

Comments on CERC Draft Order - Mechanism to decide Compensation for installation of Emission Control Equipment – 04/SM/2021

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1.	<p>Timelines for tariff determination</p> <p><i>(Not covered in the Order)</i></p>	<p>Suggestions:</p> <p>a. Based on the estimated/ projected CAPEX to be incurred towards installation of ECS, the Hon'ble Commission may kindly grant Projected Compensation (@ say 90% of the estimated Compensation on the basis of benchmark costs approved by CEA) 2-3 months before ODe of the ECS which may subsequently be trued up on the basis of actual ECS CAPEX.</p> <p align="center">OR</p> <p>The petition for determination of tariff may be allowed to be filed six months prior to scheduled commissioning of ECS so that the additional tariff is paid from the month in which ECS is commissioned.</p> <p>b. For the purpose of Projected Compensation, norms for IDC / Pre-ops expenses / Contingency / Taxes etc., may be specified for calculating the project capex on a normative basis.</p>

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		<p>Rationale:</p> <p>Compensation determination, being an exhaustive process, may span across 6-12 months after ODe of the ECS. In the absence of any projected Compensation, the generating company would not be able to recover the additional tariff during this intervening period of 6-12 months. However, the debt servicing obligations of the generation company to its lenders would start immediately after ODe of the ECS. In absence of projected Compensation, it would be extremely difficult for a generating company to discharge its debt-servicing obligation towards the ECS investment during this intervening period.</p> <p>Further, in the current challenging scenario, the lenders are increasingly looking for certainty of timelines for recovery of compensation as a pre-requisite for lending, in absence of which, it would be extremely difficult for a generating company to achieve timely financial closure. Such a delay in achieving financial closure, would eventually lead to breach of permissible timelines prescribed by MoEF, GoI for installation of ECS, for absolutely no fault of generating companies.</p> <p>Grant of projected Compensation (@ say 90% of the estimated Compensation) 2-3 months before ODe of the ECS, which may subsequently be trued up on the basis of actual ECS CAPEX, will be a win-win proposition for the all stake holders viz. the lending institutions,</p>

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		<p>generating companies, Discoms etc. as:</p> <ul style="list-style-type: none"> • This would enable the generating companies to secure the return on investment made by them towards ECS, right from the first day of its operation, thereby facilitating them to honor their debt-servicing obligations on timely basis. • Further, this will also prevent accumulation of substantial arrears of the Discoms/ Beneficiaries in terms of Supplementary Tariff and Carrying Cost during such intervening period of 6-12 months, which would otherwise impair their cash-flows on account of a substantial accrued liability. <p>Currently CEA/CERC is approving only hard cost without the components like taxes/IDC/Pre-ops/contingency etc. To arrive at Projected Compensation/Tariff payable by the procurer from the date of starting of operation of ECS, norms for the above components would require to be finalized by CEA/CERC, which will be subject to true up at actuals during the compensation determination process by the Hon'ble Commission.</p>
2.	<p>Depreciation (DEPe)</p> <p>31. The staff paper had suggested as under:</p> <p><i>“4.9. Based on the above, life of 25 years has been</i></p>	<p><u>Suggestions:</u></p> <p>a. It is suggested that the recoverable depreciation of the emission control system (to be computed at 90% of the capital cost from its date of operation) should be fully</p>

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	<p><i>considered for ECS. Accordingly, 90% (considering salvage value of 10%) of additional capital expenditure on account of installation of ECS is proposed to be recovered by the generating company in 25 years as depreciation {straight line method @3.6% (90%/25) per year} starting from ODe of ECS.”</i></p> <p>34. We are of the view that the useful life of the generating station is to be considered 40 years in line with the Companies Act, 2013. The Commission has considered the useful life of the generating station based on life cycle of major equipment of thermal generating station. The life of emission control system has been considered as 25 years in line with the other major equipment of generating station. The Commission observes that as on today, there are no generation projects with</p>	<p>recovered in the balance useful life or balance extended life of the generating station or the balance long term PPA tenure, whichever is lower.</p> <p>b. Further, in view of the above, the Hon’ble Commission should facilitate the recovery of the terminal value of the ECS from the beneficiaries if the PPA/concession period is not extended beyond the original tenure of the PPA or if the PPA is terminated prematurely.</p> <p>c. The Order should also provide for a mechanism where the compensation is proportionally distributed among the respective procurers.</p> <p><u>Rationale:</u></p> <p>Consideration of 25 years of life for emission control system irrespective of balance useful life of power plant would result in severe under recovery of cost for the generators. The justification provided for considering 25 year life of emission control system in the draft Order is based on assumption that the useful life of a power plant in which the emission control system is installed would be 40 years which is based on:</p> <p>a. Life of generating station as considered in the Companies Act, 2013 as 40 years</p>

