

DHARIWAL INFRASTRUCTURE LIMITED

Appendix: Comments on Staff Paper on the Mechanism for Compensation for Competitively Bid Thermal Generating Stations for Change in Law event on account of compliance of revised emission standard of MoEFCC

At the outset, Dhariwal Infrastructure Limited (“**DIL**”) would like to thank the Hon’ble Central Electricity Regulatory Commission (“**Hon’ble Commission**”) for bringing out the Staff Paper on Mechanism for Compensation for Competitively Bid Thermal Generating Stations for Change in Law event on account of compliance of Revised Emission standard of Ministry of Environment, Forest and Climate Change (“**MoEFCC**”), Government of India (“**Staff Paper on Emission Control System**”) and providing the stakeholders an opportunity to provide comments/suggestions on the same. Prima facie, in our humble opinion, the Hon’ble Commission may, in general, consider compensation for competitively bid projects in line with that allowed for cost-plus projects as prescribed under CERC (Terms & Conditions of Tariff) (1st Amendment) Regulations 2020 as amended from time to time. The comments and suggestions on the methodology proposed in Staff paper on Emission Control System on behalf of DIL are provided in the following matrix for the kind perusal and consideration of the Hon’ble Commission.

Paragraph	Particulars	Comments and Suggestions
OPPORTUNITY COST FOR INSTALLATION OF FGD SYSTEM		
Para 1.4	<i>The Commission, for installation of ECS (like FGD system), vide order dated 23.4.2020 in Petition No. 446/MP/2019 and vide subsequent orders in other petitions, Similarly, as regards opportunity cost i.e. revenue/ tariff which may not be available to the generator during the period of plant shutdown for integration of the FGD system with the generating station, it has been decided that the same would be considered after installation of FGD system.</i>	<p>We humbly request the Hon’ble Commission to consider and include the following specific provision in the staff paper as regards to opportunity cost for installation of FGD system as stated below:</p> <p>a) No deduction of Capacity/Fixed Charges on account of non-availability of plant during the shutdown period required for installation and integration of FGD System with the main generating station/unit.</p> <p><u>Justification:</u></p> <p>Availability of the unit may suffer during stabilization period of six months post commissioning of FGD system as the plant O&M engineers have no experience of operating the FGD plant. Hence, while calculating plant Annual Plant Availability Factor (“PAF”) for that particular year and during stabilization period, availability loss</p>

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		due to shut down for integration of Emission Control System (“ECS”)/ FGD related forced outages post commissioning may be allowed to be excluded from calculation of actual plant availability for recovery of fixed costs.
FGD IMPLEMENTATION FOR PROJECTS WITHOUT LONG TERM PPAs		
Para 1.5	<p><i>While acknowledging the 2015 Rules as a Change in Law event under the PPA and approving provisional cost for installation of FGD system, the Commission, vide order dated 23rd April, 2020 in Petition No. 446/MP/2019, issued directions to staff as under:</i></p> <p><i>“..... 41. Therefore we direct staff of the Commission to float a staff paper at the earliest on the issue of compensation mechanism and tariff implications on account of the 2015 Notification in case of those thermal power plants where the PPA does not have explicit provision for compensation mechanism during the operation period and the PPA requires the Commission to devise such mechanism, inviting comments from all the stakeholders.”</i></p> <p><i>Similar direction has also been issued by the Commission in its order dated 6th May, 2020 in Petition No. 209/MP/2019.</i></p>	<p>We appreciate the intention of the Hon’ble Commission to address the issue of compensation mechanism and tariff implications on account of the MoEFCC notification dated 07.12.2015 in case of those thermal power plants where the long-term PPA does not have explicit provision for compensation mechanism during the term of the PPA. However, in line with the above, it is humbly suggested and requested that the Hon’ble Commission may devise a suitable mechanism for recovery of the entire cost pertaining to those generating units having fully or partial un-tied capacity, for implementing Emission Control Systems like FGD Plant.</p> <p><u>Justification:</u></p> <p>In view of the fact that there is a substantial thermal capacity in our country which are untied/partially tied and also the fact that compliance of environmental norms is mandatory, it is important to provide assurance to lenders for financing the capital cost of FGD System of these untied capacity projects. A mechanism which can provide some visibility of recovery of tariff towards expenditure of FGD System can be assuring to the lenders. Else, without any mechanism for untied capacity of the generation projects, there is a high possibility of these thermal generating projects becoming</p>

