

**Comments on Draft Suo-Motu Order on the Mechanism of Comensation of Emission Control System in compliance with the Revised Emission Standards for Thermal Power Generating Stations whose tarioff is determined through competitive biddgin under Section 63 of the Electricy Act, 2003**

**by  
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We thank CERC for taking pain and efforts to come with a robust FGD cost reimbursement model through Tariff for section 63 projects. However, it must be taken into account that Section 63 itself has further scenarios like Case 1 and Case 2 and Case 2 further has 5 scenarios. The tariff model is applicable for Section 63 Case 1 and Case 2 Scenario 1,2,3 but unfortunately this is not in line with Case 2 Scenario 4 thermal plants wherein the bid out paramaters were only Capacity Charges (Fixed Charges) and Net Station Heat Rate (Efficiency). Energy Charges is a completed pass through as per the terms of the PPA. The following points mentioned below as per the recent draft order are for your kind consideration in case of Case 2 Scenario 4 TPPs and ensure the principle of economic restitution

S. No.	Clause	As per Draft Order	NPL Comments
1	Applicability of the Proposed Compensation	The Commission is of the view that the proposed Compensation Mechanism shall be applicable as per the following principles: (a) The Compensation Mechanism <b>shall be applicable to generating stations which have valid PPA(s) with the procurer(s), having provisions of restitutionary relief under Change in Law</b> or having specific provision which vests power in the Commission to determine the impact of change in law during operation period;	<b>Following revision is proposed:</b> The Commission is of the view that the proposed Compensation Mechanism shall be applicable as per the following principles: (a) The Compensation Mechanism <b>during construction period shall be applicable as per the PPA, , to generating stations which have valid PPA(s) with the procurer(s), having provisions of restitutionary relief under Change in Law or shall be determined by CERC provided provision exists</b> which vests power in the CERC to determine the impact of change in law during operation period;
2	Depreciation (Point 34)	The Commission observes that as on today, there are no generation projects with competitively bid tariff which have completed more than 15 years of life. <b>Therefore, based on 40 years of life of generating stations</b> , in all cases 25 years of life of emission control system would be available for recovery of depreciation.	<b>We have expressed our views on this issue in the staff paper also.</b> The depreciation window should be allowed upto the extent of the remaining PPA term. There is no certainty of DISCOM continuing with PPAs after expiry of PPA term. Also, in view of the present energy mix reliance towards renewables and tariff as low as 1.99 Rs/unit, it unreasonable to assume that PPA would get extended by atleast 15 years. <b>In fact the following points should be taken into consideration:</b> 1. Lenders to the FGD project will not be able to recover loam amount. Higher depreciation during initial years (within the PPA period) would reduce the overall financial risk of the lenders as well investors 2. the benefit of zero depreciation automatically gets passed on to the consumers after the term of the PPA, in case discom wants to extend the PPA on mutual terms Therefore, DEPe = should be ACEe divided by balance period of the PPA using SLM method
3	Cost of Capital Employed (Point 40)	The interest rate will be weighted average rate of interest on loans of the generating station including ECS or at the rate of Marginal Cost of Lending Rate of State Bank of India (for one year tenor) as on 1st April of the year under consideration plus 350 basis points, whichever is lower. <b>The generating companies shall workout the applicable interest rate for the cost of capital employed towards emission control system for the year under consideration.</b>	The principle of economic restitution is being fulfilled only from the discom's perspective. <b>The equity investment by the IPP in the FGD Capex has to reimbursed at the expected rate of return i.e. 14% (post tax as per CERC Taiff Regulations 2019-2024).</b> <b>There are two solutions in case CERC doesnot agree to the economic restitution principle as above:</b> 1. 100% debt funding to be made mandatory by lending Financial Institutions 2. Upfront payment of equity towards capital cost by Discom in cases where change in law has been approved by the appropriate commission/APTEL 3. CERC can request MoP/Gol to provide soft funding to FGD projects through Green Energy Cess imposed on coal.
4	Additional Operation & Maintenance Expenses (O&Me)	We propose that the additional revenue expenses for operation and maintenance (O&Me) for the <b>first two years of operation (including part financial year), shall be based on 2% of the additional capital expenditure (ACEe) for installation of ECS (excluding IDC and FERV) as admitted by the Commission, to be escalated at the rate of 3.5% per annum for the second year.</b>	O&M cost for the power stations may be raised to 3% of the ACEe <b>CERC may please clarify the componenets of O&amp;M costs.</b> (a) does it includes oil costs in case of unit tripping due to FGD system (b) does it include additional water consumption charges The O&M costs can be reviewed after 2 years after multiple ECS have operated in different plant configurations and truing up of first two year of O&M costs can be done. Additionally, handling and storage cost of gypsum to be also considered on normative basis
5	Additional Interest of Working Capital (IWCe)	<b>Cost of lime stone or reagent for stock of 20 days</b> corresponding to the normative annual plant availability factor	<b>No Comments</b>
6	Additional Capacity Charges due to additional Auxiliary Energy Consumption (ACCe)	AUXe is the Additional energy consumption due to emission control System <b>as specified by the Central Electricity Authority and admitted by the Commission from time to time.</b>	<b>Should be made mandatory for consideration by all SERCs</b> Formula of $QCCx((1-AUXo)/(1-AUXt)-1)$ is ok only in respect of the current methodology as mentioned in the draft order which may be recorded in the final Order.

