

Comments/ Objections/Suggestions on Draft CERC (Terms & Conditions of Tariff) Regulations, 2014

LANCO

Always Inspiring



EPC



POWER



SOLAR



RESOURCES



INFRASTRUCTURE

Date: 15-16 Jan 2014

Reference Clause	Draft CERC Regulations	Comments/ Objections / Suggestions
Scope & extent of application Cl. 2 (2) (a)	These regulations <u>shall not apply</u> for determination of tariff in case of: Generating Stations or inter-State transmission systems whose tariff has been discovered through tariff based competitive bidding in accordance with the guidelines issued by the Central Government under <u>Section 63 of the Act</u>	CERC regulations may be applied for revision / determination of tariff adopted under Section 63 of the Act in specific cases with supply to multiple states [Legal opinion by Attorney General also states that ‘Regulatory Commission has powers for revision of tariff adopted under Section 63 of the Act.’]
Definitions & Interpretation of Beneficiary Cl. 3 (6)	‘beneficiary’... means a distribution licensee through a long term PPA either directly <u>or through a trading licensee on payment of fixed charges</u> and by scheduling in accordance with the Grid Code	“fixed charges” may be replaced with “total tariff and trading margin”
Definitions & Interpretation of Installed capacity Cl. 3 (29)	‘Installed Capacity’... means the summation of the name plate capacities of all the units at the generator terminals as may be approved by the Commission from time to time; <u>Provided that installed capacity in case of thermal generating stations before declaration of COD shall be schedule given by RLDC or SLDC as the case may be.</u>	The applicability of the proviso is not clear. Energy generated prior to COD is infirm power, which is not scheduled by RLDC or SLDC.
Date of Commercial Operation 4 (1), 4th para	Provided also that the generating station shall <u>demonstrate the plant availability of not less than the normative plant availability in the month following the date of declaration of commercial operation.</u> If the generating station is not able to demonstrate normative availability, generating station is said to be put into commercial service from the month of normative availability.	For plants with part capacity tied up under CERC Regulations and balance to be tied up under Case-1 bidding, this clause will impose restriction on declaring COD since the normative availability cannot be demonstrated with only part of the capacity tied up.

Reference Clause	Draft CERC Regulations	Comments/ Objections / Suggestions
Trial Run and Trial Operation 5 (1)	Trial Run shall mean the successful running of the generating station or unit thereof at <u>maximum continuous rating or installed capacity for continuous period of 72 hours</u>	<ul style="list-style-type: none"> ▪ It is necessary to link this with a condition that RLDCs / SLDC shall schedule the station at full load during trial run and plant should be treated 'Must Run' ▪ For Hydro Plants, similar to the minimum period considered for Declared Capacity while computing capacity charge and energy charge, the period in the definition of Trial Run should also be reckoned as three (3) hours of continuous operation of the Station/ unit at the maximum continuous rating or installed capacity
Application for Determination of Tariff Cl. 7 (7), 2nd para	Provided that if the date of commercial operation is <u>delayed beyond 180 days</u> from the date of issue of tariff order in terms of clause (6) of this regulation, the <u>tariff granted</u> shall be deemed to have been withdrawn and the generating company or the transmission licensee shall be required to file a fresh application for determination of tariff after the date of commercial operation of the project.	If the delay is due to reasons beyond the control of generators, provisional tariff should not be withdrawn.
Truing up Cl. 8 (3)	The financial gains by a generating company on account of controllable parameters shall be shared between generating company and the beneficiaries on <u>monthly basis</u> , in the ratio of 3:1 as per the following formulae:	<ul style="list-style-type: none"> ▪ Sharing to be done on annual basis in order to take care of losses likely to be incurred during some months ▪ In case of any losses incurred due to lower scheduling by beneficiaries, losses should be shared in the same ratio of 3:1. Alternatively, correction factors should be provided for Heat Rate and Auxiliary Power consumption at different loads

