PETITION FOR DETERMINATION OF TARIFF

FOR

Singrauli STPS

(From 01.04.2024 to 31.03.2029)

BEFORE THE HON'BLE CENTRAL ELECTRICITY REGULATORY COMMISSION

NEW DELHI

PETITION NO……

IN THE MATTER OF : Petition Under Section 62 and 79 (1) (a) of the Electricity Act, 2003 read with Chapter-III of the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 2023 and Chapter-3, Regulation-9 of Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2024 for approval of tariff of Singrauli Super Thermal Power Station (2000 MW) **for the period from 01.04.2024 to 31.03.2029**.

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Summary of Issues:

Tariff determination petition (2024-29) of Singrauli STPS (2000 MW)

(In compliance with CERC notice dated 07.06.2024)

The major highlights of the tariff determination petition of Singrauli STPS (2000 MW) for tariff period 2024-29 are as follows:-

The present petition is being filed under Section 62 and 79 (1) (a) of the Electricity Act, 2003 read with Chapter-III of the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999 and Chapter-3, Regulation-9(2) of Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2024 for determination of Tariff of Singrauli Super Thermal Power Station (2000 MW) for the period from 01.04.2019 to 31.03.2024.

Singrauli STPS is located in the State of Uttar Pradesh (UP) and comprises of five units of 200 MW and two units of 500 MW . The COD of station is 01.05.1988.The power generated from Singrauli STPS is being supplied to various discoms as per MoP allocation and respective PPAs including Uttar Pradesh Power Corp. Ltd. (UPPCL), Rajasthan Urja Vika Nigam Limited (RUVNL) , BSES Rajdhani Power Ltd. (BRPL), BSES Yamuna Power Ltd. (BYPL), Tata Power Delhi Distribution Ltd. (TPDDL), Haryana Power Purchase Centre (HPPC), Punjab State Power Corporation Ltd. (PSPCL) and Uttarakhand Power Corporation Ltd. (UPCL).

The tariff for Singrauli STPS for the period from 01.04.2019 to 31.3.2024 was determined by the Hon'ble Commission vide order dated 05.09.2023 in Petition No. 424/GT/2020. The capital cost allowed for tariff determination included the projected additional capital expenditure admitted by the Hon'ble Commission after prudence check. The petitioner had filed a separate true up petition for the period 01.04.2019 to 31.03.2024 for revision of tariff in line with the applicable provisions of Tariff Regulations 2019.

The Petitioner in the instant petition has considered the opening capital cost as of 01.04.2024 by adjusting the admitted capital cost as on 31.03.2024, accounting for the

difference between the admitted expenditure for the period 2019-24 and the actual expenditure as per true-up petition.

The projected additional Capital Expenditure for the FY 2019-20, 2020-21, 2021-22, 2022-23 and 2023-24 are Rs 3.5 Cr, Rs 46.15 Cr, Rs 65.78 Cr, Rs 15.00 Cr and Nil respectively amounting to total of Rs 130.43 Crores during the 2024-29 period. The same has been depicted year wise in Form 9A of the Appendix-I along with applicable regulations and justification for the claims. It is humbly requested to approve the projected Additional Capital expenditure during the period of 2024-29.

The Hon'ble Commission is requested to allow the claims for water charges, security expenses, and ash transportation expenses for the instant station as estimated by the Petitioner in Form 3A of Appendix-I. These claims shall be subject to retrospective adjustment based on actual expenditures during the truing-up process.
Furthermore, the consumption of capital spares shall be claimed at the time of truing up based on the actual consumption of spares during the period 2024–29.

Further, in order to avoid interest liabilities for beneficiaries until the 2024-29 tariff order is finalized ,The petitioner requests permission to recover ash Utilization charges monthly subject to true-up at the end of the 2024-29 period.

The petitioner seeks permission to approach the Commission to recover the impact of wage revisions effective from 1.1.2027, as allowed under Tariff Regulations 2024, during the tariff true-up based on actual payments made.

The petitioner requests the Commission's approval to recover the filing and publication fees directly from the beneficiaries, as permitted under Regulation 94(1) of the Tariff Regulations 2024.

In the light of above submission and as per the Petition being filed by the Petitioner for determination of tariff of Singrauli Super Thermal Power Station (Singrauli STPS) (2000 MW),the Hon'ble Commission may please approve tariff for the tariff period 2024-29 as per provision of Regulation 9(2) of Tariff Regulations 2024.

BEFORE THE HON'BLE CENTRAL ELECTRICITY REGULATORY COMMISSION

NEW DELHI

PETITION NO……

IN THE MATTER OF : Petition Under Section 62 and 79 (1) (a) of the Electricity Act, 2003 read with Chapter-III of the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 2023 and Chapter-3, Regulation-9 of Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2024 for approval of tariff of Singrauli Super Thermal Power Station (2000 MW) **for the period from 01.04.2024 to 31.03.2029**.

AND

IN THE MATTER OF

Petitioner: : NTPC Ltd.
NTPC Bhawan
Core-7, Scope Complex
7, Institutional Area, Lodhi Road
New Delhi-110 003.

Respondents:

1. Uttar Pradesh Power Corp. Ltd. (UPPCL)
Shakti Bhawan
14, Ashok Marg,
Lucknow – 226 001.

2. Rajasthan Urja Vika Nigam Limited (RUVNL)
(on behalf of DISCOMs of Rajasthan),
Vidyut Bhawan, Janpath,
Jaipur 302 005

3. Tata Power Delhi Distribution Ltd.
Grid Substation, Hudson Road
Kingsway Camp
Delhi-110009.

4. BSES Rajdhani Power Ltd.,
   2nd floor, B-Block
   BSES Bhawan, Nehru Place
   New Delhi-110019.

5. BSES Yamuna Power Ltd.,
   Shakti Kiran Building
   Karkardooma
   Delhi-110092

6. Haryana Power Purchase Centre (HPPC)
   Shakti Bhawan, Sector – VI,
   Panchkula
   Haryana – 134 109

7. Punjab State Power Corporation Ltd. (PSPCL)
   The Mall
   Patiala – 147 001

8. Uttarakhand Power Corporation Ltd. (UPCL)
   Urja Bhawan, Kanwali Road
   Dehradun – 248 001
   Uttarakhand.

The Petitioner humbly states that:

1) The Petitioner herein NTPC Ltd. (hereinafter referred to as '**Petitioner**' or **'NTPC')**, is a company incorporated under provisions of the Company Act, 1956 and a Government Company as defined under Section 2(45) of the Companies Act, 2013. Further, NTPC is a 'Generating Company' as defined under Section 2(28) of the Electricity Act, 2003.

2) In terms of Section 79(1)(a) of Electricity Act, 2003, the Hon'ble Commission has been vested with the functions to regulate the tariff of NTPC, being a Generating Company owned and controlled by the Central Government. The regulation of the tariff of NTPC is as provided under Section 79(1)(a) read with Section 61, 62 and 64 of the Electricity Act, 2003 and the Regulations notified by the Hon'ble Commission in exercise of powers under Section 178 read with Section 61 of the Electricity Act, 2003.

3) The Petitioner is having power stations/ projects at different regions and places in the country. Singrauli Super Thermal Power Station (2000 MW) (hereinafter referred to as Singrauli STPS) is one such station located in the State of Uttar Pradesh (UP).The power generated from Singrauli STPS is being supplied to the respondents herein mentioned above.

4) The Hon'ble Commission has notified the Central Electricity Regulatory Commission (Terms & Conditions of Tariff) Regulations, 2024 (hereinafter 'Tariff Regulations 2024') which came into force from 01.04.2024, specifying the terms & conditions and methodology of tariff determination for the period 01.04.2024 to 31.03.2029.

5) Regulation 9(2) of Tariff Regulations 2024 provides as follows:

"(2) In case of an existing generating station or unit thereof, or transmission system or element thereof, the application shall be made by the generating company or the transmission licensee, as the case may be, by 30.11.2024 , based on admitted capital cost including additional capital expenditure already admitted and incurred up to 31.3.2024 (either based on actual or projected additional capital expenditure) and estimated additional capital expenditure for the respective years of the tariff period 2024-29 along with the true up petition for the period 2019-24 in accordance with the CERC (Terms and Conditions of Tariff) Regulations, 2019."

In terms of above, the Petitioner is filing the present petition for determination of tariff for Singrauli STPS for the period from 01.04.2024 to 31.03.2029 as per the Tariff Regulations 2024.

6) The tariff of the Singrauli STPS for the tariff period 1.4.2019 to 31.3.2024 was determined by the Hon'ble Commission vide its dated 05.09.2023 in Petition

No. 424/GT/2020 in accordance with the CERC (Terms & Conditions of Tariff) Regulations 2019. The petitioner vide affidavit dated 16.11.2024 had filed a separate true up petition for the period 01.04.2019 to 31.03.2024 for revision of tariff in line with the applicable provisions of Tariff Regulations 2019.

7) It is submitted that Hon'ble Commission vide order dated 05.09.2023 in Petition No. 424/GT/2020 has allowed a capital cost of Rs 1240.44 Cr. as on 31.03.2024 based on the admitted projected capital expenditure for the 2019-24 period. However, the actual closing capital cost as on 31.03.2024 has been worked out in the foresaid true-up petition as Rs. 1486.80 Cr based on the actual expenditure after truing up exercise for the period 2019-24. Accordingly, the Petitioner has adjusted an amount of Rs. 246.35 Cr from the admitted capital cost as on 31.03.2024 and accordingly the opening capital cost as on 01.04.2024 has been considered as Rs 1486.80 Cr. in the instant petition. The Hon'ble Commission may be pleased to accordingly adopt this adjustment in the admitted capital cost as on 31.3.2024 and determine the tariff in the present petition for the period 2024-29.

8) The capital cost claimed in the instant petition is based on the opening capital cost as on 01.04.2024 considered as above and projected estimated capital expenditures claimed for the period 2024-29 under Regulation 19 and Regulation 24, 25 and 26 of the Tariff Regulations, 2024.

9) The Petitioner further respectfully submits that as per Regulation 36(1)(6) of the Tariff Regulations 2024, the water charges, security expenses, ash transportation expenses and capital spares consumed for thermal generating stations are to be allowed separately. The details in respect of water charges such as type of cooling water system, water charges as applicable for 2023-24 have been furnished below for reference. Water charges for the period 2024 – 29 is claimed based on the estimated expenses and same may be allowed in

tariff based on the same. In accordance with provision of the Regulations, the petitioner shall be furnishing the details of actual for the relevant year at the time of truing up and the same shall be subject to retrospective adjustment.

Description	**Remarks**
Type of Plant	Coal based station
Type of cooling water system	Once Through Cooling
Total Water Charges(2023-24)	876.46 Lacs

10) Similarly, the Petitioner is claiming the security & ash transportation expenses based on the estimated expenses for the period 2024-29, the same shall be subject to retrospective adjustment based on actuals at the time of truing up. In respect of capital spares consumption, it is submitted that the same shall be claimed at the time of true-up in terms of the proviso to the Regulation 36(1)(6) based on actual consumption of spares during the period 2024-29.

11) However, it is submitted that the expenditure towards the ash transportation charges is recurring in nature and the Petitioner has been incurring ash transportation expenditure in its stations in the current tariff period also. In case the same is permitted to be recovered after the issuance of the tariff order for the period 2024-29, there will be additional liability on the beneficiary on account of the interest payment for the period till the time the tariff petitions for the period 2024-29 is decided. To avoid the interest payment liability of the beneficiaries, it is prayed that the petitioner may be allowed to recover/ pass on the ash transportation charges on a monthly basis subject to true-up at the end of the 2024-29 period.

12) The petitioner humbly submits that petition no. 227/MP/2024 has been filed by the petitioner concerning Ash Utilization Expenditure for its stations which is

under active consideration of this Hon'ble Commission and the outcome of the said petition will be applicable to the instant petition also.

13) It is submitted that in terms of Regulation 60 (5) of the Tariff Regulations 2024, the Petitioner is required to furnish details qua providing the details of Landed Price & Gross Calorific Value ("GCV") of fuel in Form 15. It is further submitted that the Petitioner in terms of Regulation 40 of the Tariff Regulations 2019 was required to furnish the details for Landed Price & GCV of fuel also as per Form 15 of the Tariff Regulations, 2019.

14) However, in so far as the present Petition is concerned, the Petitioner has prepared & submitted the data of fuel as per Form 15 of the Tariff Regulations, 2019. The same is because of the following reasons:-

(a) This Hon'ble Commission had notified the Tariff Regulations, 2019 on 07.03.2019 and the same was in effect till 31.03.2024.

(b) The Petitioner being a diligent utility has been seamlessly providing the said data of fuel in terms of the prescribed format (i.e. Form 15 of Annexure-I (Part I)) of the Tariff Regulations, 2019 to this Hon'ble Commission for computation of Interest on Working Capital.

(c) Thereafter, this Hon'ble Commission on 15.03.2024 notified the Tariff Regulations, 2024, wherein the format of Form 15 was changed/ amended by this Hon'ble Commission and a new format was placed in the Tariff Regulations 2024 in the month of June'2024.

(d) By virtue of the said change, the Petitioner has been obligated to furnish the data of fuel for its existing plants month wise for the preceding 12 months i.e. for FY 2023-24 for computation of Interest on Working Capital.

15) It is humbly submitted that by virtue of the Tariff Regulations, 2024, this Hon'ble Commission has added a new format/ revised the format of Form-15 which has not prescribed in the past Tariff Regulations i.e. of 2019. Hence, it is only now (in the Tariff Regulations 2024) that the Petitioner has been obligated to furnish the data of fuel as per the new format of Form-15.

16) It is respectfully submitted that since the format for Form 15 has been changed in Tariff Regulations, 2024 and was notified in the month of June'2024, the Petitioner could not have been aware about the said changes earlier, hence the Petitioner did not maintain the data required in new format of Form 15 of Tariff Regulations, 2024.

17) Therefore, this Hon'ble Commission may kindly exempt the Petitioner from furnishing the data of fuel in terms of new format of Form 15 of the Tariff Regulations, 2024 & may be allowed to furnish the details of fuel for FY 2023-24 in terms of the prescribed format of Form-15 of the Tariff Regulations, 2019.

18) The Petitioner further respectfully submits that the wage/ salary revision of the employees of the Petitioner will be due with effect from 1.1.2027. As per Regulation 36(1)(8) of the Tariff Regulations 2024, the impact on account of implementation of wage/ pay revision shall be allowed at the time of truing up of tariff. The Petitioner therefore craves liberty to approach the Hon'ble Commission for allowing the impact on account of implementation of wage/ pay revision of the employees of the Petitioner with effect from 1.1.2027, based on the actual payments whenever paid by it.

19) The present petition is filed on the basis of norms specified in the Tariff Regulations 2024. It is submitted that the petitioner is in the process of installing the Emission Control Systems (ECS) in compliance of the Revised Emission Standards as notified by MOEF vide notification dated 07.12.2015 as amended. Completion of these schemes in compliance of revised emission norms will affect the Station APC, Heat Rate, O&M expenses ,water consumption etc. In addition the availability of the unit/ station would be also affected due to shutdown of the units for installation of ECS. The petitioner would be filing the details of the same in a separate petition in terms of the Regulation 29 of CERC (Terms& Conditions of Tariff) Regulations 2024.

20) The petitioner has accordingly calculated the tariff for 2024-29 period based on the above and the same is enclosed as **Appendix-I** to this petition.

21) It is submitted the Petitioner has served the copy of the Petition on to the Respondents mentioned herein above and has posted the Petition on the company website i.e. www.ntpc.co.in/notices .

22) In accordance with the 'Conduct of Business Regulations 2023' of the Hon'ble Commission, the Petitioner shall publish a notice about such filing in at least two daily leading digital newspapers one in English language and another in any of the Indian languages, having wide circulation in each of the States and Union Territories where the beneficiaries are situated, as per Form 14 appended to these regulations. Subsequently, the Petitioner shall submit the proof of publications as soft copies of the publications under an affidavit through the e-filing portal of the Hon'ble Commission within one week from the date of publication. Further, the Petitioner shall also submit the detail of expenses incurred for publication of the notice along with the prayer for recovery of Publication Expenses as per Regulation-94 of CERC Tariff Regulations 2024.

23) It is submitted that the Petitioner has already paid the requisite filing fee vide transaction id 37c568eba62158b7b321 on 24.04.2024 for the year 2024-25 and the details of the same have been duly furnished to the Hon'ble Commission. For the subsequent years, it shall be paid as per the provisions of the CERC (Payment of Fees) Regulations, 2012 as amended. Further Regulation 94 (1) of Tariff Regulations 2024 provides that the application fee and publication expenses may be allowed to be recovered directly from the beneficiaries at the discretion of the Hon'ble Commission. Accordingly, it is prayed that Hon'ble Commission may be pleased to allow recover filing fee and publication fee directly from the beneficiaries.

24) It is submitted that the petitioner is filing this tariff petition subject to the outcome of its various appeals/ petitions pending before different courts. Besides, the petitions filed by NTPC for determination of capital base as on 31.3.2019 through true-up exercise are pending before the Hon'ble Commission and would take some time. The Petitioner, therefore, reserves its right to amend the tariff petition as per the outcome in such appeals/ petitions, if required.

Prayers

In the light of the above submissions, the Petitioner, therefore, prays that the Hon'ble Commission may be pleased to:

i) Approve tariff of Singrauli STPS for the tariff period 01.04.2024 to 31.03.2029.

ii) Allow the recovery of filing fees as & when paid to the Hon'ble Commission and publication expenses from the beneficiaries.

iii) Allow reimbursement of Ash Transportation Charges directly from the beneficiaries on monthly basis subject to true up.

iv) Allow the recovery of pay/wage revision as additional O&M over and above the normative O&M.

v) Pass any other order as it may deem fit in the circumstances mentioned above.

Petitioner

Noida

21-11-2024

BEFORE THE CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

PETITION NO.....

IN THE MATTER OF	:	Petition Under Section 62 and 79 (1) (a) of the Electricity Act, 2003 read with Chapter-III of the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 2023 and Chapter-3, Regulation-9 of Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2024 for approval of tariff of Singrauli Super Thermal Power Station (2000 MW) for the period from 01.04.2024 to 31.03.2029.
Petitioner:	:	NTPC Ltd. NTPC Bhawan Core-7, Scope Complex 7, Institutional Area, Lodhi Road New Delhi-110 003
Respondents:		Uttar Pradesh Power Corp. Ltd. (UPPCL) Shakti Bhawan 14, Ashok Marg Lucknow – 226 001 And Others

AFFIDAVIT

I, Parimal Piyush, Son of Late Bharat Mishra, aged about 49 years, resident of IN1-2004, Inspire, Eldeco Aamantran, Sector-119, Noida (UP), do hereby solemnly affirm and state as follows:

1. That the deponent is the Additional General Manager (Commercial) of the Petitioner NTPC Ltd., and is well conversant with the facts and the circumstances of the case and therefore competent to swear this affidavit.

2. That the accompanying Petition under Section 62 and 79 (1) (a) of the Electricity Act, 2003, has been filed by my authorized representative under my

परिमल पीयूष/PARIMAL PIYUSH
अपर महाप्रबन्धक (वाणिज्यिक)
Addl. General Manager (Commercial)
एन टी पी सी लिमिटेड/NTPC LIMITED
EOC, A-8A, Sector-24, Noida-201301 (U.P.)

instruction and the contents of the same are true and correct to the best of my knowledge and belief.

3. That the contents of Para No. 1 to 24 as mentioned in the Petition are true and correct based on my personal knowledge, belief and records maintained in the office.

4. That the annexures annexed to the Petition are correct and true copies of the respective originals.

5. That the Deponent has not filed any other Petition or Appeal before any other forum or court of law with respect to the subject matter of the dispute.

परिमल पीयूष/PARIMAL PIYUSH
अपर महाप्रबन्धक (वाणिज्यिक)
Addl. General Manager (Commercial)
एन टी पी सी लिमिटेड/NTPC LIMITED
EOC, A-8A, Sector-24, Noida-201301 (U.P.)

(Deponent)

Verification:

Verified at Noida on this 21ST day of November 2024, that the contents of my above noted affidavit are true and correct to my knowledge and no part of it is false and nothing material has been concealed therefrom.

(Deponent)

परिमल पीयूष/PARIMAL PIYUSH
अपर महाप्रबन्धक (वाणिज्यिक)
Addl. General Manager (Commercial)
एन टी पी सी लिमिटेड/NTPC LIMITED
EOC, A-8A, Sector-24, Noida-201301 (U.P.)

NOTARY GAUTAM BUDDH NAGAR GOVT. OF INDIA

ATTESTED
YOGENDRA SINGH
NOTARY NOIDA
G.B. NAGAR (U.P.) INDIA

21 NOV 2024

TARIFF FILING FORMS (THERMAL)

FOR DETERMINATION OF TARIFF

FOR

Singrauli STPS

(From 01.04.2024 to 31.03.2029)

PART-I

APPENDIX-I

Checklist of Main Tariff Forms and other information for tariff filing for Thermal Stations

Form No.	Title of Tariff Filing Forms (Thermal)	Tick
FORM- 1	Summary of Tariff	✓
FORM -1 (I)	Statement showing claimed capital cost	✓
FORM -1 (II)	Statement showing Return on Equity	✓
FORM-2	Plant Characteristics	✓
FORM-3	Normative parameters considered for tariff computations	✓
FORM-3A	Statement showing O&M Expenses	✓
FORM- 4	Details of Foreign loans	✓
FORM- 4A	Details of Foreign Equity	**NA**
FORM-5	Abstract of Admitted Capital Cost for the existing Projects	✓
FORM-5A	Abstract of Claimed Capital Cost for the existing Projects	✓
FORM- 6	Financial Package upto COD	**NA**
FORM- 7	Details of Project Specific Loans	**NA**
FORM- 8	Details of Allocation of corporate loans to various projects	✓
FORM-9A	Summary of Statement of Additional Capitalisation claimed during the period	✓
FORM-9 ##	Statement of Additional Capitalisation after COD	✓
FORM- 10	Financing of Additional Capitalisation	✓
FORM- 11	Calculation of Depreciation on original project cost	✓
FORM- 12	Statement of Depreciation	✓
FORM- 13	Calculation of Weighted Average Rate of Interest on Actual Loans	✓
FORM- 14	Draw Down Schedule for Calculation of IDC & Financing Charges	**NA**
FORM- 15##	Details of Fuel for Computation of Energy Charges: Primary Fuel(Coal)	✓
FORM- 15A##	Details of Fuel for Computation of Energy Charges: Secondary Fuel(Oil)	✓
FORM- 15B	Computation of Energy Charges	✓
FORM- 16	Details of Limestone for Computation of Energy Charge Rate	**NA**
FORM-17	Details of Capital Spares	***
FORM- 18	Non-Tariff Income	***
FORM-19	Details of Water Charges	***
FORM-20	Details of Statutory Charges	***

Provided yearwise

***** Shall be provided at the time of true up**

List of Supporting Forms / documents for tariff filing for Thermal Stations

Form No.	Title of Tariff Filing Forms (Thermal)	Tick
FORM-A	Abstract of Capital Cost Estimates	**NA**
FORM-B	Break-up of Capital Cost for Coal/Lignite based projects	**NA**
FORM-C	Break-up of Capital Cost for Gas/Liquid fuel based Projects	**NA**
FORM-D	Break-up of Construction/Supply/Service packages	**NA**
FORM-E	Details of variables , parameters , optional package etc. for New Project	**NA**
FORM-F	Details of cost over run	**NA**
FORM-G	Details of time over run	**NA**
FORM –H	Statement of Additional Capitalisation during end of the useful life	**NA**
FORM –I	Details of Assets De-capitalised during the period	***
FORM –J	Reconciliation of Capitalisation claimed vis-à-vis books of accounts	***
FORM –K	Statement showing details of items/assets/works claimed under Exclusions	***
FORM-L	Statement of Capital cost	✓
FORM-M	Statement of Capital Woks in Progress	✓
FORM-N	Calculation of Interest on Normative Loan	✓
FORM-O	Calculation of Interest on Working Capital	✓
FORM-P	Incidental Expenditure up to SCOD and up to Actual COD	**NA**
FORM-Q	Expenditure under different packages up to SCOD and up to Actual COD	**NA**
FORM-R	Actual cash expenditure	**NA**
FORM-S	Statement of Liability flow	***
FORM-T	Summary of issues involved in the petition	✓
***** Shall be provided at the time of true up**		