7	<p align="center"><b>SUPPLEMENTARY ENERGY CHARGES (SEC)</b> Expenses towards consumption of reagents (CORe)</p>	<p><b>CORe (Rs/KWh) = ((SRCe)x(LPRe)(1000))</b> Where, CORe is expenses towards consumption of reagents in Rs/KWh SRCe is the specific reagent consumption on account of emission control system (in grams/KWh) for a unit generated at generator terminal. This shall be normative number recommended by CEA for different variants of the ECS; LPRe is the weighted average landed price of reagents for ECS (in Rs/Kg) during the month.</p>	<p><b>One of the elements that has been quoted in case of Section 63 Case 2 Scenario 4 Projects is Station Heat Rate.</b> IPPs are not scheduled at constant full load during the year. Infact the heat rate quoted is corresponding to a schedule of 100% PLF while quoting for the bid. in such a case where NSHR becomes an important factor while calculating the specific limestone consumption equation, CERC shall link the limestone consumption on normative basis to the annual average PLF For eg: 100% PLF - CORe (Rs/KWh) = ((SRCe)x(LPRe)(1000)) 90% PLF - CORe (Rs/KWh) = ((SRCe)x(LPRe)(1000))/0.9 80% PLF - CORe (Rs/KWh) = ((SRCe)x(LPRe)(1000))/0.8 ...and so on upto 50% PLF capping with this the power plants shall be not be subjected to under recovery on account of part load operation towards ECS and principle of economic restitution be restored</p>
8	<p align="center"><b>Additional Energy Charges due to additional Auxiliary Energy Consumption (AECe)</b></p>	<p><b>Additional Energy Charges (AECe)</b> <b>= Quoted Energy Charges x ((1-AUXo)/(1-AUXt)) -1</b> <b>Where,</b> <b>Quoted Energy Charges is sum of Escalable and non-Escalable Energy Charges in Rs/KWh.</b></p>	<p><b>For Section 63 Case 2 Scenario 4 Projects, the term quoted energy charges does not apply as the same are not the bid paramters as per the bid document</b>  in case of Case 2 Scenario 4 projects, the following formula should be adopted to compensate for additional energy charges on account of aux consumption: <b>AECe = Energy Charge formula as per the PPA x (((1-AUXo)/(1-AUXt)) -1)</b></p>
9	<p align="center"><b>Recovery of Supplementary Capacity Charge (SFC(m))</b></p>	<p>68. The supplementary capacity charges (SFC(m)) would consist of two components: <b>a) Compensation for additional fixed Charges due to additional capital expenditure, O&amp;M and IWC (AFEe) (in Rs per KWh); and</b> <b>b) Compensation for Capacity Charges due to additional Auxiliary Consumption = ACCe ( in Rs per KWh)</b></p>	<p><b>Justification for amendment:</b> First of all as per Point no. 70. Availability of ECS has been considered separately and not with plant availability. It shall be considered that if the ECS is not available then power plant itself becomes non-compliant to the emission norms which is the prerogative of the the respective pollution control board and not SERCs therefore payment of supplementary Capacity Charge cannot be tied to availability of ECS alone.  Secondly, availability of ECS shall be correlated with Plant availability and additional incentive shall be payable on higher availability to incentivise the operating plants to ensure ECS stays in operation. The apprehension raised by CERC that plants can be operated without ECS in compliance with the emission norms is unfounded  Additionally, it will be increasing the amount of disputes and litigations between the discoms and generator if the availability of ECS is to be determined separately. The investment into ECS equipment has to be recovered despite the coal mix that is used to operate the plant.</p>
10	<p align="center"><b>Recovery of Supplementary Capacity Charge (SFC(m))</b></p>	<p><b>If the contract period as per PPA is less than the useful life of the emission control system, the obligation of the procurer shall be limited to its contract period and contracted capacity</b></p>	<p><b>If the DISCOM is obliged to pay only for the contract period or PPA period then how can depreciation be applied on the period more than contract period.</b>  CERC may make it mandatory for DISCOMS to purchase power from Thermal Power Plants beyond the PPA term so that generating companies are able to claim Depreciation as per draft order. In our view the reimbursement for ECS towards capacity charges and depreciation should only be applicable and completed within the PPA period</p>