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		<p>completely redundant which obviously will be a national loss and a big shock to the lenders and the economy. (As the lenders have already funded those projects).</p> <p>Keeping this holistic picture in mind, it is proposed that the Hon'ble Commission may devise a suitable mechanism into place for recovery of cost of such un-tied/partially-tied capacities towards installation of FGD System. Further, the Hon'ble Commission may like to introduce some enabling provision in the proposed compensation mechanism for determination of in-principle cost of FGD System for such untied/partially tied projects.</p> <p>In line with this, the Hon'ble Commission may kindly consider if proportionate cost of un-tied capacities/partially-tied capacities of all commissioned thermal projects can be recovered through a pooled mechanism where the total unrecovered costs of such capacities shall be made payable by those procurers who will procure power from these generators under short term route/power exchange market.</p> <p>Such pooled recovery mechanism for cost of FGD System can also be useful for all such thermal projects who will complete their useful life of 25 years well before the completion of useful life of FGD System and in case, they are unable to tie-up power in long-term route in future.</p> <p>Alternatively, the following mechanism can also be adopted:</p>

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Paragraph	Particulars	Comments and Suggestions
		<p>a) For open capacity being sold on IEX or through DEEP portal, the bidding would be without considering FGD costs. An additional FGD installation reimbursement cost notified by the Hon'ble Commission (based on the benchmark costs for FGD by CEA) will be collected from all the procurers on per unit basis and paid to the generators with FGD.</p> <p>b) In case of medium-term contracts through DEEP portal, the generator with FGD commissioned during the tenure of the contract - may be reimbursed on and from the date of compliance of SO_x norms. The total tariff, i.e., fixed and variable costs per unit as approved by the Hon'ble Commission shall be applicable.</p> <p>Otherwise, the generating stations having partial un-tied capacity should be allowed to install ECS to the extent of Contracted Capacity only.</p>
COMPENSATION MECHANISM FOR CHANGE IN LAW EVENTS DURING OPERATION PERIOD		
Para 4.1	<i>As discussed in paragraphs 3.2, 3.3 and 3.6 above, this Staff Paper attempts to formulate a generic mechanism of compensation due to a Change in Law event on account of installation of ECS only during the operation period to restore the affected parties to the same economic position. Compensation during operation period would require estimating the following impacts:</i>	<p>We humbly request the Hon'ble Commission to consider the following applicable cost towards Emission Control Systems in addition to the impact on tariff stipulated in the staff paper:</p> <p>a) Transit and handling loss of limestone may be allowed as transportation of limestone will entail transit losses similar to coal.</p>

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	<p><i>A. Impact due to additional capital expenditure;</i></p> <p><i>B. Impact due to additional Operation & Maintenance expenses and additional Interest on Working Capital;</i></p> <p><i>C. Impact due to consumption of reagent; and</i></p> <p><i>D. Impact due to additional auxiliary energy consumption.</i></p>	<p>b) Handling cost, unloading charges, charges for third party sampling and applicable statutory charges for lime stone may be allowed.</p> <p>c) Limestone sampling, Testing and Analysis charges may be allowed as a pass-through item in limestone procurement.</p> <p>d) IEDC (Incidental Expenses during Construction or Pre-operative Expenses) and expenditure towards project management and engineering services should be considered at actuals for the purpose of Additional Capital Expenditure of ECS.</p> <p>e) Initial Spares under Additional Capital Expenditure should also be allowed to be recovered for an existing project as per CERC (Terms and Condition of Tariff) Regulations (First Amendment), 2020 as amended by the Hon'ble Commission for time to time.</p> <p>f) Financing Charges and Insurance Charges should be included under Additional Capital Expenditure.</p>
ADDITIONAL CAPITAL EXPENDITURE (ACE_{ECS})		
Para 4.2	<p><i>During operation period, the expenditure on installation of ECS will be an additional capital expenditure. It would include base cost of ECS, taxes and duties, IDC (interest during construction) and miscellaneous costs associated with installation of ECS. This additional capital expenditure needs to be serviced by way of increase in monthly tariff spread</i></p>	<p>We request the Hon'ble Commission to specify the miscellaneous costs associated with installation of ECS including recovery of IEDC or Pre-operating Expenses, expenditure towards project management and engineering services at actuals, Initial Spares, Financing Charges and Insurance Charges after prudence check by the Commission.</p>

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	<p>over useful life of the ECS through Supplementary Capacity Charges (SCC) which includes:</p> <p>a) Depreciation (ACEDep); and b) Cost of Capital Employed for ECS (ACEcoc).</p>	<p><u>Justification:</u></p> <p>1. It is submitted that the Hon'ble Commission in its Order dated 23.04.2020 in Petition No. 446/MP/2019 (Sasan Power Ltd.) has allowed Pre-operating Expenses and expenditure towards project management and engineering services at actuals and the same benefit may be extended to other generating companies. The relevant extract of the Order is reproduced below:</p> <p style="padding-left: 40px;"><i>“30. The Commission also allows the petitioner to claim expenditure towards IDC, taxes & duties, FERV (if any) and expenditure towards project management & engineering services at actuals after commissioning of the FGD system, which may be allowed after prudence check. As regards pre-operative expenses, the cost may be allowed subject to proper justification for such expense and after prudence check by the Commission.”</i></p> <p>2. Initial Spares under Additional Capital Expenditure should also be allowed to be recovered for an existing project as per CERC (Terms and Condition of Tariff) Regulations (First Amendment), 2020 as amended by the Hon'ble Commission for time to time.</p> <p>3. Financing Charges and Insurance Charges should be included under Additional Capital Expenditure.</p>