List of supporting documents for tariff filing for Thermal Stations

S. No.	Information / Document	Tick
1	Certificate of incorporation, Certificate for Commencement of Business, Memorandum of Association, & Articles of Association (For New Station setup by a company making tariff application for the first time to CERC)	NA
2	A. Station wise and Corporate audited Balance Sheet and Profit & Loss Accounts with all the Schedules & annexures on COD of the Station for the new station & for the relevant years.	NA
	B. Station wise and Corporate audited Balance Sheet and Profit & Loss Accounts with all the Schedules & annexures for the existing station for relevant years.	***
3	Copies of relevant loan Agreements	NA
4	Copies of the approval of Competent Authority for the Capital Cost and Financial package.	NA
5	Copies of the Equity participation agreements and necessary approval for the foreign equity.	NA
6	Copies of the BPSA/PPA with the beneficiaries, if any	NA
7	Detailed note giving reasons of cost and time over run, if applicable.	NA
	List of supporting documents to be submitted:	
	a. Detailed Project Report	
	b. CPM Analysis	
	c. PERT Chart and Bar Chart	
	d. Justification for cost and time Overrun	
8	Generating Company shall submit copy of Cost Audit Report along with cost accounting records, cost details, statements, schedules etc. for the Generating Unit wise /stage wise/Station wise/ and subsequently consolidated at Company level as submitted to the Govt. of India for first two years i.e. 2019-20 and 2020-21 at the time of mid-term true-up in 2021-22 and for balance period of tariff period 2019-24 at the time of final true-up in 2024-25. In case of initial tariff filing the latest available Cost Audit Report should be furnished.	***
9	Any other relevant information, (Please specify)	NA
10	Reconciliation with Balance sheet of any actual additional capitalization and amongst stages of a generating station	***
11	BBMB is maintaining the records as per the relevant applicable Acts. Formats specified herein may not be suitable to the available information with BBMB. BBMB may modify the formats suitably as per available information to them for submission of required information for tariff purpose.	NA
***** Shall be provided at the time of true up**		

PART-I
FORM- 1

Summary of Tariff

	Name of the Petitioner:	**NTPC Limited**
	Name of the Generating Station:	**Singrauli STPS**
	Place (Region/District/State):	**Northern Region/ Sonebhadra/ Uttar Pradesh**

Amount in Rs. Lakhs

S. No.	Particulars	Unit	Existing 2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
1	2	3	4	5	6	7	8	9
1.1	Depreciation	Rs Lakh	1,932.61	28,845.39	4,153.50	5,920.20	1,350.00	-
1.2	Interest on Loan	Rs Lakh	1,549.64	763.84	-	-	-	-
1.3	Return on Equity	Rs Lakh	8,364.13	8,418.73	8,569.77	8,824.86	9,003.25	9,036.38
1.4	Interest on Working Capital	Rs Lakh	10,129.13	12,650.69	12,484.09	12,723.40	11,884.56	12,094.28
1.5	O&M Expenses	Rs Lakh	88,862.71	125040.00	129320.00	133580.00	117940.00	122500.00
1.6	Special Allowance (If applicable)	Rs Lakh	19,000.00	21500.00	21500.00	21500.00	21500.00	21500.00
	Total	Rs Lakh	**129838.23**	**197218.64**	**176027.36**	**182548.46**	**161677.81**	**165130.65**
2	Primary Fuel							
2.1	Landed Fuel Cost (coal/gas/RLNG/ liquid) as per FSA approved by beneficiaries	Rs/Ton	2164.03	2235.74				
	(%) of Fuel Quantity	(%)	100%	100%				
2.2	Landed Fuel Cost (coal from Integrated mine) as per FSA, if any, approved by beneficiaries or as per allocation of coal quantity		NIL					
	(%) of Fuel Quantity							
2.3	Landed Fuel Cost Imported Coal as per FSA approved by beneficiaries							
	(%) of Fuel Quantity							
2.4	Landed Fuel Cost (coal/gas /RLNG/liquid) other than FSA							
	(%) of Fuel Quantity							
2.5	Landed Fuel Cost Imported Coal other than FSA.							
	(%) of Fuel Quantity							
3	Secondary Fuel	Rs./kL	78,599.77	77,579.11				
	Energy Charge Rate ex-bus (Paise/kWh) - Coal	Rs/Unit	1.50	1.51				
	Energy Charge Rate ex-bus (Paise/kWh) -Oil	Rs/Unit	0.04	0.04				
	Energy Charge Rate ex-bus (Paise/kWh) - Total	Rs/Unit	1.54	1.55				

(Petitioner)

PART-I
FORM- 1(I)

Name of the Petitioner:	**NTPC Limited**
Name of the Generating Station:	**Singrauli STPS**

Amount in Rs. Lakhs

Statement showing claimed capital cost – (A+B)

S. No.	Particulars	2024-25	2025-26	2026-27	2027-28	2028-29
1	2	3	4	5	6	7
1	Opening Capital Cost	1,48,679.92	1,50,545.92	1,55,160.92	1,61,738.92	1,63,238.92
2	Add: Addition during the year/period	1,866.00	4,615.00	6,578.00	1,500.00	-
3	Less: De-capitalisation during the year/period	-	-	-	-	-
4	Less: Reversal during the year / period	-	-	-	-	-
5	Add: Discharges during the year/ period	-	-	-	-	-
6	Closing Capital Cost	1,50,545.92	1,55,160.92	1,61,738.92	1,63,238.92	1,63,238.92
7	**Average Capital Cost**	**1,49,612.92**	**1,52,853.42**	**1,58,449.92**	**1,62,488.92**	**1,63,238.92**

Statement showing claimed capital cost eligible for RoE at normal rate (A)

S. No.	Particulars	2024-25	2025-26	2026-27	2027-28	2028-29
1	2	3	4	5	6	7
1	Opening Capital Cost	148679.92	148679.92	149979.92	149979.92	149979.92
2	Add: Addition during the year / period	0.00	1300.00	0.00	0.00	0.00
3	Less: De-capitalisation during the year / period					
4	Less: Reversal during the year / period					
5	Add: Discharges during the year / period					
6	Closing Capital Cost	148679.92	149979.92	149979.92	149979.92	149979.92
7	**Average Capital Cost**	**148679.92**	**149329.92**	**149979.92**	**149979.92**	**149979.92**

Statement showing claimed capital cost eligible for RoE at one year MCLR + 350 bps subject to ceiling of 14.00% (B)

S. No.	Particulars	2024-25	2025-26	2026-27	2027-28	2028-29
1	2	3	4	5	6	7
1	Opening Capital Cost	0.00	1866.00	5181.00	11759.00	13259.00
2	Add: Addition during the year / period	1866.00	3315.00	6578.00	1500.00	0.00
3	Less: De-capitalisation during the year / period					
4	Less: Reversal during the year / period					
5	Add: Discharges during the year / period					
6	Closing Capital Cost	1866.00	5181.00	11759.00	13259.00	13259.00
7	**Average Capital Cost**	**933.00**	**3523.50**	**8470.00**	**12509.00**	**13259.00**

(Petitioner)

PART-I

FORM- 1(IIA)

	Name of the Petitioner:	**NTPC Limited**
	Name of the Generating Station:	**Singrauli STPS**

Statement showing Return on Equity at Normal Rate

Amount in Rs. Lakhs

S. No.	Particulars	2024-25	2025-26	2026-27	2027-28	2028-29
1	2	3	4	5	6	7
	Return on Equity					
1	Gross Opening Equity (Normal)	66,177.89	66,177.89	66,567.89	66,567.89	66,567.89
2	Less: Adjustment in Opening Equity	21,573.92	21,573.92	21,573.92	21,573.92	21,573.92
3	Adjustment during the year					
4	Net Opening Equity (Normal)	44,603.97	44,603.97	44,993.97	44,993.97	44,993.97
5	Add: Increase in equity due to addition during the year / period	0.00	390.00	0.00	0.00	0.00
7	Less: Decrease due to De-capitalisation during the year / perioc	0.00	0.00	0.00	0.00	0.00
8	Less: Decrease due to reversal during the year / period	0.00	0.00	0.00	0.00	0.00
9	Add: Increase due to discharges during the year / period	0.00	0.00	0.00	0.00	0.00
10	Net closing Equity (Normal)	44,603.97	44,993.97	44,993.97	44,993.97	44,993.97
11	Average Equity (Normal)	44,603.97	44,798.97	44,993.97	44,993.97	44,993.97
12	Rate of ROE (%)	18.782	18.782	18.782	18.782	18.782
13	Total ROE	**8,377.52**	**8,414.14**	**8,450.77**	**8,450.77**	**8,450.77**

(Petitioner)

PART-I

FORM- 1(IIB)

	Name of the Petitioner:	**NTPC Limited**
	Name of the Generating Station:	**Singrauli STPS**

Statement showing Return on Equity linked to SBI MCLR+ 350 basis points

Amount in Rs. Lakhs

S. No.	Particulars	2024-25	2025-26	2026-27	2027-28	2028-29
1	2	3	4	5	6	7
	Return on Equity linked to SBI MCLR+ 350 basis points					
1	Gross Opening Equity (Normal)	0.00	559.80	1554.30	3527.70	3977.70
2	Less: Adjustment in Opening Equity	0.00	0.00	0.00	0.00	0.00
3	Adjustment during the year					
4	Net Opening Equity (Normal)	0.00	559.80	1554.30	3527.70	3977.70
5	Add: Increase in equity due to addition during the year / period	559.80	994.50	1973.40	450.00	0.00
7	Less: Decrease due to De-capitalisation during the year / perio	0.00	0.00	0.00	0.00	0.00
8	Less: Decrease due to reversal during the year / period	0.00	0.00	0.00	0.00	0.00
9	Add: Increase due to discharges during the year / period	0.00	0.00	0.00	0.00	0.00
10	Net closing Equity (Normal)	559.80	1554.30	3527.70	3977.70	3977.70
11	Average Equity (Normal)	279.90	1057.05	2541.00	3752.70	3977.70
12A	Rate of ROE- Pre Tax (%)	12.15	12.15	12.15	12.15	12.15
12B	Effective Tax Rate (%)	17.47	17.47	17.47	17.47	17.47
12C	Rate of ROE – Post Tax (%)	14.722	14.722	14.722	14.722	14.722
13	Total ROE	**41.21**	**155.62**	**374.09**	**552.48**	**585.61**

(Petitioner)

PART-I
FORM-2

Plant Characteristics

Name of the Petitioner	**NTPC Ltd.**						
Name of the Generating Station	**Singrauli STPS**						
Unit(s)/Block(s)/Parameters	**Unit-I**	**Unit-II**	**Unit-III**	**Unit-IV**	**Unit-V**	**Unit-VI**	**Unit-VII**
Installed Capacity (MW)	200	200	200	200	200	500	500
Schedule COD as per Investment Approval	NA						
Actual COD /Date of Taken Over (as applicable)	1-Jun-82	1-Feb-83	1-Jul-83	1-Jan-84	1-Jun-84	1-Jul-87	1-May-88
Pit Head or Non Pit Head or Integrated Mine	Pit Head						
Name of the Boiler Manufacture	BHEL						
Name of Turbine Generator Manufacture	BHEL						
Main Steams Pressure at Turbine inlet (kg/Cm^2) abs[1].							
Main Steam Temperature at Turbine inlet (^{0}C) [1]							
Reheat Steam Pressure at Turbine inlet (kg/Cm$^{2)}$ [1]							
Reheat Steam Temperature at Turbine inlet (^{0}C) [1]							
Main Steam flow at Turbine inlet under MCR condition (tons /hr)[2]							
Main Steam flow at Turbine inlet under VWO condition (tons /hr)[2]							
Unit Gross electrical output under MCR /Rated condition (MW)[2]							
Unit Gross electrical output under VWO condition (MW)[2]							
Guaranteed Design Gross Turbine Cycle Heat Rate (kCal/kWh)3							
Conditions on which design turbine cycle heat rate guaranteed	Not Applicable						
% MCR							
% Makeup Water Consumption							
Design Capacity of Make up Water System							
Design Capacity of Inlet Cooling System							
Design Cooling Water Temperature (^{0}C)							
Back Pressure							
Steam flow at super heater outlet under BMCR condition (tons/hr)							
Steam Pressure at super heater outlet under							
BMCR condition) **(kg/Cm$^{2)}$**							
Steam Temperature at super heater outlet under							
BMCR condition (^{0}C)							
Steam Temperature at Reheater outlet at BMCR condition (^{0}C)							
Design / Guaranteed Boiler Efficiency (%)[4]							
Design Fuel with and without Blending of domestic/imported coal							
Type of Cooling Tower	Not Applicable						
Type of cooling system[5]	Once Through Cooling						
Type of Boiler Feed Pump[6]	Electric Motor Driven					Steam Driven	
Type of Boiler (Wall Fired/Tangential Fired)	Tangential Fired						
Fuel Details[7]							
-Primary Fuel	Coal						
-Secondary Fuel	LDO						
-Alternate Fuels							
Special Features/Site Specific Features[8]	Merry Go Round (MGR)						
Special Technological Features[9]							
Environmental Regulation related features[10]	Electrostatic Precipitators						
Any other special features	FGD Under Implementation						

Petitioner

PART-I
FORM- 3

Normative parameters considered for tariff computations

Name of the Petitioner:	**NTPC Limited**						
Name of the Generating Station:	**Singrauli STPS**						
							(Year Ending March)
Particulars	**Unit**	**Existing 2023-24**	**2024-25**	**2025-26**	**2026-27**	**2027-28**	**2028-29**
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Base Rate of Return on Equity	%	15.50	15.50	15.50	15.50	15.50	15.50
Base Rate of Rate of Return on Add - cap beyond the original scope of work including additional capitalization due to Change in Law, Force Majeure	%	7.757	12.150	12.150	12.150	12.150	12.150
Effective Tax Rate	%	17.4720	17.4720	17.4720	17.4720	17.4720	17.4720
Target Availability	%	85.00	83.00	83.00	83.00	83.00	83.00
Peak Hours	%	85.00	83.00	83.00	83.00	83.00	83.00
Off-Peak Hours	%	85.00	83.00	83.00	83.00	83.00	83.00
ß- Average Monthly Frequency Response Per	0-1	NA	Will be provided at the time of truing up				
Auxiliary Energy Consumption	%	7.13	6.88	6.88	6.88	6.88	6.88
Gross Station Heat Rate	kCal/kWh	2410.00	2395.00	2395.00	2395.00	2395.00	2395.00
Specific Fuel Oil Consumption	ml/kWh	0.50	0.50	0.50	0.50	0.50	0.50
Cost of Coal/Lignite for WC1	in Days	40	40	40	40	40	40
Cost of Main Secondary Fuel Oil for WC1	in Months	2	2	2	2	2	2
Fuel Cost for WC2	in Months	NA	NA	NA	NA	NA	NA
Liquid Fuel Stock for WC2	in Months	NA	NA	NA	NA	NA	NA
O&M Expenses	Rs lakh/MW	31.84	34.045	35.835	37.715	39.695	41.775
Maintenance Spares for WC	% of O&M	20.00	20.00	20.00	20.00	20.00	20.00
Receivables for WC	in Days	45	45	45	45	45	45
Storage capacity of Primary fuel#	Lakh MT	8.4	8.4	8.4	8.4	8.4	8.4
SBI 1 Year MCLR plus 325 basis point3	%	12.00	11.90	11.90	11.90	11.90	11.90
Blending ratio of domestic coal/imported coal		NA	NA	NA	NA	NA	NA
Norms for consumption of reagent		NA	NA	NA	NA	NA	NA
Specific Limestone consumption for Wet Limestone FGD		FGD is yet to be Commissioned.					
Specific Limestone consumption for Lime Spray Dryer or Semi-dry FGD		NA	NA	NA	NA	NA	NA
Specific consumption of sodium bicarbonate		NA	NA	NA	NA	NA	NA
Specific Limestone consumption for CFBC based generating station		NA	NA	NA	NA	NA	NA
Specific urea consumption of the SNCR		NA	NA	NA	NA	NA	NA
Specific ammonia consumption of the SCR		NA	NA	NA	NA	NA	NA
Transit and Handling Losses of coal or lignite, as applicable		0.20%	0.20%	0.20%	0.20%	0.20%	0.20%

Petitioner

Form-4

DETAILS OF FOREIGN LOANS

Name of the company		**NTPC LIMITED**					
Name of the Power Station							
Exchange Rate as on	31-03-2019	USD = Rs.	69.77	EUR = Rs.	78.84	JPY = Rs.	0.6343
Exchange Rate as on	31-03-2020	USD = Rs.	76.06	EUR = Rs.	84.43	JPY = Rs.	0.7069
Exchange Rate as on	31-03-2021	USD = Rs.	74.06	EUR = Rs.	87.28	JPY = Rs.	0.6730
Exchange Rate as on	31-03-2022	USD = Rs.	76.33	EUR = Rs.	85.76	JPY = Rs.	0.6280
Exchange Rate as on	31-03-2023	USD = Rs.	82.74	EUR = Rs.	90.87	JPY = Rs.	0.6263
Exchange Rate as on	31-03-2024	USD = Rs.	83.95	EUR = Rs.	91.51	JPY = Rs.	0.5576

41.61% (Amount in (Amount in (Amount in (Amount in (Amount in

Financial Year (Starting from COD)	**2019-20 (01.04.2019 to 31.03.2020)**				**2020-21 (01.04.2020 to 31.03.2021)**				**2021-22 (01.04.2021 to 31.03.2022)**				**2022-23 (01.04.2022 to 31.03.2023)**				**2023-24 (01.04.2023 to 31.03.2024)**			
1	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
KfW -ESP	Date	Amount (FC)	Ex. Rate	Amount (INR)	Date	Amount (FC)	Ex. Rate	Amount (INR)	Date	Amount (FC)	Ex. Rate	Amount (INR)	Date	Amount (FC)	Ex. Rate	Amount (INR)	Date	Amount (FC)	Ex. Rate	Amount (INR)
Currency 1 EURO	15-03-2019																			
At the date of drawl	01-04-2019	395.26	78.84	31,162.55	01-04-2020	395.26	84.43	33,372.07	01-04-2021	395.26	87.28	34,498.57	01-04-2022	395.26	85.76	33,897.77	01-04-2023	395.26	90.87	35,917.56
Loan repayment upto previous period		98.82	78.84	7,790.64		148.22				197.63				247.04				296.45		
Net loan at the Beginning of the period	01-04-2019	296.45	78.84	23,371.91	01-04-2020	247.04	84.43	20,857.54	01-04-2021	197.63	87.28	17,249.28	01-04-2022	148.22	85.76	12,711.66	01-04-2023	98.82	90.87	8,979.39
Schedule repayment date of principal	15-09-2019	24.70	78.60	1,941.78	15-09-2020	24.70	86.97	2,148.52	15-09-2021	24.70	86.90	2,146.87	15-09-2022	24.70	80.34	1,984.72	15-09-2023	24.70	89.05	2,200.01
Scheduled payment date of interest	15-09-2019	4.73	78.60	371.66	15-09-2020	3.94	86.97	342.69	15-09-2021	3.15	86.90	273.94	15-09-2022	2.36	80.34	189.95	15-09-2023	1.58	89.05	140.36
Witholding tax including surcharge on interest	15-09-2019	-		-	15-09-2020	-	0.00	-	15-09-2021	-	0.00	-	15-09-2022	-	0.00	-	15-09-2023	-	0.00	-
Schedule repayment date of principal	15-03-2020	24.70	83.77	2,069.33	15-03-2021	24.70	86.71	2,142.03	15-03-2022	24.70	84.01	2,075.26	15-03-2023	24.70	87.78	2,168.60	15-03-2024	24.70	90.47	2,234.95
Scheduled payment date of interest	15-03-2020	4.33	83.77	363.06	15-03-2021	3.55	86.71	307.49	15-03-2022	2.76	84.01	231.70	15-03-2023	1.97	87.78	172.95	15-03-2024	1.18	90.57	107.06
Witholding tax including surcharge on interest	15-03-2020	-		-	15-03-2021	-	0.00	-	15-03-2022	-	0.00	-	15-03-2023	-	0.00	-	15-03-2024	-	0.00	-
ERV	31-03-2020			1,496.74	31-03-2021			682.29	31-03-2022			-315.49	31-03-2023			421.04	31-03-2024			-23.12
At the end of Financial year	31-03-2020	**247.04**	**84.43**	20,857.54	31-03-2021	**197.63**	**87.28**	**17,249.28**	31-03-2022	**148.22**	**85.76**	**12,711.66**	31-03-2023	**98.82**	**90.87**	**8,979.39**	31-03-2024	**49.41**	**91.51**	**4,521.32**

Part-I
FORM-3A
ADDITIONAL FORM

Calculation of O&M Expenses

Name of the Company :	**NTPC Limited**
Name of the Power Station :	**Singrauli STPS**

Amount in Rs. Lakhs

S.No.	Particulars	2024-25	2025-26	2026-27	2027-28	2028-29
1	2	3	4	5	7	8
1	**O&M expenses under Reg.36(1)**					
1a	Normative	68090.00	71670.00	75430.00	79390.00	83550.00
2	**O&M expenses under Reg.36(1)(6)**					
2a	Water Charges	1050.00	1150.00	1250.00	1350.00	1450.00
2b	Secutiry expenses	5900.00	6500.00	6900.00	7200.00	7500.00
2c	Capital Spares	Shall be provided at the time of truing up				
3	O&M expenses-Ash Transportation	50000.00	50000.00	50000.00	30000.00	30000.00
	Total O&M Expenses	**125040.00**	**129320.00**	**133580.00**	**117940.00**	**122500.00**

Petitioner

PART-I
FORM-3B
Additional Form

Computation of Special Allowance

Name of the Company :				NTPC Limited					
Name of the Power Station :				Singrauli STPS					
Rate of Special allowance @lakh/MW/year					10.75				
									(Rs. Lakh)
Unit No.	Capacity (MW)	Date of COD	Year of completion of useful life of 25 yrs.		Special Allowance as per Clause 28				
				Existing 2018-19	2024-25	2025-26	2026-27	2027-28	2028-29
1	2000	21-Nov-88	2013-14	19,000	21,500	21,500	21,500	21,500	21,500
Year wise Total for the Station				**19,000**	**21,500**	**21,500**	**21,500**	**21,500**	**21,500**

Petitioner

PART 1
FORM- 5

Abstract of Admitted Capital Cost for the existing Projects

Name of the Company :	**NTPC Limited**
Name of the Power Station :	**Singrauli STPS**

Last date of order of Commission for the project	**Date (DD-MM-YYYY)**	05-09-2023
Reference of petition no. in which the above order was passed	**Petition no.**	424/GT/2020

Following details (whether admitted and /or considered) as on the last date of the period **i.e. 31.03.2024** for which tariff is approved, in the above order by the Commission:

Capital cost	**(Rs. in lakh)**	1,24,044.50
Amount of un-discharged liabilities included in above (& forming part of admitted capital cost)		-
Amount of un-discharged liabilities corresponding to above admitted capital cost (but not forming part of admitted capital cost being allowed on cash basis)		315.49
Gross Normative Debt		65257.23
Cumulative Repayment		62658.31
Net Normative Debt		2,598.92
Gross Notional Equity		58787.27
Adjustment to equity in terms of 1st proviso to Regulation 18(3)		21573.92
Normative Equity		37213.35
Cumulative Depreciation		107784.86
Freehold land		1,081.00

(Petitioner)

PART 1
FORM- 5A

Abstract of Claimed Capital Cost for the existing Projects

Name of the Company :	**NTPC Limited**
Name of the Power Station	**Singrauli STPS**

Reference of Final True-up Tariff Petition	**Affidavit dated**	16-11-2024
Capital Cost as on 31.03.2024/01.04.2024 as per Hon'ble Commission's Order dated 05.09.2023 In Pet. No. 424/GT/2020	**Rs. Lakhs**	1,24,044.50
Adjustment as per of above petition		24635.42
Following details as considered by the Petitioner as **on the First date of the period i.e. 01.04.2024** for which tariff is claimed:		
Capital cost as on 01.04.2024	**(Rs. in lakh)***	148679.92
Amount of un-discharged liabilities included in above (& forming part of admitted capital cost)		0
Amount of un-discharged liabilities corresponding to above admitted capital cost (but not forming part of admitted capital cost being allowed on cash basis)		1701.11
Gross Normative Debt		82,502.02
Cumulative Repayment		62,842.06
Net Normative Debt		19,659.96
Normative Equity		44,603.97
Cumulative Depreciation		1,06,708.21
Freehold land		1,081.00

(Petitioner)

Statement Giving Details of Project Financed through a Combination of loan

Form 8

	TRANCHE NO	
BP NO 5050000641	**T00001**	**D0001**

Unsecured Loan From HDFC Bank Ltd. VI		
Source of Loan :	**HDFC Bank Ltd. VI**	
Currency :	INR	
Amount of Loan :	15,00,00,00,000	
Total Drawn amount :	2,70,00,00,000	
Date of drawl	26.09.2018	
Interest Type :	Floating	
Fixed Interest Rate :		
Base Rate, If Floating Interest	8.45%	
Margin, If Floating Interest :	NIL	
Are there any Caps/ Floor :	Y/N	
Frequency of Intt. Payment	MONTHLY	
If Above is yes, specify Caps/ Floor :		
Moratorium Period :	6 Years	
Moratorium effective from :	26.09.2018	
Repayment Period (Inc Moratorium) :	15 Years	
Repayment Frequency :	9 Yearly Instalment	
Repayment Type :	AVG	
First Repayment Date :	26.09.2025	
Base Exchange Rate :	RUPEE	
Date of Base Exchange Rate :	N.A.	
Project Code	Project Name	Amount
	NORTH KARANPURA	70,00,00,000
	SINGRAULI	1,00,00,00,000
	RAMAGUNDAM	1,00,00,00,000
Total Allocated Amount		**2,70,00,00,000**

