal Power Plant – 25 years</p> <p>(vi) Biomass Gasifier based Power Project – 20 years</p> <p>(vii) Biogas based Power Project – 20 years</p>
3.	Scope and Extent of Application	<p>These Regulations shall apply in all cases where tariff, for a generating station or unit thereof based on Renewable sources of energy, is to be determined by the Commission under Section 62 read with Section 70 of the Act.</p> <p>Provided that in cases of Wind, Small Hydro projects, Biomass power based on Rankine cycle, non-Fossil Fuel based Co-generation projects, Solar PV, Solar Thermal power projects, Biomass gasifier, Biogas, Municipal Solid Waste and Refuse derived fuel based power projects, these regulations shall apply subject to the fulfillment of eligibility criteria specified in Regulation 4 of these Regulations.</p>
4.	Eligibility Criteria	<p>(i) Wind Power Projects – Using new Wind turbine generators located at sites approved by State Nodal Agency/State Govt. (only for zoning purpose)</p> <p>(ii) Small Hydro Project located at the site approved by State Nodal Agency/State Govt. using new plant & machinery and installed power plant capacity to be lower than or equal to 25 MW at single location.</p> <p>(iii) Biomass Power Plant Based on Rankine Cycle Technology – Biomass power project using new plant and machinery based on Rankine Cycle technology and using Biomass fuel sources provided use of Fossil fuel is restricted up to 15% in terms of calorific value on annual basis till 31-03-2017.</p> <p>(iv) Non Fossil fuel based Co-generation project – The project shall qualify to be non Fossil Fuel based Co-generation project, if it is using new plant and machinery and is in accordance with the definition and also meets the qualifying criteria outlined below:</p> <ul style="list-style-type: none"> ➤ Topping Cycle Mode of Co-generation – Any facility that uses non-Fossil Fuel input for power generation and also utilizes the thermal energy generated for useful heat applications in other industrial activities simultaneously. ➤ Provided that for the Co-generation facility to qualify under the topping cycle mode, the sum of useful power output and one half the useful thermal output (steam) be greater than 45% of the facilities energy consumption during season. <p>(v) Solar PV and Solar Thermal Power Project – Based on technologies approved by MNRE.</p>

		<p>(vi) Biomass Gasifier based Power Project – The project shall qualify to be termed as a Biomass gasifier based power plant, if it is using new plant and machinery and having a grid connected system that uses 100% producer gas engine, coupled with gasifier technologies approved by MNRE.</p> <p>(vii) Biogas Based Power Project – The project shall qualify to be termed as a Biogas based power plant if it is using new plant and machinery and having grid connected system that uses 100% Biogas fired engine coupled with Biogas technology for Co-digesting agriculture residues, manure and other bio waste as may be approved by MNRE.</p> <p>(viii) Municipal Solid Waste based Power Projects – The project shall qualify to be termed as a Municipal solid waste based power project, if it is using new plant and machinery based on Rankine cycle technology and using Municipal solid waste as fuel sources</p> <p>(ix) Refuse derived Fuel based Power Projects - The project shall qualify to be termed as a Refuse derived fuel based power project, if it is using new plant and machinery based on Rankine cycle technology and using Refuse derived fuel as fuel sources</p>
5	Control Period or Review Period	<p>Five years, of which the first year shall be the financial year, shall be 2012-13 provided:</p> <p>(a) The benchmark capital cost for Solar PV and Solar thermal to be reviewed annually by the commission.</p> <p>(b) Tariff determined for projects commissioned during the control period shall continue to be applicable for the entire duration of the Tariff Period</p> <p>(c) Revision in Regulations for next control period to be undertaken at least six months prior to end of the first control period.</p> <p>(d) In case regulations for next control period are not notified until commencement of next control period, the tariff norms shall continue to remain applicable until notification of the revised Regulations subject to adjustments as per revised Regulations.</p>
