

# CENTRAL ELECTRICITY REGULATORY COMMISSION

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No. L-1 /259/2021/CERC

Date: 3 July, 2024

## PUBLIC NOTICE

**Subject: Revision of the mechanism of compensation as set out in the order dated August 13, 2021 in Suo-Motu Petition No. 6/SM/2021 on account of installation of emission control system in compliance of the revised emission standards by the competitively bid Coal based Thermal Power Generating station – Draft order in the Suo-Motu petition no. 4/SM/2024 thereof.**

The Central Electricity Regulatory Commission (hereinafter referred to as ‘the Commission’) issued a mechanism vide order in Suo Motu Petition No.6/SM/2021 on August 13, 2021 to determine the compensation for recovery of the expenditure incurred or to be incurred by the generating companies on account of installation of emission control system in compliance with the revised emission standards issued the Ministry of Environment, Forest & Climate Change, Government of India for the electricity supplied from competitive bidding based Coal or Lignite based Thermal Generating stations.

2. The abovesaid mechanism was issued by the Commission with certain limitations on account of non-availability of operational and commercial data. Based on the challenges experienced by the generating companies in financing the installation of emission control system, technological developments in the field and the operational data, it is felt necessary to revisit the mechanism in certain respects. Recently, the Commission has notified the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2024 in which the framework for installation, financing and operation of the emission control system has been revised. In light of the above developments, the Commission has reviewed the existing compensation mechanism decided in its order dated August 13, 2021 in Petition No. 6/SM/2021 and accordingly, has proposed the revision of the mechanism on certain counts vide the draft order the Suo-Motu petition no. 4/SM/2024 (Attached herewith).

3. Notice is hereby given to invite the comments/suggestions/objections from the stakeholders and interested persons on the proposed revised compensation mechanism of the emission control system. The comments/ suggestions/ objections may be sent to the Secretary, Central Electricity Regulatory Commission, 7<sup>th</sup> Floor, Tower B, World Trade Centre, Nauroji Nagar, New Delhi- 110029 or may be mailed to [seey@cercind.in](mailto:seey@cercind.in) and [mmchaudhari@cercind.gov.in](mailto:mmchaudhari@cercind.gov.in) on or before 24<sup>th</sup> July, 2024.

**Sd/-**  
**(Harpreet Singh Pruthi)**  
**Secretary, CERC**

Note: The comments/suggestions/objections shall be uploaded through the SAUDAMINI Portal for registered users after login and clicking: e-Regulation link on the e-filing Home Page. For more details or technical queries e-Court Helpdesk at 011-20904365 extn. 260 or 7042604928 may be contacted.

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
( NEW DELHI )**

**Suo-Motu Petition No. 4/SM/2024**

**Coram:**

**Shri Jishnu Barua, Chairperson**

**Shri Arun Goyal, Member**

**Shri Ramesh Babu V., Member**

**Date of Order : 3<sup>rd</sup> July, 2024**

**DRAFT ORDER**

**In the matter of :**

**Revision of the mechanism as set out in the order dated August 13, 2021, in Suo-Motu Petition No. 6/SM/2021 for recovery through tariff of the expenditure incurred on account of installation of emission control system by the generating companies in compliance of the revised emission standards of the Ministry of Environment, Forest & Climate Change, Government of India for the electricity supplied by the Coal based Thermal Power Generating station whose tariff is determined through competitive bidding under section 63 of the Electricity Act, 2003.**

The Central Electricity Regulatory Commission (hereinafter referred to as 'the Commission') issued a mechanism vide order in 6/SM/2021 on August 13, 2021 (hereinafter referred as "existing compensation mechanism") to determine the compensation for recovery of the expenditure incurred or to be incurred by the generating companies on account of installation of emission control system in compliance with the revised emission standards issued the Ministry of Environment, Forest & Climate Change, Government of India for the electricity supplied from Coal or Lignite based Thermal Generating stations (hereinafter referred as "revised emission standards")<sup>1</sup>. This mechanism is applicable to those coal-based thermal generating stations (i) that have valid power purchase agreements (PPA) with the procurer(s) on the basis of the tariff based competitive bidding carried out under section 63 of the Electricity Act, 2003 (short as "the Act") as on date of issue of revised emission standards by MoEF and (ii) where

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<sup>1</sup> Environment (Protection) Amendment Rules, 2015 on 7.12.2015 (including amendments thereafter)



the notification of the revised emission standards is admissible as change in law event in terms of the respective PPA(s).