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	<p>competitively bid tariff which have completed more than 15 years of life. Therefore, based on 40 years of life of generating stations, in all cases 25 years of life of emission control system would be available for recovery of depreciation. Thus, the proposed approach for recovery of depreciation in 25 years balances the interest of the generating companies and procurers.</p> <p>35. Accordingly, in all cases irrespective of balance useful life of the generating plant, 90% of additional capital expenditure on account of installation of ECS (considering salvage value of 10%) shall be recovered by the generating company in 25 years as depreciation (straight line method @3.6% per year). The depreciation shall be computed from the date of putting the emission control system into use after meeting all applicable technical and environmental standards, certified through the Management</p>	<p>b. Comments received in support of useful life of 40 years</p> <p>It is submitted that Hon’ble Commission has notified “Terms and Conditions of Tariff Regulations 2019” on 7th March 2019. When these Regulation were framed the Companies Act, 2013 has been applicable and was in force. These Regulations are applicable for power plants where tariff is determined by Hon’ble commission under Section 62 which is mainly central generating stations. Under these Regulations, useful life of ‘Coal/lignite based thermal power plant’ has still been considered as 25 years. The Annexure to the Tariff Regulations, 2019 specified depreciation rate for plant and machinery of power plant as 5.28% considering the life of plant as 25 years. We would like to submit that life of a power plant does not depend on method of tariff determination and hence same approach needs to adopted when it comes to technical parameters like useful life of a power plant.</p> <p>The fact cannot be ignored that not all plants will be able to operate for 40 years, and there is huge risk of under recovery if the actual plant life remains less than the proposed 40 years. This would also be against the principles of restitution which has been emphasized by the Hon’ble Commission. Further as loan repayment is around 12 years (amounting 7.5% = 90/12) considering depreciation of 3.6% on SLM basis even for the loan repayment period is also against principle of Restitution which would not result in same NPV for the plant as if such change-in-law would not have occurred.</p>

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	<p>Certificate duly signed by an authorised person. The value base for the purpose of depreciation shall be the additional capital expenditure of the emission control system as admitted by the Commission. In case of gradual installation of emission control system for different emission standards or for multiple units, weighted average life shall be considered to work out depreciation. The computation of depreciation during each year of the contract period shall be worked out by the parties directly based on admitted capital cost and the depreciation rate as follows:</p> <p>DEPe = (0.036) x ACEe</p>	<p>It is submitted that Ministry of Environment, Forests and Climate Change (MoEFCC) had notified Environment Protection Rules on 31st March 2021. As per these amended Rules, the implementation schedule for emission control systems has been extended till 2022-2024. As a result, the emission control systems would be implemented in 2024 and assuming 25 years of life after that works to total useful life for power plants more than 43 years on average.</p> <p>As many projects have PPA tenures less or equal to remaining useful life of 25 years and going by the current scenario when there is reluctance on part of procurers to sign a long term PPAs, it is very uncertain that after the useful life of 25 years the generator would be able to secure any new PPA. The financing institutions would consider this as a huge risk if the depreciation of emission control system is considered beyond useful life / remaining PPA tenure. It is suggested that Hon'ble Commission may seek an independent view from financing institutions if their financing norms allow financing with such uncertainty on cost recovery after current PPA tenure is over.</p> <p>Accordingly, we strongly feel that the recovery of Depreciation of ECS CAPEX cannot be standardized across the board and has to be linked to and recovered over the balance useful life or balance extended life of the generating station or the balance long term PPA tenure, whichever is lower, in order to ensure that the Compensation on account of this "Change in</p>

