

**Draft CERC(Terms and Conditions  
of Tariff) (First Amendment)  
Regulations, 2020**

**Submission of  
Lalitpur Power Generation Company Ltd (Bajaj Group)**

# Preliminary Observations:

- Lalitpur Power Generation Company Ltd. (LPGCL), a Bajaj Group Company welcomes such step as it will ensure readiness of the tariff mechanism to determine supplementary capacity charges and supplementary Energy Charges for Emission Control System (ECS)
- A proactive step giving regulatory certainty to ensure financial resources for implementing ECS & provide the necessary regulatory certainty especially in the backdrop of Covid-19 Pandemic.
- The presentation highlights the four major components :
  1. ROE on investment in ECS
  2. O&M
  3. AEC
  4. Limestone purity & consumption
- We have also filed our detailed comments with the required reasoning. Hon'ble Commission may please also consider the same.

## ROE on investment for compliance of Emission Control System(ECS)

Item	CERC proposed Amendment	LPGCL Suggestions/ Reason
ROE on FGD Investment <b>(Amendment of Regulation 30 (Principal Regulation))</b>	ROE on the investment of FGD equivalent to return on debt instead of return on equity.	<p><b>Suggestion:</b> ROE on the investment of FGD to be consistent with Principal Regulation i.e 15.5%.</p> <p><b>Introduction:</b> As per Regulation 30 (2), Normative ROE (15.5%) is permissible for additional capitalisation due to change in law which has also been supported in SOR dated 22.03.2019. Investment on ECS also falls under change in law.</p> <p>The equity investment in the emission control equipment carry far higher risk due to:</p> <ol style="list-style-type: none"><li>1. Being totally new technology, the chances for the failures and problems shall be more putting the entire risk of units of the station going out of service more frequently till the same gets stabilised.</li><li>2. The equity investment in the emission control equipment carries far higher risk than that of BTG package and OEMs will not take any responsibility for deterioration of plant performance.</li><li>3. Thermal Power Plants inherently carry higher risk vis-a-vis transmission projects (fuel risk, execution risk, operational risk &amp; environmental related risk)</li></ol>

## ROE on investment for compliance of Emission Control System (ECS)

Item	CERC proposed Amendment	LPGCL Suggestions/ Reason
ROE on FGD Investment (Amendment of Regulation 30 of the Principal Regulation)	ROE on the investment of FGD equivalent to return on debt instead of return on equity.	<p>4. A return lower than 15.5% and treating such equity investment akin to debt would be inconsistent with Section 61 of Electricity Act'2003 &amp; Tariff Policy 2016 which mandates returns should be commensurate with the risk taken by investor.</p> <p>5. If ROE is equal to cost of debt, arranging finances (debt) would become difficult for the GENCOs, whose balance sheets are already leveraged and equity proportion is lower than 30%. Moreover, where equity proportion is already less than 30% then average DSCR may reach to the level of 1.17 against bank stipulations of 1.25 rendering the project unviable for lenders to finance it</p> <p>6. Since Capital cost of FGD is very high and if ROE is paid @ cost of debt, then this shall discourage investors to put their own money.</p>

## ROE on investment for compliance of Emission Control System (ECS)

Item	CERC proposed Amendment	LPGCL Suggestions/ Reason
ROE on FGD Investment (Amendment of Regulation 30 of the Principal Regulation)	ROE on the investment of FGD equivalent to return on debt instead of return on equity.	<p>7. Since, installation of FGD will be a long gestation project and ROE is not provided during construction phase, higher Return on Equity post commissioning is very much required.</p> <p>8. Lowering of ROE is likely to result in decline in cash flows from operations due to reduction in revenue and will hit the profitability. The equity IRR and project IRR will further reduce.</p> <p>9. Risk free returns and Equity Risk Premium (ERP) are two key determinant in Capital Asset Pricing Model (CAPM) which is followed by Hon'ble Commission. If we consider risk free return of around 7% then ERP works out to 4% which does not commensurate with the risk involved (cost of debt of IPPs is around 11%).</p> <p>10. Since, ROE is proposed at the same rate of cost of debt, there will be no incentive for generators to reduce cost of debt.</p>

## ROE on investment for compliance of Emission Control System (ECS)

Item	CERC proposed Amendment	LPGCL Suggestions/ Reason
ROE on FGD Investment ( <b>Amendment of Regulation 30 of the Principal Regulation</b> )	ROE on the investment of FGD equivalent to return on debt instead of return on equity.	<p>11. The interest rate is dependent upon the credit rating of the generator and varies widely from one generator to other. This will lead to 'variable ROE'. For example, CPSUs borrows at 7.5% where as IPPs borrow at 11-12%.</p> <p>12. Investment in a new power plant with ECS will get ROE of 15.5% on entire equity whereas existing power plants will get 15.5% on main plant and lower ROE (8-11%) on ECS.</p> <p><b>In order to align return with the commensurate risk, the Hon'ble Commission may consider ROE of 16.5% on Emission Control Equipment (1% higher return on equity due to above reasons).</b></p>