2. Since the installation of the emission control system in the existing<sup>2</sup> generating stations requires the generating companies to incur significant capital and operational expenditures which were not factored by them at the time of tariff based competitive bidding, the existing compensation mechanism issued by the Commission envisaged the restitution principle by providing for a separate tariff structure of emission control system, financial and operational parameters, methodology for determination of the compensation for emission control system and the manner of recovery of compensation through tariff from the procurers. Further, this mechanism also provided certainty on the cash flow of the concerned generating companies in the form of supplementary tariff, facilitated securing funds from the financial institutions, and enabled the generating companies and procurers to appreciate the tariff implications on account of the installation of the emission control system.

3. At the time of issuing the existing compensation mechanism, only a few generating companies had installed the emission control systems. This limitation posed a challenge with regard to the availability of operational data and other challenges faced by the generating companies in funding the installation of emission control systems. The mechanism of compensation for the emission control system involves the prescribing of financial and operational norms that need to promote efficiency, be achievable, and be relatable to past performance. Given the data uncertainties and other practical considerations, the Commission issued a mechanism based on available information that could be further strengthened as and when more reliable data and the experience of the stakeholders became available. Thus, the mechanism issued by the Commission needs to be evolved and improved upon based on experience, performance data, and technological developments.

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<sup>2</sup> Existing generating station means those coal based generating station which are in operation prior to notification of the revised emission standards.



4. The Commission, while developing the compensation mechanism for emission control systems, relied on the provisions of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 (“2019 Tariff Regulations”) for the tariff structure, the financial and technical parameters, useful life of the generation project, treatment of depreciation and operation & maintenance expenses.

5. The Commission has considered the issues involved in the implementation of the existing compensation mechanism. The Commission received feedback from generating companies while implementing the mechanism, particularly in respect of securing the debt and equity funds for the emission control system. The Commission noted that the mechanism was issued with certain limitations based on operational data and experience, which need to be reviewed based on experience and the feedback of the stakeholders. Recently, the Commission, based on the experience of the generating companies and after consultation with the stakeholders, revised the tariff mechanism of the emission control system under the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2024 (“2024 Tariff Regulations”)<sup>3</sup>. Since the 2024 Tariff Regulations are not applicable to the projects covered under Section 63 of the Act, the Commission has received representations from the stakeholders to consider similar treatment for the projects covered under Section 63 of the Act. In light of the above developments, the Commission is of the view that the existing compensation mechanism decided by the Commission in its order dated August 13, 2021, in Petition No. 6/SM/2024, applicable to tariff based competitive bidding projects needs to be revisited on the following aspects:

- (a) Recovery of Depreciation;
- (b) Operation & Maintenance expenses;
- (c) Cost of debt & equity of emission control system;
- (d) Interim Relief in the form of Provisional Tariff

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<sup>3</sup> Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2024 was issued on 15<sup>th</sup> March 2024.



6. Accordingly, the Commission has proposed a revised mechanism hereunder in order to elicit feedback and suggestions from the concerned generating companies, procurers, and other stakeholders.

### **Proposed Revised Compensation Mechanism**

#### **A. Recovery of Depreciation**

##### ***Tariff Regulations, 2019***

7. The Commission has specified the treatment of depreciation of the emission control system in the 2019 Tariff Regulations as per Regulation 33(10), which is extracted below:-

“(10) Depreciation of the emission control system of an existing or a new generating station or unit thereof where the date of operation of the emission control system is subsequent to the date of commercial operation of the generating station or unit thereof, shall be computed annually from the date of operation of such emission control system based on straight line method, with salvage value of 10%, over a period of —

- a) twenty five years, in case the generating station or unit thereof is in operation for fifteen years or less as on the date of operation of the emission control system; or
- b) balance useful life of the generating station or unit thereof plus fifteen years, in case the generating station or unit thereof is in operation for more than fifteen years as on the date of operation of the emission control system; or
- c) ten years or a period mutually agreed by the generating company and its beneficiaries, whichever is higher, in case the generating station or unit thereof has completed its useful life.”