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DEPRECIATION (ACE_{DEP}) AND USEFUL LIFE		
Para 4.6	<i>There can be no obligations on the existing procurers to procure power beyond the contracted period and contracted capacity as per the PPA. Therefore, recovery of compensation from the existing procurers for the period beyond the contracted period of PPAs is not justified, as the same would amount to paying compensation for the services not availed. Therefore, a procurer should be liable to pay compensation for Change in Law on account of installation of ECS only for the duration of its contract and commensurate to its contracted capacity.</i>	<p>We humbly request the Hon'ble Commission to kindly review the said provision in the staff paper and allow full recovery of depreciation on account of installation of Emission Control System from the existing long-term procurers from its date of operation till the balance useful life of the generating station. As such, there should not be any discrimination in treatment of approval of expenditure pertaining to FGD System and other Emission Control Systems between cost-plus projects (u/s 62 of the Act) and competitively bid projects (u/s 63 of the Act). In our considered opinion, the norms for recovery of cost of FGD System for competitively bid projects should be aligned with CERC Tariff Regulations as amended from time to time.</p> <p><u>Justification:</u></p> <p>a) Capital Expenditure associated with compliance towards installation of Emission Control System is highly capital intensive. Funding of such capital-intensive projects is difficult for majority of the developers without long-term loan from the banks/financial institutions. The recovery of depreciation provides the necessary cash flow for the developer to repay its debt. Hence, the recovery against depreciation should be adequate enough to meet such debt servicing obligation till the time such debt obligations are outstanding for the developer. In our humble opinion, the depreciation should not be made uniform throughout the useful life of the Project.</p>

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		<p>b) It is pertinent to mention that at present there is no suitable mechanism available for recovery of the balance capital cost pertaining to installation of Emission Control System, where the contracted tenure of long-term PPA is over or there is no long-term PPA. Moreover, there will be no obligation on the existing procurers to extend their PPA tenure unlike the cost-plus projects. Therefore, it would be detrimental for the investor and will send a wrong signal to the lenders/bankers who will refuse to fund such huge capital investment without assurance of entire debt servicing from the existing procurers.</p> <p>c) While it is correct that many generating stations continue to outlive their lives beyond 25 years, it must be understood that the same is not relevant for competitively bid projects. There has not been a single instance so far, where old depreciated plants have taken part and won a medium/long-term contract under competitive bidding. The technology of older plants tends to become inefficient with advent of new technology and cannot match the new age modern plants when it comes to competitive bidding. It is also because of this reason that many of the cost-plus projects are being retired post completion of useful life of 25 years as it would not be viable to recover the capex required to meet the new environmental norms.</p> <p>d) Further, as per extant Tariff Regulations, the cost-plus projects get Additional Capital Expenditure for Renovation & Modernization after their useful life. This is required as main plant</p>

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		<p>equipment need upgradation due to obsolescence of spares. In addition, capital expenditures are also allowed for compliances of existing laws/force majeure/security considerations when such expenditures are considered as reasonable and justifiable. However, for competitively bid projects, there are no provisions for any additional capex except for the provision of Change In law events in the contracts. Thus, it would be quite unreasonable to expect that the main plant and BoP will continue operate beyond 25 years solely based on efficient O&M practices.</p>
Para 4.7	<p><i>Where ECS is installed after the COD of the generating station, the useful life of the generating station would be over before the useful life of ECS, both being 25 years. However, compensation is proposed to be worked out considering the useful life of ECS as 25 years starting from the Date of Operation (ODe) of ECS, irrespective of the fact that useful life of the plant gets over before the useful life of ECS. This is because of the fact that it is generally observed that even after the expiry of useful life of 25 years, well-maintained generating stations operate efficiently for another 10 to 15 years (many Central sector/State sector thermal generating stations are already operating after completing 25 years of useful life) by incurring marginal expenditure towards Renovation & Modernization. Therefore, the generating company has an option to recover the un-recovered</i></p>	<p>We humbly request the Hon’ble Commission that extension of the useful life of well-maintained generating stations by incurring marginal expenditure towards Renovation & Modernization is not a feasible option and as such may not be adopted in generic. Instead, we suggest that the recoverable depreciation of the Emission Control System shall be computed at 90% of its capital cost from its date of operation at the rates specified in Appendix-I to CERC (Terms & Conditions of Tariff) Regulations, 2019 and shall be fully recovered within the balance useful life of the generating station.</p> <p><u>Justification:</u></p> <p>a) Depreciation is a major component of tariff and assures the cash flow for the project which is utilized for meeting the debt service obligations.</p>