Statement Giving Details of Project Financed through a Combination of loan

Form 8

	TRANCHE NO	
BP NO 5050000571	**T00001**	**D00003**

Unsecured Loan From Punjab National Bank-III		
Source of Loan :	**Punjab National Bank-III**	
Currency :	INR	
Amount of Loan :	20,00,00,00,000	
Total Drawn amount :	5,00,00,00,000	
Date of Drawl	13.08.2018	
Interest Type :	Floating	
Fixed Interest Rate :		
Base Rate, If Floating Interest	8.30%	
Margin, If Floating Interest :	0.00%	
Are there any Caps/ Floor :	Y/N	
Frequency of Intt. Payment	MONTHLY	
If Above is yes, specify Caps/ Floor :		
Moratorium Period :	3 Years	
Moratorium effective from :	13.08.2018	
Repayment Period (Inc Moratorium) :	12 Years	
Repayment Frequency :	9 Yearly Instalment	
Repayment Type :	AVG	
First Repayment Date :	01.02.2022	
Base Exchange Rate :	RUPEE	
Date of Base Exchange Rate :	N.A.	
Project Code	Project Name	Amount
	BARH-I	30,00,00,000.00
	SOLAPUR	20,00,00,000.00
	TANDA-II	20,00,00,000.00
	TALLAIPALLI	50,00,00,000.00
	SINGRAULI R&M	80,00,00,000.00
	FARAKKA R&M	80,00,00,000.00
	RIHAND R&M	50,00,00,000.00
	DADRI GAS R&M	40,00,00,000.00
	KORBA R&M	40,00,00,000.00
	RAMAGUNDAM R&M	40,00,00,000.00
	VINDHAYACHAL R&M	30,00,00,000.00
	UNCHAHAR R&M	20,00,00,000.00
Total Allocated Amount		**5,00,00,00,000.00**

Statement Giving Details of Project Financed through a Combination of loan

Form 8

	TRANCHE NO	
BP NO 5050000571	**T00001**	**D00004**

Unsecured Loan From Punjab National Bank-III		
Source of Loan :	**Punjab National Bank-III**	
Currency :	INR	
Amount of Loan :	20,00,00,00,000	
Total Drawn amount :	5,00,00,00,000	
Date of Drawl	21.08.2018	
Interest Type :	Floating	
Fixed Interest Rate :		
Base Rate, If Floating Interest	8.30%	
Margin, If Floating Interest :	0.00%	
Are there any Caps/ Floor :	Y/N	
Frequency of Intt. Payment	MONTHLY	
If Above is yes, specify Caps/ Floor :		
Moratorium Period :	3 Years	
Moratorium effective from :	21.08.2018	
Repayment Period (Inc Moratorium) :	12 Years	
Repayment Frequency :	9 Yearly Instalment	
Repayment Type :	AVG	
First Repayment Date :	01.02.2022	
Base Exchange Rate :	RUPEE	
Date of Base Exchange Rate :	N.A.	
Project Code	Project Name	Amount
	SINGRAULI R&M	1,00,00,00,000.00
	KORBA R&M	1,00,00,00,000.00
	RAMAGUNDAM R&M	1,00,00,00,000.00
	VINDHYACHAL R&M	1,00,00,00,000.00
	TANDA R&M	1,00,00,00,000.00
Total Allocated Amount		**5,00,00,00,000.00**

Statement Giving Details of Project Financed through a Combination of loan

Form 8

	TRANCHE NO	
BP NO 5050000382	**T00001**	**D0005**

Unsecured Loan From SBBJ-II		
Source of Loan :	**SBBJ-II**	
Currency :	INR	
Amount of Loan :	5,00,00,00,000	
Total Drawn amount :	2,00,00,00,000	
Date of Drawal:	29.06.2018	
Interest Type :	Floating	
Fixed Interest Rate :	----------	
Base Rate, If Floating Interest	8.25%	
Margin, If Floating Interest :	0.00%	
Are there any Caps/ Floor :	Y/N	
Frequency of Intt. Payment	Monthly	
If Above is yes, specify Caps/ Floor :		
Moratorium Period :	5 Years	
Moratorium effective from :	29.06.2018	
Repayment Period (Inc Moratorium) :	15 Years	
Repayment Frequency :	10 Yearly Installments	
Repayment Type :	AVG	
First Repayment Date :	14.03.2020	
Base Exchange Rate :	RUPEE	
Date of Base Exchange Rate :	N.A.	
Project Code	**Project Name**	**Amount**
	SINGRAULI R&M	1,00,00,00,000
	Tanda R&M	1,00,00,00,000
Total Allocated Amount		**2,00,00,00,000.00**

Statement Giving Details of Project Financed through a Combination of loan

Form 8

TRANCHE NO

BP NO 5050000442 **T00001** D0001

Unsecured Loan From SBI-VIII		
Source of Loan :	**SBI-VIII**	
Currency :	INR	
Amount of Loan :	1,00,00,00,00,000	
Total Drawn amount :	5,00,00,00,000	
Interest Type :	Floating	
Fixed Interest Rate :	----------	
Base Rate, If Floating Interest	D0001-3-8.25%	
Margin, If Floating Interest :		
Are there any Caps/ Floor :	Y/N	
Frequency of Intt. Payment	Monthly	
If Above is yes, specify Caps/ Floor :		
Moratorium Period :	6 Years	
Moratorium effective from :	21.01.2015	
Repayment Period (Inc Moratorium) :	15 Years	
Repayment Frequency :	9 Yearly Installments	
Repayment Type :	AVG	
First Repayment Date :	31.01.2022	
Base Exchange Rate :	RUPEE	
Date of Base Exchange Rate :	N.A.	
Project Code	**Project Name**	**Amount**
	BARH-I	1,00,00,00,000
	FARAKKA R&M	25,00,00,000
	TSTPP R&M	40,00,00,000
	SINGRAULI R&M	40,00,00,000
	RAMAGUNDAM R&M	50,00,00,000
	KAWAS R&M	60,00,00,000
	KORBA R&M	60,00,00,000
	GANDHAR R&M	1,25,00,00,000
Total Allocated Amount		**5,00,00,00,000.00**

Statement Giving Details of Project Financed through a Combination of loan

Form 8

	TRANCHE NO	
BP NO 5050000661	**T00001**	**D00005**

Unsecured Loan From SBI-XI		
Source of Loan :	**SBI-XI**	
Currency :	INR	
Amount of Loan :	50,00,00,00,000	
Total Drawn amount :	5,00,00,00,000	
Date of Drawal:	11.12.2018	
Interest Type :	Floating	
Fixed Interest Rate :	----------	
Base Rate, If Floating Interest	8.35%	
Margin, If Floating Interest :	0.00%	
Are there any Caps/ Floor :	Y/N	
Frequency of Intt. Payment	Monthly	
If Above is yes, specify Caps/ Floor :		
Moratorium Period :	3 Years	
Moratorium effective from :	11.12.2018	
Repayment Period (Inc Moratorium) :	12 Years	
Repayment Frequency :	9 Yearly Installments	
Repayment Type :	AVG	
First Repayment Date :	01.10.2022	
Base Exchange Rate :	RUPEE	
Date of Base Exchange Rate :	N.A.	
Project Code	**Project Name**	**Amount**
	BARH-I	6,00,00,000
	TAPOVAN VISHNUGARH	7,00,00,000
	SOLAPUR	12,00,00,000
	LARA-I	40,00,00,000
	GADARWARA	75,00,00,000
	NORTH KARANPURA	10,00,00,000
	DARLIPALLI	60,00,00,000
	TANDA-II	30,00,00,000
	KHARGONE	1,00,00,00,000
	TELANGANA	1,20,00,00,000
	SINGRAULI R&M	20,00,00,000
	RAMAGUNDAM R&M	20,00,00,000
Total Allocated Amount		**5,00,00,00,000.00**

Statement Giving Details of Project Financed through a Combination of loan

Form 8

	TRANCHE NO	
BP NO 5050000762	**T00001**	**D00006**

Unsecured Loan From AXIS BANK-II		
Source of Loan :	**AXIS BANK-II**	
Currency :	INR	
Amount of Loan :	25,00,00,00,000	
Total Drawn amount :	5,00,00,00,000	
Date of Drawl	08.04.2020	
Interest Type :	Floating	
Fixed Interest Rate :		
Base Rate, If Floating Interest	7.45%	
Margin, If Floating Interest :	-	
Are there any Caps/ Floor :	Y/N	
Frequency of Intt. Payment	MONTHLY	
If Above is yes, specify Caps/ Floor :		
Moratorium Period :	3 Years	
Moratorium effective from :	08.04.2020	
Repayment Period (Inc Moratorium) :	12 Years	
Repayment Frequency :	9 Yearly Yearly Instalment	
Repayment Type :	AVG	
First Repayment Date :	11.07.2023	
Base Exchange Rate :	RUPEE	
Date of Base Exchange Rate :	N.A.	
Project Code	Project Name	Amount
	BARH-I	70,00,00,000
	GADARWARA	60,00,00,000
	DARLIPALLI	20,00,00,000
	KHARGONE	20,00,00,000
	BARAUNI-II	40,00,00,000
	BILHAUR SOLAR 85MW	30,00,00,000
	AURAIYA SOLAR 20MW	5,00,00,000
	AURAIYA SOLAR FS 20MW	5,00,00,000
	SIMHADRI FLOATING	5,00,00,000
	SINGRAULI R&M	43,00,00,000
	KORBA R&M	32,00,00,000
	RAMAGUNDAM I & II R&M	45,00,00,000
	VINDHYACHAL R&M	40,00,00,000
	FARAKKA R&M	26,00,00,000
	RIHAND R&M	35,00,00,000
	DADRI GAS R&M	6,00,00,000
	TSTPP R&M	8,00,00,000
	NCTPP R&M	5,00,00,000
	CHATTI BARIATU CMB	5,00,00,000
Total Allocated Amount		**5,00,00,00,000**

Refinanced by Bank of India Loan in 2022-23

Statement Giving Details of Project Financed through a Combination of loan

Form 8

BP NO 50500001121	TRANCHE NO T00001	D00002

Unsecured Loan From Bank Of India-V A

Source of Loan :	**Bank Of India-V A**	
Currency :	INR	
Amount of Loan :	11,89,13,00,000	
Total Drawn amount :	11,22,08,00,000	
Date of Drawal :	09.08.2021	
Interest Type :	Floating	
Fixed Interest Rate :		
Base Rate, If Floating Interest	8.15%	
Margin, If Floating Interest :	NIL	
Are there any Caps/ Floor :	Y/N	
Frequency of Intt. Payment	Monthly	
If Above is yes, specify Caps/ Floor :		
Moratorium Period :	3 Years	
Moratorium effective from :	09.08.2021	
Repayment Period (Inc Moratorium) :	15 Years	
Repayment Frequency :	Yearly	
Repayment Type :	AVG	
First Repayment Date :	05.03.2025	
Base Exchange Rate :	RUPEE	
Date of Base Exchange Rate :		
Project Code	**Project Name**	**Amount**
	AURAIYA SOLAR	5,00,00,000.00
	AURAIYA SOLAR FS	5,00,00,000.00
	SINGRAULI-R&M	43,00,00,000.00
	FSTPS FGD	2,00,00,000.00
	KHSTPS FGD	1,00,00,000.00
	TSTPS-FGD	22,00,00,000.00
	UNCHAHAR-I-FGD	24,00,00,000.00
	SIPAT-I FGD	15,00,00,000.00
	SIMHADRI-FGD	2,00,00,000.00
	SOLAPUR-FGD	9,00,00,000.00
	KUDGI-FGD	8,00,00,000.00
	THDC	3,62,37,00,000.00
	NEEPCO	1,93,17,00,000.00
	BARH-I	2,37,36,00,000.00
	NORTH KARANPURA	46,46,00,000.00
	TAPOVAN VISHNUGAD	84,79,00,000.00
	RAMMAM	12,08,00,000.00
	TELANGANA	31,22,00,000.00
	TALAIPALI	1,44,00,000.00
	CHATTI BARIATU	17,19,00,000.00
Total Allocated Amount		**11,22,08,00,000**

Unsecured Loan From HDFC Bank Ltd. IX		
Source of Loan :	**HDFC Bank Ltd. IX**	
Currency :	INR	
Amount of Loan :	50,00,00,00,000	
Total Drawn amount :	5,00,00,00,000	
Date of drawl	18.11.2020	
Interest Type :	Floating	
Fixed Interest Rate :		
Base Rate, If Floating Interest	5.95%	
Margin, If Floating Interest :	NIL	
Are there any Caps/ Floor :	Y/N	
Frequency of Intt. Payment	MONTHLY	
If Above is yes, specify Caps/ Floor :		
Moratorium Period :	3 Years	
Moratorium effective from :	18.11.2020	
Repayment Period (Inc Moratorium) :	15 Years	
Repayment Frequency :	12 Yearly Instalment	
Repayment Type :	AVG	
First Repayment Date :	30.06.2024	
Base Exchange Rate :	RUPEE	
Date of Base Exchange Rate :	N.A.	
Project Code	Project Name	Amount
	BARH I	1,75,00,00,000.00
	BARAUNI-II	25,00,00,000.00
	SOLAPUR	20,00,00,000.00
	TTPS R&M	1,00,00,000.00
	SINGRAULI R&M	15,00,00,000.00
	KORBA R&M	15,00,00,000.00
	RAMAGUNDAM I & II R&M	43,50,00,000.00
	VINDHYACHAL R&M	18,00,00,000.00
	FARAKKA R&M	12,00,00,000.00
	UNCHAHAR R&M	16,00,00,000.00
	RIHAND R&M	16,00,00,000.00
	FARIDABAD R&M	1,50,00,000.00
	DADRI GAS R&M	3,00,00,000.00
	TSTPP R&M	11,50,00,000.00
	KAHALGAON R&M	16,00,00,000.00
	SIMHADRI R&M	1,50,00,000.00
	CHATTI BARIATU CMB	25,00,00,000.00
	TALAIPALI COAL MINE	75,00,00,000.00
	KIRENDARI	10,00,00,000.00
Total Allocated Amount		**5,00,00,00,000**

Statement Giving Details of Project Financed through a Combination of loan

Form 8

	TRANCHE NO	
BP NO 5050000791	**T00001**	**D00002**

Unsecured Loan From HDFC Bank Ltd. VII		
Source of Loan :	**HDFC Bank Ltd. VII**	
Currency :	INR	
Amount of Loan :	25,00,00,00,000	
Total Drawn amount :	5,00,00,00,000	
Date of drawl	21.06.2019	
Interest Type :	Floating	
Fixed Interest Rate :		
Base Rate, If Floating Interest	8.40%	
Margin, If Floating Interest :	NIL	
Are there any Caps/ Floor :	Y/N	
Frequency of Intt. Payment	MONTHLY	
If Above is yes, specify Caps/ Floor :		
Moratorium Period :	6 Years	
Moratorium effective from :	21.06.2019	
Repayment Period (Inc Moratorium) :	15 Years	
Repayment Frequency :	9 Yearly Instalment	
Repayment Type :	AVG	
First Repayment Date :	11.06.2026	
Base Exchange Rate :	RUPEE	
Date of Base Exchange Rate :	N.A.	
Project Code	Project Name	Amount
	NCPS-FGD	**10,00,00,000**
	FSTPS R&M	**10,00,00,000**
	KORBA-R&M	**10,00,00,000**
	SOLAPUR	**50,00,00,000**
	MOUDA-II	**50,00,00,000**
	TELANGANA	**30,00,00,000**
	Singrauli-R&M	**30,00,00,000**
	Simhadri-R&M	**15,00,00,000**
	Korba-R&M	**10,00,00,000**
	Ramagundam-R&M	**10,00,00,000**
	VSTPS R&M	**10,00,00,000**
	TANDA-II	**30,00,00,000**
	DARLIPALLI	**30,00,00,000**
	NORTH KARANPURA	**30,00,00,000**
	GADARWARA	**40,00,00,000**
	LARA-I	**15,00,00,000**
	BARH-I	**1,20,00,00,000**
Total Allocated Amount		**5,00,00,00,000**

TRANCHE NO

Form 8

TRANCHE NO

BP NO 5050001151 **T00001** **D00002**

Unsecured Loan From HDFC Bank Ltd. X		
Source of Loan :	**HDFC Bank Ltd. X**	
Currency :	INR	
Amount of Loan :	30,00,00,00,000	
Total Drawn amount :	5,00,00,00,000	
Date of drawl	24.11.2021	
Interest Type :	Floating	
Fixed Interest Rate :		
Base Rate, If Floating Interest	5.83%	
Margin, If Floating Interest :	NIL	
Are there any Caps/ Floor :	Y/N	
Frequency of Intt. Payment	MONTHLY	
If Above is yes, specify Caps/ Floor :		
Moratorium Period :	3 Years	
Moratorium effective from :	24.11.2021	
Repayment Period (Inc Moratorium) :	15 Years	
Repayment Frequency :	12 Yearly Instalment	
Repayment Type :	AVG	
First Repayment Date :	24.11.2025	
Base Exchange Rate :	RUPEE	
Date of Base Exchange Rate :	N.A.	
Project Code	Project Name	Amount
	NORTH KARANPURA	24,00,00,000.00
	RAMMAM	3,00,00,000.00
	TELANGANA	23,00,00,000.00
	LARA	50,00,00,000.00
	GADARWARA	50,00,00,000.00
	DARLIPALLI	77,00,00,000.00
	TANDA-II	65,00,00,000.00
	BARAUNI-II	20,00,00,000.00
	SINGRAULI R&M	15,00,00,000.00
	KORBA R&M	25,00,00,000.00
	RAMAGUNDAM I & II R&M	40,00,00,000.00
	VINDHYACHAL R&M	7,00,00,000.00
	FARAKKA R&M	10,00,00,000.00
	UNCHAHAR R&M	4,00,00,000.00
	RIHAND R&M	15,00,00,000.00
	KAHALGAON R&M	3,00,00,000.00
	CHATTI BARIATU CMB	5,00,00,000.00
	DULANGA COAL MINE	26,00,00,000.00
	TALAIPALI COAL MINE	26,00,00,000.00
	KIRENDARI	3,00,00,000.00
	BARH-II FGD	2,50,00,000.00
	MOUDA-II FGD	6,50,00,000.00
Total Allocated Amount		**5,00,00,00,000**

Form 8

TRANCHE NO

BP NO 5050001151	T00001	D00004
Unsecured Loan From HDFC Bank Ltd. X		
Source of Loan :	**HDFC Bank Ltd. X**	
Currency :	INR	
Amount of Loan :	30,00,00,00,000	
Total Drawn amount :	5,00,00,00,000	
Date of drawl	12.05.2022	
Interest Type :	Floating	
Fixed Interest Rate :		
Base Rate, If Floating Interest	5.83%	
Margin, If Floating Interest :	NIL	
Are there any Caps/ Floor :	Y/N	
Frequency of Intt. Payment	MONTHLY	
If Above is yes, specify Caps/ Floor :		
Moratorium Period :	3 Years	
Moratorium effective from :	24.11.2021	
Repayment Period (Inc Moratorium) :	15 Years	
Repayment Frequency :	12 Yearly Instalment	
Repayment Type :	AVG	
First Repayment Date :	24.11.2025	
Base Exchange Rate :	RUPEE	
Date of Base Exchange Rate :	N.A.	
Project Code	Project Name	Amount
	NORTH KARANPURA	33,00,00,000.00
	KAYAKULAM FLOATING	40,00,00,000.00
	AURAIYA SOLAR FS 20	5,00,00,000.00
	JETSAR SOLAR	10,00,00,000.00
	DEVIKOT SOLAR	5,00,00,000.00
	DEVIKOT SOLAR-90MW	20,00,00,000.00
	NOKHRA SOLAR	1,00,00,00,000.00
	ETTAYAPURAM SOLAR	5,50,00,000.00
	RIHAND-SOLAR	1,00,00,000.00
	KAWAS SOLAR	5,00,00,000.00
	ANTA SOLAR	8,50,00,000.00
	SOLAPUR SOLAR	5,00,00,000.00
	NOKH SOLAR PLOT-I (245MW)	33,00,00,000.00
	NOKH SOLAR PLOT-III (245M	39,00,00,000.00
	SINGRAULI-R&M	13,00,00,000.00
	KORBA-R&M	10,00,00,000.00
	RAMAGUNDAM-R&M	37,00,00,000.00
	VSTPS R&M	9,00,00,000.00
	FSTPS R&M	20,00,00,000.00
	RIHAND-R&M	20,00,00,000.00
	FARIDABAD R&M	5,00,00,000.00
	TSTPP R&M	10,00,00,000.00
	KAHALGAON(R&M)	10,00,00,000.00
	NCPS-STAGE-I-DSI	56,00,00,000.00
Total Allocated Amount		**5,00,00,00,000**

Statement Giving Details of Project Financed through a Combination of loan

Form 8

TRANCHE NO

BP NO 5050001263	T00001	D0001
Unsecured Loan From Indusind Bank		

Source of Loan :	Indusind Bank	
Currency :	INR	
Amount of Loan :	15,00,00,00,000	
Total Drawn amount :	2,16,42,00,000	
Date of Drawal:	15.07.2022	
Interest Type :	FLOATING	
Rate of Interest	6.82%	
Margin, If Floating Interest :	0.00%	
Are there any Caps/ Floor :	Y/N	
Frequency of Intt. Payment	MONTHLY	
If Above is yes, specify Caps/ Floor :		
Moratorium Period :	3 Years	
Moratorium effective from :	15-Jul-22	
Repayment Period (Inc Moratorium) :	15 Years	
Repayment Frequency :	12 Equal annual Instalments	
Repayment Type :	AVG	
First Repayment Date :	15-Jul-26	
Base Exchange Rate :	RUPEE	
Date of Base Exchange Rate :	N.A.	
Project Code	**Project Name**	**Amount**
	ETTAYAPURAM SOLAR(230MW)	14,42,00,000.00
	NORTH KARANPURA	52,00,00,000.00
	DEVIKOT SOLAR-90MW	13,00,00,000.00
	SAMBHU KI BHURJ SOLAR 250	9,00,00,000.00
	FATEHGARH (296MW)	10,00,00,000.00
	KAWAS SOLAR 56MW	5,00,00,000.00
	BARAUNI-II (2X250MW)	8,00,00,000.00
	SINGRAULI R&M	20,00,00,000.00
	KORBA R&M	20,00,00,000.00
	RAMAGUNDAM I & II R&M	20,00,00,000.00
	VINDHYACHAL R&M	11,00,00,000.00
	FARAKKA R&M	7,00,00,000.00
	CHATTI BARIATU CMB	10,00,00,000.00
	TALAIPALI COAL MINE	13,00,00,000.00
	KIRENDARI	4,00,00,000.00
Total Allocated Amount		**2,16,42,00,000.00**

Singrauli

(Rs Lakhs)

Year wise Prepayment of Loans

Sr. No.	Bank	ROI on prepayment date	Date of Prepayment	Replaced with Bank	ROI of relplaced Loan	Prepayment Amount	Benefit(%)	Benefit(%) retained with NTPC
Prepayment of Loans in 2022-23								
1	Axis Bank II	8.30%	29-Mar-23	Bank of India-V-A	8.15%	4300	0.15%	0.08%

WAR - Rupee Term Loan

Sl No	BP No.	BANK	RATE OF INTEREST	From	To	No of days	Product	2024-25
1	5050000641	HDFC Bank Ltd. VI	7.9500%	01-Apr-24	31-Mar-25	365.00	29.02	
						365.00	**29.02**	**7.9500%**
2	5050000571	Punjab National Bank	7.9000%	01-Apr-24	31-Mar-25	365.00	28.84	
						365.00	**28.84**	**7.9000%**
4	5050000382	State Bank of Bikaner	8.2000%	01-Apr-24	31-Mar-25	365.00	29.93	
						365.00	**29.93**	**8.2000%**
5	5050000442	State Bank of India - V	8.2000%	01-Apr-24	31-Mar-25	365.00	29.93	
						365.00	**29.93**	**8.2000%**
6	5050000661	State Bank of India - X	8.2000%	01-Apr-24	31-Mar-25	365.00	29.93	
						365.00	**29.93**	**8.2000%**
7	50500001121	Bank of India-V-A	8.00%	01-Apr-24	31-Mar-25	365.00	29.20	
						365.00	**29.20**	**8.00%**
8	5050000981	HDFC Bank Limited-IX	7.95%	01-Apr-24	31-Mar-25	365.00	29.02	
						365.00	**29.02**	**7.95%**
9	5050000791	HDFC Bank Limited-VI	7.95%	01-Apr-24	31-Mar-25	365.00	29.02	
						365.00	**29.02**	**7.95%**
10	5050001151	HDFC X	7.95%	01-Apr-24	31-Mar-25	365.00	29.02	
						365.00	**29.02**	**7.95%**
11	5050001263	IndusInd Bank	8.05%	01-Apr-24	31-Mar-25	365.00	29.38	
						365.00	**29.38**	**8.05%**

PART-I
FORM- 9A
Additional Form

Year wise Statement of Additional Capitalisation after COD

Name of the Petitioner	NTPC Limited
Name of the Generating Station	Singrauli STPS
COD	01-05-1988
For Financial Year	2024-29 (Summary)