6	Tariff Period	<p>(i) Tariff period except in case of SHP below 5 MW, Solar PV and Solar Thermal, Biomass gasifier, Biogas, Municipal solid waste and Refuse derived fuel based power projects to be minimum of 13 years.</p> <p>(ii) 35 years for SHP below 5MW</p> <p>(iii) 25 years for Solar PV and Solar Thermal Power Projects</p> <p>(iv) 20 years for Biomass gasifier, Biogas, Municipal solid waste and Refuse derived fuel based power projects</p> <p>(v) Tariff period to be considered from the date of commercial operation of RE generating stations</p> <p>(vi) Tariff determined to be applicable only for the duration of the tariff period as per (i), (ii), (iii) & (iv) above</p>
7	Project Specific Tariff	<p>(1) To be determined by the commission on case to case basis for the following type of projects.</p> <p>(i) (i) Municipal Solid waste and Refuse derived fuel based projects: Provided that the Commission while determining the project specific tariff for Municipal Solid Waste and Refuse Derived Fuel based power projects shall be guided by the provisions of Chapter 5A of these Regulations</p> <p>(ii) Any other new renewable energy technologies approved by MNRE</p> <p>(iii) Other hybrid projects include renewable – renewable or renewable conventional sources for which renewable technology is approved by MNRE.</p> <p>(iv) Solar PV and Solar Thermal projects, if project developer opts for project specific tariff, provided the commission shall be guided by the provisions of these Regulations.</p> <p>(v) Hybrid Solar Thermal Power Plants</p> <p>(vi) Biomass project other than that based on Rankine Cycle technology application with water cooled condenser.</p> <p>(2) (a) Determination of project specific tariff to be in accordance with terms and conditions of the Commission.</p> <p>(b) Provided the financial norms of these regulations except for capital cost shall be ceiling norms.</p>

8.	Petition and Proceedings for determination of Tariff	<p>(i) Commission to determine the generic tariff on the basis of suo-motu petition at least six months in advance at the beginning of each year of the control period as per norms specified in these Regulations.</p> <p>(ii) The petition for determination of project specific tariff shall be accompanied by fee with following information.</p> <p>(a) Information in forms 1.1, 1.2, 2.1 and 2.2 of Regulations (appended in these Regulations) as the case may be.</p> <p>(b) Detailed project report</p> <p>(c) A statement of all applicable terms and conditions and expected expenditure for the period for which tariff is to be determined.</p> <p>(d) A statement containing full details of calculation of any subsidy and incentive received, due or assumed to be due from the Central Government and/or State Government. This statement shall also include the proposed tariff calculated without consideration of the subsidy and incentive.</p>
9.	Tariff Structure	<p>Single part tariff consisting of the following fixed cost components:</p> <p>(a) Return on equity</p> <p>(b) Interest on loan capital</p> <p>(c) Depreciation</p> <p>(d) Interest on Working capital</p> <p>(e) Operation and maintenance expenses</p> <p>Note: Fuel cost component to be added to the above for Biomass and Non-Fossil Co-generation. Single part tariff with two components, fixed cost component and fuel cost.</p>
10.	Tariff Design	<p>(i) The generic tariff shall be determined on levelised basis for the Tariff Period. For single part tariff with two components, tariff shall be determined on levelised basis considering the year of commissioning of the project for fixed cost component and on year of operation basis for fuel cost component.</p> <p>(ii) For levelised tariff computation, the discount factor equivalent to weighted average cost of capital shall be considered.</p> <p>(iii) Levelisation shall be carried out for the useful life while tariff shall be specified for the period equivalent to Tariff Period.</p>
11.	Despatch Principles for Electricity generated from Renewable Energy Sources	<p>(i) All RE Power Plants including Municipal Solid Waste and Refuse Derived Fuel based power projects except Biomass Power Plants with installed capacity of 10MW and above, and non-Fossil Fuel based Co-generation plants to be treated as "MUST-RUN" power plants and not subjected to merit order despatch principles.</p> <p>(ii) Biomass Power Plants of 10 MW installed capacity and above, non-Fossil Fuel based Co-generation projects, Municipal Solid Waste and Refuse Derived Fuel to be subjected to scheduling and dispatch code and specified under CERC (Indian Electricity Grid Code) Regulations, 2010 and CERC (Unscheduled Interchange and related matters) Regulations, 2009 including amendments thereto.</p> <p>(iii) Wind power generation plant 10 MW and above and connection point is 33 kV and above shall also be subjected to scheduling and despatch code as specified under Indian Electricity Grid Code (IEGC) 2010.</p>
