Draft

Comments on the Staff Paper by CERC on Compensation Mechanism for Competitively Bid Thermal Generating Stations for Change in Law on account of compliance of the Revised Emission Standards of the MoEF&CC

Introduction

1.1 The Ministry of Environment, Forest and Climate Change, Government of India ("MoEF&CC") has notified the Environment (Protection) Amendment Rules, 2015 on 7th December, 2015 (in short, "the 2015 Rules") amending the Environment (Protection) Rules, 1986 specifying revised emission standards and water consumption limit for coal and lignite based thermal generating stations.

In order to meet these revised emission standards, the generating companies are required to install or upgrade Emission Control Systems ("ECS"). ECS includes Flue-Gas Desulfurization (FGD) system, Electrostatic Precipitators (ESP), Selective Catalytic Reduction (SCR) system or Selective Non-Catalytic Reduction (SNCR) system etc.

1.2 Installation and operation of an ECS involves following additional capital cost and revenue cost:

a) One-time capital expenditure towards plant and machinery for installation of ECS
b) Revenue expenditure (including Operation & Maintenance Expenditure and Interest on Working Capital) on recurring basis
c) Operational expenses (cost of reagent used for ECS e.g. limestone) on recurring basis.

Contractual framework

1.3 The paper discusses the provisions available for compensation under different PPAs

- Model PPA for long-term power procurement under Case-1 bidding
- Model PPA for long-term power procurement under Case-2 bidding
- For Case 1 document under DBFOO Model

1.4 In terms of the model PPAs, for Operation Period under Case-1 and Case-2 bidding, the Commission is required to determine the compensation as well the effective date from which such compensation is payable. In the DBFOO model, the role of the Commission with respect to determining compensation in case of any Change in Law event starts if the parties, are not able to settle the issue amicably and refer the same to the Commission for adjudication.

1.5 During construction period, the impact is to be assessed based on the increase/ decrease of capital cost and the relief to the supplier/ procurers for incremental increase/ decrease in capital cost is calculated through a pre-specified formula provided in the PPA itself.

1.6 The paper also gives examples of several PPAs which provide for pre-specified formula for computing compensation for any Change in Law event during the construction period and such compensation needs to be determined by applying such pre-specified formula.

1.7 Article 13.2 of the model PPA in respect of Case-2 bidding (similar provisions exist in Case-1 bidding PPA) provides that the parties affected by Change in Law should be restored to the same economic position as if the Change in Law had not occurred. Hence carrying cost shall also be applicable from the date of event till the date of approval by appropriate authority.

Approach to the paper by CERC

1.8 Since compensation during construction period is defined in most PPAs, CERC through the current paper has given a generic mechanism of compensation during operation period. This would require estimating the impact of the following:

a) Impact due to additional capital expenditure;
b) Impact due to additional Operation & Maintenance expenses and additional Interest on Working Capital;
c) Impact due to consumption of reagent; and
d) Impact due to additional auxiliary energy consumption.

Clause	Description	Remarks
4.2	**A) Additional Capital Expenditure:** Additional capital expenditure includes base cost of ECS, taxes and duties, IDC and miscellaneous costs associated with installation. This additional capital expenditure needs to be serviced by way of increase in monthly tariff spread over useful life of the ECS through Supplementary Capacity Charges (SCC) which include Depreciation and Cost of Capital Employed.	The Add. Cap shall be dependent on the nature of ECS/ FGD being installed as per CEA's guidance. While currently only indicative costs of implementation are available and there shall be variation based on plant wise design, space constraints etc. The same shall have to be thoroughly reviewed and approved by CERC on a case to case basis.