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	<i>compensation by continuing to run the generating station beyond its useful life.</i>	
Para 4.9	<i>Based on the above, life of 25 years has been 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>b) It is submitted that all the assets capitalized at the time of COD or thereafter, do not have same useful life. Some of the critical assets/part of the asset-packages like BTG, BoP etc. may have shorter useful life or become obsolete before the completion of its useful life due to non-availability of spares, services from OEM etc. Replacement of such critical assets therefore becomes critical for reliability and sustainable operation of the unit. Similarly, during the lifetime of the Project, the utility may have to incur capital expenditure in order to comply with stricter Environment Norms, as it is required in the present context. Such additional Capital Expenditure incurred during midway or at fag-end of useful life of the project, either for the purpose of replacement or for the purpose of environmental compliance, are necessary, but cannot ensure extension of the life of the entire project. Hence, while determining the useful life of the ECS, the Hon'ble Commission may have to strike a balance between the serviceability of the main plant and the useful life of the ECS and make the same commensurate with that of the main plant since there is no scope for undertaking any capex for life extension in the contracts for competitively bid projects.</p> <p>c) Further, it is submitted that, most of the existing generating units are already operational for more than 5-10 years and balance useful life of the main plant would be lesser than the newly installed ECS. Lenders, who would provide the loan for the ECS, shall expect the same to be recovered during the normal service period of the main plant. The recovery against Depreciation is</p>

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		<p>used to repay the principle amount of long-term loan. In order to ensure that debt servicing ability of the generators, it is important that depreciation allowed is higher during such term the long-term loan is outstanding.</p> <p>d) Therefore, in our humble opinion, the Hon'ble Commission may allow Depreciation to be calculated annually in the same manner and at rates specified in Appendix-I to CERC (Terms & Conditions of Tariff) Regulations, 2019.</p>
COST OF CAPITAL EMPLOYED (ACE_{coc})		
Para 4.10	<p><i>The cost of capital employed also known as the cost of fund infused represents the weighted average cost of debt fund and equity fund deployed in the project. Considering the fact that any compensation mechanism needs to be based on the principle of restitution, there can be no expectation of profit in any component of tariff.</i></p>	<p>We humble request the Hon'ble Commission to kindly review the said provision in the staff paper and align the same in accordance with the existing CERC (Terms and Condition of Tariff) (First Amendment) Regulations, 2020, i.e., with regard to Gross Fixed Asset (GFA), Normative Debt/Equity Ratio and Return on Equity (RoE) in the interest of desired growth of the power sector and providing level playing field for PPA's under Section 62 and Section 63 of the Electricity Act 2003 for compliance of installation of Emission Control System.</p>
Para 4.11	<p><i>Accordingly, additional capital expenditure on installation of emission control system is proposed to be serviced on Net Fixed Assets (NFA) basis (value of fixed assets reducing each year by the depreciation value) @ weighted average rate of interest of loans raised by the generator or at the rate of Marginal Cost of Lending Rate of State Bank of India (for one year tenor) plus 350 basis points, as on 1st April of the year in which emission control system is put into operation, whichever is lower.</i></p>	<p><u>Justification:</u></p> <p>a) It is submitted that there should not be equitable treatment of cost of Debt and cost of Equity which is in deviation to the financial principles. As per extant CERC Tariff Regulations, cost of debt is serviced through IDC before Commercial Operation Date (COD) of the asset and after COD through Interest on Loan.</p>

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		<p>Further, loan provided by the lenders are protected under the law whereas the equity infused by the project developer is only entitled for return after COD of the asset, i.e., only after overcoming all the project encumbrances. Further, any cost overrun is only allowed to the extent it is found prudent by the Hon'ble Commission and in case of disallowance of such cost overrun, the developers get adverse financial impact. Therefore, allowing return similar to debt would amount to denial of risk premium applicable to equity investments which would be contrary to the principles of commercial financing.</p> <p>b) Benchmarking of cost of debt for implementation of Cost of Capital Employed (CoCE) approach is difficult in current unstable Indian debt market. With the increasing large number of Non-performing Assets ("NPA") and financially stressed thermal power projects in the power sector, any variation in cost of debt would add to the risk profile of the developer. In addition, the borrowing capability of different companies varies and depends on the rating in terms of its financial status, this may limit the level playing field for the developers to comply with the benchmarking norms related to cost of debt.</p> <p>c) Adoption of NFA approach for competitively bid projects will put such projects in a different platform than the cost-plus projects for whom this Hon'ble Commission has allowed cost of equity @ weighted average cost of debt subject to ceiling of 14% per annum vide CERC (terms & Conditions of Tariff) (First</p>