Amount in Rs Lakh

Sl. No.	Head of Work /Equipment	ACE Claimed (Actual / Projected)					Regulations under which claimed	Justification	Admitted Cost by the Commission, if any
		2024-25	2025-26	2026-27	2027-28	2028-29			
1	2	3	4	5	6	7		8	9
A.	**Works eligble for RoE at Normal Rate**								
1	HMI Upgradation		1300.00				Please refer respective financial Year for Regulations and Justification		
	Total (A)	**-**	**1,300.00**	**-**	**-**	**-**			
B.	**Works eligble for Return on Equity linked to SBI MCLR+ 350 basis points:**								
1	Dry Ash Extraction system	1866.00	240.00				Please refer respective financial Year for Regulations and Justification		
2	Ash Utilization Infrastructure		875.00	3,285.00	900.00				
3	AWRS Augmentation		1500.00	3,000.00	600.00				
4	Expenditure for enabling Biomass Cofiring		500.00						
5	Setup of peripheral security surveillance system at NTPC Singrauli		200.00	293.00					
	Total (B)	**1866.00**	**3315.00**	**6578.00**	**1500.00**	**0.00**			
Total Add. Cap. Claimed (A+B)		**1,866.00**	**4,615.00**	**6,578.00**	**1,500.00**	**-**			

(Petitioner)

PART-I
FORM- 9

Year wise Statement of Additional Capitalisation after COD

Name of the Petitioner	**NTPC Limited**
Name of the Generating Station	**Singrauli STPS**
COD	**01-05-1988**
For Financial Year	**2024-25**

Amount in Rs Lakh

Sl. No.	Head of Work /Equipment	ACE Claimed (Projected)				Regulations under which claimed	Justification	Admitted Cost by the Commission, if any
		Accrual basis as per IGAAP	Un-discharged Liability included in col. 3	Cash basis	IDC included in col. 3			
1	**2**	**3**	**4**	**5= (3-4)**	**6**	**7**	**8**	**9**
A.	**Works eligble for RoE at Normal Rate**							
					NIL			
	Total (A)	**-**	**-**	**-**	**-**			
B.	**Works eligble for Return on Equity linked to SBI MCLR+ 350 basis points:**							
1	Dry Ash Extraction system	1866.00	-	1,866.00		26-1(b), 19(2)(i)	It is submitted that 100% Ash utilization has been made mandatory by MOEF &CC vide its notification dtd. 25.01.2016 and subsequent NGT Order dtd 20.11.2018(**Attached as Annexure-A1**). For complaince of MOEF Gazette Notification and NGT order, and to avoid imposition of penality for "damages for environment restoration" as prescribed in the said Order, NTPC singrauli is incuring this expenditure for achieving 100% Ash utilisation target in Singrauli. In view of this, Hon'ble Commission may be pleased to allow the same under Reg. 26(1)(b) of Tariff Regulations 2024. It is further submitted tha Hon'ble Commission had already allowed the expenditure against this works vide order dated 05.09.2023 in petition no. 424/GT/2020 under Regulation 26(1)(b) of TR 2019.It is submitted that the work has been partially capitalized in tariff period 2019-24, and this expenditure pertains to the remaining capitalization for unit 6 and 7, pending the completion of trial runs and the Performance Guarantee (PG) test.	
	Total (B)	**1,866.00**	**-**	**1,866.00**				
Total Add. Cap. Claimed (A+B)		**1,866.00**	**-**	**1,866.00**	**-**			

(Petitioner)

PART-I

FORM- 9

Year wise Statement of Additional Capitalisation after COD

Name of the Petitioner	**NTPC Limited**
Name of the Generating Station	**Singrauli STPS**
COD	**01-05-1988**
For Financial Year	**2025-26**

Amount in Rs Lakh

Sl. No.	Head of Work /Equipment	ACE Claimed (Actual / Projected)				Regulations under which claimed	Justification	Admitted Cost by the Commission, if any
		Accrual basis as per IGAAP	Un-discharged Liability included in col. 3	Cash basis	IDC included in col. 3			
1	**2**	**3**	**4**	**5= (3-4)**	**6**	**7**	**8**	**9**
A.	**Works eligble for RoE at Normal Rate**							
1	HMI Upgradation	1,300.00		1,300.00		25-2(b), 25-2(c)	It is submitted that the SG, TG, and BOP station C&I system at NTPC Singrauli (Unit 4 and Unit 5) operates on the ABB Symphony platform with a Windows XP operating system. Microsoft has officially ended support for Windows XP on April 8, 2014 (**attached as Annexure A2**). With the cessation of support, no further maintenance patches, security updates, or antivirus support are available, exposing the existing system to significant security risks. It is further submitted that , the CEA Guidelines (2021) for Cyber Security in the Power Sector (**attached as Annexure A3**) mandates (i) Phasing out legacy systems, (ii) Hardening existing systems with additional security controls in consultation with the OEM, and (iii) Maintaining system logs for a minimum of six months. In light of these mandates, it has become essential to upgrade the existing ABB Symphony system. It is submitted that the proposed upgradation involves upgradation of existing HMI System and implementing a cybersecurity suite to strengthen system hardening. The OEM's offer, detailing the need for this upgrade, is provided **as Annexure A4** for reference. In view of the above, it is respectfully submitted that the Hon'ble Commission may allow the proposed expenditure under Section25-2(b),25-2(c)	
	Total (A)	**1,300.00**	**-**	**1,300.00**				
B.	**Works eligble for Return on Equity linked to SBI MCLR+ 350 basis points:**							
1	Dry Ash Extraction system	240.00	-	240.00		26-1(b), 19(2)(i)	Please refer to Justification provided in Form-9 2024-25 for Same item	
2	Ash Utilization Infrastructure	875.00	-	875.00		26-1(b), 19(2)(i)	In accordance with the Ministry of Environment, Forest and Climate Change (MOEF&CC) notification dated 31st December 2021(**Attached as annexure-A5**), all coal or lignite-based thermal power plants are responsible for ensuring 100% utilization of the ash generated by them in an eco-friendly manner. To comply with this mandate, various expenditures are proposed to be incurred in the instant station during tariff period 2024-29. These include the development of a Rail Ash Loading System to enhance ash utilization through the ash loading silos and transportation via the rail network, procurement of weighbridges to ensure accurate weighment of ash for utilization.Further, it is submitted that Hon'ble commission acknowledges the inclusion of capital expenditure on account of ash disposal and utilization in capital cost as per provision of regulation 19(2)(i). In view of this, Hon'ble Commission may be pleased to allow the same under Reg. 26(1)(b) read with 19(2)(i) of Tariff Regulations 2024.	

Year wise Statement of Additional Capitalisation after COD

Name of the Petitioner	**NTPC Limited**
Name of the Generating Station	**Singrauli STPS**
COD	**01-05-1988**
For Financial Year	**2025-26**

Amount in Rs Lakh

Sl. No.	Head of Work /Equipment	ACE Claimed (Actual / Projected)				Regulations under which claimed	Justification	Admitted Cost by the Commission, if any
		Accrual basis as per IGAAP	Un-discharged Liability included in col. 3	Cash basis	IDC included in col. 3			
1	**2**	**3**	**4**	**5= (3-4)**	**6**	**7**	**8**	**9**
3	AWRS Augmentation	1,500.00		1,500.00		26-1(b)	The National Green Tribunal (NGT), in its order dated 18.01.2022, addressing industrial pollution issues in the Singrauli and Sonebhadra regions of Madhya Pradesh and Uttar Pradesh, directed NTPC Singrauli, to take measures to stop the discharge of ash pond overflow into the Rihand reservoir (**NGT Order attached as Annexure-A6**). The projected expenditure for augmenting the Ash Water Recirculation System (AWRS) is intended to ensure compliance with the NGT Order by preventing any discharge of ash water into external areas. In view of this, Hon'ble Commission may be pleased to allow the same under Reg. 26(1)(b) of Tariff Regulations 2024.	
4	Expenditure for enabling Biomass Cofiring	500.00		500.00		26-1(b)	The Ministry of Power (MoP) through its revised Biomass Policy dated 8th October 2021, has mandated the co-firing of biomass pellets in coal-based generating stations at a blending ratio of 5% (**Annex-A7**). In view of this mandate, Proposed expenditure is to facilitate the required co-firing. Therefore, It is requested that the Commission allow this expenditure under Section 26(1)(b).	
5	Setup of peripheral security surveillance system at NTPC Singrauli	200.00	-	200.00		26-1(d)	It is submitted that the Petitioner has received a directive from the Central Industrial Security Force (CISF) under the Ministry of Home Affairs on 22-03-2023, mandating the augmentation of the peripheral security surveillance system in the instant station to monitor and control suspicious movements, thereby enhancing security. The communication in this regard is **attached as Annexure A8.** The anticipated expenditure under this head is projected to be incurred to enhance the safety and security of the installation in line with the above mandate. In view of this requirement, it is humbly requested that the Commission allow this expenditure under Section 26(1)(d).	
	Total (B)	**3,315.00**	**-**	**3,315.00**				
		4,615.00	**-**	**4,615.00**	**-**			

(Petitioner)

PART-I
FORM- 9

Year wise Statement of Additional Capitalisation after COD

Name of the Petitioner	**NTPC Limited**
Name of the Generating Station	**Singrauli STPS**
COD	**01-05-1988**
For Financial Year	**2026-27**

Amount in Rs Lakh

Sl. No.	Head of Work /Equipment	ACE Claimed (Actual / Projected)				Regulations under which claimed	Justification	Admitted Cost by the Commission, if any
		Accrual basis as per IGAAP	Un-discharged Liability included in col. 3	Cash basis	IDC included in col. 3			
1	**2**	**3**	**4**	**5= (3-4)**	**6**	**7**	**8**	**9**
A.	**Works eligble for RoE at Normal Rate**							
	NIL							
	Total (A)	**-**	**-**	**-**	**-**	**-**		
B.	**Works eligble for Return on Equity linked to SBI MCLR+ 350 basis points:**							
1	Setup of peripheral security surveillance system at NTPC Singrauli	293.00	-	293.00		26-1(d)	Please refer to Justification provided in Form-9 2025-26 for Same item	
2	Ash Utilization Infrastructure	3,285.00	-	3,285.00		26-1(b), 19(2)(i)	Please refer to Justification provided in Form-9 2025-26 for Same item	
3	AWRS Augmentation	3,000.00	-	3,000.00		26-1(b)	Please refer to Justification provided in Form-9 2025-26 for Same item	
	Total (B)	**6,578.00**	**-**	**6,578.00**	**-**	**-**		
Total Add. Cap. Claimed (A+B)		**6,578.00**	**-**	**6,578.00**	**-**	**-**		

(Petitioner)

PART-I
FORM- 9

Year wise Statement of Additional Capitalisation after COD

Name of the Petitioner	**NTPC Limited**
Name of the Generating Station	**Singrauli STPS**
COD	**01-05-1988**
For Financial Year	**2027-28**

Amount in Rs Lakh

Sl. No.	Head of Work /Equipment	ACE Claimed (Actual / Projected)				Regulations under which claimed	Justification	Admitted Cost by the Commission, if any
		Accrual basis as per IGAAP	Un-discharged Liability included in col. 3	Cash basis	IDC included in col. 3			
1	**2**	**3**	**4**	**5= (3-4)**	**6**	**7**	**8**	**9**
A.	**Works eligble for RoE at Normal Rate**							
	NIL							
	Total (A)	**-**	**-**	**-**	**-**	**-**		
B.	**Works eligble for Return on Equity linked to SBI MCLR+ 350 basis points:**							
1	Ash Utilization Infrastructure	900.00	-	900.00		26-1(b), 19(2)(i)	Please refer to Justification provided in Form-9 2025-26 for Same item	
2	AWRS Augmentation	600.00	-	600.00		26-1(b)	Please refer to Justification provided in Form-9 2025-26 for Same item	
	Total (B)	**1,500.00**	**-**	**1,500.00**	**-**			
Total Add. Cap. Claimed (A+B)		**1,500.00**	**-**	**1,500.00**	**-**	**-**		

(Petitioner)

PART-I
FORM- 9

Year wise Statement of Additional Capitalisation after COD

Name of the Petitioner	**NTPC Limited**
Name of the Generating Station	**Singrauli STPS**
COD	**01-05-1988**
For Financial Year	**2028-29**

Amount in Rs Lakh

Sl. No.	Head of Work /Equipment	ACE Claimed (Actual / Projected)				Regulations under which claimed	Justification	Admitted Cost by the Commission, if any
		Accrual basis as per IGAAP	Un-discharged Liability included in col. 3	Cash basis	IDC included in col. 3			
1	2	3	4	5= (3-4)	6	7	8	9
A.	**Works eligble for RoE at Normal Rate**							
NIL								
	Total (A)	-	-	-				
B.	**Works eligble for Return on Equity linked to SBI MCLR+ 350 basis points:**							
NIL								
	Total (B)	-	-	-				
Total Add. Cap. Claimed (A+B)		-	-	-	-	-		

(Petitioner)

PART-I
FORM- 10

Name of the Petitioner				**NTPC Limited**						
Name of the Generating Station				**Singrauli STPS**						
Date of Commercial Operation				**01-05-1988**						
							Amount in Rs Lakh			
Financial Year (Starting from COD)1	Actual					Admitted				
	2024-25	**2025-26**	**2026-27**	**2027-28**	**2028-29**	**2024-25**	**2025-26**	**2026-27**	**2027-28**	**2028-29**
1	2	3	4	5	6	7	8	9	10	11
Amount capitalised in Work/ Equipment										
Financing Details										
Loan-1	**Add cap is proposed to be finance in Debt:Equity ratio of 70:30**									

(Petitioner)

PART-I
FORM- 12

Statement of Depreciation

Name of the Company :	**NTPC Limited**
Name of the Power Station :	**Singrauli STPS**

(Amount in Rs Lakh)

S. No.	Particulars	Existing 2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
1	2	3	4	5	6	7	8
1	Opening Capital Cost	1,48,204.83	1,48,679.92	1,50,545.92	1,55,160.92	1,61,738.92	1,63,238.92
2	Closing Capital Cost	1,48,679.92	1,50,545.92	1,55,160.92	1,61,738.92	1,63,238.92	1,63,238.92
3	Average Capital Cost	1,48,442.37	1,49,612.92	1,52,853.42	1,58,449.92	1,62,488.92	1,63,238.92
1a	*Cost of IT Equipments & Software included in (1) above	2,382.67	2,159.18	2,159.18	2,159.18	2,159.18	2,159.18
2a	*Cost of IT Equipments & Software included in (2) above	2,159.18	2,159.18	2,159.18	2,159.18	2,159.18	2,159.18
3a	*Average Cost of IT Equipments & Software	2,270.93	2,159.18	2,159.18	2,159.18	2,159.18	2,159.18
4	Freehold land	1,081.00	1,081.00	1,081.00	1,081.00	1,081.00	1,081.00
8	Rate of depreciation						
6	Depreciable value	1,32,852.33	1,34,734.34	1,38,887.84	1,44,808.04	1,46,158.04	1,46,158.04
9	Balance useful life at the beginning of the period	-	-	-	-	-	-
9	Depreciation (for the period)	1,932.61	28,845.39	4,153.50	5,920.20	1,350.00	-
10	Depreciation (annualised)	1,932.61	28,845.39	4,153.50	5,920.20	1,350.00	-
11	Cumulative depreciation at the end of the period	1,07,950.34	1,35,553.59	1,39,707.09	1,45,627.29	1,46,977.29	1,46,977.29
12	Less: Cumulative depreciation adjustment on account of un-discharged liabilities deducted as on 01.04.2009	-	-	-	-	-	-
13	Add: Cumulative depreciation adjustment on account of liability Discharge	-	-	-	-	-	-
14	Less: Cumulative depreciation adjustment on account of de-capitalisation	-1,242.13	-	-	-	-	-
15	Net Cumulative depreciation at the end of the period after adjustments	1,06,708.21	1,35,553.59	1,39,707.09	1,45,627.29	1,46,977.29	1,46,977.29

PART-I
FORM- 12

Statement of Depreciation

Name of the Company :	**NTPC Limited**
Name of the Power Station :	**Singrauli STPS**

(Amount in Rs Lakh)

S. No.	Particulars	Existing 2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
1	2	3	4	5	6	7	8
	For existing assets (i.e. assets admitted upto 31.3.2009)						
1	Opening Capital Cost	1,12,529.95	1,11,149.80	1,11,149.80	1,11,149.80	1,11,149.80	1,11,149.80
2	Closing Capital Cost	1,11,149.80	1,11,149.80	1,11,149.80	1,11,149.80	1,11,149.80	1,11,149.80
3	Average Capital Cost	1,11,839.87	1,11,149.80	1,11,149.80	1,11,149.80	1,11,149.80	1,11,149.80
1a	*Cost of IT Equipments & Software included in (1) above	2,382.67	2,159.18	2,159.18	2,159.18	2,159.18	2,159.18
2a	*Cost of IT Equipments & Software included in (2) above	2,159.18	2,159.18	2,159.18	2,159.18	2,159.18	2,159.18
3a	*Average Cost of IT Equipments & Software	2,270.93	2,159.18	2,159.18	2,159.18	2,159.18	2,159.18
4	Freehold land	1,081.00	1,081.00	1,081.00	1,081.00	1,081.00	1,081.00
8	Rate of depreciation						
6	Depreciable value	99,910.08	99,277.84	99,277.84	99,277.84	99,277.84	99,277.84
9	Balance useful life at the beginning of the period	-	-	-	-	-	-
9	Depreciation (for the period)	-	-	-	-	-	-
10	Depreciation (annualised)	-	-	-	-	-	-
11	Cumulative depreciation at the end of the period	1,01,339.22	1,00,097.09	1,00,097.09	1,00,097.09	1,00,097.09	1,00,097.09
12	Less: Cumulative depreciation adjustment on account of un-discharged liabilities deducted as on 01.04.2009						
13	Add: Cumulative depreciation adjustment on account of liability Discharge						
14	Less: Cumulative depreciation adjustment on account of de-capitalisation	-1,242.13					
15	Net Cumulative depreciation at the end of the period after adjustments	1,00,097.09	1,00,097.09	1,00,097.09	1,00,097.09	1,00,097.09	1,00,097.09

PART-I
FORM- 12

Statement of Depreciation

Name of the Company :	**NTPC Limited**
Name of the Power Station :	**Singrauli STPS**

(Amount in Rs Lakh)

S. No.	Particulars	Existing 2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
1	2	3	4	5	6	7	8
	For new assets (i.e. assets admitted on/ after 1.4.2009)						
1	Opening Capital Cost	35,674.88	37,530.12	39,396.12	44,011.12	50,589.12	52,089.12
2	Closing Capital Cost	37,530.12	39,396.12	44,011.12	50,589.12	52,089.12	52,089.12
3	Average Capital Cost	36,602.50	38,463.12	41,703.62	47,300.12	51,339.12	52,089.12
1a	*Cost of IT Equipments & Software included in (1) above						
2a	*Cost of IT Equipments & Software included in (2) above						
3a	*Average Cost of IT Equipments & Software						
4	Freehold land						
8	Rate of depreciation						
6	Depreciable value	32,942.25	35,456.51	39,610.01	45,530.21	46,880.21	46,880.21
9	Balance useful life at the beginning of the period	-	-	-	-	-	-
9	Depreciation (for the period)	1,932.61	28,845.39	4,153.50	5,920.20	1,350.00	-
10	Depreciation (annualised)	1,932.61	28,845.39	4,153.50	5,920.20	1,350.00	-
11	Cumulative depreciation at the end of the period	6,611.12	35,456.51	39,610.01	45,530.21	46,880.21	46,880.21
12	Less: Cumulative depreciation adjustment on account of un-discharged liabilities deducted as on 01.04.2009						
13	Add: Cumulative depreciation adjustment on account of liability Discharge						
14	Less: Cumulative depreciation adjustment on account of de-capitalisation	-					
15	Net Cumulative depreciation at the end of the period after adjustments	6,611.12	35,456.51	39,610.01	45,530.21	46,880.21	46,880.21

***to be provided during True-up**

(Petitioner)

		Form 13				
	Name of the Company	NTPC Limited				
	Name of the Station	Singrauli Thermal Power Station				
S No	**Loan**	**2024-25**	**2025-26**	**2026-27**	**2027-28**	**2028-29**
1	**HDFC Bank Ltd. VI**					
	Net Loan Opening	10000.00	10000.00	8888.89	7777.78	6666.67
	Additions	0.00	0.00	0.00	0.00	0.00
	Repayment	0.00	1111.11	1111.11	1111.11	1111.11
	Net Loan Closing	10000.00	8888.89	7777.78	6666.67	5555.56
	Avg Loan	10000.00	9444.44	8333.33	7222.22	6111.11
	Rate of Interest	7.9500%	7.9500%	7.9500%	7.9500%	7.9500%
	Interest	795.00	750.83	662.50	574.17	485.83
2	**Punjab National Bank-III -D3**					
	Net Loan Opening	5333.33	4444.44	3555.56	2666.67	1777.78
	Additions	0.00	0.00	0.00	0.00	0.00
	Repayment	888.89	888.89	888.89	888.89	888.89
	Net Loan Closing	4444.44	3555.56	2666.67	1777.78	888.89
	Avg Loan	4888.89	4000.00	3111.11	2222.22	1333.33
	Rate of Interest	7.9000%	7.9000%	7.9000%	7.9000%	7.9000%
	Interest	386.22	316.00	245.78	175.56	105.33
3	**Punjab National Bank-III -D4**					
	Net Loan Opening	6666.67	5555.56	4444.44	3333.33	2222.22
	Additions	0.00	0.00	0.00	0.00	0.00
	Repayment	1111.11	1111.11	1111.11	1111.11	1111.11
	Net Loan Closing	5555.56	4444.44	3333.33	2222.22	1111.11
	Avg Loan	6111.11	5000.00	3888.89	2777.78	1666.67
	Rate of Interest	7.9000%	7.9000%	7.9000%	7.9000%	7.9000%
	Interest	482.78	395.00	307.22	219.44	131.67
4	**SBBJ-II -D5**					
	Net Loan Opening	5000.00	4000.00	3000.00	2000.00	1000.00
	Additions	0.00	0.00	0.00	0.00	0.00
	Repayment	1000.00	1000.00	1000.00	1000.00	1000.00
	Net Loan Closing	4000.00	3000.00	2000.00	1000.00	0.00
	Avg Loan	4500.00	3500.00	2500.00	1500.00	500.00
	Rate of Interest	8.2000%	8.2000%	8.2000%	8.2000%	8.2000%
	Interest	369.00	287.00	205.00	123.00	41.00
5	**SBI-VIII**					
	Net Loan Opening	2666.67	2222.22	1777.78	1333.33	888.89
	Additions	0.00	0.00	0.00	0.00	0.00
	Repayment	444.44	444.44	444.44	444.44	444.44
	Net Loan Closing	2222.22	1777.78	1333.33	888.89	444.44
	Avg Loan	2444.44	2000.00	1555.56	1111.11	666.67
	Rate of Interest	8.2000%	8.2000%	8.2000%	8.2000%	8.2000%
	Interest	200.44	164.00	127.56	91.11	54.67
6	**SBI-XI**					
	Net Loan Opening	1555.56	1333.33	1111.11	888.89	666.67
	Additions	0.00	0.00	0.00	0.00	0.00
	Repayment	222.22	222.22	222.22	222.22	222.22
	Net Loan Closing	1333.33	1111.11	888.89	666.67	444.44
	Avg Loan	1444.44	1222.22	1000.00	777.78	555.56
	Rate of Interest	8.2000%	8.2000%	8.2000%	8.2000%	8.2000%
	Interest	118.44	100.22	82.00	63.78	45.56
7	**Bank Of India-V A-D2** ***(Refinancing of Axis Bank-II***					
	Net Loan Opening	4300.00	4300.00	4300.00	4300.00	4300.00
	Additions					
	Repayment	0.00	0.00	0.00	0.00	0.00
	Net Loan Closing	4300.00	4300.00	4300.00	4300.00	4300.00
	Avg Loan	0.00	0.00	0.00	0.00	0.00