4.3	**Life of the FGD system** 1. 40 years for plants under Section 63 2. 25 years for plants under Section 62 3. Provision of life extension with R&M CERC has considered useful life of ECS as 25 years from the date of operation of ECS considering that the useful life of the plants shall be suitably extended. Also, the period of compensation shall only be for the capacity contracted and for the period of PPA only.	It is to bring to notice of the CERC that, such a consideration of life for ECS may lead to further extension of life of plants (specially for Section 62 plants) and also lead prolonged burden of compensation on Discoms. 1. The installation of FGD should not be allowed for plants with life of less than 10 years (even for plants which have crossed 25 years and life is extended). In case, FGD is allowed, considering a recovery of 25 years as per the paper, the life has to be extended by minimum of 15 years. 2. For section 63, the plants would have been commissioned in the last 15 years and since their life is considered for 40 years, the consideration of 25 years may be acceptable. However, the period of PPAs may be less than 40 years and there should not any burden on the procurer's post expiry of the period of PPA. 3. In case, plants are not contracted fully or PPA is for a shorter period (3 or 5 years), installing FGD shall further increase the FC & VC. Also, the recovery shall be for the entire life of the plant. Considering the current scenario wherein there is excess surplus capacity available, once a PPA contracted for short/ medium term is over, the Generator with high FCs (ECS added) shall find it more difficult to contract further leading to difficulty in recovery of costs. 4. Hence, the life should be case specific and should not be generalized as 25 years. Priority should be to retire inefficient plants (majorly under Section 62) which have completed useful life before approving the additional capex.

4.4	**a) Depreciation** 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.	The decision on depreciation or recovery of capex should be based on the balance life of the plant, current FC & VC, type of FGD system installed and additional capex employed. A general rule of 25 years recovery should not lead to further increase in life of inefficient plants.
4.10	**b) Cost of Capital Employed** Weighted average rate of interest of loans raised by the generator or at the rate of MCLR 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.	The Commission before approving the same is requested to review and undertake prudence check before approving the same. Also, since principle of restitution shall be applicable i.e. carrying cost from the date of change of law till it is approved by Regulatory Commission, the Commission is requested to review that there is no delay on the part of the generator in filing or completion of the installation. In case, there is a delay in installation on the part of the generator, there shall be delay in filing of petition based on actual costs and subsequent delay in approving of the legitimate expenses. In such a scenario, the carrying cost should not be passed on to the procurer.
4.12	**B) Additional Operation & Maintenance expenses and additional Interest on Working Capital:** Operation of ECS would involve additional recurring expenses towards Operation and Maintenance (O&M) and Interest on Working Capital (IWC) towards maintaining stock of reagents, receivables and O&M expenses. These are required to be reimbursed to the generating company on monthly basis to restore it to the same economic position. It is proposed that additional O&M expenses for first year may be allowed @ 2% of additional capital expenditure for installation of ECS (excluding IDC and FERV), admitted by the Commission after prudence check. For subsequent years, the first year O&M expenses may be escalated @3.5% or any	The Commission is requested to consider the minimum of 2% of the addl. Capex or actual O&M incurred which ever is lower. It is only mentioned that actual O&M shall be reviewed. The escalation should be based on a composite % of WPI/ CPI or 3.5% whichever is lower.

	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.	
4.16	**C) Additional Operational Expenses due to Consumption of Reagent:** 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. 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.	The norms are generally kept on a higher side while defining parameters to account for variation and to give certainty. Commission is requested to provide provisions for revision of norms based on actuals. The generator should be incentivized for lower consumption but the norms should be as per actual trends and not higher.
4.18	**D) Additional Auxiliary Energy Consumption** The auxiliary consumption shall increase due to installation of FGD.	The paper highlights four methodologies for considering the auxiliary consumption which are – Aux. as agreed between parties, normative, as indicative in the petition and derived. Post installation of FGDs, the variation in quoted tariffs shall be impacted by change in auxiliary consumption only as given in the section 4.20 to 4.26. Hence, it is important that actual variation is passed through and not based on some normative or derived. It is observed that for other change in law cases also, the generators do not provide actual auxiliary consumption and provide normative figures which are majorly higher (specially for Section 63 plants) which are also not governed by Regulations. It should be mentioned that the compensation shall be as per actual increase in auxiliary or normative/ derived/ agreed etc. whichever is lower.

The rest of the section are on recovery of supplementary charges which shall be as per the PPA.