**Draft Order on Petition No. 04/SM/2021 (suo-motu) released by Central Electricity Regulatory Commission (CERC) dated 12th April 2021**

**Comments from SBI Capital Markets Ltd**

| S. No. | Clause | Remarks |
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| 1 | **23. Capital Cost**<br><br>*In response to the Staff Paper, several suggestions have been received regarding additional capital expenditure on emission control system on account of incidental expenditure during construction, financing charges, insurance charges, interest during construction, un-discharged liabilities, gain or loss on foreign exchange rate variations, initial spares etc. The proposed Compensation Mechanism deals with the methodology to work out the compensation based on capital cost admitted by the Commission. The Commission expects that the hard cost of emission control system would be discovered through a process of transparent competitive bidding. An inclusion or exclusion of any other expenditure shall be decided on case to case basis. Once the capital cost is determined, the compensation mechanism can be made applicable to work out the compensation.* | A clear guideline shall be given regarding the benchmark of costs. Once the lenders/financing entities have agreed for a particular capital cost based on transparent mechanism, it becomes uncertain for them in case of exclusion of any item (on case to case basis). In such a scenario, it is very difficult to speculate what cost will finally be approved by the regulatory authority for compensation. Usually, the financing happens before the final approval of capital cost. Therefore, any significant/sizeable exclusion from the capital cost may be difficult to absorb for the lenders.<br><br>Hence, the compensation shall be based on actual capital cost discovered through transparent process. As per the existing practice, the Central Electricity Authority (CEA) works out a provisional hard cost for the ECS system based on the report submitted by the generating company. Further, the Commission has also acknowledged other soft costs like IDC, taxes & duties, FERV, and management cost, which are to be approved after prudence check. The final ECS cost approval (hard cost and soft cost) may take time as the process of approval is comprehensive and involves approaching the Commission.<br><br><u>Suggested Approach:</u> The provisional hard cost for the ECS system shall be adopted (based on CEA estimates) with consideration of 10% of the total hard cost as soft cost. The additional capacity charge may be derived based on such cost and discoms shall start making payment accordingly. The project company shall approach Commission for final cost approval with all the relevant backups. The final cost as approved by the Commission may be trued up and the tariff may be accordingly adjusted. However, the provisional hard cost as acknowledged by CEA should be considered as |

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| | | benchmark and such cost should not be lowered at the time of final approval by the Commission unless actual cost is lower than estimate. |
| 2 | **35. Depreciation**<br><br>*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 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:*<br>*DEPe = (0.036) x ACEe*<br>*Where,*<br>*ACEe is the gross capital cost (in Rupees) of emission control system as admitted by the Commission;*<br>*DEPe is annual depreciation in Rupees.* | Even though the plant may have a higher useful life in the future with renovation and modernization, lenders provide funding based on the economic life derived from present PPA arrangement.<br><br>Therefore, in order to get funding from lenders for ECS system, balance economic life of the present PPA will be a crucial factor. When the lenders are approached for funding of these ECS systems, the economic life considered for the appraisal process will be much shorter than 25 years. If the compensation is determined based on useful life of 25 years, the lenders will be able to fund very small portion of the capex required as their loan will have a shorter tenor. Therefore, it may result in non-availability of funds for ECS systems.<br><br>For computation of depreciation for compensation purpose, the useful life shall be closer to the balance residual period of PPA. Peak period for power generation capacity addition in this country (in private sector) was between 2012-13 and 2015-16. Year 2014 may be considered as the mid-point for this peak period. Assuming that all these ECS systems will be implemented by years 2024, the residual tenor of most PPAs will be 15 years or less after implementation of ECS. Therefore, an economic life of 15 years for the ECS system may be considered for all the plants as a standard practice. Accordingly, a depreciation rate of 6% p.a. may be kept considering salvage value of 10%. |
| 3 | **40. Cost of capital**<br><br>*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* | For funding of any capital expenditure in power generation sector, lenders usually stipulate Debt-Equity requirement of 70:30. It is a well established mechanism. It is also in consonance with CERC (Terms and Conditions of |