Reference Clause	Draft CERC Regulations	Comments/ Objections / Suggestions
Capital Cost Cl. 9 (2) (f)	Adjustment of revenue due to sale of infirm power prior to the <u>schedule commissioning</u> as specified under regulation 18 of this Regulation.	This should be related to actual commissioning date instead of schedule commissioning
Controllable and Uncontrollable Factors Cl. 12 (2)	The “uncontrollable factors” shall include but not limited to the following: i. Force Majeure events, such as acts of war, fire, natural calamities, etc.; and ii. Change in law	Delay of associated transmission system also should be included in uncontrollable factors
Renovation and Modernisation Cl. 15 (3)	In case of gas/ liquid fuel based open/ combined cycle thermal generating station, any expenditure for <u>renovation of gas turbines after 25 years of operation from its COD</u> and an expenditure shall be allowed	Existing tenure of 15 years may be continued
Capacity Charges Cl. 21	The Capacity charges consist of components: (a) Return on Equity; (b) Interest on loan capital; (c) Depreciation; (d) Interest on working capital; and (e) Operation and Maintenance expenses; Provided that special allowance	Exclusion of secondary fuel oil consumption from the components of Capacity Charges and including it under Energy Charges is not appropriate. Secondary oil consumption will increase if despatch scheduled by beneficiaries / LDCs leads to start-ups/shutdowns, ramping up/down, and low load operations.
Energy Charges Cl. 22	Energy charges shall be derived on the basis of shall consist of the following cost (a) Landed Fuel Cost of primary fuel; and (b) <u>Cost of secondary fuel oil consumption</u>	

Reference Clause	Draft CERC Regulations	Comments/ Objections / Suggestions
<p>Return on Equity Cl. 24 (2)</p>	<p>Return on Equity shall be computed <u>at the base rate of 15.5%</u> for thermal generating stations, transmission system</p>	<p>RoE of 15.5% does not provide adequate returns to the developers / investors considering the following:</p> <ul style="list-style-type: none"> ▪ Difference between SBI benchmark PLR and the RoE rate of 15.5% considered for 2009 Regulations has now reduced substantially ▪ Equity return has to be kept at a reasonably higher level compared to the cost of Debt in order to attract private investments in power sector; however, the lending rates (after the mark-up on the PLR and commission, etc.) have gone up significantly in the last 2-3 years period thus narrowing the gap between interest on debt and RoE ▪ Internal accruals from Return on Equity are required for the purpose of investing in new / expansion projects by IPP developers ▪ RoE rate should take into cognizance the annual rate of inflation as well as its growing trend <p>In view of the above, a post-Tax RoE of 18% for thermal plants and 20% for Hydro stations (due to long gestation period and additional hydrology / geology risks)</p>