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		<p>Law” event adequately restores the affected generating company to the same economic position as if such “Change in Law” had not occurred, a principle enshrined under the PPAs upheld by both APTEL as well as the Supreme Court, failing which not only would the generators be exposed to under-recovery which is against the principle of restitution but financial closure of the ECS loans itself would get affected as the lenders are already significantly risk averse. It is worth mentioning even at cost of repetition that such restitution shall happen during the period of operation of PPA.</p> <p>Further, the Hon’ble Commission should facilitate the recovery of the terminal value of the ECS from the beneficiaries if the PPA/concession period is not extended beyond the original tenure of the PPA or if the PPA is terminated prematurely. The Order should also provide for a mechanism where the compensation is proportionally distributed among the respective procurers.</p>
3.	<p>Cost of Additional Capital Expenditure (COCe)</p> <p>39. We have considered the suggestions of the</p>	<p>Suggestions:</p> <p>a. Servicing of capital employed should be estimated considering 70:30 debt equity ratio on gross capital.</p>

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	<p>stakeholders. The Commission notes that the approach of net fixed assets and cost of capital employed suggested in the staff paper satisfies the principle of economic restitution. The Commission is aware of the concerns and financial position of the generating companies. However, any compensation for change in law cannot be a mechanism to improve their financial position. Accordingly, we hold that the suggested approach of servicing investment through cost of capital employed approach is appropriate, being consistent with the principle of economic restitution.</p> <p>40. The servicing of capital employed during each year of the contract period shall be worked out based on net fixed asset (derived by adjusting cumulative depreciation of emission control system) and interest rate of fund. The interest rate will be weighted</p>	<p>b. RoE should be allowed on the equity component @ 15.5% post-tax on the lower of actual or normative equity. If however, the RoE is still proposed to be restricted to the rate of interest of loans, the said rate of interest should be the higher of the actual weighted average rate of interest or the SBI PLR plus 350 basis points.</p> <p>c. Rate of interest for debt to be the weighted average rate of interest of actual loan portfolio of the emission control system or in the absence of actual loan portfolio, the weighted average rate of interest of the generating company as a whole should be considered.</p> <p>Rationale:</p> <p>The proposed serving of capital employed does not meet the principle of economic restitution for the generators on two counts.</p> <p>a. Recovery on net fixed asset basis: this leads to lower returns on equity employed</p> <p>b. Return on equity same as cost of debt capped at SBI MCLR +350.</p> <p>In practice, cost of equity is always and substantially higher than cost of debt. Thus, providing return on equity at the rate of cost of debt and that too capped at SBI MCLR + 350</p>

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	<p>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. The generating companies shall workout the applicable interest rate for the cost of capital employed towards emission control system for the year under consideration. The cost of capital employed during the year shall be worked out as follows:</p> $COCe(n) = NFA(n) \times WAROI(n) / 100$ <p>Where $NFA(n) = ACEe - [(n-1)X (DEPe)]$</p> <p>Where,</p> <p>COCe is Servicing cost of Additional Capital</p>	<p>b.p results in erosion of equity and does not place generator in the same economic position as in absence of installation of FGD.</p> <p>While it is correct, as mentioned by the Hon’ble Commission, that compensation under change in law cannot be a mechanism to improve financial position of generators. However, at the same time compensation under change-in-law should not put additional stress on finances of generators. The proposal outlined in the draft order would make it difficult for equity investment and hence impact achieving emission standards or operation of plant.</p> <p>It is also submitted that Hon’ble Commission has notified “Terms and Conditions of Tariff) (First Amendment) Regulations, 2020” on 25th August 2020. Under these Amendment Regulations Hon’ble Commission has provided methodology for recovery of additional cost of emission control system for power plants where the tariff is determined by Hon’ble Commission under section 62 of the Electricity Act 2003. In these Regulations the treatment of cost of debt and return on equity for such plants is proposed as follows:</p> <p style="text-align: center;"><i>“(3) The return on equity in respect of additional capitalization on account of emission control system shall be computed at the base rate of one year marginal cost of lending rate (MCLR) of the State Bank of India as on 1st April of the year in</i></p>