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		<p>Amendment) Regulations 2020. Under the NFA approach, while the debt:equity ratio has not been specified, only the allowable cost of capital employed have been capped at @ SBI MCLR +350 basis points. Pertinently, the credit ratings of various developers are not high enough to secure long-term loan from banks/financial institutions at such low rate. In case of further decrease in the SBI MCLR till the year of commissioning, the developers may find additional cost to be borne by them to fund the interest repayment. In our humble opinion, therefore, NFA approach will be unfair on the developers of competitively bid projects as this will deny not only reasonable returns to such developer as well as they may not be able to generate adequate cash flow for meeting its debt service obligation.</p> <p>d) In view of above, it is submitted that compliance of emission norms would be requiring huge investment and in order to tie-up for financial arrangements amid huge NPAs in the power sector, it is crucial to have in place suitable norms which facilitate the funding and such curtailment would lead to delay in getting project funding. Hence, the Hon'ble Commission may at least allow the cost of equity @ weighted average rate of interest on long-term loan subject to a ceiling of 14% in line with the provision for the generation projects u/s 62 of the Act as stipulated in the CERC (terms & Conditions of Tariff) (First Amendment) Regulations 2020.</p>

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		<p>e) In this regard, it is further relevant to note that with such norms in place generating companies would prefer to increase debt component or theoretically even going for 100% debt financing. The increase in debt component in the project would increase the risk of the lenders resulting into increased interest rates. With the power sector being a stressed sector and generators also being financially stressed in the process, no banks/lenders will agree to fund 100% of the cost of revised emission norms. Even if banks/lenders agree to fund 100%, the financial ratios of the project company get jeopardized thereby crippling them further.</p> <p>f) In view of the above, we therefore suggest the Hon'ble Commission to align the said provision in accordance with the existing CERC (Terms and Condition of Tariff) (First Amendment) Regulations 2020 with regard to Gross Fixed Asset (GFA) approach, Normative Debt/Equity Ratio and Return on Equity (RoE) approach in the interest of desired growth of the power sector and providing level playing field for PPA's under Section 62 and Section 63 of the Electricity Act 2003 for compliance of installation of Emission Control System.</p>
INCOME TAX		
No Provision	-	We request the Hon'ble Commission to allow the developers to recover income tax on the contribution to profit element arising out of the compensation through supplementary tariff in line with the provisions of CERC (Terms & Conditions of Tariff) Regulations 2019 read with its amendments.

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		It is submitted that the additional income tax will pose an adverse financial burden on the competitively bid generating projects after installation of ECS. We therefore request the Hon'ble Commission to include appropriate provision in the final compensation mechanism.
ADDITIONAL O&M EXPENSES (ARE_{o&m})		
Para 4.13	<i>The Commission, in some of the orders, has allowed provisional first year O&M expenses @2% of capital expenditure for installation of FGD (excluding IDC and FERV) admitted by the Commission after prudence check. On similar lines, it is proposed that additional O&M expenses (ARE_{o&m}) for first year may be allowed @2% of additional capital expenditure (ACEECS) for installation of ECS (excluding IDC and FERV), admitted by the Commission after prudence check. For subsequent years, the first year O&M expenses (ARE_{o&m}) may be escalated @3.5% or any other escalation rate as may be specified by the Commission. The above O&M expenses may subsequently be reviewed based on actual O&M expenses of ECS installed at various generating stations.</i>	<p>We humbly request the Hon'ble Commission that estimation of O&M expenses on account of Emission Control System proposed in the staff paper is a difficult exercise due to the lack of available data and experience. However, we feel that the proposed norm of 2% of admitted capital expenditure (excluding IDC & FERV) escalated @3.5% per annum, appears to be on the lower side, on the basis of limited data that is presently available.</p> <p><u>Justification:</u></p> <p>It is submitted that O&M expenses of Emission Control System on a stand-alone basis, may require additional cost involvement over the power plant due to following reasons:</p> <p>a) 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.</p>

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		<p>b) Degradation of equipment as the whole system operates in corrosive environment. This may pose major challenges for the generators to ensure availability of Emission Control System.</p> <p>c) Higher maintenance cost as a sizeable number of equipment installed for the Emission Control System is likely to be imported and also, the cost of imported spares is sensitive to forex fluctuations.</p> <p>d) Implementation of Emission Control System at existing plants setup may require additional infrastructural support such as additional manpower to facilitate smooth operation (for example, installation of a dedicated road and gate for trucks carrying gypsum - similar to separate dedicated gates with security personnel that have to be maintained in power plants for ash movement). Deployment of additional manpower for O&M of FGD System will result in significant additional expenses for the generating company.</p> <p>e) Operation of FGD System would increase the Water Consumption of the plant, therefore generators would have to shell out additional expenses towards increase in water requirement of the plant. While the Hon'ble Commission has vide CERC (terms & Conditions of Tariff) (First Amendment) Regulations 2020 considered the additional water expenditure by way of determining the same through the tariff of the entire generating station, with due consideration to the norm of specific water</p>

