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**TSPL/CERC/AM/OCT-20/233**

**Date: 03 October 2020**

**To,**  
**The Secretary**  
**Central Electricity Regulatory Commission,**  
**3rd & 4th Floor, Chanderlok Building,**  
**36, Janpath,**  
**New Delhi -110 001.**

**Subject:** Submission of opinion/comments for Draft Staff Paper on Compensation on Mechanism for Compensation for Competitively Bid Thermal Generating Stations for Change in Law on account of Compliance of the Revised Emission Standards of MoEF&CC.

Dear Sir,

This is with reference to the above subject wherein Hon'ble Central Electricity Regulatory Commission by way of public notice no. EN-(01)/8/2020-CERC dated 05.09.2020 has published the proposed draft "Staff Paper" whereby inviting comments/suggestions/objections from the stakeholders and interested persons on the provisions of above draft paper.

Talwandi Sabo Power Limited (TSPL) as a Generating Company submits suggestions on the "Draft Staff Paper on Compensation on Mechanism for Compensation for Competitively Bid Thermal Generating Stations for Change in Law on account of Compliance of the Revised Emission Standards of the MoEF&CC".

This is submitted for your kind consideration.

Thanking You,  
Yours Sincerely,  
For **Talwandi Sabo Power Ltd.**

*Amit Kumar Mittal*  
Amit Mittal

GM- Power Sales, Strategy & Corporate Affairs

**Enclosure:** As Above.

**Comments/ Submissions on behalf of Talwandi Sabo Power Limited (TSPL) on the “Draft Staff Paper on Compensation on Mechanism for Compensation for Competitively Bid Thermal Generating Stations for Change in Law on account of Compliance of the Revised Emission Standards of the MoEF&CC”**

**1. Amendment of Clause 2.7**

2.7. Thus, in terms of the model PPAs, during Operation Period, in case of Case-1 bidding and Case-2 bidding, the Commission is required to determine the compensation as well the effective date from which such compensation is payable and the same is binding on the parties.

**Comments/ Suggestions:** With respect to the above clause, it is humbly requested that this Hon’ble Commission may kindly consider inclusion of State Regulatory Commission (SERC) along with Central Commission.

**Rationale:** It is stated that the Staff Paper, would act as a guiding principle for formalization of methodologies to be adopted by various State Commissions to approve change in law tariff adjustments. Hence, inclusion of State Commissions (SERC) would remove ambiguity.

**2. Amendment of Clause 4.4**

4.4. Thus, 25 years is the minimum period that has been considered as life of a thermal generating station. Accordingly, the useful life of the ECS is considered as 25 years in line with the other major equipment of generating plant. However, many generating stations have already been in operation for a few years and the remaining useful life in case of such generating stations is less than 25 years. Therefore, while considering the useful life of ECS as 25 years, it has been assumed that the useful life of the generating station would be subsequently extended. The salvage value of ECS has been considered as 10% after completion of its useful life.

**Comments/ Suggestions:** With respect to the above, it is humbly requested that this Hon’ble Commission may kindly consider balance period of PPA’s as useful life of ECS and not a fixed period of 25 years.

**Rationale:** It is stated that huge expenditures are required to be done by generators to install ECS. If the term of the Power Purchase Agreement (PPA) is not extended by the procurer, the generator would suffer huge losses. The PPA does not provide for automatic extension beyond 25 years.

Eg. For TSPL, the useful life of the plant as of now is around 21 years (till August 2041). By the time, FGD is expected to be installed, it may be around 19 years. In such a scenario, the compensation should be calculated in such a way that useful life of ECS is around 19 years and all costs to be recovered accordingly. In case of TSPL which is situated in the



State of Punjab, it is not feasible to have PPA term extended beyond originally envisaged term of 25 years (till 2041). Though, the PPA has clause for extension of the PPA on mutually agreed basis, if the PPA is not extended then TSPL shall not be able to recover the investments made and this shall be in contravention to clause 3.4 of the staff paper. Salvage value cannot be considered as 10% as there is no such provision in the TSPL PPA. In fact, there may be additional expenses to keep FGD functional and not taking salvage value shall help the generator to take care of that eventuality rather than abandoning the plant for want of money to correct the FGD at that time.