Financial Principles		
12.	Capital Cost	<p>(i) All capital works including plant and machinery, civil works, erection and commissioning, financing, interest during construction and evacuation infrastructure up to inter-connection point.</p> <p>(ii) For project specific tariff the generating company shall submit the break-up of capital cost items along with its petition as per "Petition and proceedings for determination of tariff" given at Sl. No. 8 above.</p>
13.	Debt Equity Ratio	<p>(i) For generic tariff based on suo – motu petition it is 70:30</p> <p>(ii) For project specific tariff:</p> <p>(a) If equity is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan.</p> <p>(b) If equity is less than 30%, actual equity to be considered for determination of tariff.</p> <p>(c) Equity invested in foreign currency be designated in Indian rupees on the date of each investment.</p>

14	Loan and Finance Charges	<p>(i) Loan tenure- 12 years. This loan shall be considered gross normative loan.</p> <p>(ii) Interest rate- Calculation for interest to be worked out on gross normative loan.</p> <p>(a) Normative loan outstanding as on 1st April of every year shall be worked out by deducting the cumulative repayment up to March 31st of previous year from the gross normative loan.</p> <p>(b) For the computation of tariff, the normative interest rate shall be considered as average of State Bank of India (SBI) Base rate prevalent during the first six months of previous year plus 300 basis points.</p> <p>(c) The payment of loan to commence from 1st year of commercial operation of the project and shall be equal to the annual depreciation allowed.</p>
15.	Depreciation	<p>(i) Value of depreciation shall be the capital cost and depreciation be allowed up to 90% of capital cost with salvage value as 10%.</p> <p>(ii) Depreciation per annum to be on "Differential Depreciation Approach" over loan period beyond loan tenure over useful life computed on "Straight Line Method". Depreciation – 5.83% per annum for first 12 years of tariff period. Remaining depreciation to be spread over the remaining useful life of the project.</p> <p>(iii) Depreciation to be charged from the first year. In case commercial operation is for part of the year, depreciation to be charged on pro-rata basis.</p>
16.	Return on Equity	<p>(i) The value base for the equity shall be 30% of the capital cost or actual equity (in case of project specific tariff determination) as determined under Regulation 13.</p> <p>(ii) The normative Return on Equity shall be:</p> <p>(a) 20% per annum for the first 10 years</p> <p>(b) 24% per annum 11th year onwards</p>
17.	Interest on Working Capital	<p>Working capital requirement shall be computed as follows:</p> <p>(i) Wind Energy/Small Hydro Power/Solar PV/Solar Thermal</p> <p>(a) O&M expenses – for 1 month</p> <p>(b) Receivables – 2 months of energy charges for sale of electricity calculated on the normative CUF.</p> <p>(c) Maintenance spares – 15% of O&M expenses</p> <p>(ii) Biomass Power, Municipal Solid Waste and Refuse Derived Fuel, and Non-Fossil Fuel Co-generation projects</p> <p>(a) Fuel cost – four months equivalent to normative PLF</p> <p>(b) O&M expenses – for 1 month</p> <p>(c) Receivables – 2 months of fixed and variable (fuel) charges for sale of electricity calculated on the target PLF.</p> <p>(d) Maintenance spares – 15% of O&M expenses</p> <p>(iii) Interest on working capital shall be interest rate equivalent to average State Bank of India base rate prevalent during first six months of the previous year plus 350 basis points.</p>
18	Operation and Maintenance Expenses	<p>(i) O&M expenses to comprise R&M, establishment including employee expenses, administrative and general expenses.</p> <p>(ii) O&M expenses to be for the Tariff Period based on normative O&M expenses as specified in these Regulations for the first year of control period.</p> <p>(iii) Normative O&M expenses during first year of control period (FY 2012-13) be escalated at the rate of 5.72% per annum over the Tariff Period.</p>
19	Rebate	<p>(i) For payment of bills of the generating companies through LC – 2%</p> <p>(ii) Payment other than through LC but within 1 month of presentation of bills by generating companies – 1%</p>