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	<p>Expenditure in Rupees per annum;</p> <p>NFA(n) is the net fixed asset of the of the year “n”;</p> <p>WAROI (n) is the weighted average rate of interest (in %) worked out based on weighted average rate of interest on loans of the generating station including ECS or at the rate of MCLR of SBI (for one year tenor) as on 1st April of the year plus 350 basis points, whichever is lower;</p> <p>“n” represents the year starting from the date of operation of emission control system.</p>	<p><i>which the date of operation (ODE) occurs plus 350 basis point, subject to ceiling of 14%;</i>”</p> <p><i>“(5a) The rate of interest on loan for installation of emission control system shall be the weighted average rate of interest of actual loan portfolio of the emission control system or in the absence of actual loan portfolio, the weighted average rate of interest of the generating company as a whole shall be considered.”</i></p> <p>As per above provisions, for plants where tariff is determined under Section 62, Debt Equity ratio of 70:30 has been considered. Return on equity is calculated on gross asset basis (30% of capital cost) and not on net fixed asset basis. The cost of Debt is considered at actual interest rates of the loan portfolio. It is submitted that the financial principles for additional cost recovery for emission control system cannot be applied differently depending upon the tariff determination methodology (u/s 62 or 63) for the plants.</p> <p>It is thus submitted that by proposing servicing of capital employed on net fixed asset basis at the rate of cost of debt with a cap of or SBI MCLR + 350 points, does not put the generators at the same economic position as prior to installation of emission control system. Also, the proposed return on capital employed for a plant u/s 63 would be significantly lower than a plant u/s 62. A reasonable return on equity needs to be provided to put the</p>

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		generator in same financial position as to prior to change-in-law.
4.	<p>Additional Operation & Maintenance Expenses (O&Me)</p> <p>44. Accordingly, we propose that the additional revenue expenses for operation and maintenance (O&Me) for the 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. The O&M expenses from the third year onward shall be as per norms and escalation rate determined separately by the Commission. The additional O&M expenses (O&Me) shall be worked out as follows:</p> <p>First Year: 2% of ACEe excluding IDC and FERV</p> <p>Second Year: 2% of ACEe escalated at the rate of</p>	<p>Suggestions:</p> <ol style="list-style-type: none"> Additional O&M expenses should be allowed at 5% of ECS capitalization (excluding IDC and FERV) for the first two years, to be escalated at the rate of 3.5% per annum for the second year. Normative handling, storage and disposal charges of Gypsum (say Rs 150/tonne) may be allowed to the generating companies. Additional cost towards desalination for coastal plants which use seawater, may be considered while finalizing the norms for O&M expenses. <p>Rationale:</p> <p>We agree with the suggestion provided by the Hon'ble commission to determine the norms for O&M expenses based on sufficient data available post 2 years of operation of ECS. However, the proposal to consider additional O&M expenses for the first 2 years of operation at 2% of the additional capital expenditure for installation of ECS is very low and</p>

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	<p>3.5%.</p> <p>Third Year onward: As per norms to be specified by the Commission.</p>	<p>is likely to lead to under-recovery of expenses in the first two years because of the following reasons:</p> <ul style="list-style-type: none"> • Thermal power plants predominantly have electromechanical devices (though there are several small chemical facilities) whereas Wet Limestone FGD is primarily a large chemical based plant with higher wear and tear entailing higher operation and maintenance cost. • Degradation of equipment as the whole system operates in corrosive environment. This may pose major challenges for the generators to ensure availability of ECS. • Higher maintenance cost as a sizeable number of equipment installed for the ECS likely to be imported and imported spares are sensitive to FERV fluctuations. • Implementation of ECS in the existing generating projects may require additional infrastructural support to facilitate smooth operation • Recurring annual insurance costs of ECS which is almost of the order of 0.5% of ECS CAPEX.

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		<p>Hence, keeping the above facts in mind, it is suggested that additional O&M expenses should be allowed at 5% of ECS capitalization (excluding IDC and FERV) for the first two years, and for subsequent years, the norms may be determined by the Hon’ble Commission as mentioned in the Draft Order.</p> <p>Further, commissioning of many limestone based ECS by such a large number of generating plants would pose a challenge for disposal of Gypsum, which is a by-product of ECS. As it is, gypsum has low demand in the market and with high availability of Gypsum post commissioning of sizeable ECS capacity from 2022 onwards, there would be limited takers of Gypsum. Thus, Gypsum, which is a hazardous material, would necessitate environmentally safe measures for its storage and disposal thereby entailing significant expenses. Therefore, it is requested that a normative charge for handling, storage, transportation and disposal of Gypsum (say Rs 150/tonne) may be allowed to the generating plants.</p>
5.	<p>Additional Interest on Working Capital (IWCe)</p> <p>47. The Working Capital (WCe) shall include following components:</p> <p>(i) Cost of lime stone or reagent for stock of 20</p>	<p>Suggestion:</p> <p>Cost of lime stone or reagent should be considered for stock of 30 days corresponding to the normative annual plant availability factor.</p>