11	Recovery of Supplementary Energy Charge (SEC(m))	<p>71. Per unit Supplementary Energy Charges on account of installation of the emission control system shall be computed on the basis reagent consumption and additional quoted energy charges. Monthly Supplementary Energy Charges (SEC(m)) shall be computed as follows:  <math>(SEC(m)) = AEO(m) \times [CORE/(1 - AUXt) + AECe]</math>  <b>Where,</b>  AEO(m) is scheduled energy during the month 'm' (in kWh);  CORE is additional operational expense due to specific reagent consumption on account of emission control system (Rs. per KWh)  AUXt is Total Auxiliary Energy consumption  AECe is Additional Energy Charge due to additional Auxiliary Energy Consumption (Rs. per KWh)</p>	<p><b>Gap in this formula is as follows:</b></p> <ol style="list-style-type: none"> <li>1. the formula is not applicable to Case 2 Scenario 4 projects as the energy charges formula is applicable as per PPA, hence the revised formula should be = <math>AEOm \times [CORE \text{ (as specified in 7 above)}/(1 - AUXt) + AECe \text{ (as specified in 8 above)}]</math>, which shall take into account the impact of part load operations for SHR and specific limestone consumption.</li> <li>2. There is no mechanism of reimbursement of costs linked to disposal of gypsum. Please also consider the same to ensure principle of restitution</li> <li>3. in case the % of aux consumption is found to be higher than normative %, then minimum Aux % to be taken should the actual aux consumption recorded at 85% PLF</li> </ol>
12	Availability Calculation	<p>Availability (%) = <math>(Availability \text{ declared in MW} \times 100) / (CC(Revised))</math>  <b>Where,</b>  <math>AUXt = AUXo + AUXe</math>  <math>CC(Revised) = CCo \times (1 - AUXt) / (1 - AUXo)</math>;  CCo is Original Contracted Ex-Bus capacity of unit or generating station, as the case may be;</p>	<p><b>No comments on formula unless</b> in case the % of aux consumption is found to be higher than normative %, then minimum Aux % to be taken should the actual aux consumption recorded at 85% PLF</p>
13	Shutdown Period	<p>As regards the normative availability factors in annual shutdown period, the parties to the PPAs shall coordinate and plan the interconnection of emission control system with main plant by synchronizing it with the annual overhaul. The Commission is of the view that if the period of shut down exceeds beyond annual shutdown period factored in the normative availability under PPA, either on account of delay in timely completion of activities for interconnecting emission control system or lack of coordination, the consequential cost for the same cannot not be passed on to the consumers.</p>	<p><b>the said observation goes against the principle of economic restitution to the generators due to the following reasons:</b></p> <ol style="list-style-type: none"> <li>1. Generating companies cannot be penalised for delay in commissioning of ECS for reasons beyond the control of such companies. Difference between the 100% availability and normative availability of the generating station is for the sole benefit of the generators to carry out critical maintenance and overhaul activities. Any factor which alters or interrupts this schedule of availability has to be taken outside the purview of the PPA. It is contradiction with the point 10 as mentioned above wherein the availability of ECS is being treated separately for the purpose of reimbursement while for executing the project it is made as a part of the normative availability of the generating station</li> <li>2. Generators are eligible for incentive on declaring higher availability of the generating station during the year. If principle of economic restitution is to be applied then the generators must be reimbursed the incentive to the extent of shutdown that is attributable to ECS installation (upto Normative Availability) and Capacity Charges (upto Normative Availability) in case the annual availability falls below the normative availability</li> <li>3. in case the argument as mentioned in the draft order is adopted, then this will lead to potential disputes with discoms as the in case of power plants failing to achieve normative availability on account of installation of ECS, the %age of forced outages which are covered under the cushion of <math>[100\% - \text{Normative availability}\%]</math> can be a point of dispute</li> </ol>