Reference Clause	Draft CERC Regulations	Comments/ Objections / Suggestions																														
<p>Tax on Return on Equity Cl. 25 (1)</p>	<p>Tax on the income corresponding to Return on Equity approved by the Commission for the generating company or the transmission licensee, as the case may be shall be directly recovered from the beneficiaries or the long term transmission customers /DICs, as the case may be. Tax on the income shall be computed with reference to the total actual income tax paid by the generating company or the transmission licensee, as the case may be, on pro-rata basis with respect to return on equity. The tax on any other income stream (including efficiency gains, incentive, etc.) other than Return on Equity shall not be recovered from beneficiaries or long term transmission customers / DICs, as the case may be and tax on such other incomes shall be payable by the generating company or the transmission licensee, as the case may be.</p>	<ul style="list-style-type: none"> ▪ The practice of pre-tax return on equity by grossing up the tax rate should be continued ▪ During the period when 801A benefit is available to a project, the grossing up could be done by using the MAT rate instead of corporate tax rate ▪ Base rate should be grossed up by actual tax paid in respect of a Project and not the corporate tax of the Company as a whole ▪ Taxes recovered through this way should be trued up with the actual taxes paid either at the end of the year or end of control period ▪ Additional tax paid by the generator on other incomes from efficiency gains, etc. should also be reimbursed by the beneficiaries 																														
<p>Operation and Maintenance Expenses Cl. 29</p>	<p>• Coal based and lignite fired (including those based on CFBC technology) generating stations, : Rs. In Lakh / MW</p> <table border="1" data-bbox="432 1072 983 1296"> <thead> <tr> <th>Year</th> <th>.....</th> <th>.....</th> <th>.....</th> <th>600 MW Sets and above</th> </tr> </thead> <tbody> <tr> <td>FY 2014-15</td> <td></td> <td></td> <td></td> <td>14.68</td> </tr> <tr> <td>FY 2015-16</td> <td></td> <td></td> <td></td> <td>15.61</td> </tr> <tr> <td>FY2016-17</td> <td></td> <td></td> <td></td> <td>16.60</td> </tr> <tr> <td>FY 2017-18</td> <td></td> <td></td> <td></td> <td>17.66</td> </tr> <tr> <td>FY 2018-19</td> <td></td> <td></td> <td></td> <td>18.78</td> </tr> </tbody> </table>	Year	600 MW Sets and above	FY 2014-15				14.68	FY 2015-16				15.61	FY2016-17				16.60	FY 2017-18				17.66	FY 2018-19				18.78	<ul style="list-style-type: none"> ▪ For the 600 MW and above units, Tariff Regulations 2009 specified the O&M expenses for FY 2013-14 as Rs. 14.62 lakhs/MW. Compared to this, O&M Expenses of Rs. 14.68 lakhs/MW for FY 2014-15 are just 0.41% more which is far below the escalation rate of 6.35% considered in the Draft Regulation. Hence O&M expense should be pegged at Rs. 15.55 lakh / MW for FY 2014-15, and escalated at 6.35% per annum during the subsequent years.
Year	600 MW Sets and above																												
FY 2014-15				14.68																												
FY 2015-16				15.61																												
FY2016-17				16.60																												
FY 2017-18				17.66																												
FY 2018-19				18.78																												

Reference Clause	Draft CERC Regulations	Comments/ Objections / Suggestions
Incentive Cl. 30 (4)	Incentive to a generating station or unit thereof shall be payable at a flat rate of <u>50 paise/kWh</u> for ex-bus scheduled energy corresponding to scheduled generation in excess of ex-bus energy corresponding to Normative Annual Plant Load Factor (NAPLF)	Incentive based on Availability should be continued since PLF is linked to Scheduled Generation which is under the direct control of beneficiaries. In a scenario with fuel shortages, and DISCOMs not offtaking adequate power, generators would be at a disadvantage in spite of all efforts and expenses required to maintain the units with higher Availability.
Computation of Capacity Charges and Energy Charges Cl. 30 (7) related to normative transit and handling losses	<p>The landed cost of fuel for the month shall include price of fuel corresponding to the grade and quality of fuel inclusive of royalty, arrived at after considering normative transit and handling losses as percentage of the quantity of coal or lignite dispatched by the coal or lignite supply company during the month as given below:</p> <ul style="list-style-type: none"> ▪ Pithead generating stations : 0.2% ▪ Non-pithead generating stations : 0.8% <p>Provided that in case of pit head stations if coal or lignite is procured from sources other than the pit head mines which is transported to the station through rail transit loss 0.8% shall be applicable.</p> <p>Provided further that in case of imported coal the transit and handling losses shall be 0.2%</p>	<ul style="list-style-type: none"> ▪ Transit and handling losses for plants required to use washed coal as mandated by MoEF may be separately indicated ▪ Imported coals are subjected to multiple loading and unloading, handling transit operations. Therefore, handling losses of imported coal should be increased to 1.6%