		Form 13				
	Name of the Company	NTPC Limited				
	Name of the Station	Singrauli Thermal Power Station				
S No	**Loan**	**2024-25**	**2025-26**	**2026-27**	**2027-28**	**2028-29**
	Rate of Interest	8.0750%	8.0750%	8.0750%	8.0750%	8.0750%
	Interest	0.00	0.00	0.00	0.00	0.00
	Rate of Interest is including Refinancing benefit					
8	**HDFC Bank Ltd. IX**					
	Net Loan Opening	1500.00	1375.00	1250.00	1125.00	1000.00
	Additions	0.00	0.00	0.00	0.00	0.00
	Repayment	125.00	125.00	125.00	125.00	125.00
	Net Loan Closing	1375.00	1250.00	1125.00	1000.00	875.00
	Avg Loan	1437.50	1312.50	1187.50	1062.50	937.50
	Rate of Interest	7.9500%	7.9500%	7.9500%	7.9500%	7.9500%
	Interest	114.28	104.34	94.41	84.47	74.53
9	**HDFC Bank Ltd. VII**					
	Net Loan Opening	3000.00	3000.00	3000.00	2666.67	2333.33
	Additions	0.00	0.00	0.00	0.00	0.00
	Repayment	0.00	0.00	333.33	333.33	333.33
	Net Loan Closing	3000.00	3000.00	2666.67	2333.33	2000.00
	Avg Loan	3000.00	3000.00	2833.33	2500.00	2166.67
	Rate of Interest	7.9500%	7.9500%	7.9500%	7.9500%	7.9500%
	Interest	238.50	238.50	225.25	198.75	172.25
10	**HDFC Bank Ltd. X-D2**					
	Net Loan Opening	1500.00	1500.00	1375.00	1250.00	1125.00
	Additions	0.00	0.00	0.00	0.00	0.00
	Repayment	0.00	125.00	125.00	125.00	125.00
	Net Loan Closing	1500.00	1375.00	1250.00	1125.00	1000.00
	Avg Loan	1500.00	1437.50	1312.50	1187.50	1062.50
	Rate of Interest	7.9500%	7.9500%	7.9500%	7.9500%	7.9500%
	Interest	119.25	114.28	104.34	94.41	84.47
11	**HDFC Bank Ltd. X-D4**					
	Net Loan Opening	1300.00	1300.00	1191.67	1083.33	975.00
	Additions	0.00	0.00	0.00	0.00	0.00
	Repayment	0.00	108.33	108.33	108.33	108.33
	Net Loan Closing	1300.00	1191.67	1083.33	975.00	866.67
	Avg Loan	1300.00	1245.83	1137.50	1029.17	920.83
	Rate of Interest	7.9500%	7.9500%	7.9500%	7.9500%	7.9500%
	Interest	103.35	99.04	90.43	81.82	73.21
12	**Indusind Bank-D1**					
	Net Loan Opening	2000.00	2000.00	2000.00	1833.33	1666.67
	Additions	0.00	0.00	0.00	0.00	0.00
	Repayment	0.00	0.00	166.67	166.67	166.67
	Net Loan Closing	2000.00	2000.00	1833.33	1666.67	1500.00
	Avg Loan	2000.00	2000.00	1916.67	1750.00	1583.33
	Rate of Interest	8.0500%	8.0500%	8.0500%	8.0500%	8.0500%
	Interest	161.00	161.00	154.29	140.88	127.46
13	**BOND-54**					
	Net Loan Opening	640.00	0.00	0.00	0.00	0.00
	Additions	0.00	0.00	0.00	0.00	0.00
	Repayment	640.00	0.00	0.00	0.00	0.00
	Net Loan Closing	0.00	0.00	0.00	0.00	0.00
	Avg Loan	320.00	0.00	0.00	0.00	0.00
	Rate of Interest	8.5200%				
	Interest	27.26	0.00	0.00	0.00	0.00
14	**BOND-69**					
	Net Loan Opening	1000.00	1000.00	1000.00	1000.00	1000.00
	Additions	0.00	0.00	0.00	0.00	0.00
	Repayment	0.00	0.00	0.00	0.00	0.00
	Net Loan Closing	1000.00	1000.00	1000.00	1000.00	1000.00

		Form 13				
	Name of the Company	NTPC Limited				
	Name of the Station	Singrauli Thermal Power Station				
S No	**Loan**	**2024-25**	**2025-26**	**2026-27**	**2027-28**	**2028-29**
	Avg Loan	1000.00	1000.00	1000.00	1000.00	1000.00
	Rate of Interest	7.3500%	7.3500%	7.3500%	7.3500%	7.3500%
	Interest	73.50	73.50	73.50	73.50	73.50
15	**BOND-73**					
	Net Loan Opening	4200.00	4200.00	4200.00	4200.00	4200.00
	Additions	0.00	0.00	0.00	0.00	0.00
	Repayment	0.00	0.00	0.00	0.00	0.00
	Net Loan Closing	4200.00	4200.00	4200.00	4200.00	4200.00
	Avg Loan	4200.00	4200.00	4200.00	4200.00	4200.00
	Rate of Interest	6.4600%	6.4600%	6.4600%	6.4600%	6.4600%
	Interest	271.32	271.32	271.32	271.32	271.32
16	**BOND-74**					
	Net Loan Opening	1700.00	1700.00	1700.00	1700.00	1700.00
	Additions	0.00	0.00	0.00	0.00	0.00
	Repayment	0.00	0.00	0.00	0.00	0.00
	Net Loan Closing	1700.00	1700.00	1700.00	1700.00	1700.00
	Avg Loan	1700.00	1700.00	1700.00	1700.00	1700.00
	Rate of Interest	6.7200%	6.7200%	6.7200%	6.7200%	6.7200%
	Interest	114.24	114.24	114.24	114.24	114.24
17	**BOND-75**					
	Net Loan Opening	2725.00	2725.00	2725.00	2725.00	2725.00
	Additions	0.00	0.00	0.00	0.00	0.00
	Repayment	0.00	0.00	0.00	0.00	0.00
	Net Loan Closing	2725.00	2725.00	2725.00	2725.00	2725.00
	Avg Loan	2725.00	2725.00	2725.00	2725.00	2725.00
	Rate of Interest	7.4700%	7.4700%	7.4700%	7.4700%	7.4700%
	Interest	203.56	203.56	203.56	203.56	203.56
18	**BOND-78**					
	Net Loan Opening	1300.00	1300.00	1300.00	1300.00	1300.00
	Additions	0.00	0.00	0.00	0.00	0.00
	Repayment	0.00	0.00	0.00	0.00	0.00
	Net Loan Closing	1300.00	1300.00	1300.00	1300.00	1300.00
	Avg Loan	1300.00	1300.00	1300.00	1300.00	1300.00
	Rate of Interest	7.4700%	7.4700%	7.4700%	7.4700%	7.4700%
	Interest	97.11	97.11	97.11	97.11	97.11
	TOTAL					
	Net Loan Opening	56387.22	51955.56	46819.44	41183.33	35547.22
	Additions	0.00	0.00	0.00	0.00	0.00
	Repayment	4431.67	5136.11	5636.11	5636.11	5636.11
	Net Loan Closing	51955.56	46819.44	41183.33	35547.22	29911.11
	Avg Loan	49871.39	45087.50	39701.39	34065.28	28429.17
	Rate of Interest	**7.7705%**	**7.7404%**	**7.7038%**	**7.6533%**	**7.5827%**
	Interest	3875.26	3489.95	3058.51	2607.10	2155.70
1)	Bonds Interest Rate is inclusive of surveillance fees of 0.03%					

FORM-15

Details/Information to be provided to beneficiaries under Clause (2) of Regulation 40 of CERC (Terms & Conditions of Tariff) Regulations, 2019

Details of Source wise Fuel for Computation of Energy Charges (in case of coal)

	Name of the Petitioner:	**NTPC Limited**
	Name of the Generating Station:	**SINGRAULI SUPER THERMAL POWER PROJECT**
	Month:	**Apr-23** **Revised**

S.No.	Particulars	Unit	Domestic Coal		E-Auction	Imported Coal	Bio Mass
			Supplied by MGR	Supplied by Rail			
A)	**OPENING QUANTITY**						
1	Opening Quantity ofCoal/Lignite	MT	302913.79	0.00	0.00	0.00	0.00
2	Value of Stock	Rs.	602055640	0	0	0	0
B)	**QUANTITY**						
3	Quantity of coal supplied by the coal Company	MT	816274.17	0.00	0.00	0.00	0.00
4	Adjustment (+/-) in quantity supplied by the coal Company	MT	0.00	0.00	0.00	0.00	0.00
5	Coal supplied by the Coal Company (1+2)	MT	816274.17	0.00	0.00	0.00	0.00
6	Normative transit & handling losses	MT	1632.55	0.00	0.00	0.00	0.00
7	**Net Coal / Lignite supplied (5 - 6)**	**MT**	**814641.62**	**0.00**	**0.00**	**0.00**	**0.00**
C)	**PRICE**						
8	Amount charged by the Coal / Lignite Company	Rs.	1593416847	0	0	0	0
9	Adjustment (+ / -) in amount charged by coal / Lignite Company	Rs.	161026480	0	0	0	0
10	Handling, Sampling such Other similer Charges	Rs.	20580140	0	0	0	0
11	**Total Amount charged (8 +9+10)**	**Rs.**	**1775023467**	**0**	**0**	**0**	**0**
D)	**TRANSPORATION**						
12	Transportation charges by Rail / Ship / Road Transport	Rs.	0	0	0	0	0
13	Adjustment (+/-) in amount charged by Railways / transport Company	Rs.	0	0	0	0	0
14	Demurrage charges, if any	Rs.	0	0	0	0	0
15	Cost of diesel in transporting coal through MGR system	Rs.	6354249	0	0	0	0
16	**Total transportation charges (12+ 13 + 14 + 15)**	**Rs.**	**6354249**	**0**	**0**	**0**	**0**
17	**Total amount charged for coal supplied including transportation (11+16)**	**Rs.**	**1781377716**	**0**	**0**	**0**	**0**
E)	**TOTAL COST**						
18	Landed cost of coal/ Lignite(2+17)/(1+7)	**Rs./MT**	**2132.72**		**0.00**	**0.00**	**0.00**
19	Blending Ratio(Domestic/Imported)		100.00%		0.00%	0.00%	0.00%
20	**Weighted average cost of coal (Including Bio Mass)**	**Rs./MT**	**2132.72**				
20a	**Weighted average cost of coal (Excluding Bio Mass)**	**Rs./MT**	**2132.72**				
F)	**QUALITY**						
21	GCV of Domestic Coal of the opening coal stock as per bill of Coal Company	(Kcal/Kg)	4583				
22	GCV of Domestic Coal supplied as per bill of Coal Company	(Kcal/Kg)	4412				
23	GCV of Imported Coal of the opening stock as per bill Coal Company	(Kcal/Kg)				NA	
24	GCV of Imported Coal supplied as per bill Coal Company	(Kcal/Kg)				NA	
25	Weighted average GCV of coal/ Lignite as Billed (Including Biomass)	(Kcal/Kg)	**4458**				
25a	Weighted average GCV of coal/ Lignite as Billed (Excluding Bio Mass)	(Kcal/Kg)	**4458**				
26	GCV of Domestic Coal of the opening stock as received at Station	(Kcal/Kg)	3898				
27	GCV of Domestic Coal supplied as received at Station	(Kcal/Kg)	3827				
28	GCV of Imported Coal of opening stock as received at Station	(Kcal/Kg)				NA	
29	GCV of Imported Coal of opening stock as received at Station	(Kcal/Kg)				NA	
30	Weighted average GCV of coal/ Lignite as Received (Including Biomass)	(Kcal/Kg)	**3846**				
30a	Weighted average GCV of coal/ Lignite as Received (Excluding Bio Mass)	(Kcal/Kg)	**3846**				

190524

Sr Mgr (Finance)

Jashu Bhatt,
Sr Manager (Finance),
Unified Fuel Comm Group,
NCPP Dadri,
NTPC Limited

FORM-15

Details/Information to be provided to beneficiaries under Clause (2) of Regulation 40 of CERC (Terms & Conditions of Tariff) Regulations, 2019

Details of Source wise Fuel for Computation of Energy Charges (in case of coal)

	Name of the Petitioner:	**NTPC Limited**
	Name of the Generating Station:	**SINGRAULI SUPER THERMAL POWER PROJECT**
	Month:	**May-23 REVISED**

S.No.	Particulars	Unit	Domestic Coal		E-Auction	Imported Coal	Bio Mass
			Supplied by MGR	Supplied by Rail			
A)	**OPENING QUANTITY**						
1	Opening Quantity ofCoal/Lignite	MT	312129.41	0.00	0.00	0.00	0.00
2	Value of Stock	Rs.	665684412	0	0	0	0
B)	**QUANTITY**						
3	Quantity of coal supplied by the coal Company	MT	810493.09	0.00	0.00	0.00	0.00
4	Adjustment (+/-) in quantity supplied by the coal Company	MT	0.00	0.00	0.00	0.00	0.00
5	Coal supplied by the Coal Company (1+2)	MT	810493.09	0.00	0.00	0.00	0.00
6	Normative transit & handling losses	MT	1620.99	0.00	0.00	0.00	0.00
7	**Net Coal / Lignite supplied (5 - 6)**	**MT**	**808872.11**	**0.00**	**0.00**	**0.00**	**0.00**
C)	**PRICE**						
8	Amount charged by the Coal / Lignite Company	Rs.	1585206391	0	0	0	0
9	Adjustment (+ / -) in amount charged by coal / Lignite Company	Rs.	246648609	0	0	0	0
10	Handling, Sampling such Other similer Charges	Rs.	21089790	0	0	0	0
11	**Total Amount charged (8 +9+10)**	**Rs.**	**1852944790**	**0**	**0**	**0**	**0**
D)	**TRANSPORATION**						
12	Transportation charges by Rail / Ship / Road Transport	Rs.	0	0	0	0	0
13	Adjustment (+/-) in amount charged by Railways / transport Company	Rs.	0	0	0	0	0
14	Demurrage charges, if any	Rs.	0	0	0	0	0
15	Cost of diesel in transporting coal through MGR system	Rs.	6709619	0	0	0	0
16	**Total transportation charges (12+ 13 + 14 + 15)**	**Rs.**	**6709619**	**0**	**0**	**0**	**0**
17	**Total amount charged for coal supplied including transportation (11+16)**	**Rs.**	**1859654409**	**0**	**0**	**0**	**0**
E)	**TOTAL COST**						
18	Landed cost of coal/ Lignite(2+17)/(1+7)	**Rs./MT**	**2252.75**		**0.00**	**0.00**	**0.00**
19	Blending Ratio(Domestic/Imported)		100.00%		0.00%	0.00%	0.00%
20	**Weighted average cost of coal (Including Bio Mass)**	**Rs./MT**	**2252.75**				
20a	**Weighted average cost of coal (Excluding Bio Mass)**	**Rs./MT**	**2252.75**				
F)	**QUALITY**						
21	GCV of Domestic Coal of the opening coal stock as per bill of Coal Company	(Kcal/Kg)	4458				
22	GCV of Domestic Coal supplied as per bill of Coal Company	(Kcal/Kg)	4652				
23	GCV of Imported Coal of the opening stock as per bill Coal Company	(Kcal/Kg)				NA	
24	GCV of Imported Coal supplied as per bill Coal Company	(Kcal/Kg)				NA	
25	Weighted average GCV of coal/ Lignite as Billed (Including Biomass)	(Kcal/Kg)	**4598**				
25a	Weighted average GCV of coal/ Lignite as Billed (Excluding Bio Mass)	(Kcal/Kg)	**4598**				
26	GCV of Domestic Coal of the opening stock as received at Station	(Kcal/Kg)	3846				
27	GCV of Domestic Coal supplied as received at Station	(Kcal/Kg)	3928				
28	GCV of Imported Coal of opening stock as received at Station	(Kcal/Kg)				NA	
29	GCV of Imported Coal of opening stock as received at Station	(Kcal/Kg)				NA	
30	Weighted average GCV of coal/ Lignite as Received (Including Biomass)	(Kcal/Kg)	**3905**				
30a	Weighted average GCV of coal/ Lignite as Received (Excluding Bio Mass)	(Kcal/Kg)	**3905**				

23.05.24

Jashu Bhatt,
Sr Mgr (Finance)
Sr Manager (Finance),
Unified Fuel Comm Group,
NCPP Dadri,
NTPC Limited

FORM-15

Details/Information to be provided to beneficiaries under Clause (2) of Regulation 40 of CERC (Terms & Conditions of Tariff) Regulations, 2019

Details of Source wise Fuel for Computation of Energy Charges (in case of coal)

	Name of the Petitioner:	**NTPC Limited**
	Name of the Generating Station:	**SINGRAULI SUPER THERMAL POWER PROJECT**
	Month:	**Jun-23 REVISED**

S.No.	Particulars	Unit	Domestic Coal		E-Auction	Imported Coal	Bio Mass
			Supplied by MGR	Supplied by Rail			
A)	**OPENING QUANTITY**						
1	Opening Quantity ofCoal/Lignite	MT	263651.51	0.00	0.00	0.00	0.00
2	Value of Stock	Rs.	593941894	0	0	0	0
B)	**QUANTITY**						
3	Quantity of coal supplied by the coal Company	MT	846213.82	0.00	0.00	0.00	0.00
4	Adjustment (+/-) in quantity supplied by the coal Company	MT	0.00	0.00	0.00	0.00	0.00
5	Coal supplied by the Coal Company (1+2)	MT	846213.82	0.00	0.00	0.00	0.00
6	Normative transit & handling losses	MT	1692.43	0.00	0.00	0.00	0.00
7	**Net Coal / Lignite supplied (5 - 6)**	**MT**	**844521.40**	**0.00**	**0.00**	**0.00**	**0.00**
C)	**PRICE**						
8	Amount charged by the Coal / Lignite Company	Rs.	1746215792	0	0	0	0
9	Adjustment (+ / -) in amount charged by coal / Lignite Company	Rs.	212263088	0	0	0	0
10	Handling, Sampling such Other similer Charges	Rs.	15359609	0	0	0	0
11	**Total Amount charged (8 +9+10)**	**Rs.**	**1973838489**	**0**	**0**	**0**	**0**
D)	**TRANSPORATION**						
12	Transportation charges by Rail / Ship / Road Transport	Rs.	0	0	0	0	0
13	Adjustment (+/-) in amount charged by Railways / transport Company	Rs.	0	0	0	0	0
14	Demurrage charges, if any	Rs.	0	0	0	0	0
15	Cost of diesel in transporting coal through MGR system	Rs.	6401873	0	0	0	0
16	**Total transportation charges (12+ 13 + 14 + 15)**	**Rs.**	**6401873**	**0**	**0**	**0**	**0**
17	**Total amount charged for coal supplied including transportation (11+16)**	**Rs.**	**1980240362**	**0**	**0**	**0**	**0**
E)	**TOTAL COST**						
18	Landed cost of coal/ Lignite(2+17)/(1+7)	**Rs./MT**	**2322.91**		**0.00**	**0.00**	**0.00**
19	Blending Ratio(Domestic/Imported)		100.00%		0.00%	0.00%	0.00%
20	**Weighted average cost of coal (Including Bio Mass)**	**Rs./MT**	**2322.91**				
20a	**Weighted average cost of coal (Excluding Bio Mass)**	**Rs./MT**	**2322.91**				
F)	**QUALITY**						
21	GCV of Domestic Coal of the opening coal stock as per bill of Coal Company	(Kcal/Kg)	4598				
22	GCV of Domestic Coal supplied as per bill of Coal Company	(Kcal/Kg)	4482				
23	GCV of Imported Coal of the opening stock as per bill Coal Company	(Kcal/Kg)				NA	
24	GCV of Imported Coal supplied as per bill Coal Company	(Kcal/Kg)				NA	
25	Weighted average GCV of coal/ Lignite as Billed (Including Biomass)	(Kcal/Kg)	**4510**				
25a	Weighted average GCV of coal/ Lignite as Billed (Excluding Bio Mass)	(Kcal/Kg)	**4510**				
26	GCV of Domestic Coal of the opening stock as received at Station	(Kcal/Kg)	3905				
27	GCV of Domestic Coal supplied as received at Station	(Kcal/Kg)	3888				
28	GCV of Imported Coal of opening stock as received at Station	(Kcal/Kg)				NA	
29	GCV of Imported Coal of opening stock as received at Station	(Kcal/Kg)				NA	
30	Weighted average GCV of coal/ Lignite as Received (Including Biomass)	(Kcal/Kg)	**3892**				
30a	Weighted average GCV of coal/ Lignite as Received (Excluding Bio Mass)	(Kcal/Kg)	**3892**				

23.05.24

Jashu Bhatt,
Sr. Manager (Finance),
Unified Fuel Comm Group,
NCPP Dadri,
NTPC Limited

Sr Mgr (Finance)

FORM-15

Details/Information to be provided to beneficiaries under Clause (2) of Regulation 40 of CERC (Terms & Conditions of Tariff) Regulations, 2019

Details of Source wise Fuel for Computation of Energy Charges (in case of coal)

	Name of the Petitioner:	**NTPC Limited**
	Name of the Generating Station:	**SINGRAULI SUPER THERMAL POWER PROJECT**
	Month:	**Jul-23 REVISED**

S.No.	Particulars	Unit	Domestic Coal		E-Auction	Imported Coal	Bio Mass
			Supplied by MGR	Supplied by Rail			
A)	**OPENING QUANTITY**						
1	Opening Quantity ofCoal/Lignite	MT	230683.91	0.00	0.00	0.00	0.00
2	Value of Stock	Rs.	535856915	0	0	0	0
B)	**QUANTITY**						
3	Quantity of coal supplied by the coal Company	MT	869911.94	0.00	0.00	0.00	0.00
4	Adjustment (+/-) in quantity supplied by the coal Company	MT	0.00	0.00	0.00	0.00	0.00
5	Coal supplied by the Coal Company (1+2)	MT	869911.94	0.00	0.00	0.00	0.00
6	Normative transit & handling losses	MT	1739.82	0.00	0.00	0.00	0.00
7	**Net Coal / Lignite supplied (5 - 6)**	**MT**	**868172.12**	**0.00**	**0.00**	**0.00**	**0.00**
C)	**PRICE**						
8	Amount charged by the Coal / Lignite Company	Rs.	1792822648	0	0	0	0
9	Adjustment (+ / -) in amount charged by coal / Lignite Company	Rs.	168093405	0	0	0	0
10	Handling, Sampling such Other similer Charges	Rs.	16998083	0	0	0	0
11	**Total Amount charged (8 +9+10)**	**Rs.**	**1977914136**	**0**	**0**	**0**	**0**
D)	**TRANSPORATION**						
12	Transportation charges by Rail / Ship / Road Transport	Rs.	0	0	0	0	0
13	Adjustment (+/-) in amount charged by Railways / transport Company	Rs.	0	0	0	0	0
14	Demurrage charges, if any	Rs.	0	0	0	0	0
15	Cost of diesel in transporting coal through MGR system	Rs.	7102438	0	0	0	0
16	**Total transportation charges (12+ 13 + 14 + 15)**	**Rs.**	**7102438**	**0**	**0**	**0**	**0**
17	**Total amount charged for coal supplied including transportation (11+16)**	**Rs.**	**1985016574**	**0**	**0**	**0**	**0**
E)	**TOTAL COST**						
18	Landed cost of coal/ Lignite(2+17)/(1+7)	**Rs./MT**	**2294.09**		**0.00**	**0.00**	**0.00**
19	Blending Ratio(Domestic/Imported)		100.00%		0.00%	0.00%	0.00%
20	**Weighted average cost of coal (Including Bio Mass)**	**Rs./MT**	**2294.09**				
20a	**Weighted average cost of coal (Excluding Bio Mass)**	**Rs./MT**	**2294.09**				
F)	**QUALITY**						
21	GCV of Domestic Coal of the opening coal stock as per bill of Coal Company	(Kcal/Kg)	4433				
22	GCV of Domestic Coal supplied as per bill of Coal Company	(Kcal/Kg)	4201				
23	GCV of Imported Coal of the opening stock as per bill Coal Company	(Kcal/Kg)				NA	
24	GCV of Imported Coal supplied as per bill Coal Company	(Kcal/Kg)				NA	
25	Weighted average GCV of coal/ Lignite as Billed (Including Biomass)	(Kcal/Kg)	**4249**				
25a	Weighted average GCV of coal/ Lignite as Billed (Excluding Bio Mass)	(Kcal/Kg)	**4249**				
26	GCV of Domestic Coal of the opening stock as received at Station	(Kcal/Kg)	3928				
27	GCV of Domestic Coal supplied as received at Station	(Kcal/Kg)	3762				
28	GCV of Imported Coal of opening stock as received at Station	(Kcal/Kg)				NA	
29	GCV of Imported Coal of opening stock as received at Station	(Kcal/Kg)				NA	
30	Weighted average GCV of coal/ Lignite as Received (Including Biomass)	(Kcal/Kg)	**3797**				
30a	Weighted average GCV of coal/ Lignite as Received (Excluding Bio Mass)	(Kcal/Kg)	**3797**				

23.05.24

Sr Mgr (Finance)

Jashu Bhatt,
Sr Manager (Finance),
Unified Fuel Comm Group,
NCPP Dadri,
NTPC Limited

FORM-15

Details/Information to be provided to beneficiaries under Clause (2) of Regulation 40 of CERC (Terms & Conditions of Tariff) Regulations, 2019

Details of Source wise Fuel for Computation of Energy Charges (in case of coal)

	Name of the Petitioner:	**NTPC Limited**
	Name of the Generating Station:	**SINGRAULI SUPER THERMAL POWER PROJECT**
	Month:	**Aug-23** **Revised**