8. On similar lines, the Commission had considered the period of 25 years for depreciation of emission control systems for competitively bid projects in the existing compensation mechanism, considering the fact that no generating station has completed fifteen years of life. The relevant paragraphs of the order dated August 13, 2021, in 6/SM/2021 are extracted below:-

#### **“Depreciation (DEPe) component of SFC**

29. Many stakeholders have submitted comments mainly on two issues - period over which depreciation is to be recovered and the rate of depreciation. Some stakeholders



have suggested that the recovery should be over the balance useful life or balance extended life of the thermal generating station or the balance tenure of the long term PPA, whichever is lower. Some stakeholders have suggested that the useful life of the emission control system should be considered as the remaining useful life of the thermal generating station and depreciation for the initial 12 years of operation may be considered at a rate of 6% to 7.5% for servicing the debt repayment and the remaining depreciation should be on Straight Line method basis till the end of useful life of the thermal generating station. Some stakeholders have pointed out that the standardized recovery of depreciation @ 3.6% per annum is premised on the assumption that all thermal generating stations shall continue to operate efficiently for 25 years post installation of the emission control system, irrespective of their actual years of operation, at the time of installing the emission control system.

30. One of the stakeholders has justified the approach proposed by the Commission on the ground that almost all the thermal generating stations under competitive bidding have been commissioned during the last fifteen years and since their useful life is considered as forty years, the consideration of 25 years for recovery of depreciation is logical.

31. We have considered all the suggestions and comments of the stakeholders. We are of the view that the useful life of a thermal generating station is to be considered as 40 years in line with the Companies Act, 2013. The life of emission control system has considered as 25 years in line with other major equipment of thermal generating stations. The Commission observes that as on today, there are no thermal generating stations with competitively bid tariff which have completed more than 15 years of life after COD. Therefore, based on 40 years of life of thermal generating stations, 25 years of life of emission control system would be available for recovery of depreciation. Further, the recovery of depreciation in 25 years also balances the interest of the generating companies and the procurers.

32. Accordingly, 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 operation of the emission control system after meeting all applicable technical and environmental standards, certified through the Management Certificate duly signed by an authorized 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. 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:

$$DEPe = (0.036) \times ACEe$$

Where,

ACEe is the gross capital cost (in Rupees) of emission control system as admitted by the Commission;

DEPe is annual depreciation (in Rupees).”



**The 2024 Tariff Regulations**

9. In the 2024 Tariff Regulations, the Commission has revised the treatment of depreciation of the emission control system for new and existing projects. The depreciation as specified under Regulation 33 of the 2024 Tariff Regulations is explained with the help of a table as under: -

Description	Date of Operation of emission control system	Recovery of Depreciation	
		70% of additional capital expenditure after adjustment of salvage value	Recovery of balance depreciation (30% of additional capital expenditure after adjustment of salvage value)
If the emission control system is implemented within the <b>original scope</b> and the <b>date of commercial operation</b> of the generating station and emission control system is the same	<b>Along with the COD</b> of the generating station or unit thereof	<b>15 years</b> from the date of operation of the emission control system at the depreciation rate specified in Appendix II of Tariff Regulations, 2024	<b>10 years</b> (balance useful life)
Existing generating station or new generating station where the <b>date of operation of the emission control system is subsequent</b> to the date of commercial operation of the generating station.	(i) Operation of emission control system within a period <b>up to the 20<sup>th</sup> year</b> of the date of commercial operation of the generating station	<b>12 years</b> from the date of operation of the emission control system at the depreciation at the rate specified in Appendix I of Tariff Regulations, 2024	Balance period of <b>13 years or balance operational life</b> of the generating station after the lapse of 12 years from the date of operation of the emission control system, whichever is lower
	(ii) Operation of emission control system <b>after the 20<sup>th</sup> year</b> of the date of commercial operation of the generating station and <b>up to the 25<sup>th</sup> year</b> (useful life)	Entire depreciation to be recovered over the balance of the <b>operational life</b> of the generating station.	



Description	Date of Operation of emission control system	Recovery of Depreciation	
		70% of additional capital expenditure after adjustment of salvage value	Recovery of balance depreciation (30% of additional capital expenditure after adjustment of salvage value)
If the date of operation of the emission control system is <b>subsequent to the date of completion of the useful life</b> of the generating station	After completion of useful life ( <b>after the 25<sup>th</sup> year</b> )	Entire depreciation to be recovered over <b>10 year period</b> from the date of operation of the emission control system or over the period <b>as mutually agreed</b> by the generating company and beneficiaries, whichever is higher.	