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		<p>consumption as per MoEFCC Notification dated 07.12.2015, the same is not provided herein for the competitively bid projects. The Hon'ble Commission may therefore allow the water charges for ECS operation separately to bring in the parity between the competitively bid projects and cost-plus projects.</p> <p>f) Commissioning of limestone-based FGD systems may pose a serious challenge for marketability of Gypsum as a by-product. Presently, the production and demand of industrial gypsum is limited. However, once the FGDs of the thermal power plants are commissioned it would change the supply chain of gypsum due to sudden high availability of gypsum. With the glut of chemically produced gypsum as by-product of FGDs, it is entirely possible that there may not be many takers and this environmentally hazardous gypsum would need to be disposed through environmentally-safe measures, which would involve significant expenses for handling and disposing/utilizing Gypsum. Such expenditure must be reimbursed to the generating company.</p> <p>g) Further, the Hon'ble Commission has proposed limestone consumption based on formula which requires determination of Sulphur in Coal by ultimate analysis of Coal on regular basis. Presently, the coal parameters are evaluated basis the proximate analysis of Coal. Evaluation of Coal parameters through ultimate analysis of Coal on regular basis would involve recurring cost for the developers which may be reimbursed additionally through O&M Expenses.</p>

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		<p>h) Insurance cost in the tune of 0.5% of admitted capital cost. In view of the above, our suggestions in this regard are:</p> <ol style="list-style-type: none"> I. For the initial few years (till the end of the control period), O&M expenses may be allowed at 5% of the admitted capital expenditure (excluding IDC & FERV), or at actuals, whichever is lower. II. Based on actual data, the norms for the next control period may be framed accordingly. <p>Alternatively, the Hon'ble Commission may allow to recover O&M Expenses as proposed in the Staff Paper plus Additional Manpower Expenses, Water Consumption, Cost of Ultimate Analysis of Coal and Gypsum Handling & Disposal Cost at actuals.</p>
ADDITIONAL IWC (ARE_{IWC})		
Para 4.14	<p><i>Working capital may include:</i></p> <p><i>i) Cost of limestone or reagent towards stock for 20 days corresponding to the normative annual plant availability factor and advance payment for 30 days towards cost of reagent for generation corresponding to the normative annual plant availability factor;</i></p> <p><i>ii) Operation and maintenance expenses in respect of emission control system for one month and maintenance spares @20% of operation and maintenance expenses in respect of emission control system; and</i></p>	<p>We humbly request the Hon'ble Commission to consider the following provisions in the proposed staff paper pertaining to computation of Interest on Working Capital:</p> <ol style="list-style-type: none"> a) For computation of Interest on Working Capital, the Hon'ble Commission has considered cost of only limestone or reagent only and no other essential consumables like chemicals etc. Such chemicals may also be considered as element of working capital for FGD System. b) Maintenance spares may be considered at 30% of operation and maintenance expenses in respect of Emission Control

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	<p><i>iii) Receivables equivalent to 45 days of supplementary capacity charge and supplementary energy charge for sale of electricity calculated on the normative annual plant availability factor.</i></p>	<p>Systems as technology of FGD System is in nascent stage in our country and very few players have installed FGD Systems & therefore sufficient data are not available at present.</p> <p>c) The proposed staff paper does not stipulate the rate at which computation of Interest on Working Capital will be computed. In our humble opinion, we suggest that the rate of Interest on Working Capital may be aligned in line with CERC Tariff Regulations 2019 (First Amendment), i.e., at the rate of Marginal Cost of Lending Rate (“MCLR”) of State Bank of India (for one year tenure) plus 350 basis points, as on 1st April of the year.</p>
ADDITIONAL OPERATIONAL EXPENSES DUE TO CONSUMPTION OF REAGENTS (AOE_{cor})		
Para 4.16	<p><i>Some kind of reagent is required to be used in ECS to meet the norms as specified by the 2015 Rules. CEA (Central Electricity Authority) has suggested the norms of specific reagent consumption (grams/kWh). The norms of specific reagent consumption and auxiliary energy consumption as specified by CEA, for different variants of FGD system, SNCR system and SCR system, have been indicated at Annexure-I to this Staff Paper. The cost of reagent per unit of electricity generated at generator terminal of the generating station shall be calculated based on the specific reagent consumption (grams/kWh) and landed price of the reagent at the generating station.</i></p>	<p>We request the Hon’ble Commission to allow the cost of reagent per unit of electricity generated at generator terminal at actual consumption of limestone and reagents since there are limited data available based on which any such norms may be arrived presently.</p> <p><u>Justification:</u></p> <p>a) As the available data on actual consumption of limestone/other reagents in Indian conditions are limited, the normative values may be arrived after 5 years of operation of FGD System by the generators and during that period the actual consumption of limestone reagent need to be considered. Similarly, the NO_x control system is still at the pilot stage and as such fixing</p>