## O&M expenses on Emission Control System (ECS)

Item	CERC proposed Amendment	LPGCL Suggestions/ Reason
Normative O&M expenses on account of Emission Control System <b>(Amendment of Regulation 35 of the Principal Regulation)</b>	O&M expenses on ECS- 2% of the hard cost with escalation 3.5% /year	<b>Suggestion: O &amp; M expenses for ECS may be provided as 4% of the admitted hard cost to bring parity with the plant O&amp;M.</b> The O&M expenses proposed in the amendment for ECS is inadequate because of: <ol style="list-style-type: none"><li>1. Main plant O &amp; M expenses as percentage of the CERC benchmark hard capital cost works out to be around 3.5% for a typical 3x660 (1980 MW) power plant excluding IDC &amp; IEDC.</li><li>2. FGD is extremely maintenance prone equipment compare to main plant due to handling of Sulphur and other highly corrosive substances. Therefore, O&amp;M expenses on account of FGD should be at par if not more than the main plant O&amp;M expenses.</li></ol>

## O&M expenses on account of Emission Control System (ECS)

Item	CERC proposed Amendment	LPGCL Suggestions/ Reason
Normative O&M expenses on account of Emission Control System <b>(Amendment of Regulation 35 of the Principal Regulation)</b>	O&M expenses on account of emission control system- 2% of the admitted capital expenditure (excluding IDC & IEDC) with escalation annually @ 3.5%	<p>3. A sizeable number of equipment installed for the emission control system are likely to be imported therefore sensitive to forex fluctuations.</p> <p>4. The lime handling system including gypsum disposal system is subjected to very tough running conditions and wear &amp; tear and failures.</p> <p>5. Additional system required to handle waste water having very high chloride level and zero liquid discharge</p> <p>6. It requires additional infrastructural support like construction of a dedicated road and gate for trucks carrying gypsum to facilitate smooth operation.</p> <p>7. Further, Simultaneous commissioning of FGD by majority Generators in 2022 may pose a challenge for sale/disposal of Gypsum as a by-product.</p> <p><b>In case Gypsum is not sold then cost of disposal and storage of the same should be provided.</b></p>

## Aux. Energy Consumption on account of Emission Control System (ECS)

Item	CERC proposed Amendment	LPGCL Suggestions/ Reason
Aux. Energy Consumption for wet limestone based FGD system <b>(Amendment of Regulation 49 of the Principal Regulation)</b>	Aux. Energy Consumption for wet limestone based FGD system proposed as 1%	<b>Suggestion: AEC for emission control system to be provided as 1.5%</b> The AEC proposed in the amendment for ECS is inadequate because of: <ol style="list-style-type: none"><li>1. AEC of 1% has been proposed at full load without considering average PLF of thermal power stations at national level which was 56% in 2019-20.</li><li>2. Additional power consumption on account of cooling water for FGD.</li><li>3. Additional power consumption on account of pumping and treatment of makeup water.</li><li>4. Existing AEC will increase on account of various common services for ECS.</li></ol>

## Aux. Energy Consumption on account of Emission Control System (ECS)

Item	CERC proposed Amendment	LPGCL Suggestions/ Reason
Aux. Energy Consumption for wet limestone based FGD system ( <b>Amendment of Regulation 49 of the Principal Regulation</b> )	Aux. Energy Consumption for wet limestone based FGD system proposed as 1%	<p><b>5.</b> Due to scarcity of water at many places in India, Emission control system will require installation of RO plant / ZLD Crystallizer system whose operation will consume additional power.</p> <p><b>6.</b> AEC is dependent upon the quality of limestone as well as the quality of coal which are uncontrollable factors for generators. Uncertainty over purity of lime stone and sulphur content of coal has to be considered by Hon'ble Commission while deciding the AEC of ECS</p> <p><b>Further, the Regulation-6B of the IEGC 4<sup>th</sup> amendment Regulations, 2016 provides for adjustment of norms of operation (HR, AEC etc. ) for the power plant systems other than emission control system. According the IEGC is required to be amended to incorporate adjustment of Aux Energy Consumption for emission control systems proposed in these draft regulations.</b></p>