### ***Proposal for Recovery of Depreciation***

10. It is observed from the above table that the Commission, in the 2024 Tariff Regulations, has revised the period of recovery of 70% depreciation (after adjusting the salvage value) of the emission control system to 12 years for all the generating stations where the operation of emission control system commences within the 20<sup>th</sup> year of the commercial operation of the generating station or unit thereof and the balance depreciation is graded over 13 years or the balance operational life of the generating station, whichever is lower. This is a change from the 2019 Tariff Regulations, where the 90% depreciation was to be recovered within 25 years from the date of installation of an emission control system for projects that have completed fifteen years or less of their useful life. Further, in the 2024 Tariff Regulations, the Commission introduced the concept of “operational life” of the coal-based thermal generating stations and fixed it at 35 years<sup>4</sup>. Hence, the emission control system installed before the completion of 20 years of the generating station’s useful life has a balance operational life of more than 15 years.

11. In the case of competitively bid projects, the PPAs do not define the useful life, but the PPAs provide for the term of the agreements for the supply of power, the highest being 25 years. For the purpose of determining the period of recovery of depreciation for the emission control system, the operational life can be assumed to be 35 years

<sup>4</sup> Regulation 3(87) of the Tariff Regulations, 2024.





commensurate with the period specified in the 2024 Tariff Regulations. A perusal of the data with regard to competitively bid projects reveals that very few projects have completed a life of 15 years from the dates of their commercial operation. If we consider the operational life of 35 years, there will be a balance of life of 20 years to repay the loan raised for the emission control system over a period of 12-15 years. Therefore, it is pragmatic to consider the operational life of the generating plant to be 35 years and the loan tenor of an emission control system for competitively bid projects to be 12 years in line with the 2024 Tariff Regulations.

12. In the light of the above discussion, the Commission proposes to modify Paras 31 and 32 of the order in petition 6/SM/2021 as under:-

“31. The Commission has specified the operational life of a thermal generating station as 35 years in the 2024 Tariff Regulations. Further, the Commission, in light of the operational life of 35 years, has specified the period of recovery of 70% of depreciation of the emission control system as 12 years in the 2024 Tariff Regulations, which is commensurate with the standard loan tenor. There are very few thermal generating stations under competitively bid tariffs that have completed 15 years of life after their COD, and their loan tenors are in the range of 12-15 years. The Commission considers it appropriate to provide for the recovery of 70% of the depreciation of the emission control system over a period of 12 years from the date of operation of the emission control system commensurate with the loan tenor in order to enable the generating companies of competitively bid projects to meet their debt service obligations and the balance depreciation shall be spread over the remaining operational life of the generating stations.

32. Accordingly, 70% of additional capital expenditure on account of the installation of the ECS (considering a salvage value of 10%) shall be recovered by the generating company in 12 years. The depreciation shall be computed from the date of operation of the emission control system after meeting all applicable technical and environmental standards, certified through the Management Certificate duly signed by an authorized 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. 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:-

- a) Up to 31<sup>st</sup> March of the financial year, completing the 12<sup>th</sup> year from the date of operation of the emission control system:

$$DEPe(n) = 5.25\% \times ACEe.$$



b) 13<sup>th</sup> year onwards from the date of operation of emission control system:-

$$DEPe(m) = (0.30 \times 0.90 \times ACEe) / (\text{Balance operational life} - 12)$$

Where,

ACEe is the gross capital cost (in Rupees) of emission control system as admitted by the Commission;

DEPe(n) is annual depreciation (in Rupees) up to the 12<sup>th</sup> year, where n=1,2.....12.

DEPe(m) is annual depreciation (in Rupees) from the 13<sup>th</sup> year onwards  
where m=13,14,.....

Balance operational life is balance operational life of the generating station as on the date of installation of the emission control system.”