Reference Clause	Draft CERC Regulations	Comments/ Objections / Suggestions
<p>Computation of Capacity Charges and Energy Charges</p> <p>Cl. 30 (9) related to Alternative Source of Fuel Supply</p>	<p>In case of part or full use of alternative source of fuel supply by coal based thermal generating stations</p> <p>Provided that in such case, prior permission shall not be a pre-condition, unless otherwise agreed in their power purchase agreement;</p> <p>Provided further that the weighted average price of use of alternative source of fuel shall not exceed <u>30% of base price</u> of fuel computed as per clause (10) of this regulation.</p> <p>Provided weighted average price of use of alternative source of fuel exceed 30% of base price of fuel this regulation or <u>20% of fuel price for the previous month</u>, whichever is lower, prior consultation with beneficiary shall be made not later than three days in advance.</p>	<ul style="list-style-type: none"> ▪ If the beneficiaries / procurers do not consent to alternative fuel procurement despite shortfall in CIL supplies, the generating units / station should be considered deemed available for recovery of full fixed costs. ▪ e-Auction coal and imported coal prices are higher by much more than the limits of 30% / 20% proposed (imported coal is about 2.5 times costlier than linkage coal); hence the limits should be enhanced appropriately
<p>Computation and Payment of Capacity charge and Energy Charge for Hydro Generating Stations: Cl. 31 (7)</p>	<p>In case the energy charge rate (ECR) for a hydro generating station,Energy Charge for the energy in excess of the above shall be billed at <u>ninety paise per kWh only</u></p>	<p>This is a disadvantage for hydro generating stations, and it should be incentivised by keeping its payment on par with primary energy</p>
<p>Norms of Operation for thermal generating station</p> <p>Cl. 36 (A)</p>	<p>(A) Normative Annual Plant Availability Factor (NAPLF)</p> <p>(a) All thermal generating stations, except those covered under clauses (b), (c), (d), & (e) – 85%</p>	<p>In case of supply shortfall from CIL and reluctance of DISCOMs to allow alternative coal procurement, and the station being dispatched at a lower level, NAPAF should be aligned to an appropriately lower level for recovery of full fixed charges.</p>