S.No.	Particulars	Unit	Domestic Coal		E-Auction	Imported Coal	Bio Mass
			Supplied by MGR	Supplied by Rail			
A)	**OPENING QUANTITY**						
1	Opening Quantity ofCoal/Lignite	MT	205159.03	0.00	0.00	0.00	0.00
2	Value of Stock	Rs.	470653032	0	0	0	0
B)	**QUANTITY**						
3	Quantity of coal supplied by the coal Company	MT	898751.43	0.00	0.00	0.00	0.00
4	Adjustment (+/-) in quantity supplied by the coal Company	MT	0.00	0.00	0.00	0.00	0.00
5	Coal supplied by the Coal Company (1+2)	MT	898751.43	0.00	0.00	0.00	0.00
6	Normative transit & handling losses	MT	1797.50	0.00	0.00	0.00	0.00
7	**Net Coal / Lignite supplied (5 - 6)**	**MT**	**896953.93**	**0.00**	**0.00**	**0.00**	**0.00**
C)	**PRICE**						
8	Amount charged by the Coal / Lignite Company	Rs.	1859348908	0	0	0	0
9	Adjustment (+ / -) in amount charged by coal / Lignite Company	Rs.	154683324	0	0	0	0
10	Handling, Sampling such Other similer Charges	Rs.	30362331	0	0	0	0
11	**Total Amount charged (8 +9+10)**	**Rs.**	**2044394563**	**0**	**0**	**0**	**0**
D)	**TRANSPORATION**						
12	Transportation charges by Rail / Ship / Road Transport	Rs.	0	0	0	0	0
13	Adjustment (+/-) in amount charged by Railways / transport Company	Rs.	0	0	0	0	0
14	Demurrage charges, if any	Rs.	0	0	0	0	0
15	Cost of diesel in transporting coal through MGR system	Rs.	6842832	0	0	0	0
16	**Total transportation charges (12+ 13 + 14 + 15)**	**Rs.**	**6842832**	**0**	**0**	**0**	**0**
17	**Total amount charged for coal supplied including transportation (11+16)**	**Rs.**	**2051237395**	**0**	**0**	**0**	**0**
E)	**TOTAL COST**						
18	Landed cost of coal/ Lignite(2+17)/(1+7)	**Rs./MT**	**2288.23**		**0.00**	**0.00**	**0.00**
19	Blending Ratio(Domestic/Imported)		100.00%		0.00%	0.00%	0.00%
20	**Weighted average cost of coal (Including Bio Mass)**	**Rs./MT**	**2288.23**				
20a	**Weighted average cost of coal (Excluding Bio Mass)**	**Rs./MT**	**2288.23**				
F)	**QUALITY**						
21	GCV of Domestic Coal of the opening coal stock as per bill of Coal Company	(Kcal/Kg)	4249				
22	GCV of Domestic Coal supplied as per bill of Coal Company	(Kcal/Kg)	4408				
23	GCV of Imported Coal of the opening stock as per bill Coal Company	(Kcal/Kg)				NA	
24	GCV of Imported Coal supplied as per bill Coal Company	(Kcal/Kg)				NA	
25	Weighted average GCV of coal/ Lignite as Billed (Including Biomass)	(Kcal/Kg)	**4377**				
25a	Weighted average GCV of coal/ Lignite as Billed (Excluding Bio Mass)	(Kcal/Kg)	**4377**				
26	GCV of Domestic Coal of the opening stock as received at Station	(Kcal/Kg)	3797				
27	GCV of Domestic Coal supplied as received at Station	(Kcal/Kg)	3737				
28	GCV of Imported Coal of opening stock as received at Station	(Kcal/Kg)				NA	
29	GCV of Imported Coal of opening stock as received at Station	(Kcal/Kg)				NA	
30	Weighted average GCV of coal/ Lignite as Received (Including Biomass)	(Kcal/Kg)	**3749**				
30a	Weighted average GCV of coal/ Lignite as Received (Excluding Bio Mass)	(Kcal/Kg)	**3749**				

23.05.24

Jashu Bhatt,
Sr.Manager (Finance),
Unified Fuel Comm Group,
NCPP Dadri,
NTPC Limited

Sr.Mgr.(Finance)

FORM-15

Details/Information to be provided to beneficiaries under Clause (2) of Regulation 40 of CERC (Terms & Conditions of Tariff) Regulations, 2019

Details of Source wise Fuel for Computation of Energy Charges (in case of coal)

	Name of the Petitioner:	**NTPC Limited**
	Name of the Generating Station:	**SINGRAULI SUPER THERMAL POWER PROJECT**
	Month:	**Sep-23 Provisional**

S.No.	Particulars	Unit	Domestic Coal		E-Auction	Imported Coal	Bio Mass
			Supplied by MGR	Supplied by Rail			
A)	**OPENING QUANTITY**						
1	Opening Quantity ofCoal/Lignite	MT	164072.95	0.00	0.00	0.00	0.00
2	Value of Stock	Rs.	375437282	0	0	0	0
B)	**QUANTITY**						
3	Quantity of coal supplied by the coal Company	MT	760590.83	0.00	0.00	0.00	0.00
4	Adjustment (+/-) in quantity supplied by the coal Company	MT	0.00	0.00	0.00	0.00	0.00
5	Coal supplied by the Coal Company (1+2)	MT	760590.83	0.00	0.00	0.00	0.00
6	Normative transit & handling losses	MT	1521.18	0.00	0.00	0.00	0.00
7	**Net Coal / Lignite supplied (5 - 6)**	**MT**	**759069.64**	**0.00**	**0.00**	**0.00**	**0.00**
C)	**PRICE**						
8	Amount charged by the Coal / Lignite Company	Rs.	1571809805	0	0	0	0
9	Adjustment (+ / -) in amount charged by coal / Lignite Company	Rs.	64678829	0	0	0	0
10	Handling, Sampling such Other similer Charges	Rs.	16544677	0	0	0	0
11	**Total Amount charged (8 +9+10)**	**Rs.**	**1653033311**	**0**	**0**	**0**	**0**
D)	**TRANSPORATION**						
12	Transportation charges by Rail / Ship / Road Transport	Rs.	0	0	0	0	0
13	Adjustment (+/-) in amount charged by Railways / transport Company	Rs.	0	0	0	0	0
14	Demurrage charges, if any	Rs.	0	0	0	0	0
15	Cost of diesel in transporting coal through MGR system	Rs.	7855251	0	0	0	0
16	**Total transportation charges (12+ 13 + 14 + 15)**	**Rs.**	**7855251**	**0**	**0**	**0**	**0**
17	**Total amount charged for coal supplied including transportation (11+16)**	**Rs.**	**1660888562**	**0**	**0**	**0**	**0**
E)	**TOTAL COST**						
18	Landed cost of coal/ Lignite(2+17)/(1+7)	**Rs./MT**	**2205.86**		**0.00**	**0.00**	**0.00**
19	Blending Ratio(Domestic/Imported)		100.00%		0.00%	0.00%	0.00%
20	**Weighted average cost of coal (Including Bio Mass)**	**Rs./MT**	**2205.86**				
20a	**Weighted average cost of coal (Excluding Bio Mass)**	**Rs./MT**	**2205.86**				
F)	**QUALITY**						
21	GCV of Domestic Coal of the opening coal stock as per bill of Coal Company	(Kcal/Kg)	4381				
22	GCV of Domestic Coal supplied as per bill of Coal Company	(Kcal/Kg)	4309				
23	GCV of Imported Coal of the opening stock as per bill Coal Company	(Kcal/Kg)				NA	
24	GCV of Imported Coal supplied as per bill Coal Company	(Kcal/Kg)				NA	
25	Weighted average GCV of coal/ Lignite as Billed (Including Biomass)	(Kcal/Kg)	**4322**				
25a	Weighted average GCV of coal/ Lignite as Billed (Excluding Bio Mass)	(Kcal/Kg)	**4322**				
26	GCV of Domestic Coal of the opening stock as received at Station	(Kcal/Kg)	3748				
27	GCV of Domestic Coal supplied as received at Station	(Kcal/Kg)	3734				
28	GCV of Imported Coal of opening stock as received at Station	(Kcal/Kg)				NA	
29	GCV of Imported Coal of opening stock as received at Station	(Kcal/Kg)				NA	
30	Weighted average GCV of coal/ Lignite as Received (Including Biomass)	(Kcal/Kg)	**3737**				
30a	Weighted average GCV of coal/ Lignite as Received (Excluding Bio Mass)	(Kcal/Kg)	**3737**				

23.05.24

Sr. Mgr (Finance)

Jashu Bhatt,
Sr. Manager (Finance),
Unified Fuel Comm Group,
NCPP Dadri,
NTPC Limited

FORM-15

Details/Information to be provided to beneficiaries under Clause (2) of Regulation 40 of CERC (Terms & Conditions of Tariff) Regulations, 2019

Details of Source wise Fuel for Computation of Energy Charges (in case of coal)

	Name of the Petitioner:	**NTPC Limited**
	Name of the Generating Station:	**SINGRAULI SUPER THERMAL POWER PROJECT**
	Month:	**Oct-23 Revised**

S.No.	Particulars	Unit	Domestic Coal		E-Auction	Imported Coal	Bio Mass
			Supplied by MGR	Supplied by Rail			
A)	**OPENING QUANTITY**						
1	Opening Quantity ofCoal/Lignite	MT	110694.60	0.00	0.00	0.00	0.00
2	Value of Stock	Rs.	244176861	0	0	0	0
B)	**QUANTITY**						
3	Quantity of coal supplied by the coal Company	MT	788959.61	0.00	0.00	0.00	0.00
4	Adjustment (+/-) in quantity supplied by the coal Company	MT	0.00	0.00	0.00	0.00	0.00
5	Coal supplied by the Coal Company (1+2)	MT	788959.61	0.00	0.00	0.00	0.00
6	Normative transit & handling losses	MT	1577.92	0.00	0.00	0.00	0.00
7	**Net Coal / Lignite supplied (5 - 6)**	**MT**	**787381.69**	**0.00**	**0.00**	**0.00**	**0.00**
C)	**PRICE**						
8	Amount charged by the Coal / Lignite Company	Rs.	1652237998	0	0	0	0
9	Adjustment (+ / -) in amount charged by coal / Lignite Company	Rs.	46136686	0	0	0	0
10	Handling, Sampling such Other similer Charges	Rs.	16256427	0	0	0	0
11	**Total Amount charged (8 +9+10)**	**Rs.**	**1714631111**	**0**	**0**	**0**	**0**
D)	**TRANSPORATION**						
12	Transportation charges by Rail / Ship / Road Transport	Rs.	0	0	0	0	0
13	Adjustment (+/-) in amount charged by Railways / transport Company	Rs.	0	0	0	0	0
14	Demurrage charges, if any	Rs.	0	0	0	0	0
15	Cost of diesel in transporting coal through MGR system	Rs.	3196213	0	0	0	0
16	**Total transportation charges (12+ 13 + 14 + 15)**	**Rs.**	**3196213**	**0**	**0**	**0**	**0**
17	**Total amount charged for coal supplied including transportation (11+16)**	**Rs.**	**1717827324**	**0**	**0**	**0**	**0**
E)	**TOTAL COST**						
18	Landed cost of coal/ Lignite(2+17)/(1+7)	**Rs./MT**	**2184.67**		**0.00**	**0.00**	**0.00**
19	Blending Ratio(Domestic/Imported)		100.00%		0.00%	0.00%	0.00%
20	**Weighted average cost of coal (Including Bio Mass)**	**Rs./MT**	**2184.67**				
20a	**Weighted average cost of coal (Excluding Bio Mass)**	**Rs./MT**	**2184.67**				
F)	**QUALITY**						
21	GCV of Domestic Coal of the opening coal stock as per bill of Coal Company	(Kcal/Kg)	4501				
22	GCV of Domestic Coal supplied as per bill of Coal Company	(Kcal/Kg)	4517				
23	GCV of Imported Coal of the opening stock as per bill Coal Company	(Kcal/Kg)				NA	
24	GCV of Imported Coal supplied as per bill Coal Company	(Kcal/Kg)				NA	
25	Weighted average GCV of coal/ Lignite as Billed (Including Biomass)	(Kcal/Kg)	**4440**				
25a	Weighted average GCV of coal/ Lignite as Billed (Excluding Bio Mass)	(Kcal/Kg)	**4440**				
26	GCV of Domestic Coal of the opening stock as received at Station	(Kcal/Kg)	3736				
27	GCV of Domestic Coal supplied as received at Station	(Kcal/Kg)	3819				
28	GCV of Imported Coal of opening stock as received at Station	(Kcal/Kg)				NA	
29	GCV of Imported Coal of opening stock as received at Station	(Kcal/Kg)				NA	
30	Weighted average GCV of coal/ Lignite as Received (Including Biomass)	(Kcal/Kg)	**3809**				
30a	Weighted average GCV of coal/ Lignite as Received (Excluding Bio Mass)	(Kcal/Kg)	**3809**				

19.05.24

Jashu Bhatt,
Sr Manager (Finance),
Sr Mgr(Finance)
Unified Fuel Comm Group,
NCPP Dadri,
NTPC Limited

FORM-15

Details/Information to be provided to beneficiaries under Clause (2) of Regulation 40 of CERC (Terms & Conditions of Tariff) Regulations, 2019

Details of Source wise Fuel for Computation of Energy Charges (in case of coal)

	Name of the Petitioner:	**NTPC Limited**
	Name of the Generating Station:	**SINGRAULI SUPER THERMAL POWER PROJECT**
	Month:	**Nov-23 Revised**

S.No.	Particulars	Unit	Domestic Coal		E-Auction	Imported Coal	Bio Mass
			Supplied by MGR	Supplied by Rail			
A)	**OPENING QUANTITY**						
1	Opening Quantity ofCoal/Lignite	MT	203193.29	0.00	0.00	0.00	0.00
2	Value of Stock	Rs.	443911362	0	0	0	0
B)	**QUANTITY**						
3	Quantity of coal supplied by the coal Company	MT	754087.87	0.00	0.00	0.00	0.00
4	Adjustment (+/-) in quantity supplied by the coal Company	MT	0.00	0.00	0.00	0.00	0.00
5	Coal supplied by the Coal Company (1+2)	MT	754087.87	0.00	0.00	0.00	0.00
6	Normative transit & handling losses	MT	1508.18	0.00	0.00	0.00	0.00
7	**Net Coal / Lignite supplied (5 - 6)**	**MT**	**752579.70**	**0.00**	**0.00**	**0.00**	**0.00**
C)	**PRICE**						
8	Amount charged by the Coal / Lignite Company	Rs.	1587969948	0	0	0	0
9	Adjustment (+ / -) in amount charged by coal / Lignite Company	Rs.	44207112	0	0	0	0
10	Handling, Sampling such Other similer Charges	Rs.	3473697	0	0	0	0
11	**Total Amount charged (8 +9+10)**	**Rs.**	**1635650757**	**0**	**0**	**0**	**0**
D)	**TRANSPORATION**						
12	Transportation charges by Rail / Ship / Road Transport	Rs.	0	0	0	0	0
13	Adjustment (+/-) in amount charged by Railways / transport Company	Rs.	0	0	0	0	0
14	Demurrage charges, if any	Rs.	0	0	0	0	0
15	Cost of diesel in transporting coal through MGR system	Rs.	5698189	0	0	0	0
16	**Total transportation charges (12+ 13 + 14 + 15)**	**Rs.**	**5698189**	**0**	**0**	**0**	**0**
17	**Total amount charged for coal supplied including transportation (11+16)**	**Rs.**	**1641348946**	**0**	**0**	**0**	**0**
E)	**TOTAL COST**						
18	Landed cost of coal/ Lignite(2+17)/(1+7)	**Rs./MT**	**2181.75**		**0.00**	**0.00**	**0.00**
19	Blending Ratio(Domestic/Imported)		100.00%		0.00%	0.00%	0.00%
20	**Weighted average cost of coal (Including Bio Mass)**	**Rs./MT**	**2181.75**				
20a	**Weighted average cost of coal (Excluding Bio Mass)**	**Rs./MT**	**2181.75**				
F)	**QUALITY**						
21	GCV of Domestic Coal of the opening coal stock as per bill of Coal Company	(Kcal/Kg)	4440				
22	GCV of Domestic Coal supplied as per bill of Coal Company	(Kcal/Kg)	4264				
23	GCV of Imported Coal of the opening stock as per bill Coal Company	(Kcal/Kg)				NA	
24	GCV of Imported Coal supplied as per bill Coal Company	(Kcal/Kg)				NA	
25	Weighted average GCV of coal/ Lignite as Billed (Including Biomass)	(Kcal/Kg)	**4303**				
25a	Weighted average GCV of coal/ Lignite as Billed (Excluding Bio Mass)	(Kcal/Kg)	**4303**				
26	GCV of Domestic Coal of the opening stock as received at Station	(Kcal/Kg)	3809				
27	GCV of Domestic Coal supplied as received at Station	(Kcal/Kg)	3925				
28	GCV of Imported Coal of opening stock as received at Station	(Kcal/Kg)				NA	
29	GCV of Imported Coal of opening stock as received at Station	(Kcal/Kg)				NA	
30	Weighted average GCV of coal/ Lignite as Received (Including Biomass)	(Kcal/Kg)	**3899**				
30a	Weighted average GCV of coal/ Lignite as Received (Excluding Bio Mass)	(Kcal/Kg)	**3899**				

23.05.24

Jashu Bhatt,
Sr Manager (Finance),
Unified Fuel Comm Group,
NCPP Dadri,
NTPC Limited

Sr Mgr (Finance)

FORM-15

Details/Information to be provided to beneficiaries under Clause (2) of Regulation 40 of CERC (Terms & Conditions of Tariff) Regulations, 2019

Details of Source wise Fuel for Computation of Energy Charges (in case of coal)

	Name of the Petitioner:	**NTPC Limited**
	Name of the Generating Station:	**SINGRAULI SUPER THERMAL POWER PROJECT**
	Month:	**Dec-23 Revised**

S.No.	Particulars	Unit	Domestic Coal		E-Auction	Imported Coal	Bio Mass
			Supplied by MGR	Supplied by Rail			
A)	**OPENING QUANTITY**						
1	Opening Quantity ofCoal/Lignite	MT	182897.99	0.00	0.00	0.00	0.00
2	Value of Stock	Rs.	399037958	0	0	0	0
B)	**QUANTITY**						
3	Quantity of coal supplied by the coal Company	MT	838431.21	0.00	0.00	0.00	0.00
4	Adjustment (+/-) in quantity supplied by the coal Company	MT	0.00	0.00	0.00	0.00	0.00
5	Coal supplied by the Coal Company (1+2)	MT	838431.21	0.00	0.00	0.00	0.00
6	Normative transit & handling losses	MT	1676.86	0.00	0.00	0.00	0.00
7	**Net Coal / Lignite supplied (5 - 6)**	**MT**	**836754.35**	**0.00**	**0.00**	**0.00**	**0.00**
C)	**PRICE**						
8	Amount charged by the Coal / Lignite Company	Rs.	1765302303	0	0	0	0
9	Adjustment (+ / -) in amount charged by coal / Lignite Company	Rs.	30511007	0	0	0	0
10	Handling, Sampling such Other similer Charges	Rs.	12673720	0	0	0	0
11	**Total Amount charged (8 +9+10)**	**Rs.**	**1808487030**	**0**	**0**	**0**	**0**
D)	**TRANSPORATION**						
12	Transportation charges by Rail / Ship / Road Transport	Rs.	0	0	0	0	0
13	Adjustment (+/-) in amount charged by Railways / transport Company	Rs.	0	0	0	0	0
14	Demurrage charges, if any	Rs.	0	0	0	0	0
15	Cost of diesel in transporting coal through MGR system	Rs.	9671702	0	0	0	0
16	**Total transportation charges (12+ 13 + 14 + 15)**	**Rs.**	**9671702**	**0**	**0**	**0**	**0**
17	**Total amount charged for coal supplied including transportation (11+16)**	**Rs.**	**1818158732**	**0**	**0**	**0**	**0**
E)	**TOTAL COST**						
18	Landed cost of coal/ Lignite(2+17)/(1+7)	**Rs./MT**	**2174.46**		**0.00**	**0.00**	**0.00**
19	Blending Ratio(Domestic/Imported)		100.00%		0.00%	0.00%	0.00%
20	**Weighted average cost of coal (Including Bio Mass)**	**Rs./MT**	**2174.46**				
20a	**Weighted average cost of coal (Excluding Bio Mass)**	**Rs./MT**	**2174.46**				
F)	**QUALITY**						
21	GCV of Domestic Coal of the opening coal stock as per bill of Coal Company	(Kcal/Kg)	4303				
22	GCV of Domestic Coal supplied as per bill of Coal Company	(Kcal/Kg)	4330				
23	GCV of Imported Coal of the opening stock as per bill Coal Company	(Kcal/Kg)				NA	
24	GCV of Imported Coal supplied as per bill Coal Company	(Kcal/Kg)				NA	
25	Weighted average GCV of coal/ Lignite as Billed (Including Biomass)	(Kcal/Kg)	**4325**				
25a	Weighted average GCV of coal/ Lignite as Billed (Excluding Bio Mass)	(Kcal/Kg)	**4325**				
26	GCV of Domestic Coal of the opening stock as received at Station	(Kcal/Kg)	3899				
27	GCV of Domestic Coal supplied as received at Station	(Kcal/Kg)	3854				
28	GCV of Imported Coal of opening stock as received at Station	(Kcal/Kg)				NA	
29	GCV of Imported Coal of opening stock as received at Station	(Kcal/Kg)				NA	
30	Weighted average GCV of coal/ Lignite as Received (Including Biomass)	(Kcal/Kg)	**3862**				
30a	Weighted average GCV of coal/ Lignite as Received (Excluding Bio Mass)	(Kcal/Kg)	**3862**				

23.05.24

Jashu Bhatt,
Sr Manager (Finance),
Unified Fuel Comm Group,
NCPP Dadri,
NTPC Limited

FORM-15

Details/Information to be provided to beneficiaries under Clause (2) of Regulation 40 of CERC (Terms & Conditions of Tariff) Regulations, 2019

Details of Source wise Fuel for Computation of Energy Charges (in case of coal)

	Name of the Petitioner:	**NTPC Limited**
	Name of the Generating Station:	**SINGRAULI SUPER THERMAL POWER PROJECT**
	Month:	**Jan-24 Revised**

S.No.	Particulars	Unit	Domestic Coal		E-Auction	Imported Coal	Bio Mass
			Supplied by MGR	Supplied by Rail			
A)	**OPENING QUANTITY**						
1	Opening Quantity ofCoal/Lignite	MT	217797.34	0.00	0.00	0.00	0.00
2	Value of Stock	Rs.	473592660	0	0	0	0
B)	**QUANTITY**						
3	Quantity of coal supplied by the coal Company	MT	784849.22	0.00	0.00	0.00	0.00
4	Adjustment (+/-) in quantity supplied by the coal Company	MT	0.00	0.00	0.00	0.00	0.00
5	Coal supplied by the Coal Company (1+2)	MT	784849.22	0.00	0.00	0.00	0.00
6	Normative transit & handling losses	MT	1569.70	0.00	0.00	0.00	0.00
7	**Net Coal / Lignite supplied (5 - 6)**	**MT**	**783279.52**	**0.00**	**0.00**	**0.00**	**0.00**
C)	**PRICE**						
8	Amount charged by the Coal / Lignite Company	Rs.	1666781773	0	0	0	0
9	Adjustment (+ / -) in amount charged by coal / Lignite Company	Rs.	77077678	0	0	0	0
10	Handling, Sampling such Other similer Charges	Rs.	8016022	0	0	0	0
11	**Total Amount charged (8 +9+10)**	**Rs.**	**1751875473**	**0**	**0**	**0**	**0**
D)	**TRANSPORATION**						
12	Transportation charges by Rail / Ship / Road Transport	Rs.	0	0	0	0	0
13	Adjustment (+/-) in amount charged by Railways / transport Company	Rs.	0	0	0	0	0
14	Demurrage charges, if any	Rs.	0	0	0	0	0
15	Cost of diesel in transporting coal through MGR system	Rs.	3211659	0	0	0	0
16	**Total transportation charges (12+ 13 + 14 + 15)**	**Rs.**	**3211659**	**0**	**0**	**0**	**0**
17	**Total amount charged for coal supplied including transportation (11+16)**	**Rs.**	**1755087132**	**0**	**0**	**0**	**0**
E)	**TOTAL COST**						
18	Landed cost of coal/ Lignite(2+17)/(1+7)	**Rs./MT**	**2226.28**		**0.00**	**0.00**	**0.00**
19	Blending Ratio(Domestic/Imported)		100.00%		0.00%	0.00%	0.00%
20	**Weighted average cost of coal (Including Bio Mass)**	**Rs./MT**	**2226.28**				
20a	**Weighted average cost of coal (Excluding Bio Mass)**	**Rs./MT**	**2226.28**				
F)	**QUALITY**						
21	GCV of Domestic Coal of the opening coal stock as per bill of Coal Company	(Kcal/Kg)	4325				
22	GCV of Domestic Coal supplied as per bill of Coal Company	(Kcal/Kg)	4359				
23	GCV of Imported Coal of the opening stock as per bill Coal Company	(Kcal/Kg)				NA	
24	GCV of Imported Coal supplied as per bill Coal Company	(Kcal/Kg)				NA	
25	Weighted average GCV of coal/ Lignite as Billed (Including Biomass)	(Kcal/Kg)	**4351**				
25a	Weighted average GCV of coal/ Lignite as Billed (Excluding Bio Mass)	(Kcal/Kg)	**4351**				
26	GCV of Domestic Coal of the opening stock as received at Station	(Kcal/Kg)	3863				
27	GCV of Domestic Coal supplied as received at Station	(Kcal/Kg)	3904				
28	GCV of Imported Coal of opening stock as received at Station	(Kcal/Kg)				NA	
29	GCV of Imported Coal of opening stock as received at Station	(Kcal/Kg)				NA	
30	Weighted average GCV of coal/ Lignite as Received (Including Biomass)	(Kcal/Kg)	**3895**				
30a	Weighted average GCV of coal/ Lignite as Received (Excluding Bio Mass)	(Kcal/Kg)	**3895**				