## **B. Operation & Maintenance Expenses**

13. In the 2019 Tariff Regulations, the compensation for additional operation and maintenance expenses on account of the installation of an emission control system was specified as 2.5% of the additional capital expenditure incurred for the installation of an emission control system (excluding IDC and FERV), which was to be escalated at the rate of 3.5% per annum for the period up to 31.3.2024, and the norms would be reviewed based on available data thereafter.<sup>5</sup> Keeping in view the provisions of the 2019 Tariff Regulations and after considering the comments and suggestions of stakeholders, the Commission, vide Para 44 of the order dated August 13, 2021, in Suo-Motu Petition No. 6/SM/2021, decided the escalation rate as under:

“44. Accordingly, the Commission is of the view that operation and maintenance expenses shall be allowed @2.5% (instead of 2% proposed in the draft Suo-Motu order) of the additional capital expenditure (ACEe) for installation of ECS (excluding IDC and FERV) as admitted by the Commission and to be escalated at the rate of 3.5% per annum for the period up to 31.03.2024 and, thereafter, the norms shall be reviewed based on available data. ....” (emphasis supplied)

<sup>5</sup> Para 44 of the order in 6/SM/2021 dated 13.8.2021.



14. The Commission, vide Regulation 36(1)(9) of the 2024 Tariff Regulations, has specified the operation and maintenance expenses on account of the emission control system as a percentage of the capital cost in the absence of adequate data. The relevant provision is extracted below: -

**“36. Operation and Maintenance Expenses:**

**(1) Thermal Generating Station:**

...

(9) The operation and maintenance expenses on account of emission control systems in coal or lignite based thermal generating stations shall be 2% of the admitted capital expenditure (excluding IDC and IEDC) as on its date of operation, which shall be escalated annually @ 5.25% during the tariff period ending on 31st March 2029:

Provided that income generated from the sale of gypsum or other by-products shall be reduced from the operation and maintenance expenses.

...”

***Proposal for O&M Expenses***

15. The Commission, vide order dated August 13, 2021, in Suo-Motu Petition No. 6/SM/2021, decided the O&M expense as 2.5% of the additional expenditure on account of the emission control system to be escalated @ 3.5% per annum up to 31.3.2024. The Commission further decided that after 31.3.2024, norms would be decided based on actual data. While framing the 2024 Tariff Regulations, the Commission sought data from the various generating companies. In order to determine the norms of operation & maintenance expenses, data from a longer horizon (3-5 years) is required. It is observed that some of the generating stations have installed the emission control system recently, and hence, adequate operational data is still not available. In view of the limitation of data availability, the Commission reiterated the earlier provision in the 2024 Tariff Regulations by specifying the Operation & Maintenance expenses as a percentage of additional capital expenditure on account of the emission control system, to be escalated at the annual escalation rate of 5.25%. This escalation rate of 5.25% has been worked out based on the inflation indices.

16. The Commission, in its order dated August 13, 2021, provided for operation & maintenance expenses of the emission control system for competitively bid projects @



2.5%, which was 0.5% higher than the norm specified in the 2019 Tariff Regulations on account of gypsum and water handling. However, while framing the 2024 Tariff Regulations, the Commission considered the O&M expenses @ 2% of the additional capital expenditure as adequate to meet the expenses. Accordingly, the operation & maintenance expenses of an emission control system for the competitively bid projects are proposed @ 2% of the additional capital expenditure on account of the emission control system (excluding IDC & IEDC) as on the date of commissioning to be escalated at the rate of 5.25% per annum till 31<sup>st</sup> March 2029 or revision by the Commission based on the availability of data, whichever is earlier. All the generating companies shall maintain the operation & maintenance expenses of the emission control system separately and submit to the Commission as and when so directed by the Commission.

17. Accordingly, it is proposed to modify Para 44 of the order in petition 6/SM/2021 as under:-

“44. Accordingly, the Commission is of the view that operation and maintenance expenses shall be allowed @2.0% of the additional capital expenditure (ACEe) for installation of ECS (excluding IDC, IEDC, and FERV) as admitted by the Commission and to be escalated at the rate of 5.25% per annum till 31<sup>st</sup> March 2029 or revision by the Commission based on availability of data, whichever is earlier. Till 31.03.2029, the additional O&M expenses (O&Me) shall be worked out as follows:-

First Year: 2.0% of ACEe excluding IDC, IEDC, and FERV (to be allowed proportionately if the operation of the ECS is for part of the year)

Second Year onwards: 2.0% of ACEe escalated annually at the rate of 5.25%.

The additional O&M expenses payable shall be worked out by reducing the income generated from the sale of gypsum or other by-products from the operation and maintenance expenses.

44A. All generating companies are directed to maintain the operation & maintenance expenses of the emission control system separately and submit them to the Commission as and when directed.”