## Specific limestone consumption/Purity on account of Emission Control System (ECS)

Item	CERC proposed Amendment	LPGCL Suggestions/ Reason
Specific limestone consumption and Purity (Amendment of Regulation 49 of the Principal Regulations)	Considering limestone purity as 90% thus effecting the specific lime stone consumption and Aux. Power Consumption	<p><b>Suggestion:</b> Hon'ble Commission may provide a suitable formula ranging from 75-90% purity of lime stone based on the availability and purity of limestone in the region where the power plant is located. Accordingly, the Aux. Energy Consumption and limestone consumption may be decided for different purity range.</p> <p>The propose limestone purity of 90% is extremely difficult to get due to following reasons:</p> <ol style="list-style-type: none"><li>1. The purity of limestone varies from one geographical region to other.</li><li>2. The purity of limestone is beyond the control of the generators. In India, most of the limestone is available in eastern part and has purity less than 85%. The high purity limestone is used by the cement manufactures and it is apprehended that the power plants may have to use low quality limestone.</li></ol>

## Specific limestone consumption/Purity on account of Emission Control System (ECS)

Item	CERC proposed Amendment	LPGCL Suggestions/ Reason																	
Specific limestone consumption and Purity (Amendment of Regulation 49 of the Principal Regulations)	Considering limestone purity as 90% thus effecting the specific lime stone consumption and Aux. Power Consumption	<p><b>Specific limestone consumption:</b></p> <p>3. The specific limestone consumption is extremely sensitive to the factors like technology of FGD, the sulphur content in coal, the reactivity of limestone and the PLF of the power plant.</p> <p>4. The lime stone consumption based on 85% purity with different sulphur content in coal of GCV of 3300 Kcal/kg at normative HR is calculated below:</p> <table border="1" data-bbox="876 896 2519 1119"> <thead> <tr> <th data-bbox="876 896 1309 982">Sulphur (%)</th> <th data-bbox="1309 896 1508 982">&lt;0.4</th> <th data-bbox="1508 896 1765 982">0.4-0.5</th> <th data-bbox="1765 896 2023 982">0.5-0.6</th> <th data-bbox="2023 896 2280 982">0.6-0.7</th> <th data-bbox="2280 896 2519 982">0.7-0.8</th> </tr> </thead> <tbody> <tr> <td data-bbox="876 982 1309 1119">Lime stone consumption</td> <td data-bbox="1309 982 1508 1119">12</td> <td data-bbox="1508 982 1765 1119">15</td> <td data-bbox="1765 982 2023 1119">18</td> <td data-bbox="2023 982 2280 1119">20</td> <td data-bbox="2280 982 2519 1119">24</td> </tr> </tbody> </table>						Sulphur (%)	<0.4	0.4-0.5	0.5-0.6	0.6-0.7	0.7-0.8	Lime stone consumption	12	15	18	20	24
Sulphur (%)	<0.4	0.4-0.5	0.5-0.6	0.6-0.7	0.7-0.8														
Lime stone consumption	12	15	18	20	24														

## Initial spares on account of Emission Control System (ECS)

Item	CERC proposed Amendment	LPGCL Suggestions/ Reason
Initial Spares (Amendment of Regulation 23 of the Principal Regulation)	Initial spares as 4% for emission control system (FGD) similar provision as provided for main plant in Principal Regulations.	<p><b>Suggestion:</b> Initial spares required for FGD may be revised upward to 5% of the Hard Cost in view of the following:</p> <ol style="list-style-type: none"><li>1.FGD is being introduced in India only first time and the data for consumption of spares is not available.</li><li>2.FGD will handle very corrosive and abrasive material. The life of spares will surely be less compare to BTG and BOP.</li></ol> <p>The Hon'ble Commission may consider initial spares @ 5% till sufficient data is available for determining the normative value of initial spares. It is felt that percentage may go up due to nature of material that FGD will handle.</p> <p>It is requested that a cut-off time of 5 years after successful commissioning of FGD may be provided.</p>

## Interest on Working Capital on account of Emission Control System (ECS)

Item	CERC proposed Amendment	LPGCL Suggestions/ Reason
Interest on Working Capital (Amendment of Regulation 34 of the Principal Regulations)	<p>Working capital same as main plant except point (ii)</p> <p><b>Advance payment for 30 days towards cost of coal or lignite and limestone for generation corresponding to the NAPAF</b></p>	<p><b>Suggestion:</b> Hon'ble commission may add the point (ii) as Advance payment for 30 days towards cost of limestone for generation corresponding to the normative annual plant availability factor.</p> <p>If we compare the working capital provided for generating station in the Principal Regulation vis-à-vis emission control system then it can be clearly seen that point (ii) <b>Advance payment for 30 days towards cost of coal or lignite and limestone for generation corresponding to the normative annual plant availability factor</b> has escaped attention of the Hon'ble Commission in respect of emission control system. As it is clear from statement of reasons of proposed first amendment, Hon'ble Commission has proposed the similar component of working capital for ECS.</p>

**bajaj** ENERGY

**Thank You**

**bajaj** GROUP  
THINK TOMORROW