20	Late Payment Surcharge	Payment of bills beyond 60 days from the date of billing – 1.25% p.m.
21	Sharing of CDM Benefits	<p>Proceeds of carbon credit from approved CDM project to be shared between generating company and concerned beneficiaries as follows:</p> <p>(a) 100% by project developer in the first year after the date of commercial operation of the generating station.</p> <p>(b) 2nd year – share of beneficiaries @ 10% to progressively increase by 10% every year up to 50% and then to be shared in equal proportion, by the generating company and the beneficiaries.</p>

22	Subsidy or Incentive by the Central/ State Government	To be taken into consideration including accelerated depreciation benefit, if availed, while tariff is determined under these Regulations. For income tax benefit on account of accelerated depreciation, if availed, the following principles to be considered. (i) Assessment of benefit shall be based on normative cost, accelerated depreciation rate as per relevant provision under income tax Act and corporate income tax rate. (ii) Capitalization of RE projects during second half of the fiscal year.													
23.	Taxes and Duties	Tariff determined under these regulations shall be exclusive of taxes and duties as may be levied by the appropriate Government. Provided that the taxes and duties levied by the appropriate Government shall be allowed as pass through on actual incurred basis.													
Technology Specific Parameters For Wind Energy															
24.	Capital Cost	(i) To include cost of Wind turbine generator, its auxiliaries, land cost, site development charges, other civil works, transportation charges, evacuation cost up to inter-connection point, financing charges and IDC. (ii) Capital cost shall be Rs. 525 Lakh/MW (F Y 2012- 13 during first year of Control Period) and shall be linked to indexation formula as outlined in these regulations													
25	Capital Cost Indexation Mechanism	Detailed in CERC Regulations													
26	Capacity Utilization Factor (CUF)	(i) CUF norms for control period shall be as follows: <table border="1" data-bbox="667 919 1330 1152" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Annual Mean Wind Power Density (W/m²)</th> <th>CUF (%)</th> </tr> </thead> <tbody> <tr> <td>Up to 200</td> <td>20</td> </tr> <tr> <td>200-250</td> <td>22</td> </tr> <tr> <td>250-300</td> <td>25</td> </tr> <tr> <td>300-400</td> <td>30</td> </tr> <tr> <td>>400</td> <td>32</td> </tr> </tbody> </table> (ii) Annual mean Wind power density as specified in (i) above shall be measured at 80 meter hub-height. (iii) For classification of Wind energy project into particular wind zone class as per MNRE guidelines for Wind measurement, Wind mast either put up by C-WET or private developer and validated by C-Wet would normally extended 10 km from the mast point to all directions for uniform terrain and limited appropriate distance in complex terrain with regard to complexity of the site. Based on such validation by C-WET state nodal agency should certify zoning of proposed wind from complex.	Annual Mean Wind Power Density (W/m ²)	CUF (%)	Up to 200	20	200-250	22	250-300	25	300-400	30	>400	32	
Annual Mean Wind Power Density (W/m ²)	CUF (%)														
Up to 200	20														
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250-300	25														
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>400	32														
27.	Operation and Maintenance Expenses	Normative O&M expenses for first year of the control period (i.e. FY 2012-13) shall be Rs. 9 Lac per MW and escalated at the rate of 5.72% per annum over the tariff period to compute the levelled tariff.													