### **C. Cost of debt & equity of emission control system**

18. In the existing compensation mechanism, the Commission has followed the approach of net fixed assets and cost of capital employed for servicing capital expenditure. Hence,



the return on equity and servicing of debt are recognized as integral parts of the return on capital employed. The rate of investment on capital employed is allowed as the weighted average rate of interest on loans of the generating station, including the emission control system, or at the rate of Marginal Cost of Funds based Lending Rate (MCLR) of State Bank of India (for one year tenor) as on 1<sup>st</sup> April of the year plus 350 bps, whichever is lower. The relevant paragraph of the Suo-Motu order dated August 13, 2021, in 6/SM/2021 is extracted below:-

**“Cost of Additional Capital Expenditure (COCe) component of SFC**

33. In the draft Suo-Motu order in this Petition, the suggested approach of servicing of cost of capital employed was in line with industry practice unlike the servicing of debt and equity separately as followed for thermal generating stations whose tariff is determined under Section 62 of the Act. Relevant extract of the draft Suo-Motu order at paragraph 36 is as under:

“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.

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.”

34. Most of the Stakeholders have suggested to adopt the notional debt to equity ratio of 70:30 with consideration of actual debt in case of higher debt and have also suggested to service equity at the rate of 15.5% post tax i.e. with grossing up with tax rate and servicing of debt at the rate lower of actual rate or SBI MCLR+3.5%. Further, they have also suggested that the capital base be worked out based on Gross Fixed Assets (GFA) to provide a level playing field for thermal generating stations under Sections 62 and 63 of the Act for compliance to the revised emission standards.

35. One of the stakeholders (Reliance Power Ltd) has suggested that power sector is already facing severe stress. Under the current circumstances, arranging equity to install ECS to meet revised emission standards is a challenge. Accordingly, it has proposed that base return on equity in respect of additional capital expenditure should be at a specific premium of 3% per annum over the debt funding cost. One of the stakeholders (RUVNL) has suggested that weighted average rate of interest of SBI MCLR (one year tenor) plus 350 basis points as proposed in draft suo-motu order, should be reduced to SBI MCLR (one year tenor) plus 250 basis points. RUVNL has also suggested that if there is any delay in commissioning of ECS by the generating company, carrying cost should not be allowed.



36. We have considered all the suggestions and comments of the stakeholders. However, the Commission notes that the approach of net fixed assets and cost of capital employed suggested in the draft Suo-Motu order satisfies the principle of economic restitution. The Commission is aware of the concerns and financial position of the generating companies. However, compensation for change in law cannot be a mechanism to improve their financial position. Accordingly, the proposed approach of servicing investment through cost of capital employed is appropriate, being consistent with the principle of economic restitution.

37. 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 interest rate of fund. The interest rate will be weighted average rate of actual interest on loans of the thermal generating station including ECS or 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:-

$$COCe(n) = NFA(n) \times RI(n) / 100$$

Where,

$$NFA(n) = ACEe - [(n-1) \times (DEPe)]$$

COCe Servicing cost of Additional Capital Expenditure in Rupees per annum;

NFA(n) is the net fixed asset of the year “n”;

RI(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.

n represents the year starting from the date of operation of emission control system.

DEPe is annual depreciation (in Rupees).

ACEe is the gross capital cost (in Rupees) of emission control system as admitted by the Commission;

## The 2024 Tariff Regulations

19. In the 2024 Tariff Regulations, the Commission has notified the normative capital structure (70% debt and 30% equity) in respect of additional capitalization beyond the original scope, including additional capitalization on account of the emission control



system, Change in Law, and Force Majeure. The servicing of equity and debt has been dealt with as under:

- a) The equity capital is capped to the extent of 30% and the rate of return on equity is restricted at a Base Rate of 1-year MCLR of SBI as on 1st April of the year of operation plus 350 bps or 14% (whichever is lower), on a pre-tax basis.
- b) The debt for servicing consists of actual debt, and the excess equity fund beyond the normative limit of 30% is considered for servicing the debt. The interest of debt is serviced at the weighted average rate of interest calculated on the basis of the actual loan portfolio or allocated loan portfolio of the project, and in the absence of an actual loan, 1-year MCLR of the State Bank of India as applicable as on April 01, of the relevant financial year.

20. The issue that arises herein is whether separate treatment of servicing debt and equity as specified in the 2024 Tariff Regulations should be applied for the competitively bid projects or whether the existing methodology for computing the cost of capital employed for the competitively bid projects would satisfy the test of the principle of restitution?