23.05.24

Jashu Bhatt,
Sr Manager (Finance),
Unified Fuel Comm Group,
NCPP Dadri,
NTPC Limited

Sr Mgr (Finance)

FORM-15

Details/Information to be provided to beneficiaries under Clause (2) of Regulation 40 of CERC (Terms & Conditions of Tariff) Regulations, 2019

Details of Source wise Fuel for Computation of Energy Charges (in case of coal)

	Name of the Petitioner:	**NTPC Limited**
	Name of the Generating Station:	**SINGRAULI SUPER THERMAL POWER PROJECT**
	Month:	**Feb-24** **Revised**

S.No.	Particulars	Unit	Domestic Coal		E-Auction	Imported Coal	Bio Mass
			Supplied by MGR	Supplied by Rail			
A)	**OPENING QUANTITY**						
1	Opening Quantity ofCoal/Lignite	MT	158130.85	0.00	0.00	0.00	0.00
2	Value of Stock	Rs.	352044285	0	0	0	0
B)	**QUANTITY**						
3	Quantity of coal supplied by the coal Company	MT	846202.64	0.00	0.00	0.00	0.00
4	Adjustment (+/-) in quantity supplied by the coal Company	MT	0.00	0.00	0.00	0.00	0.00
5	Coal supplied by the Coal Company (1+2)	MT	846202.64	0.00	0.00	0.00	0.00
6	Normative transit & handling losses	MT	1692.41	0.00	0.00	0.00	0.00
7	**Net Coal / Lignite supplied (5 - 6)**	**MT**	**844510.23**	**0.00**	**0.00**	**0.00**	**0.00**
C)	**PRICE**						
8	Amount charged by the Coal / Lignite Company	Rs.	1796129346	0	0	0	0
9	Adjustment (+ / -) in amount charged by coal / Lignite Company	Rs.	67664625	0	0	0	0
10	Handling, Sampling such Other similer Charges	Rs.	2854463	0	0	0	0
11	**Total Amount charged (8 +9+10)**	**Rs.**	**1866648434**	**0**	**0**	**0**	**0**
D)	**TRANSPORATION**						
12	Transportation charges by Rail / Ship / Road Transport	Rs.	0	0	0	0	0
13	Adjustment (+/-) in amount charged by Railways / transport Company	Rs.	0	0	0	0	0
14	Demurrage charges, if any	Rs.	0	0	0	0	0
15	Cost of diesel in transporting coal through MGR system	Rs.	9040737	0	0	0	0
16	**Total transportation charges (12+ 13 + 14 + 15)**	**Rs.**	**9040737**	**0**	**0**	**0**	**0**
17	**Total amount charged for coal supplied including transportation (11+16)**	**Rs.**	**1875689171**	**0**	**0**	**0**	**0**
E)	**TOTAL COST**						
18	Landed cost of coal/ Lignite(2+17)/(1+7)	**Rs./MT**	**2221.87**		**0.00**	**0.00**	**0.00**
19	Blending Ratio(Domestic/Imported)		100.00%		0.00%	0.00%	0.00%
20	**Weighted average cost of coal (Including Bio Mass)**	**Rs./MT**	**2221.87**				
20a	**Weighted average cost of coal (Excluding Bio Mass)**	**Rs./MT**	**2221.87**				
F)	**QUALITY**						
21	GCV of Domestic Coal of the opening coal stock as per bill of Coal Company	(Kcal/Kg)	4351				
22	GCV of Domestic Coal supplied as per bill of Coal Company	(Kcal/Kg)	4589				
23	GCV of Imported Coal of the opening stock as per bill Coal Company	(Kcal/Kg)				NA	
24	GCV of Imported Coal supplied as per bill Coal Company	(Kcal/Kg)				NA	
25	Weighted average GCV of coal/ Lignite as Billed (Including Biomass)	(Kcal/Kg)	**4551**				
25a	Weighted average GCV of coal/ Lignite as Billed (Excluding Bio Mass)	(Kcal/Kg)	**4551**				
26	GCV of Domestic Coal of the opening stock as received at Station	(Kcal/Kg)	3895				
27	GCV of Domestic Coal supplied as received at Station	(Kcal/Kg)	4171				
28	GCV of Imported Coal of opening stock as received at Station	(Kcal/Kg)				NA	
29	GCV of Imported Coal of opening stock as received at Station	(Kcal/Kg)				NA	
30	Weighted average GCV of coal/ Lignite as Received (Including Biomass)	(Kcal/Kg)	**4127**				
30a	Weighted average GCV of coal/ Lignite as Received (Excluding Bio Mass)	(Kcal/Kg)	**4127**				

23.05.24

Jashu Bhatt,
Sr Mgr (Finance),
Sr Manager (Finance),
Unified Fuel Comm Group,
NCPP Dadri,
NTPC Limited

FORM-15

Details/Information to be provided to beneficiaries under Clause (2) of Regulation 40 of CERC (Terms & Conditions of Tariff) Regulations, 2019

Details of Source wise Fuel for Computation of Energy Charges (in case of coal)

	Name of the Petitioner:	**NTPC Limited**
	Name of the Generating Station:	**SINGRAULI SUPER THERMAL POWER PROJECT**
	Month:	**Mar-24 Revised**

S.No.	Particulars	Unit	Domestic Coal		E-Auction	Imported Coal	Bio Mass
			Supplied by MGR	Supplied by Rail			
A)	**OPENING QUANTITY**						
1	Opening Quantity ofCoal/Lignite	MT	273480.08	0.00	0.00	0.00	0.00
2	Value of Stock	Rs.	607636152	0	0	0	0
B)	**QUANTITY**						
3	Quantity of coal supplied by the coal Company	MT	846849.80	0.00	0.00	0.00	0.00
4	Adjustment (+/-) in quantity supplied by the coal Company	MT	0.00	0.00	0.00	0.00	0.00
5	Coal supplied by the Coal Company (1+2)	MT	846849.80	0.00	0.00	0.00	0.00
6	Normative transit & handling losses	MT	1693.70	0.00	0.00	0.00	0.00
7	**Net Coal / Lignite supplied (5 - 6)**	**MT**	**845156.10**	**0.00**	**0.00**	**0.00**	**0.00**
C)	**PRICE**						
8	Amount charged by the Coal / Lignite Company	Rs.	1799400700	0	0	0	0
9	Adjustment (+ / -) in amount charged by coal / Lignite Company	Rs.	191352293	0	0	0	0
10	Handling, Sampling such Other similer Charges	Rs.	19470091	0	0	0	0
11	**Total Amount charged (8 +9+10)**	**Rs.**	**2010223083**	**0**	**0**	**0**	**0**
D)	**TRANSPORATION**						
12	Transportation charges by Rail / Ship / Road Transport	Rs.	0	0	0	0	0
13	Adjustment (+/-) in amount charged by Railways / transport Company	Rs.	0	0	0	0	0
14	Demurrage charges, if any	Rs.	0	0	0	0	0
15	Cost of diesel in transporting coal through MGR system	Rs.	3359121	0	0	0	0
16	**Total transportation charges (12+ 13 + 14 + 15)**	**Rs.**	**3359121**	**0**	**0**	**0**	**0**
17	**Total amount charged for coal supplied including transportation (11+16)**	**Rs.**	**2013582204**	**0**	**0**	**0**	**0**
E)	**TOTAL COST**						
18	Landed cost of coal/ Lignite(2+17)/(1+7)	**Rs./MT**	**2343.23**		**0.00**	**0.00**	**0.00**
19	Blending Ratio(Domestic/Imported)		100.00%		0.00%	0.00%	0.00%
20	**Weighted average cost of coal (Including Bio Mass)**	**Rs./MT**	**2343.23**				
20a	**Weighted average cost of coal (Excluding Bio Mass)**	**Rs./MT**	**2343.23**				
F)	**QUALITY**						
21	GCV of Domestic Coal of the opening coal stock as per bill of Coal Company	(Kcal/Kg)	4548				
22	GCV of Domestic Coal supplied as per bill of Coal Company	(Kcal/Kg)	4421				
23	GCV of Imported Coal of the opening stock as per bill Coal Company	(Kcal/Kg)				NA	
24	GCV of Imported Coal supplied as per bill Coal Company	(Kcal/Kg)				NA	
25	Weighted average GCV of coal/ Lignite as Billed (Including Biomass)	(Kcal/Kg)	**4453**				
25a	Weighted average GCV of coal/ Lignite as Billed (Excluding Bio Mass)	(Kcal/Kg)	**4453**				
26	GCV of Domestic Coal of the opening stock as received at Station	(Kcal/Kg)	4124				
27	GCV of Domestic Coal supplied as received at Station	(Kcal/Kg)	4154				
28	GCV of Imported Coal of opening stock as received at Station	(Kcal/Kg)				NA	
29	GCV of Imported Coal of opening stock as received at Station	(Kcal/Kg)				NA	
30	Weighted average GCV of coal/ Lignite as Received (Including Biomass)	(Kcal/Kg)	**4147**				
30a	Weighted average GCV of coal/ Lignite as Received (Excluding Bio Mass)	(Kcal/Kg)	**4147**				

23.05.24

Jashu Bhatt,
Sr Manager (Finance),
Unified Fuel Comm Group,
NCPP Dadri,
NTPC Limited

Sr Mgr (Finance)

Form-15
Details of information to be submitted in respect of fuel for computation of energy charges -Oil

Station NTPC/ Singrauli
Month Apr-23 Revised

S.No.	Particulars	Unit	HFO	LDO
1	Opening Stock of Oil	KL	9.756	3634.925
2	Value of Opening Stock	Rs	2,92,012.19	28,57,04,260
3	Quantity of Oil supplied by the Oil Company	KL	0.000	3155.510
4	Adjustment (+/-) in quantity supplied made by Oil Company	KL	0.000	0.000
5	Oil supplied by the Oil Company (3+4)	KL	0.000	3155.510
6	Normative transit & Handling losses	KL	0.000	0.000
7	Net Oil supplied (5 - 6)	KL	0.000	3155.510
8	Amount charged by the Oil Company	Rs.	0.00	245803992.53
9	Adjustment (+ / -) in amount charged by Oil Company	Rs.	0.00	0
10	Total Amount charged (8 +9)	Rs.	0.00	245803992.53
11	Transportation charges by Rail / Ship / Road Transport	Rs.	0.00	0.00
12	Adjustment (+/-) in amount charged by railways / transport company	Rs.	0.00	0
13	Demurrage charges, if any	Rs.	0.00	0
14	Total transportation charges (11+/- 12 - 13)	Rs.	0.00	0.00
14A	Other Charges (Entry Tax on Oil /Siding Charges etc.)	Rs.	0.00	0
15	Total amount charged for the Oil supplied including transportation (10 + 14+14A)	Rs.	0.00	245803992.53
16	Weighted average GCV of Oil as fired	Kcal / KL	0	8906
17	Quantity of Oil at the station for the month (1 +7)	KL	9.756	6790.435
18	Total amount charged for Oil (2 + 15)	Rs.	292012.19	531508252.40
19	Landed Cost of Oil (18 / 17)	Rs / KL	29931.55	78273.08
20	Quantity of Oil consumed	KL	0.000	724.00
21	Value of Oil consumed (19 * 20)	Rs	0.00	56669709
22	Closing Stock of Oil (17 - 20)	KL	9.756	6066.435
23	Value of Closing Stock (18 - 21)	Rs	292012.19	474838543

Details of information to be submitted in respect of fuel for computation of energy charges

Station NTPC/ Singrauli
Month Apr-23 Revised

S.No.	Particulars	Unit	HFO	LDO
1	Landed Cost of Oil as at Sl No 19	Rs / KL	29931.55	78273.08
2	Usage Quantity for the month	KL	0	724
3	Weighted average rate ((R1*Q1)+(R2*Q2)) / (Q1+Q2)	Rs / KL		**78273.08**
4	Weighted average GCV of Oil on usage basis	Kcal / KL		8905.50

23.05.24
Sr Manager (Finance)

Jashu Bhatt,
Sr Manager (Finance),
Unified Fuel Comm Group,
NCPP Dadri,
NTPC Limited

Form-15
Details of information to be submitted in respect of fuel for computation of energy charges -Oil

Station NTPC/ Singrauli
Month May-23 Provisional

S.No.	Particulars	Unit	HFO	LDO
1	Opening Stock of Oil	KL	9.756	6066.435
2	Value of Opening Stock	Rs	2,92,012.19	47,48,38,543
3	Quantity of Oil supplied by the Oil Company	KL	0.000	
4	Adjustment (+/-) in quantity supplied made by Oil Company	KL	0.000	0.000
5	Oil supplied by the Oil Company (3+4)	KL	0.000	0.000
6	Normative transit & Handling losses	KL	0.000	0.000
7	Net Oil supplied (5 - 6)	KL	0.000	0.000
8	Amount charged by the Oil Company	Rs.	0.00	-4592628.53
9	Adjustment (+ / -) in amount charged by Oil Company	Rs.	0.00	0
10	Total Amount charged (8 +9)	Rs.	0.00	-4592628.53
11	Transportation charges by Rail / Ship / Road Transport	Rs.	0.00	0.00
12	Adjustment (+/-) in amount charged by railways / transport company	Rs.	0.00	0
13	Demurrage charges, if any	Rs.	0.00	0
14	Total transportation charges (11+/- 12 - 13)	Rs.	0.00	0.00
14A	Other Charges (Entry Tax on Oil /Siding Charges etc.)	Rs.	0.00	0
15	Total amount charged for the Oil supplied including transportation (10 + 14+14A)	Rs.	0.00	-4592628.53
16	Weighted average GCV of Oil as fired	Kcal / KL	0	8906
17	Quantity of Oil at the station for the month (1 +7)	KL	9.756	6066.435
18	Total amount charged for Oil (2 + 15)	Rs.	292012.19	470245914.87
19	Landed Cost of Oil (18 / 17)	Rs / KL	29931.55	77516.02
20	Quantity of Oil consumed	KL	0.000	330.00
21	Value of Oil consumed (19 * 20)	Rs	0.00	25580288
22	Closing Stock of Oil (17 - 20)	KL	9.756	5736.435
23	Value of Closing Stock (18 - 21)	Rs	292012.19	444665627

Details of information to be submitted in respect of fuel for computation of energy charges

Station NTPC/ Singrauli
Month May-23 Provisional

S.No.	Particulars	Unit	HFO	LDO
1	Landed Cost of Oil as at Sl No 19	Rs / KL	29931.55	77516.02
2	Usage Quantity for the month	KL	0	330
3	Weighted average rate ((R1*Q1)+(R2*Q2)) / (Q1+Q2)	Rs / KL		**77516.02**
4	Weighted average GCV of Oil on usage basis	Kcal / KL		8905.50

23.05.24

Jashu Bhatt,
Sr Manager (Finance),
Unified Fuel Comm Group,
NCPP Dadri,
NTPC Limited

Sr Manager (Finance)

Form-15

Details of information to be submitted in respect of fuel for computation of energy charges -Oil

Station NTPC/ Singrauli

Month Jun-23 Provisional

S.No.	Particulars	Unit	HFO	LDO
1	Opening Stock of Oil	KL	9.756	5736.435
2	Value of Opening Stock	Rs	2,92,012.19	44,46,65,627
3	Quantity of Oil supplied by the Oil Company	KL	0.000	
4	Adjustment (+/-) in quantity supplied made by Oil Company	KL	0.000	0.000
5	Oil supplied by the Oil Company (3+4)	KL	0.000	0.000
6	Normative transit & Handling losses	KL	0.000	0.000
7	Net Oil supplied (5 - 6)	KL	0.000	0.000
8	Amount charged by the Oil Company	Rs.	0.00	0.00
9	Adjustment (+ / -) in amount charged by Oil Company	Rs.	0.00	0
10	Total Amount charged (8 +9)	Rs.	0.00	0.00
11	Transportation charges by Rail / Ship / Road Transport	Rs.	0.00	0.00
12	Adjustment (+/-) in amount charged by railways / transport company	Rs.	0.00	0
13	Demurrage charges, if any	Rs.	0.00	0
14	Total transportation charges (11+/- 12 - 13)	Rs.	0.00	0.00
14A	Other Charges (Entry Tax on Oil /Siding Charges etc.)	Rs.	0.00	0
15	Total amount charged for the Oil supplied including transportation (10 + 14+14A)	Rs.	0.00	0.00
16	Weighted average GCV of Oil as fired	Kcal / KL	0	8906
17	Quantity of Oil at the station for the month (1 +7)	KL	9.756	5736.435
18	Total amount charged for Oil (2 + 15)	Rs.	292012.19	444665626.87
19	Landed Cost of Oil (18 / 17)	Rs / KL	29931.55	77516.02
20	Quantity of Oil consumed	KL	0.000	140.00
21	Value of Oil consumed (19 * 20)	Rs	0.00	10852243
22	Closing Stock of Oil (17 - 20)	KL	9.756	5596.435
23	Value of Closing Stock (18 - 21)	Rs	292012.19	433813384

Details of information to be submitted in respect of fuel for computation of energy charges

Station NTPC/ Singrauli

Month Jun-23 Provisional

S.No.	Particulars	Unit	HFO	LDO
1	Landed Cost of Oil as at Sl No 19	Rs / KL	29931.55	77516.02
2	Usage Quantity for the month	KL	0	140
3	Weighted average rate ((R1*Q1)+(R2*Q2)) / (Q1+Q2)	Rs / KL		**77516.02**
4	Weighted average GCV of Oil on usage basis	Kcal / KL		**8905.50**

23.05.24

Sr Manager (Finance)

Jashu Bhatt,
Sr Manager (Finance),
Unified Fuel Comm Group,
NCPP Dadri,
NTPC Limited

Form-15
Details of information to be submitted in respect of fuel for computation of energy charges -Oil

Station NTPC/ Singrauli
Month Jul-23 Provisional

S.No.	Particulars	Unit	HFO	LDO
1	Opening Stock of Oil	KL	9.756	5596.435
2	Value of Opening Stock	Rs	2,92,012.19	43,38,13,384
3	Quantity of Oil supplied by the Oil Company	KL	0.000	
4	Adjustment (+/-) in quantity supplied made by Oil Company	KL	0.000	0.000
5	Oil supplied by the Oil Company (3+4)	KL	0.000	0.000
6	Normative transit & Handling losses	KL	0.000	0.000
7	Net Oil supplied (5 - 6)	KL	0.000	0.000
8	Amount charged by the Oil Company	Rs.	0.00	0.00
9	Adjustment (+ / -) in amount charged by Oil Company	Rs.	0.00	0
10	Total Amount charged (8 +9)	Rs.	0.00	0.00
11	Transportation charges by Rail / Ship / Road Transport	Rs.	0.00	0.00
12	Adjustment (+/-) in amount charged by railways / transport company	Rs.	0.00	0
13	Demurrage charges, if any	Rs.	0.00	0
14	Total transportation charges (11+/- 12 - 13)	Rs.	0.00	0.00
14A	Other Charges (Entry Tax on Oil /Siding Charges etc.)	Rs.	0.00	0
15	Total amount charged for the Oil supplied including transportation (10 + 14+14A)	Rs.	0.00	0.00
16	Weighted average GCV of Oil as fired	Kcal / KL	0	8906
17	Quantity of Oil at the station for the month (1 +7)	KL	9.756	5596.435
18	Total amount charged for Oil (2 + 15)	Rs.	292012.19	433813383.87
19	Landed Cost of Oil (18 / 17)	Rs / KL	29931.55	77516.02
20	Quantity of Oil consumed	KL	0.000	308.00
21	Value of Oil consumed (19 * 20)	Rs	0.00	23874935
22	Closing Stock of Oil (17 - 20)	KL	9.756	5288.435
23	Value of Closing Stock (18 - 21)	Rs	292012.19	409938449

Details of information to be submitted in respect of fuel for computation of energy charges

Station NTPC/ Singrauli
Month Jul-23 Provisional

S.No.	Particulars	Unit	HFO	LDO
1	Landed Cost of Oil as at Sl No 19	Rs / KL	29931.55	77516.02
2	Usage Quantity for the month	KL	0	308
3	Weighted average rate ((R1*Q1)+(R2*Q2)) / (Q1+Q2)	Rs / KL		**77516.02**
4	Weighted average GCV of Oil on usage basis	Kcal / KL		**8905.50**

23.05.24

Jashu Bhatt,
Sr Manager (Finance),
Unified Fuel Comm Group,
NCPP Dadri,
NTPC Limited

Sr Manager (Finance)

Form-15
Details of information to be submitted in respect of fuel for computation of energy charges -Oil

Station NTPC/ Singrauli
Month Aug-23 Provisional

S.No.	Particulars	Unit	HFO	LDO
1	Opening Stock of Oil	KL	9.756	5288.435
2	Value of Opening Stock	Rs	2,92,012.19	40,99,38,449
3	Quantity of Oil supplied by the Oil Company	KL	0.000	
4	Adjustment (+/-) in quantity supplied made by Oil Company	KL	0.000	0.000
5	Oil supplied by the Oil Company (3+4)	KL	0.000	0.000
6	Normative transit & Handling losses	KL	0.000	0.000
7	Net Oil supplied (5 - 6)	KL	0.000	0.000
8	Amount charged by the Oil Company	Rs.	0.00	0.00
9	Adjustment (+ / -) in amount charged by Oil Company	Rs.	0.00	0
10	Total Amount charged (8 +9)	Rs.	0.00	0.00
11	Transportation charges by Rail / Ship / Road Transport	Rs.	0.00	0.00
12	Adjustment (+/-) in amount charged by railways / transport company	Rs.	0.00	0
13	Demurrage charges, if any	Rs.	0.00	0
14	Total transportation charges (11+/- 12 - 13)	Rs.	0.00	0.00
14A	Other Charges (Entry Tax on Oil /Siding Charges etc.)	Rs.	0.00	0
15	Total amount charged for the Oil supplied including transportation (10 + 14+14A)	Rs.	0.00	0.00
16	Weighted average GCV of Oil as fired	Kcal / KL	0	8906
17	Quantity of Oil at the station for the month (1 +7)	KL	9.756	5288.435
18	Total amount charged for Oil (2 + 15)	Rs.	292012.19	409938448.87
19	Landed Cost of Oil (18 / 17)	Rs / KL	29931.55	77516.02
20	Quantity of Oil consumed	KL	0.000	171.00
21	Value of Oil consumed (19 * 20)	Rs	0.00	13255240
22	Closing Stock of Oil (17 - 20)	KL	9.756	5117.435
23	Value of Closing Stock (18 - 21)	Rs	292012.19	396683209

Details of information to be submitted in respect of fuel for computation of energy charges

Station NTPC/ Singrauli
Month Aug-23 Provisional

S.No.	Particulars	Unit	HFO	LDO
1	Landed Cost of Oil as at Sl No 19	Rs / KL	29931.55	77516.02
2	Usage Quantity for the month	KL	0	171
3	Weighted average rate ((R1*Q1)+(R2*Q2)) / (Q1+Q2)	Rs / KL		**77516.02**
4	Weighted average GCV of Oil on usage basis	Kcal / KL		**8905.50**

23.05.24
Sr Manager (Finance)

Jashu Bhatt,
Sr Manager (Finance),
Unified Fuel Comm Group,
NCPP Dadri,
NTPC Limited

Form-15
Details of information to be submitted in respect of fuel for computation of energy charges -Oil

Station NTPC/ Singrauli
Month Sep-23 Provisional

S.No.	Particulars	Unit	HFO	LDO
1	Opening Stock of Oil	KL	9.756	5117.435
2	Value of Opening Stock	Rs	2,92,012.19	39,66,83,209
3	Quantity of Oil supplied by the Oil Company	KL	0.000	
4	Adjustment (+/-) in quantity supplied made by Oil Company	KL	0.000	0.000
5	Oil supplied by the Oil Company (3+4)	KL	0.000	0.000
6	Normative transit & Handling losses	KL	0.000	0.000
7	Net Oil supplied (5 - 6)	KL	0.000	0.000
8	Amount charged by the Oil Company	Rs.	0.00	0.00
9	Adjustment (+ / -) in amount charged by Oil Company	Rs.	0.00	0
10	Total Amount charged (8 +9)	Rs.	0.00	0.00
11	Transportation charges by Rail / Ship / Road Transport	Rs.	0.00	0.00
12	Adjustment (+/-) in amount charged by railways / transport company	Rs.	0.00	0
13	Demurrage charges, if any	Rs.	0.00	0
14	Total transportation charges (11+/- 12 - 13)	Rs.	0.00	0.00
14A	Other Charges (Entry Tax on Oil /Siding Charges etc.)	Rs.	0.00	0
15	Total amount charged for the Oil supplied including transportation (10 + 14+14A)	Rs.	0.00	0.00
16	Weighted average GCV of Oil as fired	Kcal / KL	0	8906
17	Quantity of Oil at the station for the month (1 +7)	KL	9.756	5117.435
18	Total amount charged for Oil (2 + 15)	Rs.	292012.19	396683208.87
19	Landed Cost of Oil (18 / 17)	Rs / KL	29931.55	77516.02
20	Quantity of Oil consumed	KL	0.000	134.00
21	Value of Oil consumed (19 * 20)	Rs	0.00	10387147
22	Closing Stock of Oil (17 - 20)	KL	9.756	4983.435
23	Value of Closing Stock (18 - 21)	Rs	292012.19	386296062