Technology Specific Parameters for Small Hydro Project (SHP)															
28	Capital Cost	(i) The normative capital cost for SHP during first year of control period (FY 2012-13) shall be as follows: <table border="1" data-bbox="583 1612 1399 1833" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Region</th> <th>Project Size</th> <th>Capital Cost (Rs. Lakh/MW)</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Himachal Pradesh, Uttrakhand and North Eastern States</td> <td>Below 5 MW</td> <td>700</td> </tr> <tr> <td>5 MW to 25 MW</td> <td>630</td> </tr> <tr> <td rowspan="2">Other States</td> <td>Below 5MW</td> <td>550</td> </tr> <tr> <td>5 MW to 25 MW</td> <td>500</td> </tr> </tbody> </table> (ii) The capital cost for subsequent years shall be determined on the basis of indexation formula as outlined under these Regulations.	Region	Project Size	Capital Cost (Rs. Lakh/MW)	Himachal Pradesh, Uttrakhand and North Eastern States	Below 5 MW	700	5 MW to 25 MW	630	Other States	Below 5MW	550	5 MW to 25 MW	500
Region	Project Size	Capital Cost (Rs. Lakh/MW)													
Himachal Pradesh, Uttrakhand and North Eastern States	Below 5 MW	700													
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Other States	Below 5MW	550													
	5 MW to 25 MW	500													

29	Capital Cost Indexation Mechanism	Detailed in CERC Regulations													
30	Capacity Utilization Factor (CUF)	(i) CUF shall be 45% for SHP located in Himachal Pradesh, Uttarakhand and North Eastern States (ii) For other States CUF shall be 30%. Note: Normative CUF is net of free power to the home state if any, and any quantum of free power if committed by the developer over and above the normative CUF shall not be factored into the tariff .													
31	Auxiliary Consumption	Normative Auxiliary Consumption - 1.0%													
32	Operation and Maintenance Expenses	Normative O&M expenses for the first year of the control period (i.e. FY 2012-13) shall be as follows: <table border="1" data-bbox="581 604 1399 827"> <thead> <tr> <th>Region</th> <th>Project Size</th> <th>Capital Cost (Rs. Lakh/MW)</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Himachal Pradesh, Uttarakhand and North Eastern States</td> <td>Below 5 MW</td> <td>25</td> </tr> <tr> <td>5 MW to 25 MW</td> <td>18</td> </tr> <tr> <td rowspan="2">Other States</td> <td>Below 5 MW</td> <td>20</td> </tr> <tr> <td>5 MW to 25 MW</td> <td>14</td> </tr> </tbody> </table> <p>Normative O&M expenses shall be escalated at the rate of 5.72% per annum for the tariff period for the purpose of determination of levelised tariff.</p>	Region	Project Size	Capital Cost (Rs. Lakh/MW)	Himachal Pradesh, Uttarakhand and North Eastern States	Below 5 MW	25	5 MW to 25 MW	18	Other States	Below 5 MW	20	5 MW to 25 MW	14
Region	Project Size	Capital Cost (Rs. Lakh/MW)													
Himachal Pradesh, Uttarakhand and North Eastern States	Below 5 MW	25													
	5 MW to 25 MW	18													
Other States	Below 5 MW	20													
	5 MW to 25 MW	14													
Technology Specific Parameters for Biomass Power Projects Based on Rankine Cycle Technology															
33	Technology Aspect	It shall be based on Rankine Cycle Technology.													
34	Capital Cost	The normative capital cost of the Biomass power projects shall be as follows: (i) Rs. 540 lakh/MW for project [other than rice straw and juliflora (plantation) based project] with water cooled condenser; (ii) Rs. 580 lakh/MW for project [other than rice straw and juliflora (plantation) based project] with air cooled condenser; (iii) Rs. 590 lakh/MW for rice straw and juliflora (plantation) based project with water cooled condenser; (iv) Rs. 630 lakh/MW for rice straw and juliflora (plantation) based project with air cooled condenser													
35	Capital Cost Indexation Mechanism	Detailed in CERC Regulations													
36	Plant Load Factor (PLF)	PLF for determining fixed charge component of Tariff shall be: (i) PLF during Stabilization up to 6 months from COD - 60% (ii) PLF during the first year after stabilization: -70% (iii) From 2 nd year onwards: -80%.													
37	Auxiliary Consumption	Auxiliary power consumption (a) Project using Water Cooled Condenser - 11% during first year of operation and 10% from 2 nd year onwards. (b) Project using Air Cooled Condenser - 13% during first year of operation and 12% from second year onwards.													