**Issue (i) : whether the separate treatment of servicing debt and equity as followed in the 2024 Tariff Regulations can be applied for the competitively bid projects in so far as additional capital expenditures on account of the emission control system are concerned.**

21. In the 2024 Tariff Regulations, the Commission has specified the servicing of debt and equity separately consistent with the principle enshrined in the Tariff Policy, 2006, and National Tariff Policy, 2016, notified under section 3 of the Act. Para 5.11 of National Tariff Policy, 2016, which is *pari materia* with the provisions of Para 5.3 of Tariff Policy, 2006, provides as under: -

“5.11 Tariff policy lays down the following framework for performance based cost of service regulation in respect of aspects common to generation, transmission as well as distribution. These shall not apply to competitively bid projects as referred to in para 6.1 and para 7.1 (6). Sector specific aspects are dealt with in subsequent sections.



a) **Return on Investment.** ...

...The Central Commission would notify, from time to time, the rate of return on equity for generation and transmission projects keeping in view the assessment of overall risk and the prevalent cost of capital which shall be followed by the SERCs also

....

d) **Cost of Debt**

Structuring of debt, including its tenure, with a view to reducing the tariff should be encouraged. Savings in costs on account of subsequent restructuring of debt should be suitably incentivised by the Regulatory Commissions keeping in view the interests of the consumers.

...”

22. The approach of servicing the capital cost through separate streams of debt and equity follows the principles of tariff determination laid down in the Tariff Policy, 2006, as well as the National Tariff Policy, 2016. The Commission, while framing the regulations under Section 61 of the Act, is required to be guided by the Tariff Policy issued under Section 3 of the Act.

23. As discussed in para 21 above, there is/was no mandatory requirement for the bidder to follow debt - equity norms for competitively bid projects as per the para 5.11 of the National Tariff Policy. Further, under Tariff based competitive bidding guidelines and the power purchase agreement issued by the Ministry of Power, the bidders are not required to disclose their financing arrangements at the time of bidding. This provides flexibility to the generating companies to infuse the debt and equity in the desired ratio at their discretion and accordingly contract loans from the financial institutions. While deciding on the existing compensation mechanism, the Commission adopted the approach of cost of capital employed in line with industry practice, unlike servicing of debt and equity separately as specified in the Tariff Regulations. Therefore, the Commission is of the view that the principle of cost of capital employed is consistent with the Tariff Policy as well as the basic premises of the competitively bid projects.

24. The Commission, in the order dated August 13, 2021, in Suo-Motu Petition No. 6/SM/2021, decided that the approach of net fixed assets and cost of capital employed satisfies the principle of economic restitution. It further held that compensation for the change in law cannot be a mechanism to improve the financial position of generating





companies. The Commission also held that the servicing of investment of additional capital expenditure on emission control system through cost of capital employed is appropriate, being consistent with the principle of economic restitution. The Commission has decided to continue with the approach of net fixed assets and cost of capital employed as decided in the existing compensation mechanism for servicing the capital infused for meeting the additional capital expenditure on account of the installation of the emission control system.

**Issue (ii) Whether the existing methodology for computation of the cost of capital employed for the competitively bid projects satisfies the test of the principle of restitution?**

25. In the existing compensation mechanism, the Commission allows the servicing of capital employed during each year of the contract period to be worked out based on net fixed asset (derived by adjusting cumulative depreciation of emission control system) and weighted average rate of interest on loans of the generating station including ECS. Thus, in a way, the Commission is recognizing the entire capital employed as a debt fund and servicing it at the rate of interest rate of debt.

26. In the 2024 Tariff Regulations, the Commission has allowed the servicing of debt at the actual rate of interest and equity at 1 year MCLR + 350 bps. However, for the servicing of the cost of capital employed which is a mix of debt and equity, the Commission prescribed the cost of servicing for capital employed as the weighted average rate of actual interest on loans or 1 year MCLR + 350 bps, whichever is lower. If the interest rate is lower than 1 year MCLR + 350 bps, the entire capital employed would be serviced at the actual interest rate. This may cause impediments to the equity investment for the emission control system.