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	<p>2. Norms for consumption of reagent:</p> <p>(1) The normative consumption of specific reagent for various technologies for reduction of emission of sulphur dioxide shall be as below:</p> <p>(a) For Wet Limestone based Flue Gas Desulphurisation (FGD) system: The specific limestone consumption (g/kWh) shall be worked out by following formula:</p> $= [0.85 \times K \times \text{SHR (kCal/kWh)} \times S (\%)] / [\text{GCV (kCal/kg)} \times \text{LP} (\%)]$ <p>Where, S = Sulphur content in percentage, LP = Limestone Purity in percentage;</p> <p>Provided that value of K shall be equivalent to (35.2 x Design SO₂ Removal Efficiency/96%) for units to comply with SO₂ emission norm of 100/200 mg/Nm³ or (26.8xDesign SO₂ Removal Efficiency/73%) for units to comply with SO₂ emission norm of 600 mg/Nm³;</p> <p>Provided further that the limestone purity shall not be less than 85%.</p>	<p>guidelines for specific consumptions of reagent at this stage would be premature.</p> <p>b) It is further submitted that the purity of limestone will not be in control of the generating companies. Major portion of the domestic limestone is having purity less than 85%. It is a fact that limestone purity varies from region to region. Availability of the quality limestone is limited for plants in the eastern region of the country. Generators may have to opt for low quality limestone – based on local availability. Hence, ceiling of limestone purity at a minimum of 85% may not be pragmatic to accommodate such huge requirement of limestone for Emission Control Systems in India, and this cap may be removed.</p>
ADDITIONAL AUXILIARY ENERGY CONSUMPTION (AUX_{ECS})		
Para 4.18	<p><i>The ex-bus energy charges quoted by the generating company will undergo change due to additional auxiliary energy consumption on account of installation of ECS</i></p>	<p>The proposed Additional Auxiliary Energy Consumption (AUX_{ECS}) for wet limestone based FGD system (without Gas to Gas Heater) has been considered as 1% of gross generation, which in our view, appears to be on lower side. We suggest that the Hon'ble Commission may allow AUX_{ECS} 1.2% of gross generation at full load, with an additional AUX_{ECS} of 0.5% for unit size of 210/250/300 MW or lower.</p> <p><u>Justification:</u></p> <p>In addition to the auxiliary power consumed by the newly installed Emission Control Systems (whose power consumption shall be</p>

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	<p>1. Additional Auxiliary Energy Consumption (ΔAUX):</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Name of Technology</th> <th style="text-align: center;">ΔAUX (as % of gross generation)</th> </tr> </thead> <tbody> <tr> <td colspan="2">(1) For reduction of emission of Sulphur Dioxide:</td> </tr> <tr> <td>a) Wet Limestone based FGD system (without Gas to Gas heater)</td> <td style="text-align: center;">1.0%</td> </tr> <tr> <td>b) Lime Spray Dryer or Semi dry FGD System</td> <td style="text-align: center;">1.0%</td> </tr> <tr> <td>c) Dry Sorbent Injection System (using Sodium bicarbonate)</td> <td style="text-align: center;">NIL</td> </tr> <tr> <td>d) For CFBC Power plant (furnace injection)</td> <td style="text-align: center;">NIL</td> </tr> <tr> <td>e) Sea Water based FGD system (without Gas to Gas heater)</td> <td style="text-align: center;">0.7%</td> </tr> <tr> <td colspan="2">(2) For reduction of emission of oxide of nitrogen:</td> </tr> <tr> <td>a) Selective Non-Catalytic Reduction system</td> <td style="text-align: center;">NIL</td> </tr> <tr> <td>b) Selective Catalytic Reduction system</td> <td style="text-align: center;">0.2%</td> </tr> </tbody> </table> <p>Provided that where the technology is installed with Gas to Gas heater, auxiliary energy consumption specified as above shall be increased by 0.3% of gross generation."</p>	Name of Technology	Δ AUX (as % of gross generation)	(1) For reduction of emission of Sulphur Dioxide:		a) Wet Limestone based FGD system (without Gas to Gas heater)	1.0%	b) Lime Spray Dryer or Semi dry FGD System	1.0%	c) Dry Sorbent Injection System (using Sodium bicarbonate)	NIL	d) For CFBC Power plant (furnace injection)	NIL	e) Sea Water based FGD system (without Gas to Gas heater)	0.7%	(2) For reduction of emission of oxide of nitrogen:		a) Selective Non-Catalytic Reduction system	NIL	b) Selective Catalytic Reduction system	0.2%	<p>guaranteed by the supplier), Auxiliary Energy Consumption of the main plant will increase due to the following reasons:</p> <ol style="list-style-type: none"> a) Additional power consumption required on account of cooling water sourced from existing plant system for the new equipment. b) Additional power consumption required on account of pumping and treatment of make-up water to Emission Control System from the existing plant water system. c) Existing plants will require additional Auxiliary Energy Consumption on account of various common services for Emission Control System. d) Due to acute scarcity of water at various locations, Emission Control System will entail installation of RO plant/ZLD Crystallizer system. Operation of such system will require additional Auxiliary Energy Consumption. e) Uncertainty over purity of lime stone and Sulphur content of coal - while the auxiliary power increase will be dependent on the quality of limestone re-agent actually received as well as the coal quality and both are uncontrollable factors for the generators. Additional energy consumption may be required to meet the statutory emission limit based on actual operating conditions and plant PLF. f) Economies of scale play a key factor on account of consumption of common facility for Emission Control System. g) Auxiliary Energy Consumption of Emission Control System will depend on operating PLF of the Units. Hence, we request
Name of Technology	Δ AUX (as % of gross generation)																					
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		Hon'ble commission to allow a suitable compensation on account of increase in Auxiliary Energy Consumption (APC) if PLF is reduced below normative PLF.
Para 4.19	<p><i>The Revised Contracted Capacity after installation of the ECS can be arrived at as follows:</i></p> $CC_{Revised} = CC_{Org} \times (1 - AUX_{Total}) / (1 - AUX_{Org})$ <p><i>where $AUX_{Total} = AUX_{Org} + AUX_{ECS}$.</i></p>	<p>We agree with Hon'ble Commission's approach for adjustment of Energy Charge Rate ("ECR") towards increased Auxiliary Energy Consumption by revising Contracted Capacity.</p> <p>It is humbly submitted that the Contracted Capacity in all the Case-1 long-term contracts are at Interconnection Point of the Generator with the CTU (Net Contracted Capacity). There will be reduction in Net Contracted Capacity when the above methodology for adjusting ECR will be implemented and this may require modification in the PPA adopted by the respective State Commission of the procuring Utility.</p> <p>To avoid change in Net Contracted Capacity in the PPA, we request the Hon'ble Commission to allow the Generating Stations having surplus capacities on same terms and conditions of the PPA to make good the reduction in the Net Contracted Capacity so that the Contracted Capacities under the PPA remain unaltered.</p> <p><u>Justification:</u></p> <p>a) The Hon'ble Commission has in the Staff Paper considered the revision in the contracted capacity of the PPAs for plants which do not have any surplus capacity left for tying-up under the same contract. However, there are PPAs which can be honored</p>