38	Station Heat Rate	(a) 4126 kCaL/kWh for project using Traveling gate boilers (b) 4063 kCaL/kWh for AFBC Boilers													
39	O&M Expenses	For second year of control period (i.e. FY 2013-14) – 40 Lac/MW													
40	Fuel Mix	(i) Power plant to be designed in such a way so as to use different types of non-Fossil Fuel available within the vicinity such as crop residues, agro-industrial residues, forest residues etc. and other Biomass fuels as may be approved by MNRE. (ii) Generating companies to ensure adequate availability of fuel to meet the respective project requirements.													

41	Use of Fossil Fuel	Use of Fossil fuels shall be limited to the extent of 15% in terms of calorific value on actual basis till 31-07-2017.																				
42	Monitoring Mechanism for the use of Fossil Fuel	(i) Project developer to furnish a monthly fuel usage and fuel procurement statement duly certified by Chartered Accountant to the beneficiary (with a copy to appropriate agency appointed by the Commission for the purpose of monitoring the fossil and non-fossil fuel consumption) for each month, along with the monthly energy bill. The statement shall cover details indicated in the Regulations (ii) Non-compliance with the above details shall result in withdrawal of applicability of tariff as per these Regulations																				
43	Calorific Value	For Biomass based projects using Fossil fuel up to 15% of calorific contribution, the Calorific Value of fuel used for the purpose of determination of tariff shall be 3174 kCal/Kg																				
44	Fuel Cost	Biomass fuel price during first year of control period (FY 2012-13) shall be as follows and is linked to index formula as specified under CERC Regulation 45 Alternatively, for each subsequent year of the tariff period, the normative escalation factor of 5% per annum shall be applicable at the option of the Biomass project developer. <table border="1" data-bbox="646 674 1346 1062"> <thead> <tr> <th>State</th> <th>Biomass Price (Rs./MT) for 2012-13</th> </tr> </thead> <tbody> <tr> <td>Andhra Pradesh</td> <td>2315</td> </tr> <tr> <td>Haryana</td> <td>2635</td> </tr> <tr> <td>Maharashtra</td> <td>2116</td> </tr> <tr> <td>Madhya Pradesh</td> <td>1507</td> </tr> <tr> <td>Punjab</td> <td>2756</td> </tr> <tr> <td>Rajasthan</td> <td>2300</td> </tr> <tr> <td>Tamil Nadu</td> <td>2277</td> </tr> <tr> <td>Uttar Pradesh</td> <td>2355</td> </tr> <tr> <td>Other States</td> <td>2283</td> </tr> </tbody> </table> <p>Alternatively, Biomass fuel price shall be decided annually by the appropriate Regulatory Commission.</p>	State	Biomass Price (Rs./MT) for 2012-13	Andhra Pradesh	2315	Haryana	2635	Maharashtra	2116	Madhya Pradesh	1507	Punjab	2756	Rajasthan	2300	Tamil Nadu	2277	Uttar Pradesh	2355	Other States	2283
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45	Fuel Price Indexation Mechanism	Detailed in CERC Regulations																				
Technology Specific Parameters for Non-Fossil Fuel Based Co-generation Projects																						
46	Technology Aspect	A project shall qualify as a non-Fossil fuel based Co-generation project if it meets the eligibility criteria as specified under Sl. No. 4 above																				
47	Capital Cost	Rs. 420 lakh /MW for the first year of control period (FY 2012-13) and shall be linked to indexation formula as outlined under Regulation 48																				
48	Capital Cost Indexation Mechanism	Detailed in CERC Regulations																				
49	Plant Load Factor	For determining fixed charge, PLF shall be computed on the basis of plant availability for number of operating days (as given below) considering operations during crushing season and offseason and load factor of 92%. <table border="1" data-bbox="540 1577 1442 1848"> <thead> <tr> <th>State</th> <th>Operating days</th> <th>Plant Load Factor (%)</th> </tr> </thead> <tbody> <tr> <td>Uttar Pradesh and Andhra Pradesh</td> <td>120 days (crushing) + 60 days (off-season) = 180 days</td> <td>45</td> </tr> <tr> <td>Tamil Nadu and Maharashtra</td> <td>180 days (crushing) + 60 days (off-season) = 240 days</td> <td>60</td> </tr> <tr> <td>Other States</td> <td>150 days (crushing) + 60 days (off-season) = 210 days</td> <td>53</td> </tr> </tbody> </table>	State	Operating days	Plant Load Factor (%)	Uttar Pradesh and Andhra Pradesh	120 days (crushing) + 60 days (off-season) = 180 days	45	Tamil Nadu and Maharashtra	180 days (crushing) + 60 days (off-season) = 240 days	60	Other States	150 days (crushing) + 60 days (off-season) = 210 days	53								