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| | *interest rate of fund. The interest rate will be weighted average rate of interest on loans of the generating station including ECS or at the rate of Marginal Cost of Lending Rate of State Bank of India (for one year tenor) as on 1st April of the year under consideration plus 350 basis points, whichever is lower. 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:*<br>*COCe(n) = NFA(n) x WAROI(n) /100*<br>*Where NFA(n) = ACEe – [(n-1)X (DEPe)]*<br>*Where,*<br>*COCe Servicing cost of Additional Capital Expenditure in Rupees per annum;*<br>*NFA(n) is the net fixed asset of the of the year "n";*<br>*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 Marginal Cost of Funds based Lending Rate (MCLR) of State Bank of India (for one year tenor) as on 1st April of the year plus 350 basis points, whichever is lower.*<br>*n represents the year starting from the date of operation of emission control system.* | Tariff) Regulations, 2019. For any debt financing in such cases, the lenders will ask for margin from the sponsors. Debt funding of entire capex is very difficult.<br><br>If the debt financing is done for 70% of the project cost, balance will be funded through equity or similar funding. Such kind of financing is not available at the same rate as loan. Therefore, capping the return on entire asset at SBI MCLR plus 350 bps is not practical.<br>It may be noted that cost of equity is usually much higher than cost of debt as equity is an unsecured and riskier instrument as compared to debt which is secured and has first priority over cashflows of the project. Therefore, capping the return on equity at cost of debt will lead to losses/ cash deficit for the system. This will reduce the overall financial feasibility of the project and ultimately the financing of the project itself will be impossible.<br><br>Further, for funding of any capex by lenders, a minimum desirable Debt Service Coverage Ratio (DSCR) for debt facility is 1.20. Here, it must be noted that robust project financials are essential for good credit rating which results in better pricing of loan. The estimated cashflow with proposed stipulations will result in an inadequate DSCR ratio. As per the proposed stipulation, the additional capacity charge w.r.t ECS capex is estimated to be insufficient to meet DSCR requirements as illustrated in Annexure due to depreciation amount being capped at 90% of asset value. It will be impossible to maintain DSCR of more than 1.00 at current stipulated additional tariff level even if entire project is funded through debt (with a tenor of 25 years plus construction period).<br><br>Therefore, for funding of ECS system, Debt-Equity ratio of 70:30 (or actual Debt-Equity ratio for such funding, whichever is higher) should be considered. Accordingly, the weighted average cost of capital should be determined based on the leverage. The Return on Equity shall be |

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| | | significantly higher than the interest rate on loan. It is considered at 15.5% in various CERC/SERC regulations. |
| 4 | **44. O&M Cost**<br><br>*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:*<br>*First Year: 2% of ACEe excluding IDC and FERV*<br>*Second Year: 2% of ACEe escalated at the rate of 3.5%.*<br>*Third Year onward: As per norms to be specified by the Commission.* | The compensation corresponding to O&M expense shall not be directly linked to capital expenditure. Such arrangement will result into lower O&M expense for developers who are able to control the capital cost in an efficient manner. The developers who implement the ECS at lower cost as compared to benchmark numbers should be incentivised.<br><br>For this purpose, CERC shall stipulate some benchmark normative O&M expenses for various categories of power plants with capacity – i) less than equal to 300 MW, ii) 300 MW-600 MW, iii) more than 600 MW. CERC may keep the option to revisit these numbers after two years once sizeable data is available. |
| 5 | **47,48. Working Capital**<br><br>*The Working Capital (WCe) shall include following components:*<br>*(i) Cost of lime stone or reagent for stock of 20 days corresponding to the normative annual plant availability factor;*<br>*(ii) Advance payment for 30 days towards cost of lime stone or reagent for generation corresponding to the normative annual plant availability factor;*<br>*(iii) Operation and maintenance expenses in respect of emission control system for one month;*<br>*(iv) Maintenance spares @20% of operation and maintenance expenses in respect of emission control system; and*<br>*(v) 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.* | For determination of working capital requirement, only 45 days of receivable is being considered. Considering the payment situation in different states, this is low. It should be kept at 60 days as most of the PPAs allow credit period of 60 days to the discoms for payment. |

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| | *Accordingly, the Additional Interest on Working Capital (IWCe) shall be worked out as under:*<br>*IWCe(n) = WCe(n) x WCIR(n)/100.*<br>*Where,*<br>*WCe(n) is the Working Capital of the year for which compensation is to be determined*<br>*WCIR(n) is Working Capital Interest rate (in %) which is 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 for which compensation is to be determined.* | |

**Annexure – Illustration for Additional Capacity Charge vs Debt Service requirements**

**Assumptions**

- ECS Capex - Rs. 100 crore
- Debt funding for the capex – Rs. 100 crore
  - Repayment Structure – 25 years tenor
  - Rate of Interest – 10.45% p.a. (SBI MCLR – 6.95% + 350 bps)
- ROCE - 10.45% (SBI MCLR – 6.95% + 350 bps)
- Depreciation Rate – 3.6%