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	<p>days corresponding to the normative annual plant availability factor;</p> <p>.....</p>	<p>Rationale:</p> <p>Unlike coal, limestone or reagent may not be available for supply on daily basis and generators would have to maintain higher stock availability compared to coal (for which 20 days stock is provided in the Regulations). Currently, there is uncertainty about the availability, quality and location (international / domestic) of limestone. The lead time for reagents sourced internationally will be substantially higher. Further, there are also constraints in transportation/ logistics since the limestone is essentially transported by road within the country. Therefore, for all plants in general and remotely located plants in particular, in order to meet the availability commitments, the generator will have to keep stock of limestone/reagent to last at least for a month considering the higher lead time of transportation and to protect against supply disruptions, quality issues etc. Therefore, 30 days stock of limestone/reagent should be considered.</p>
6.	<p>Additional Auxiliary Energy Consumption</p> <p>53.</p> <p>....</p>	<p>Suggestion:</p> <p>An additional 0.2% auxiliary consumption over and above proposed by CEA should be allowed in case of coastal plants.</p>

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	<p>AUXe is the Additional energy consumption due to emission control System as specified by the Central Electricity Authority and admitted by the Commission from time to time.</p>	<p>Rationale:</p> <p>It may be noted that the norms proposed by CEA would be on benchmark basis and does not consider plant specific requirements. In case of coastal plants there would be additional auxiliary power consumption to operate desalination plant for water to be supplied to ECS.</p>
7.	<p>Expenses towards consumption of reagents</p> <p>58. Draft Order proposes to consider expense towards consumption of reagents as follows:</p> $CORe (Rs/KWh) = (SRCe) \times (LPre) / (1000)$ <p>Where,</p> <p>CORe is expenses towards consumption of reagents in Rs/KWh</p> <p>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</p>	<p>Suggestion:</p> <p>a. An additional 3-5% consumption may be added over and above the proposed formula to compensate for consumption of limestone by hydrogen chlorides and fluorides.</p> <p>b. Condition of minimum purity of 85% of limestone may be removed. At least in the initial years till the limestone market and norms are established.</p> <p>Rationale:</p> <p>The proposed norms for Lime-stone consumption as specified by CEA does not consider the fact that in addition to Sulphur in the flue gas, hydrogen fluorides and chlorides are also</p>

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	<p>normative number recommended by CEA for different variants of the ECS;</p> <p>LPre is the weighted average landed price of reagents for ECS (in Rs/Kg) during the month.</p>	<p>present which also react with limestone. This would result in higher limestone consumption in case of Limestone based FGD is being used.</p> <p>Further, restricting the limestone purity at 85% may not be in control of the developer and would depend on its availability in the market, especially when there will be sudden increase in demand with significant FGD installations.</p>
8.	<p>Recovery of Supplementary Energy Charge</p> <p>71 (The Monthly Supplementary Energy Charges only consist of the reagent consumption on account of emission control system)</p>	<p><u>Suggestions:</u></p> <p>Supplementary Energy charge should also include the following</p> <ul style="list-style-type: none"> a. Cost of additional water required for emission control system b. Water treatment cost and waste water disposal cost c. Product disposal cost <p><u>Rationale:</u></p> <p>CEA has also recommended above additional O&M expenses in respect of wet limestone based FGD emission control system which is mentioned in the order by the Hon'ble</p>

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		Commission, dated 11th November 2019 in the petition no 152/MP/2019 (Maithon Power Limited). This appears to have been missed out in the Staff Paper and may be included appropriately.
9.	<p>Shutdown Period</p> <p>75. We have examined the suggestions. 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>Suggestion:</p> <p>The plant/unit should be considered as “Deemed Available” during the extent of actual number of days of shutdown (subject to prudence check by the Hon’ble Commission), during which the plant/unit may be compensated for the following:</p> <ul style="list-style-type: none"> • Complete defrayment of Fixed Capacity Charges • Recovery of LTOA Charges • Waiver/reimbursement of penalty under PPA, if any, for lower availability • Waiver/reimbursement of any additional charges for short / non- lifting of coal under the FSA with coal companies. <p>This will be in consonance with the Principle of Restitution upheld by the Hon’ble Supreme Court.</p>