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50	Auxiliary Consumption	8.5%																		
51	Station Heat Rate (SHR)	SHR of 3600kCal/kWh for power generation component alone to be considered for computation of tariff																		
52	Calorific Value	(a) For Bagasse – 2250 kCal/kg (b) For Biomass fuel other than Bagasse as per Regulation 43 above																		
53	Fuel Cost	(i) Price of Bagasse shall be as follows and linked to indexation formulae as outlined under Regulation 54. Alternatively, for each subsequent year of the control period, the normative escalation factor of 5% per annum shall be applicable at the option of the project developer. <table border="1" data-bbox="695 527 1305 875"> <thead> <tr> <th>State</th> <th>Bagasse Price (Rs./MT)</th> </tr> </thead> <tbody> <tr> <td>Andhra Pradesh</td> <td>1307</td> </tr> <tr> <td>Haryana</td> <td>1859</td> </tr> <tr> <td>Maharashtra</td> <td>1327</td> </tr> <tr> <td>Madhya Pradesh</td> <td>946</td> </tr> <tr> <td>Punjab</td> <td>1636</td> </tr> <tr> <td>Tamil Nadu</td> <td>1408</td> </tr> <tr> <td>Uttar Pradesh</td> <td>1458</td> </tr> <tr> <td>Other States</td> <td>1420</td> </tr> </tbody> </table> (ii) For use of Biomass other than Bagasse the Biomass price as specified under Regulation 44 above shall be applicable.	State	Bagasse Price (Rs./MT)	Andhra Pradesh	1307	Haryana	1859	Maharashtra	1327	Madhya Pradesh	946	Punjab	1636	Tamil Nadu	1408	Uttar Pradesh	1458	Other States	1420
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Other States	1420																			
54	Fuel Price Indexation Mechanism	Detailed in CERC Regulations																		
55	O&M Expenses	Rs.16.0 Lakh/MW during the first year of control period to be escalated @ 5.72% per year																		
Technology Specific Parameters for Solar PV Power Project																				
56	Technology Aspects	Norms for Solar Photovoltaic (PV) power applicable for grid connected PV system based on the technologies such as crystalline silicon or thin film etc. as may be approved by MNRE.																		
57	Capital Cost	Rs. 1000.00 Lakh/MW for FY 2012-13																		
58	Capacity Utilization Factor	19% For project specific tariff determination, commission may deviate from above norm in pursuance of Regulations 7 and 8 above.																		
59	O&M Expenses	Rs. 11.00 Lakh /MW for the 1 st year of operation allowed at the commencement of the control period to be escalated @ 5.72% per annum																		
Technology Specific Parameters for Solar Thermal Power Project																				
60	Technology Aspects	Norms for Solar Thermal Power applicable for concentrated Solar power (CSP) technologies i.e. line focusing or point focusing as may be approved by MNRE																		
61	Capital Cost	Rs.1300 Lakh/MW for FY 2012-13 For project specific tariff determination, commission may deviate from above norm in pursuance of Regulations 7 and 8 above																		
62	Capacity Utilization Factor	23% For project specific tariff determination, commission may deviate from above norm in pursuance of Regulations 7 and 8 above																		
63	O&M Expenses	Rs.15 Lakh/MW for the 1 st year of operation allowed at the commencement of the control period to be escalated @ 5.72% per annum																		
64	Auxiliary Consumption	10% For project specific tariff determination, commission may deviate from above norm in pursuance of Regulations 7 and 8 above																		

Technology Specific Parameters for Biomass Gasifier Power Projects		
65	Technology Aspect	The norms for tariff determination specified here under are for the Biomass Gasifier power projects.