27. The Commission has already recorded in its order dated August 13, 2021, in Suo-Motu Petition No. 6/SM/2021, that the emission control system requires significant additional capital expenditure. The financing of large amounts of capital expenditure may require equity infusion by the generating companies. But, as per the tariff-based bidding



guidelines issued under Section 63 of the Act, the debt: equity ratio of a competitively bid project is not required to be submitted by the generating company. In view of the above, and with due regard to the consideration of the principle of restitution, the servicing of capital employed during each year of the contract period is proposed to be delinked from the actual weighted average rate of interest, and it shall be worked out based on net fixed asset (derived by adjusting cumulative depreciation of emission control system) and 1 year MCLR of State Bank of India (for one year tenor as on 1<sup>st</sup> April of the financial year) plus 250 bps.

28. The objective of the reduced normative rate of interest is to provide flexibility to the generating company and not to create an extra surplus. We have removed the provision for an actual weighted average rate of interest for servicing capital and introduced a normative rate, which, in our view, will balance the interests of the generating company and procurer(s).

29. Accordingly, it is proposed to modify Para 37 of the order in petition 6/SM/2021 as under:-

“37. 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 normative rate of 1 year Marginal Cost of Lending Rate of State Bank of India (for one year tenor) plus 250 basis points. The generating companies shall work out the cost of capital employed towards the emission control system as follows:-

$$\text{COCe}(y) = [ \text{NFA}(y) \times \text{RI}(y) / 100 ]$$

Where,

$$\text{NFA}(y) = \text{ACEe} - \sum_{n=1}^y \text{DEPe}(n) \quad \dots \text{where } y \text{ is less than or equal to 12 years}$$

$$\text{NFA}(y) = \text{ACEe} - \sum_{n=1}^{12} (\text{DEPe}(n)) - \sum_{m=13}^z (\text{DEPe}(m)) \quad \dots \text{where } y \text{ is more than 12 years}$$

COCe Servicing cost of Additional Capital Expenditure in Rupees per annum;

NFA(y) is the net fixed asset of the of the year “y”;



RI(y) is 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 financial year plus 250 bps.

y represents the year starting from the date of operation of emission control system.

z represents the balance operational life of the plant on the date of installation of the emission control system

DEPe(n) is annual depreciation (in Rupees) up to the 12<sup>th</sup> year where n=1, 2,.....12.

DEPe(m) is annual depreciation (in Rupees) from the 13<sup>th</sup> year onward where m=13,14,.....

ACEe is the gross capital cost (in Rupees) of the emission control system as admitted by the Commission;

#### **D. Interim Relief in the form of Provisional Tariff**

30. The Commission, in the existing compensation mechanism, held that the provisional tariff needs to be mutually agreed between the procurer and seller, taking into account the compensation mechanism. In the absence of any mutual agreement, the generating company may file the application for determination of supplementary tariff after the actual Operational Date of the emission control system (ODe). Thus, the generating company will not be able to bill after the operational date of the emission control system till the determination of the supplementary tariff by the Commission. This would create difficulties for the generating company as well as the procurers. The procurers have to pay the additional carrying cost, whereas the generating companies have to raise the finance for the interim period to meet the debt service obligations and working capital requirements. Considering the above, the Commission is of the view that after the emission control system is installed, the generating company shall approach the Commission for determination of compensation. The Commission may consider granting interim compensation during the preliminary hearing subject to the determination of final compensation.

31. Accordingly, the treatment of provisional tariff in para 110 of the order in 6/SM/2021 is proposed to be modified as under:-



“110. We are of the view that a provisional tariff for the emission control system needs to be mutually agreed upon between generating companies and their respective procurers considering the compensation mechanism decided in this order. In the absence of mutual agreement, the generating companies may file petitions before the Commission after the installation of emission control systems with a specific prayer for an interim supplementary tariff. The Commission may grant interim supplementary tariff as may be considered appropriate in the course of preliminary hearings of the petitions, which shall be applicable from the date of operation of the emission control system.”

32. Except for the issues decided in this order, the remaining issues shall be dealt with in accordance with the order dated August 13, 2021, in Petition No. 06/SM/2021.

### **Suggestions/Comments from Stakeholders**

33. Before we issue the final order on the proposal (paras 12, 17, 29, and 31 of this order) to modify the mechanism to determine compensation on account of the installation of the emission control system, we intend to give an opportunity to all stakeholders to submit their views, comments, and suggestions, if any.

**( Ramesh Babu V. )**  
**Member**

**( Arun Goyal )**  
**Member**

**( Jishnu Barua )**  
**Chairperson**