Reference Clause	Draft CERC Regulations	Comments/ Objections / Suggestions																																																						
<p>Cl. 36 (C) Gross Station Heat Rate</p> <p>(a) Existing Thermal Generating Station</p> <p>(b) New Thermal Generating Station achieving COD on or after 1.4.2014</p>	<p>(i) Existing Coal-based Thermal Generating Stations, other than below:</p> <table border="1" data-bbox="388 339 1039 439"> <thead> <tr> <th data-bbox="388 339 691 386">200/210/250 MW Sets</th> <th data-bbox="691 339 1039 386">500 MW Sets (Sub-critical)</th> </tr> </thead> <tbody> <tr> <td data-bbox="388 386 691 439"><u>2425</u> kCal/kWh</td> <td data-bbox="691 386 1039 439"><u>2375</u> kCal/kWh</td> </tr> </tbody> </table> <p>(a) Coal-based and lignite-fired Thermal Generating Stations = 1.045 x Design Heat Rate</p> <p>Where the Temperature / back pressure</p> <p>Provided that the design heat rate shall not exceed the</p> <table border="1" data-bbox="353 668 1192 1232"> <thead> <tr> <th data-bbox="353 668 676 715">Pressure Rating (kg/cm²)</th> <th data-bbox="676 668 826 715">150</th> <th data-bbox="826 668 948 715">170</th> <th data-bbox="948 668 1070 715">170</th> <th data-bbox="1070 668 1192 715">247</th> </tr> </thead> <tbody> <tr> <td data-bbox="353 715 676 762">SHT/RHT (° C)</td> <td data-bbox="676 715 826 762">535/535</td> <td data-bbox="826 715 948 762">537/537</td> <td data-bbox="948 715 1070 762">537/565</td> <td data-bbox="1070 715 1192 762">565/593</td> </tr> <tr> <td data-bbox="353 762 676 839">Type of BFP</td> <td data-bbox="676 762 826 839">Electrical Driven</td> <td data-bbox="826 762 948 839">Turbine Driven</td> <td data-bbox="948 762 1070 839">Turbine Driven</td> <td data-bbox="1070 762 1192 839">Turbine Driven</td> </tr> <tr> <td data-bbox="353 839 676 916">Max Turbine Heat Rate (kCal/kWh)</td> <td data-bbox="676 839 826 916">1955</td> <td data-bbox="826 839 948 916">1950</td> <td data-bbox="948 839 1070 916">1935</td> <td data-bbox="1070 839 1192 916"><u>1830</u></td> </tr> <tr> <td data-bbox="353 916 676 963">Min. Boiler Efficiency</td> <td data-bbox="676 916 826 963"></td> <td data-bbox="826 916 948 963"></td> <td data-bbox="948 916 1070 963"></td> <td data-bbox="1070 916 1192 963"></td> </tr> <tr> <td data-bbox="353 963 676 1011">Sub-Bituminous Indian Coal</td> <td data-bbox="676 963 826 1011"><u>0.87</u></td> <td data-bbox="826 963 948 1011"><u>0.87</u></td> <td data-bbox="948 963 1070 1011"><u>0.87</u></td> <td data-bbox="1070 963 1192 1011"><u>0.87</u></td> </tr> <tr> <td data-bbox="353 1011 676 1058">Bituminous Imported Coal</td> <td data-bbox="676 1011 826 1058"><u>0.89</u></td> <td data-bbox="826 1011 948 1058"><u>0.89</u></td> <td data-bbox="948 1011 1070 1058"><u>0.89</u></td> <td data-bbox="1070 1011 1192 1058"><u>0.89</u></td> </tr> <tr> <td data-bbox="353 1058 676 1135">Max Design Unit Heat Rate (kCal/kWh)</td> <td data-bbox="676 1058 826 1135"></td> <td data-bbox="826 1058 948 1135"></td> <td data-bbox="948 1058 1070 1135"></td> <td data-bbox="1070 1058 1192 1135"></td> </tr> <tr> <td data-bbox="353 1135 676 1182">Sub-Bituminous Indian Coal</td> <td data-bbox="676 1135 826 1182">2247</td> <td data-bbox="826 1135 948 1182">2241</td> <td data-bbox="948 1135 1070 1182">2224</td> <td data-bbox="1070 1135 1192 1182">2103</td> </tr> <tr> <td data-bbox="353 1182 676 1232">Bituminous Imported Coal</td> <td data-bbox="676 1182 826 1232">2197</td> <td data-bbox="826 1182 948 1232">2191</td> <td data-bbox="948 1182 1070 1232">2174</td> <td data-bbox="1070 1182 1192 1232">2056</td> </tr> </tbody> </table>	200/210/250 MW Sets	500 MW Sets (Sub-critical)	<u>2425</u> kCal/kWh	<u>2375</u> kCal/kWh	Pressure Rating (kg/cm ²)	150	170	170	247	SHT/RHT (° C)	535/535	537/537	537/565	565/593	Type of BFP	Electrical Driven	Turbine Driven	Turbine Driven	Turbine Driven	Max Turbine Heat Rate (kCal/kWh)	1955	1950	1935	<u>1830</u>	Min. Boiler Efficiency					Sub-Bituminous Indian Coal	<u>0.87</u>	<u>0.87</u>	<u>0.87</u>	<u>0.87</u>	Bituminous Imported Coal	<u>0.89</u>	<u>0.89</u>	<u>0.89</u>	<u>0.89</u>	Max Design Unit Heat Rate (kCal/kWh)					Sub-Bituminous Indian Coal	2247	2241	2224	2103	Bituminous Imported Coal	2197	2191	2174	2056	<ul style="list-style-type: none"> ▪ For the existing (operating) plants, the norms of Heat Rate should be kept same as in 2009 Regulations, considering (a) heat rate degradation with ageing, and (b) fuel shortages and lower offtake by DISCOMs ▪ The date of reckoning for the new plants should be date of BTG order instead of COD ▪ 6.5% margin on Design Heat Rate provided in 2009 Regulation was based on various factors affecting heat rate in actual operation, which are still valid. Hence, educing this to 4.5% is not appropriate ▪ Imported coals undergo GCV loss while stocking due to high volatile matter. Hence, suitable Heat Rate correction is required ▪ Heat Rate increases at part-loads. Since DISCOMs can despatch units at as low as 40% rated load, sliding scale of Heat Rate with respect to unit load should be allowed ▪ Most pants under construction are ordered based on 2009 regulations of 85% boiler efficiency. Further, operating experience with supercritical boilers firing indigenous high ash coal / blended coal (with high moisture, imported coal) is very limited. Hence, Boiler efficiency of 85% should be continued.
200/210/250 MW Sets	500 MW Sets (Sub-critical)																																																							
<u>2425</u> kCal/kWh	<u>2375</u> kCal/kWh																																																							
Pressure Rating (kg/cm ²)	150	170	170	247																																																				
SHT/RHT (° C)	535/535	537/537	537/565	565/593																																																				
Type of BFP	Electrical Driven	Turbine Driven	Turbine Driven	Turbine Driven																																																				
Max Turbine Heat Rate (kCal/kWh)	1955	1950	1935	<u>1830</u>																																																				
Min. Boiler Efficiency																																																								
Sub-Bituminous Indian Coal	<u>0.87</u>	<u>0.87</u>	<u>0.87</u>	<u>0.87</u>																																																				
Bituminous Imported Coal	<u>0.89</u>	<u>0.89</u>	<u>0.89</u>	<u>0.89</u>																																																				
Max Design Unit Heat Rate (kCal/kWh)																																																								
Sub-Bituminous Indian Coal	2247	2241	2224	2103																																																				
Bituminous Imported Coal	2197	2191	2174	2056																																																				