| **Debt Service Workings** (figs in Rs. crore) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Year** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** |
| **Debt Service** | | | | | | | | | | | | |
| Repayment | 3.60 | 3.60 | 3.60 | 3.60 | 3.60 | 3.60 | 3.60 | 3.60 | 3.60 | 3.60 | 3.60 | 3.60 |
| Interest | 10.26 | 9.89 | 9.51 | 9.13 | 8.76 | 8.38 | 8.00 | 7.63 | 7.25 | 6.88 | 6.50 | 6.12 |
| **Total** | **13.86** | **13.49** | **13.11** | **12.73** | **12.36** | **11.98** | **11.60** | **11.23** | **10.85** | **10.48** | **10.10** | **9.72** |
| **Capital Charge Available** | | | | | | | | | | | | |
| Depreciation | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 |
| ROCE | 10.26 | 9.89 | 9.51 | 9.13 | 8.76 | 8.38 | 8.00 | 7.63 | 7.25 | 6.88 | 6.50 | 6.12 |
| **Total** | **13.86** | **13.49** | **13.11** | **12.73** | **12.36** | **11.98** | **11.60** | **11.23** | **10.85** | **10.48** | **10.10** | **9.72** |
| **DSCR** | **1.00** | **1.00** | **1.00** | **1.00** | **1.00** | **1.00** | **1.00** | **1.00** | **1.00** | **1.00** | **1.00** | **1.00** |
| **Asset** | | | | | | | | | | | | |
| Opening Block | 100 | 96.4 | 92.8 | 89.2 | 85.6 | 82 | 78.4 | 74.8 | 71.2 | 67.6 | 64 | 60.4 |
| Depreciation | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 |
| Closing Block | 96.4 | 92.8 | 89.2 | 85.6 | 82 | 78.4 | 74.8 | 71.2 | 67.6 | 64 | 60.4 | 56.8 |
| RoCE | 10.26 | 9.89 | 9.51 | 9.13 | 8.76 | 8.38 | 8.00 | 7.63 | 7.25 | 6.88 | 6.50 | 6.12 |
| **Debt** | | | | | | | | | | | | |
| Opening | 100.00 | 96.40 | 92.80 | 89.20 | 85.60 | 82.00 | 78.40 | 74.80 | 71.20 | 67.60 | 64.00 | 60.40 |
| Repayment | 3.60 | 3.60 | 3.60 | 3.60 | 3.60 | 3.60 | 3.60 | 3.60 | 3.60 | 3.60 | 3.60 | 3.60 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Closing | 96.40 | 92.80 | 89.20 | 85.60 | 82.00 | 78.40 | 74.80 | 71.20 | 67.60 | 64.00 | 60.40 | 56.80 |
| Interest | 10.26 | 9.89 | 9.51 | 9.13 | 8.76 | 8.38 | 8.00 | 7.63 | 7.25 | 6.88 | 6.50 | 6.12 |

| **Debt Service Workings** | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Year** | **13** | **14** | **15** | **16** | **17** | **18** | **19** | **20** | **21** | **22** | **23** | **24** | **25** |
| **Debt Service** | | | | | | | | | | | | | |
| Repayment | 3.60 | 3.60 | 3.60 | 3.60 | 3.60 | 3.60 | 3.60 | 3.60 | 3.60 | 3.60 | 3.60 | 3.60 | 3.60 |
| Interest | 5.75 | 5.37 | 5.00 | 4.62 | 4.24 | 3.87 | 3.49 | 3.11 | 2.74 | 2.36 | 1.99 | 1.61 | 1.23 |
| **Total** | **9.35** | **8.97** | **8.60** | **8.22** | **7.84** | **7.47** | **7.09** | **6.71** | **6.34** | **5.96** | **5.59** | **5.21** | 4.83 |
| **Capital Charge Available** | | | | | | | | | | | | | |
| Depreciation | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 |
| ROCE | 5.75 | 5.37 | 5.00 | 4.62 | 4.24 | 3.87 | 3.49 | 3.11 | 2.74 | 2.36 | 1.99 | 1.61 | 1.23 |
| **Total** | **9.35** | **8.97** | **8.60** | **8.22** | **7.84** | **7.47** | **7.09** | **6.71** | **6.34** | **5.96** | **5.59** | **5.21** | 4.83 |
| **DSCR** | **1.00** | **1.00** | **1.00** | **1.00** | **1.00** | **1.00** | **1.00** | **1.00** | **1.00** | **1.00** | **1.00** | **1.00** | **1.00** |
| **Asset** | | | | | | | | | | | | | |
| Opening Block | 56.8 | 53.2 | 49.6 | 46 | 42.4 | 38.8 | 35.2 | 31.6 | 28 | 24.4 | 20.8 | 17.2 | 13.6 |
| Depreciation | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 |
| Closing Block | 53.2 | 49.6 | 46 | 42.4 | 38.8 | 35.2 | 31.6 | 28 | 24.4 | 20.8 | 17.2 | 13.6 | 10 |
| RoCE | 5.75 | 5.37 | 5.00 | 4.62 | 4.24 | 3.87 | 3.49 | 3.11 | 2.74 | 2.36 | 1.99 | 1.61 | 1.23 |
| **Debt** | | | | | | | | | | | | | |
| Opening | 56.80 | 53.20 | 49.60 | 46.00 | 42.40 | 38.80 | 35.20 | 31.60 | 28.00 | 24.40 | 20.80 | 17.20 | 13.60 |
| Repayment | 3.60 | 3.60 | 3.60 | 3.60 | 3.60 | 3.60 | 3.60 | 3.60 | 3.60 | 3.60 | 3.60 | 3.60 | 3.60 |
| Closing | 53.20 | 49.60 | 46.00 | 42.40 | 38.80 | 35.20 | 31.60 | 28.00 | 24.40 | 20.80 | 17.20 | 13.60 | 10.00 |
| Interest | 5.75 | 5.37 | 5.00 | 4.62 | 4.24 | 3.87 | 3.49 | 3.11 | 2.74 | 2.36 | 1.99 | 1.61 | 1.23 |