Further, clause 4.7 of the staff paper assumes that the plant shall continue to operate beyond original term of the PPA assuming automatic extension of the PPA. The same is not correct.

### **3. Amendment of Clause 4.9**

#### **a) Depreciation (ACEDep) and Useful Life**

4.9. 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.

**Comments/ Suggestions:** With respect to the above, it is humbly requested that this Hon'ble Commission may kindly consider balance period of PPA's as useful life of plant and depreciation be calculated accordingly and not a fixed period of 25 years.

**Rationale:** It is stated that huge expenditures are required to be done by generators to install ECS, if the term of the Power Purchase Agreement (PPA) is not extended by the procurer, the generator would suffer huge losses. The PPA does not provide for automatic extension beyond 25 years.

### **4. Amendment of Clause 4.10**

#### **b) Cost of Capital Employed (ACEcoc)**

4.10. 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.

**Comments/ Suggestions:** With respect to the above, it is humbly requested that this Hon'ble Commission may allow return on equity for the generator/ developer at par with what is allowed to Section 62 plants as per the latest Tariff Regulation.

**Rationale:** It is submitted that this Hon'ble Commission proposed the aforementioned with a view that it would be reasonable to allow equity infused by the generating company for installing emission control system at the cost of borrowing from financial



institution. However, it is humbly submitted that the said approach may be re-looked on account of the following:

Section 61 (d) of the Electricity Act, 2003 provides that the Commission, while specifying the terms and conditions for the determination of tariff, shall be guided by the principle of 'safeguarding of consumers interest and at the same time, recovery of cost of electricity in a reasonable manner';

- i. The above principle is also recognized under para 5.11 (a) of the Revised Tariff Policy, which is as follows:

"5.11.....

a) Return on Investment

Balance needs to be maintained between the interests of consumers and the need for investments while laying down rate of return. Return should attract investments at par with, if not in preference to, other sectors so that the electricity sector is able to create adequate capacity. The rate of return should be such that it allows generation of reasonable surplus for growth of the sector....."

- ii. The infused capital and operational expenditure on installation of emission control system is part of cost of electricity supplied to consumer. Therefore, recovery of cost of electricity should be done in a reasonable manner. However, the cost of equity at cost of Debt level as proposed by this Hon'ble Commission is not aligned with the provisions of the Electricity Act, 2003, and the policies under the said Act (i.e. the Revised Tariff Policy, 2006);

Further, it is stated that in view of the power market scenario for past 8 years, financial institution is very reluctant to disburse loan to power sector in such condition generators has to be apprised with some market premium of 5 to 6% beyond the interest cost of debt to enable generators to recover their cost of capital in reasonable manner. As such, market premium is the reward for generators to be in power business in a sustainable manner to supply quality power to consumers.

#### **5. Amendment of Clause 4.11**

*4.11. 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.*

**Comments/ Suggestions:** If any loan has been specifically availed for ECS, then the actual interest rate of same should be considered. Thus, there is no significance of



weighted average interest of loans raised by the generator or the marginal cost of lending rate of State Bank of India.

**Rationale:** In line with clause 3.4 of the staff paper and in terms of the PPA the parties affected by Change in Law should be restored to the same economic position as if the Change in Law had not occurred.

#### **6. Amendment of Clause 4.13**

4.13. The Commission, in some of the orders 7, 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 (AREo&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 (AREo&m) may be escalated @3.5% or any other escalation rate as may be.

**Comments/ Suggestions:** With respect to the above, it is humbly requested that this Hon'ble Commission may consider the operation and maintenance expenses at 3% of the admitted capital expenditure (Basic +taxes & duties excluding IDC & IEDC) as on the date of its operation, which shall be escalated annually at the rate of 3.5%.