Reference Clause	Draft CERC Regulations	Comments/ Objections / Suggestions
Cl. 36 (D) Secondary fuel oil consumption	(a) Coal-based generating stations other than at (c) below: Pit Head Stations - 0.50 ml/kWh Non-Pit Head Stations - 1.00 ml/kWh	Secondary fuel consumption is not affected by the source of coal / distance from mine. Hence, the value of 1 ml/kWh should be kept common for both types of coal based stations.
Cl. 3 Definitions and Interpretations: (3) “auxiliary energy consumption’ or ‘AUX’	'auxiliary energy consumption' or 'AUX' in relation to a period in case of a generating station means Provided that auxiliary energy consumption <u>shall not include energy consumed for supply of power to housing colony and other facilities at the generating station and the power consumed for construction works</u>	It is required to include the colony power consumption also in the auxiliary energy consumption. Electricity Act 2003 as well as Electricity (Removal of Difficulties) Order 2005 consider the Colony as integral part of the Station.
Cl. 36 (E) Auxiliary Energy Consumption	Auxiliary Energy Consumption	<ul style="list-style-type: none"> ▪ Suitable quantity (in %) may be added for colony ▪ Additional quantity (in %) should be allowed for plants with FGD, sea water cooling, Air cooled condensers and special equipment required for environmental compliance. Additional 2% for FGD and 0.5% for sea water cooling may be considered.
Cl. 37 Norms for operation for hydro generating stations: (6) Auxiliary Energy Consumption (AUX)	(a) Surface Hydro generating stations (i) with rotating exciters mounted on the generator shaft: 0.7% (ii) with static excitation system: 0.5% (b) Underground hydro generating stations (i) with rotating exciters mounted on the generator shaft: 0.9% (ii) with static excitation system: 1.0%	<ul style="list-style-type: none"> ▪ Hydro station auxiliary energy shall cover operations at reservoirs (Head Works) and colony power as they are usually at remote locations. Norms shall be higher for lower sized plants since auxiliary consumption is dependent on size of sets. Hydro generating units below 100 MW need to be allowed 3%, and units below 200 MW and above 100 MW require 2%.

Thank You

Load (%)	Allowance for Gross Station Heat Rate (%)	Allowances for Aux Consumption (%)
100 - 85	No allowance	No allowance
84	0.13	0.06
83	0.25	0.12
82	0.38	0.17
81	0.5	0.23
80	0.63	0.29
79	0.78	0.35
78	0.93	0.41
77	1.07	0.46
76	1.22	0.52
75	1.36	0.57
74	1.51	0.58
73	1.66	0.6
72	1.82	0.61
71	1.99	0.63
70	2.15	0.64
69	2.32	0.65
68	2.5	0.67
67	2.68	0.68
66	2.87	0.81
65	3.05	1.03
64	3.29	1.25
63	3.53	1.46
62	3.77	1.68
61	4.01	1.9
60	4.24	2.1
59	4.54	2.29
58	4.84	2.48
57	5.14	2.66
56	5.43	2.85
55	5.73	3.04
54	6.03	3.15
53	6.36	3.22
52	6.68	3.3
51	7.01	3.38
50	7.33	3.46