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		<p>in terms of the Contracted Capacity by way of increasing the gross contracted capacity utilizing the inverse of the same factor $(1-AUX_{Total})/(1-AUX_{Org})$ as proposed by the Hon'ble Commission in the Staff Paper.</p> <p>As an illustration, we can consider a generating unit of 500 MW which has a contract of 400 MW with a beneficiary to be delivered at the delivery point. Let us assume the Auxiliary Energy Consumption under the contract is 5%, then the gross contracted capacity would be $400/(1-5\%) = 421$ MW. The balance gross capacity, i.e., $(500-421) = 79$ MW is uncontracted. -The revised Auxiliary Energy Consumption post-commissioning of ECS becomes 6%. In such case, instead of reducing the aggregate contracted capacity from 400 MW to $(421 * (1-6\%)) = 396$ MW, the PPA, in terms of aggregate contracted capacity of 400 MW, can still be honored if the gross contracted capacity becomes $400/(1-6\%) = 425$ MW, i.e., the generator decides to meet the same from the balance surplus capacity of the unit.</p>
PROCEDURE FOR PAYMENT (LATE PAYMENT SURCHARGE)		
Para 5.4	<p><i>PPAs already have a procedure for payment of Bills and there is no need to devise any separate procedure for the purpose of payment of monthly Supplementary Capacity Charges and monthly Supplementary Energy Charges. The generating company may raise the Bill for payment on account of operation of ECS in the same manner as any other bill provided in the PPA and such Bill shall be paid by the</i></p>	<p>In view of repeated payment defaults and delayed payment by many distribution utilities under long term contract, we request the Hon'ble Commission to include stringent provision in the proposed staff paper pertaining to Late Payment Surcharge on account of recovery of Supplementary Tariff for Emission Control System.</p>

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	<i>procurer(s). Provisions related to Due Date, Rebate, Late Payment Surcharge etc. will be as provided in the PPAs.</i>	<p><u>Justification:</u></p> <p>a) Lot of emphasis is given by Ministry of Power ("MoP") to inculcate payment discipline among the Discoms. The MoP has already issued orders with regard to recovery of Late Payment Surcharge ("LPS") and establishment of Payment Security Mechanism as specified in the PPA.</p> <p>b) It is also necessary to consider a graded LPS rate and progressively increasing penal rates based on ageing of receivables should be specified, for bringing more discipline in the payment pattern of DISCOMs. This concept is already adopted by various State Commissions for penalizing the defaulting consumers and benefit of this graded LPS rate is being availed by DISCOMs and same benefit needs to be passed through to the generating companies also.</p>