**Rationale:** It is submitted that the generators incur additional cost/ loss on account of disposal of the by products (generated only on account of installation of the emission control system) including in meeting the directives for scientific disposal by various statutory bodies. As such, the same shall also be made recoverable from the beneficiary. This is because if any new requirement, on account of change in law, such as the requirement to install FGD, any excess expenditure incurred ought to be recovered by the generator. This is in line with Section 61(d) of the Electricity Act, 2003 which guarantees that all reasonable costs associated with generation of electricity ought to be allowed.

For TSPL plant, O&M expenses (excluding APC, lime cost & sale of Gypsum) calculated as per CEA recommendations is 31 Cr INR (higher than 2% of FGD capital cost including taxes and duties excluding IDC & IEDC). Thus, 3% of O&M expenses should be kept in regulations. Further, the definition of O&M expenses shall be clearly mentioned as mentioned above to avoid any interpretation issues later on during billing. APC and limestone (reagent) cost shall be recovered by using other relevant clauses of this regulation and is not part of O&M expenses head.

#### **7. Amendment of Clause 4.14**

4.14. Working capital may include:

- 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;
- 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
  - 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.

**Comments/ Suggestions:** It is humbly requested that this Hon'ble Commission may consider the following:

- i) payment for 45 days towards cost of reagent or limestone for generation corresponding to the normative annual plant availability factor.
- ii) Operation and maintenance expenses in respect of emission control system for two month including water charges.

**Rationale:** It is submitted that on account of the notification dated 07.12.2015 issued by MoEF&CC, the power generators are under obligation to adopt FGD technology, thereby installing FGD equipment based on its suitability for the site. It is stated that various technologies have different O&M expenses which are required to maintain a high level of consumable inventory. As such, since the high-level inventory impacts the working capital requirements of a power generator, it is proposed to allow at least 40 days advance payment towards cost of reagent to maintain sufficient inventory of reagent.

It is further stated that this Hon'ble Commission, in view of the non-availability of adequate data towards O&M expense, has specified the O&M expenses as percentage of admitted capital cost. Therefore, at this nascent stage of high end equipments like FGD installation to ensure adequate requirement of working capital, it is humbly requested that this Hon'ble Commission may allow O& M expenses of at least 2 months.

Most of power plants are opting for wet lime FGD technology as per CEA recommendations. This system requires considerable amount of additional water usage and thus, additional water charges required for FGD shall be added up in O&M expenses as per original CERC regulations.

#### **8. Amendment of Clause 4.15**

4.15. The four components, namely, ACEDep, ACECOC, AREO&M and AREIWC shall be calculated in Rs. lakh on annual basis for the useful life of ECS i.e. 25 years starting from ODe of the ECS. The sum of these is termed as Supplementary Annual Capacity Charges (SACC). The recovery of Supplementary Annual Capacity Charges by way of monthly billing shall be in line with the recovery and payment of quoted capacity charges for generating stations in accordance with the PPA. The formulation for recovery of

Supplementary Annual Capacity Charges from various procurers are discussed subsequently in the paper.

**Comments/ Suggestions:** It is humbly requested that this Hon'ble Commission may consider the recovery of 100% actual supplementary annual capacity charges on the basis of actual availability of the plant. In case the actual availability is  $\geq 80\%$  then 100% annual capacity charges may be recovered at 80% availability. In case the actual availability is lesser than 80% the monthly capacity charges needs to be increased proportionately.

Eg. If the actual supplementary capacity charges for ECS @ 80% availability as allowed to the generator is 0.30 Rs./kWh.

The supplementary capacity charges for ECS to be recovered @ 70% availability in the following manner:

New supplementary capacity charges for the month (Rs./kWh) =  $0.30 / 70\%$  (Actual Availability) X 80% (Normative Availability)

**Rationale:** In line with clause 3.4 of the staff paper and in terms of the PPA the parties affected by Change in Law should be restored to the same economic position as if the Change in Law had not occurred.