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		<p>Rationale:</p> <p>The Draft Order has left it to the responsibility of the generating companies to ensure integration (i.e., interconnection and synchronization) of the ECS with the operating project during its the annual overhaul period. Further, no normative Shutdown Period towards such ECS integration and consequential compensation towards loss of revenue suffered by a generating company due to overall reduction in Annual Plant Availability Factor (“PAF”) on account of project Shutdown during ECS integration has been proposed in the Draft Order.</p> <p>In this regard it may be noted that the time and duration of annual shutdown / overhaul is governed by various factors such as demand-supply scenario, grid security etc. and is regulated by the LDCs. The overhauling plan is staggered basis the OEM recommendations and as per the agreed overhaul plan with Load Dispatchers. While the generating companies shall make earnest endeavors to synchronize ECS integration with project annual overhaul, however such a synchronous integration may not be always possible on account of various external factors beyond control of generating companies like delivery and commissioning schedule of ECS, Force Majeure factors affecting transportation and commissioning of ECS, unplanned shut-down of the project compelling revision of its scheduled annual overhaul</p>

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		<p>etc.</p> <p>This is especially true since there is not much experience of installation of ECS in the country and there may be many factors which may not allow the generator to synchronise ECS with the main plant within time frame of Annual overhaul. Further, it is well settled principle that only the controllable factors resulting in delay should not be passed on to the consumers, whereas the uncontrollable factors resulting in delay are to be passed on the consumer.</p>
10.	<p>Open Capacity</p> <p>76. A suggestion has been received for consideration of compensation mechanism for open capacity to provide all the generating stations, with and without emission control systems a level playing field. We are of the view that the risk associated with open capacity needs to be addressed by the concerned market player and therefore, we do not find need for any regulatory intervention for open capacity at this stage</p>	<p>Suggestion:</p> <p>Additional cost recovery mechanism may be developed for projects with open capacity which are selling power on exchange or on DEEP portal.</p> <p>Rationale: The risk associated with open capacity is:</p> <ol style="list-style-type: none"> a. Implementation of new emission standards post commissioning of the project does not fall under the category of a business call taken by the generator prior to setting up the project and is therefore a genuine concern which needs to be addressed.

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		<p>b. The impact of the compliance of emission standards would come at different times for different plants depending upon the implementation schedule drawn. Thus, till all the open capacity is compliant, the plants which have ECS will face cost disadvantage especially on exchanges and in bidding process.</p> <p>Hon'ble Commission, in its role as a market regulator, should consider such factors affecting the level playing field and propose a cost recovery mechanism may be adopted for projects with open capacity which are selling power on exchange or on DEEP portal. Such a mechanism would be need only till all the plants have implemented ECS.</p>
11.	<p>Capex for environment protection equipment in cases of Augmentation</p> <p>(Not covered in Draft Order)</p>	<p>The current Tariff Regulations and principles do not allow recovery of additional capex spent in cases of augmentation of existing equipment. For instance, installation of higher capacity ECS to comply with MoEFCC notification will result in allowance of capex only till the approved capex of existing ECS. This is unfair to the developer in case augmentation of existing ECS system is necessitated by the new and stringent emission norms, as this augmentation is also pursuant to 'change in law' and the replacement of the ECS system is happening much before completion of useful life. Accordingly, the Hon'ble Commission needs to address this anomaly in a pragmatic way to ensure that the developers are not penalized unnecessarily and that all relief granted pursuant to change in law follows the</p>

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		restitution principle in its true spirit.
12.	<p>Norms of Operation – Degradation of Gross Station Heat Rate due to ECS operation</p>	<p>Suggestion:</p> <p>1% increase in the existing normative GSHR on account of installation of De-NOx System may be allowed.</p> <p>Rationale:</p> <p>The Draft Order does not address an important aspect related to degradation of Gross Station Heat Rate (“GSHR”) of a generating project due to installation of De-NOx System, which is an essential component of ECS.</p> <p>As per the discussions held with various technical experts and OEMs, due to installation of De-NOx System, the combustion pattern of Boiler will change which will invariably result in increase in combustibles in the fly ash as well as bottom ash. Such an increase in unburnt combustibles shall consequently reduce the Boiler Efficiency thereby increasing the existing GSHR of the thermal generation projects by more than 1%.</p> <p>As such, not allowing any normative increase in GSHR due to installation of De-NOx</p>

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		<p>System shall lead to substantial under recovery by the generating companies. Accordingly, it is sincerely requested that 1% increase in the existing normative GSHR on account of installation of De-NOx System be allowed while finalizing the Draft Order.</p>