66	Capital Cost	(i) The normative Capital Cost for Biomass gasifier project based on Rankine Cycle shall be Rs. 550 lakh/MW during 1 st year of Control period (FY 2012-13) and shall be linked to indexation formula as per Regulation 67. (ii) After taking into account capital subsidy net project cost shall be Rs. 400 lakh/MW for 2012-13.
67	Capital Cost Indexation Mechanism	Detailed in CERC Regulations
68	Plant Load Factor	80%
69	Auxiliary Consumption	10%
70	Specific Fuel Consumption	1.1 Kg/kWh
71	O&M Expenses	Rs. 35 lakh/MW for first year of Control Period (FY 2012-13) with escalation of 5.72% per annum
72	Fuel Mix	Plant to be designed to use different type of non-Fossil fuels available within the vicinity of project and ensure adequate availability of fuel.
73	Fuel Cost	For first year of control period (FY 2012-13) as per Regulation 44 and linked to indexation formula as per Regulation 74. Alternatively for each subsequent year, 5% escalation per annum at the option of project developer.
74.	Fuel Price Indexation Mechanism	Detailed in CERC Regulations
Technology Specific Parameters for Biogas Based Power Projects		
75.	Technology Aspect	The norms for Tariff determination specified here under for grid connected Biogas based power projects that uses 100% Biogas fired engine coupled with Biogas technology for co-digesting agricultural residues, manure and other BiO-waste as may be approved by MNRE.
76	Capital Cost	(i) The normative capital cost for Biogas based power plant shall be Rs. 1000 Lac/MW during first year of control period (FY 2012-13) and shall be linked to indexation formula as Regulation-77. (ii) After taking into account of capital subsidy net project cost shall be Rs. 700 Lac/MW for the year 2012-13.
77.	Capital Cost Indexation Mechanism	Detailed in CERC Regulations
78	Plant Load Factor	90% for determining fixed charge component of tariff.
79	Auxiliary Consumption	12%
80	O&M Expenses	Rs. 30 lakh/MW for first year of control period (FY 2012-13) with escalation of 5.72% per annum
81	Specific Fuel Consumption	3 Kg of Substrate mix per kWh.
82	Fuel Cost (Feed Stock Price)	Rs. 990/MT during first year of control period (FY 2012-13)
83	Fuel Price Indexation Mechanism	Detailed in CERC Regulations

Technology Specific Parameters for Power Projects Using Municipal Solid Waste /Refuse Derived Fuel and Based on Rankine Cycle Technology				
84	Technology Aspect	Power projects which use Municipal Solid Waste and refuse derived fuel and are based on Rankine cycle technology application, combustion or incineration, Bio-methanation, Pyrolysis and High end Gasifier technologies		
85	Capital Cost	Normative capital costs for power projects based on Rankine cycle technology application for FY 2015-16: (i) Rs 1500 lakh/MW which use municipal solid waste (ii) Rs 900 lakh/MW which use refuse derived fuel Provided that the Capital Cost norms for the remaining years of the control period, for municipal solid waste and refuse derived fuel based power projects shall be reviewed on annual basis		
86	Plant Load Factor (PLF)	PLF	MSW	RDF
		During Stabilization	65%	65%
		During the remaining period of the first year (after stabilization)	65%	65%
		From 2nd Year onwards	75%	80%
		The stabilization period shall not be more than 6 months from the date of commissioning of the project		
87	Auxiliary Consumption	15%		
88	O&M Expenses	Normative O&M expenses for FY 2015-16 shall be 6% of normative capital cost to be escalated @ 5.72% per annum.		
89	Calorific Value	Calorific Value of the refuse derived fuel - 2500 kCal/Kg		
90	Fuel Cost	<ul style="list-style-type: none"> Fuel cost of the refuse derived fuel during FY 2015-16- Rs 1,800 per MT to be escalated @ 5% per annum at the option of the developer. No fuel cost shall be considered for determination of tariff for the power projects using municipal solid waste 		
Miscellaneous				
91	Deviation from Norms	Vested with the Commission		
92	Power to Relax	Vested with the Commission		