#### 9. Amendment of Clause 4.16

##### C) Additional Operational Expenses due to Consumption of Reagent (AOECOR):

4.16. 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.

**Comments/ Suggestions:** The formula appears to calculate limestone consumption based on stoichiometry, however, actual limestone consumption in FGD system depends upon so many other factors, like presence of impurities and their hindrance to chemical reaction, loss of limestone from the system as unreactive limestone, system inefficiency, operational issues etc.

Further, design efficiency has been considered for limestone consumption calculation, however, FGD efficiency will vary upon the factors like load, inlet dust burden, impurities in limestone etc. Further, ageing of the FGD plant will also degrade FGD efficiency.



Considering the above, it is suggested to consider actual limestone consumption at the FGD wet ball mill feed point.

Accordingly, the specific limestone consumption formula should be calculated. Limestone consumption costs should be completely pass-through in respect of both quality as well as quantity.

**Rationale:** In line with clause 3.4 of the staff paper and in terms of the PPA the parties affected by Change in Law should be restored to the same economic position as if the Change in Law had not occurred.

#### **10. Amendment of Clause 4.18**

##### **D) Additional Auxiliary Energy Consumption (AUXECS):**

4.18. 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. This is explained using the illustration given below.

**Comments/ Suggestions:** It is humbly requested that this Hon'ble Commission may consider the actual auxiliary consumption on account of installation of emission control system in thermal generating stations

**Rationale:** It is stated that the FGD technology has been recently introduced in the power industry, subsequent to the MoEF&CC notification dated 07.12.2015. As such, the FGD plants in the entire country are still under the implementation stage. As such, no technical data is available for assessment of Normative AUX energy consumption for emission control system.

Therefore, it is a humbly requested that this Hon'ble Commission may consider the AUX energy consumption as per actual or case to case basis for different technologies.

#### **11. Amendment of Clause 4.19**

The Revised Contracted Capacity after installation of the ECS can be arrived at as follows:

$$CC_{\text{Revised}} = CC_{\text{Org}} \times (1 - AUX_{\text{Total}}) / (1 - AUX_{\text{Org}})$$

where  $AUX_{\text{Total}} = AUX_{\text{Org}} + AUX_{\text{ECS}}$ .

**Comments/ Suggestions:** The formula is incorrect the correct formula is as below:

$$CC_{\text{Revised}} = CC_{\text{Org}} \times (1 - AUX_{\text{Org}}) / (1 - AUX_{\text{Total}})$$

#### **12. Amendment of Clause 4.21, 4.22 and 4.23**

**Comments/ Suggestions:** The incentive and penalties on the cumulative annual availability as per the PPA, shall also be adjusted upwards with the same factor for restoring the generating company to the same economic position.

#### **13. Amendment of Clause 5.2**





The Supplementary Annual Capacity Charges for a PPA (SACPPA) as calculated above shall be payable by following procedure.....

**Comments/ Suggestions:** The Supplementary Annual Capacity Charges for a PPA to be calculated at actual availability. Pl. refer comments at para 8 above.

**14. Amendment of Clause 5.2 sub-clause 3**

5.2- 3) Notwithstanding the availability declaration by the generating station, where the generating company has operated the generating station without operation of the ECS at any period of time, for any reason whatsoever based on instruction of CPCB or SPCB, Regional Load Despatch Centre or State Load Despatch Centre, the supplementary capacity charges shall be payable corresponding to the availability achieved by ECS.

**Comments/ Suggestions:** Notwithstanding the availability declaration by the generating station, where the generating company has operated the generating station without operation of the ECS at any period of time, for any reason whatsoever, the supplementary capacity charges shall be payable corresponding to the availability achieved by ECS.

**Rationale:** In line with clause 3.4 of the staff paper and in terms of the PPA the parties affected by Change in Law should be restored to the same economic position as if the Change in Law had not occurred.