Details of information to be submitted in respect of fuel for computation of energy charges

Station NTPC/ Singrauli
Month Sep-23 Provisional

S.No.	Particulars	Unit	HFO	LDO
1	Landed Cost of Oil as at Sl No 19	Rs / KL	29931.55	77516.02
2	Usage Quantity for the month	KL	0	134
3	Weighted average rate ((R1*Q1)+(R2*Q2)) / (Q1+Q2)	Rs / KL		**77516.02**
4	Weighted average GCV of Oil on usage basis	Kcal / KL		**8905.50**

23.05.24

Sr Manager (Finance)

Jashu Bhatt,
Sr Manager (Finance),
Unified Fuel Comm Group,
NCPP Dadri,
NTPC Limited

Form-15
Details of information to be submitted in respect of fuel for computation of energy charges -Oil

Station NTPC/ Singrauli
Month Oct-23 Provisional

S.No.	Particulars	Unit	HFO	LDO
1	Opening Stock of Oil	KL	9.756	4983.435
2	Value of Opening Stock	Rs	2,92,012.19	38,62,96,062
3	Quantity of Oil supplied by the Oil Company	KL	0.000	
4	Adjustment (+/-) in quantity supplied made by Oil Company	KL	0.000	0.000
5	Oil supplied by the Oil Company (3+4)	KL	0.000	0.000
6	Normative transit & Handling losses	KL	0.000	0.000
7	Net Oil supplied (5 - 6)	KL	0.000	0.000
8	Amount charged by the Oil Company	Rs.	0.00	0.00
9	Adjustment (+ / -) in amount charged by Oil Company	Rs.	0.00	0
10	Total Amount charged (8 +9)	Rs.	0.00	0.00
11	Transportation charges by Rail / Ship / Road Transport	Rs.	0.00	0.00
12	Adjustment (+/-) in amount charged by railways / transport company	Rs.	0.00	0
13	Demurrage charges, if any	Rs.	0.00	0
14	Total transportation charges (11+/- 12 - 13)	Rs.	0.00	0.00
14A	Other Charges (Entry Tax on Oil /Siding Charges etc.)	Rs.	0.00	0
15	Total amount charged for the Oil supplied including transportation (10 + 14+14A)	Rs.	0.00	0.00
16	Weighted average GCV of Oil as fired	Kcal / KL	0	8906
17	Quantity of Oil at the station for the month (1 +7)	KL	9.756	4983.435
18	Total amount charged for Oil (2 + 15)	Rs.	292012.19	386296061.87
19	Landed Cost of Oil (18 / 17)	Rs / KL	29931.55	77516.02
20	Quantity of Oil consumed	KL	0.000	36.00
21	Value of Oil consumed (19 * 20)	Rs	0.00	2790577
22	Closing Stock of Oil (17 - 20)	KL	9.756	4947.435
23	Value of Closing Stock (18 - 21)	Rs	292012.19	383505485

Details of information to be submitted in respect of fuel for computation of energy charges

Station NTPC/ Singrauli
Month Oct-23 Provisional

S.No.	Particulars	Unit	HFO	LDO
1	Landed Cost of Oil as at Sl No 19	Rs / KL	29931.55	77516.02
2	Usage Quantity for the month	KL	0	36
3	Weighted average rate ((R1*Q1)+(R2*Q2)) / (Q1+Q2)	Rs / KL		**77516.02**
4	Weighted average GCV of Oil on usage basis	Kcal / KL		**8905.50**

23.05.24

Jashu Bhatt,
Sr Manager (Finance),
Unified Fuel Comm Group,
NCPP Dadri,
NTPC Limited

Form-15
Details of information to be submitted in respect of fuel for computation of energy charges -Oil

Station NTPC/ Singrauli
Month Nov-23 Provisional

S.No.	Particulars	Unit	HFO	LDO
1	Opening Stock of Oil	KL	9.756	4947.435
2	Value of Opening Stock	Rs	2,92,012.19	38,35,05,485
3	Quantity of Oil supplied by the Oil Company	KL	0.000	
4	Adjustment (+/-) in quantity supplied made by Oil Company	KL	0.000	0.000
5	Oil supplied by the Oil Company (3+4)	KL	0.000	0.000
6	Normative transit & Handling losses	KL	0.000	0.000
7	Net Oil supplied (5 - 6)	KL	0.000	0.000
8	Amount charged by the Oil Company	Rs.	0.00	0.00
9	Adjustment (+ / -) in amount charged by Oil Company	Rs.	0.00	0
10	Total Amount charged (8 +9)	Rs.	0.00	0.00
11	Transportation charges by Rail / Ship / Road Transport	Rs.	0.00	0.00
12	Adjustment (+/-) in amount charged by railways / transport company	Rs.	0.00	0
13	Demurrage charges, if any	Rs.	0.00	0
14	Total transportation charges (11+/- 12 - 13)	Rs.	0.00	0.00
14A	Other Charges (Entry Tax on Oil /Siding Charges etc.)	Rs.	0.00	0
15	Total amount charged for the Oil supplied including transportation (10 + 14+14A)	Rs.	0.00	0.00
16	Weighted average GCV of Oil as fired	Kcal / KL	0	8906
17	Quantity of Oil at the station for the month (1 +7)	KL	9.756	4947.435
18	Total amount charged for Oil (2 + 15)	Rs.	292012.19	383505484.87
19	Landed Cost of Oil (18 / 17)	Rs / KL	29931.55	77516.02
20	Quantity of Oil consumed	KL	0.000	877.00
21	Value of Oil consumed (19 * 20)	Rs	0.00	67981552
22	Closing Stock of Oil (17 - 20)	KL	9.756	4070.435
23	Value of Closing Stock (18 - 21)	Rs	292012.19	315523933

Details of information to be submitted in respect of fuel for computation of energy charges

Station NTPC/ Singrauli
Month Nov-23 Provisional

S.No.	Particulars	Unit	HFO	LDO
1	Landed Cost of Oil as at Sl No 19	Rs / KL	29931.55	77516.02
2	Usage Quantity for the month	KL	0	877
3	Weighted average rate ((R1*Q1)+(R2*Q2)) / (Q1+Q2)	Rs / KL		**77516.02**
4	Weighted average GCV of Oil on usage basis	Kcal / KL		**8905.50**

23.05.24

Jashu Bhatt,
Sr Manager (Finance),
Unified Fuel Comm Group,
NCPP Dadri,
NTPC Limited

Sr Manager (Finance)

Form-15
Details of information to be submitted in respect of fuel for computation of energy charges -Oil

Station NTPC/ Singrauli
Month Dec-23 Provisional

S.No.	Particulars	Unit	HFO	LDO
1	Opening Stock of Oil	KL	9.756	4070.435
2	Value of Opening Stock	Rs	2,92,012.19	31,55,23,933
3	Quantity of Oil supplied by the Oil Company	KL	0.000	
4	Adjustment (+/-) in quantity supplied made by Oil Company	KL	0.000	0.000
5	Oil supplied by the Oil Company (3+4)	KL	0.000	0.000
6	Normative transit & Handling losses	KL	0.000	0.000
7	Net Oil supplied (5 - 6)	KL	0.000	0.000
8	Amount charged by the Oil Company	Rs.	0.00	0.00
9	Adjustment (+ / -) in amount charged by Oil Company	Rs.	0.00	0
10	Total Amount charged (8 +9)	Rs.	0.00	0.00
11	Transportation charges by Rail / Ship / Road Transport	Rs.	0.00	0.00
12	Adjustment (+/-) in amount charged by railways / transport company	Rs.	0.00	0
13	Demurrage charges, if any	Rs.	0.00	0
14	Total transportation charges (11+/- 12 - 13)	Rs.	0.00	0.00
14A	Other Charges (Entry Tax on Oil /Siding Charges etc.)	Rs.	0.00	0
15	Total amount charged for the Oil supplied including transportation (10 + 14+14A)	Rs.	0.00	0.00
16	Weighted average GCV of Oil as fired	Kcal / KL	0	8906
17	Quantity of Oil at the station for the month (1 +7)	KL	9.756	4070.435
18	Total amount charged for Oil (2 + 15)	Rs.	292012.19	315523932.87
19	Landed Cost of Oil (18 / 17)	Rs / KL	29931.55	77516.02
20	Quantity of Oil consumed	KL	0.000	160.00
21	Value of Oil consumed (19 * 20)	Rs	0.00	12402564
22	Closing Stock of Oil (17 - 20)	KL	9.756	3910.435
23	Value of Closing Stock (18 - 21)	Rs	292012.19	303121369

Details of information to be submitted in respect of fuel for computation of energy charges

Station NTPC/ Singrauli
Month Dec-23 Provisional

S.No.	Particulars	Unit	HFO	LDO
1	Landed Cost of Oil as at Sl No 19	Rs / KL	29931.55	77516.02
2	Usage Quantity for the month	KL	0	160
3	Weighted average rate ((R1*Q1)+(R2*Q2)) / (Q1+Q2)	Rs / KL		**77516.02**
4	Weighted average GCV of Oil on usage basis	Kcal / KL		**8905.50**

23.05.24

Jashu Bhatt,
Sr Manager (Finance),
Unified Fuel Comm Group,
NCPP Dadri,
NTPC Limited

Sr Manager (Finance)

Form-15
Details of information to be submitted in respect of fuel for computation of energy charges -Oil

Station **NTPC/ Singrauli**
Month **Jan-24** **Revised**

S.No.	Particulars	Unit	HFO	LDO
1	Opening Stock of Oil	KL	9.756	3910.435
2	Value of Opening Stock	Rs	2,92,012.19	30,31,21,369
3	Quantity of Oil supplied by the Oil Company	KL	0.000	
4	Adjustment (+/-) in quantity supplied made by Oil Company	KL	0.000	0.000
5	Oil supplied by the Oil Company (3+4)	KL	0.000	0.000
6	Normative transit & Handling losses	KL	0.000	0.000
7	Net Oil supplied (5 - 6)	KL	0.000	0.000
8	Amount charged by the Oil Company	Rs.	0.00	0.00
9	Adjustment (+ / -) in amount charged by Oil Company	Rs.	0.00	0
10	Total Amount charged (8 +9)	Rs.	0.00	0.00
11	Transportation charges by Rail / Ship / Road Transport	Rs.	0.00	0.00
12	Adjustment (+/-) in amount charged by railways / transport company	Rs.	0.00	0
13	Demurrage charges, if any	Rs.	0.00	0
14	Total transportation charges (11+/- 12 - 13)	Rs.	0.00	0.00
14A	Other Charges (Entry Tax on Oil /Siding Charges etc.)	Rs.	0.00	0
15	Total amount charged for the Oil supplied including transportation (10 + 14+14A)	Rs.	0.00	0.00
16	Weighted average GCV of Oil as fired	Kcal / KL	0	10500
17	Quantity of Oil at the station for the month (1 +7)	KL	9.756	3910.435
18	Total amount charged for Oil (2 + 15)	Rs.	292012.19	303121368.87
19	Landed Cost of Oil (18 / 17)	Rs / KL	29931.55	77516.02
20	Quantity of Oil consumed	KL	0.000	417.00
21	Value of Oil consumed (19 * 20)	Rs	0.00	32324182
22	Closing Stock of Oil (17 - 20)	KL	9.756	3493.435
23	Value of Closing Stock (18 - 21)	Rs	292012.19	270797187

Details of information to be submitted in respect of fuel for computation of energy charges

Station **NTPC/ Singrauli**
Month **Jan-24 Revised**

S.No.	Particulars	Unit	HFO	LDO
1	Landed Cost of Oil as at Sl No 19	Rs / KL	29931.55	77516.02
2	Usage Quantity for the month	KL	0	417
3	Weighted average rate ((R1*Q1)+(R2*Q2)) / (Q1+Q2)	Rs / KL		**77516.02**
4	Weighted average GCV of Oil on usage basis	Kcal / KL		10500

Sr Manager (Finance)

Form-15
Details of information to be submitted in respect of fuel for computation of energy charges -Oil

Station NTPC/ Singrauli
Month Feb-24 Provisional

S.No.	Particulars	Unit	HFO	LDO
1	Opening Stock of Oil	KL	9.756	3493.435
2	Value of Opening Stock	Rs	2,92,012.19	27,07,97,187
3	Quantity of Oil supplied by the Oil Company	KL	0.000	
4	Adjustment (+/-) in quantity supplied made by Oil Company	KL	0.000	0.000
5	Oil supplied by the Oil Company (3+4)	KL	0.000	0.000
6	Normative transit & Handling losses	KL	0.000	0.000
7	Net Oil supplied (5 - 6)	KL	0.000	0.000
8	Amount charged by the Oil Company	Rs.	0.00	0.00
9	Adjustment (+ / -) in amount charged by Oil Company	Rs.	0.00	0
10	Total Amount charged (8 +9)	Rs.	0.00	0.00
11	Transportation charges by Rail / Ship / Road Transport	Rs.	0.00	0.00
12	Adjustment (+/-) in amount charged by railways / transport company	Rs.	0.00	0
13	Demurrage charges, if any	Rs.	0.00	0
14	Total transportation charges (11+/- 12 - 13)	Rs.	0.00	0.00
14A	Other Charges (Entry Tax on Oil /Siding Charges etc.)	Rs.	0.00	0
15	Total amount charged for the Oil supplied including transportation (10 + 14+14A)	Rs.	0.00	0.00
16	Weighted average GCV of Oil as fired	Kcal / KL	0	8906
17	Quantity of Oil at the station for the month (1 +7)	KL	9.756	3493.435
18	Total amount charged for Oil (2 + 15)	Rs.	292012.19	270797186.87
19	Landed Cost of Oil (18 / 17)	Rs / KL	29931.55	77516.02
20	Quantity of Oil consumed	KL	0.000	0.00
21	Value of Oil consumed (19 * 20)	Rs	0.00	8
22	Closing Stock of Oil (17 - 20)	KL	9.756	3493.435
23	Value of Closing Stock (18 - 21)	Rs	292012.19	270797179

Details of information to be submitted in respect of fuel for computation of energy charges

Station NTPC/ Singrauli
Month Feb-24 Provisional

S.No.	Particulars	Unit	HFO	LDO
1	Landed Cost of Oil as at Sl No 19	Rs / KL	29931.55	77516.02
2	Usage Quantity for the month	KL	0	0
3	Weighted average rate ((R1*Q1)+(R2*Q2)) / (Q1+Q2)	Rs / KL		**77516.02**
4	Weighted average GCV of Oil on usage basis	Kcal / KL		8906.00

23.05.24

Sr Manager (Finance)
Jasnu Bhatt,
Sr Manager (Finance),
Unified Fuel Comm Group,
NCPP Dadri,
NTPC Limited

Form-15

Details of information to be submitted in respect of fuel for computation of energy charges -Oil

Station NTPC/ Singrauli

Month Mar-24 Provisional

S.No.	Particulars	Unit	HFO	LDO
1	Opening Stock of Oil	KL	9.756	3493.435
2	Value of Opening Stock	Rs	2,92,012.19	27,07,97,179
3	Quantity of Oil supplied by the Oil Company	KL	0.000	0.000
4	Adjustment (+/-) in quantity supplied made by Oil Company	KL	0.000	0.000
5	Oil supplied by the Oil Company (3+4)	KL	0.000	0.000
6	Normative transit & Handling losses	KL	0.000	0.000
7	Net Oil supplied (5 - 6)	KL	0.000	0.000
8	Amount charged by the Oil Company	Rs.	0.00	0.00
9	Adjustment (+ / -) in amount charged by Oil Company	Rs.	0.00	0
10	Total Amount charged (8 +9)	Rs.	0.00	0.00
11	Transportation charges by Rail / Ship / Road Transport	Rs.	0.00	0.00
12	Adjustment (+/-) in amount charged by railways / transport company	Rs.	0.00	0
13	Demurrage charges, if any	Rs.	0.00	0
14	Total transportation charges (11+/- 12 - 13)	Rs.	0.00	0.00
14A	Other Charges (Entry Tax on Oil /Siding Charges etc.)	Rs.	0.00	0
15	Total amount charged for the Oil supplied including transportation (10 + 14+14A)	Rs.	0.00	0.00
16	Weighted average GCV of Oil as fired	Kcal / KL	0	8906
17	Quantity of Oil at the station for the month (1 +7)	KL	9.756	3493.435
18	Total amount charged for Oil (2 + 15)	Rs.	292012.19	270797178.87
19	Landed Cost of Oil (18 / 17)	Rs / KL	29931.55	77516.02
20	Quantity of Oil consumed	KL	0.000	454.00
21	Value of Oil consumed (19 * 20)	Rs	0.00	35192274
22	Closing Stock of Oil (17 - 20)	KL	9.756	3039.435
23	Value of Closing Stock (18 - 21)	Rs	292012.19	235604905

Details of information to be submitted in respect of fuel for computation of energy charges

Station NTPC/ Singrauli

Month Mar-24 Provisional

S.No.	Particulars	Unit	HFO	LDO
1	Landed Cost of Oil as at Sl No 19	Rs / KL	29931.55	77516.02
2	Usage Quantity for the month	KL	0	454
3	Weighted average rate ((R1*Q1)+(R2*Q2)) / (Q1+Q2)	Rs / KL		**77516.02**
4	Weighted average GCV of Oil on usage basis	Kcal / KL		8906.00

23.05.24

Jashu Bhatt,
Sr Manager (Finance),
Unified Fuel Comm Group,
NCPP Dadri,
NTPC Limited

Sr Manager (Finance)

Computation of Energy Charges

Form-15B
ADDITIONAL FORM

Name of the Company	**NTPC Limited**
Name of the Power Station	**Singrauli STPS**

			2024-25	2025-26	2026-27	2027-28	2028-29
No of Days in the year		Days	365	365	365	366	365
Sp. Oil consumption		ml/kwh	0.5	0.5	0.5	0.5	0.5
Auxiliary consumption		%	6.88	6.88	6.88	6.88	6.88
Heat Rate		Kcal/Kwh	2,395.00	2,395.00	2,395.00	2,395.00	2395.00
Computation of Variable Charges							
Variable Charge (Coal)		p/kwh	150.88664	150.887	150.887	150.887	150.887
Variable Charge (Oil)		p/kwh	4.16555	4.166	4.166	4.166	4.166
Total		p/kwh	155.052	155.052	155.052	155.052	155.052
Price of fuel from Form-15/15A							
Coal Cost		(Rs./MT)	2235.74	2235.74	2235.74	2235.74	2235.74
Oil Cost		(Rs./KL)	77579.11	77579.11	77579.11	77579.11	77579.11
Coal GCV	(After Adjustment)	(kCal/Kg)	3803.75	3803.75	3803.75	3803.75	3803.75
Oil GCV		(Rs./KL)	9038.46	9038.46	9038.46	9038.46	9038.46
Computation of Fuel Expenses for Calculation of IWC:							
ESO in a year		(MUs)	13541.14	13541.14	13541.14	13578.24	13541.14
Cost of coal for 40 Days		(Rs. Lakh)	22390.98	22390.98	22390.98	22390.98	22390.98
Cost of oil for 2 months		(Rs. Lakh)	940.10	940.10	940.10	942.68	940.10
Energy Expenses for 45 days		(Rs. Lakh)	25885.27	25885.27	25885.27	25885.27	25885.27
Rate of Energy Charge from		$= (Q_s)_n \times P_s$	3.878955535	3.878955535	3.878955535	3.878955535	3.878955535
Heat Contribution from SFO / Alternate Fuel		$= (Qs)_n \times (GCV)_s$	4.519229167	4.519229167	4.519229167	4.519229167	4.519229167
Heat Contribution from coal		$= GHR - H_s$	2,390.48	2,390.48	2,390.48	2,390.48	2,390.48
Specific Primary Fuel Consumption		$= H_p / (GCV)_p$	0.63	0.63	0.63	0.63	0.63
Rate of Energy charge from Primary Fuel (p/kwh)		$(REC)_p$	140.51	140.51	140.51	140.51	140.51
Rate of Energy charge ex-bus (p/kWh)		$= ((REC)_s + (REC)_p / (1-(AUX))$	155.05	155.05	155.05	155.05	155.05

PETITIONER

PART 1
FORM- L

Name of the Petitioner NTPC Limited
Name of the Generating Station Singrauli STPS

Statement of Capital cost

(Amount in Rs. Lakh)

S. No.	Particulars	As on 01.04.2024		
		Accrual Basis	Un-discharged Liabilities	Cash Basis
A	a) Opening Gross Block Amount as per books	364341.35	6255.19	358086.16
	b) Amount of IDC in A(a) above	12053.10		12053.10
	c) Amount of FC in A(a) above	0.00		0.00
	d) Amount of FERV in A(a) above	4437.29		4437.29
	e) Amount of Hedging Cost in A(a) above	0.00		0.00
	f) Amount of IEDC in A(a) above	0.00		0.00
B	a) Addition in Gross Block Amount during the period (Direct purchases)	To be provided at the time of truing-up		
	b) Amount of IDC in B(a) above			
	c) Amount of FC in B(a) above			
	d) Amount of FERV in B(a) above			
	e) Amount of Hedging Cost in B(a) above			
	f) Amount of IEDC in B(a) above			
C	a) Addition in Gross Block Amount during the period (Transferred from CWIP)			
	b) Amount of IDC in C(a) above			
	c) Amount of FC in C(a) above			
	d) Amount of FERV in C(a) above			
	e) Amount of Hedging Cost in C(a) above			
	f) Amount of IEDC in C(a) above			
D	a) Deletion in Gross Block Amount during the period			
	b) Amount of IDC in D(a) above			
	c) Amount of FC in D(a) above			
	d) Amount of FERV in D(a) above			
	e) Amount of Hedging Cost in D(a) above			
	f) Amount of IEDC in D(a) above			
E	a) Closing Gross Block Amount as per books			
	b) Amount of IDC in E(a) above			
	c) Amount of FC in E(a) above			
	d) Amount of FERV in E(a) above			
	e) Amount of Hedging Cost in E(a) above			
	f) Amount of IEDC in E(a) above			

(Petitioner)

PART 1
FORM- M

Name of the Petitioner **NTPC Limited**
Name of the Generating Station **Singrauli STPS**

Statement of Capital Woks in Progress

(Amount in Rs. Lakh)

S. No.	Particulars	01.04.2024		
		Accrual Basis	Un-discharged Liabilities	Cash Basis
A	a) Opening CWIP as per books	127313.45	16779.02	110534.43
	b) Amount of IDC in A(a) above	6423.47		6423.47
	c) Amount of FC in A(a) above	0.00		0.00
	d) Amount of FERV in A(a) above	43.94		43.94
	e) Amount of Hedging Cost in A(a) above	0.00		0.00
	f) Amount of IEDC in A(a) above	0.00		0.00
		To be provided at the time of truing-up		
B	a) Addition in CWIP during the period			
	b) Amount of IDC in B(a) above			
	c) Amount of FC in B(a) above			
	d) Amount of FERV in B(a) above			
	e) Amount of Hedging Cost in B(a) above			
	f) Amount of IEDC in B(a) above			
C	a) Transferred to Gross Block Amount during the period			
	b) Amount of IDC in C(a) above			
	c) Amount of FC in C(a) above			
	d) Amount of FERV in C(a) above			
	e) Amount of Hedging Cost in C(a) above			
	f) Amount of IEDC in C(a) above			
D	a) Deletion in CWIP during the period			
	b) Amount of IDC in D(a) above			
	c) Amount of FC in D(a) above			
	d) Amount of FERV in D(a) above			
	e) Amount of Hedging Cost in D(a) above			
	f) Amount of IEDC in D(a) above			
E	a) Closing CWIP as per books			
	b) Amount of IDC in E(a) above			
	c) Amount of FC in E(a) above			
	d) Amount of FERV in E(a) above			
	e) Amount of Hedging Cost in E(a) above			
	f) Amount of IEDC in E(a) above			

(Petitioner)

PART-I
FORM- N

Calculation of Interest on Normative Loan

Name of the Company : **NTPC Limited**

Name of the Power Station : **Singrauli STPS**

(Amount in Rs Lakh)

S. No.	Particulars	Existing 2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
1	2	3	4	5	6	7	8
1	Gross Normative loan – Opening	82,169.46	82,502.02	83,808.22	87,038.72	91,643.32	92,693.32
2	Cumulative repayment of Normative loan up to previous year	61,875.55	62,842.06	83,808.22	87,038.72	91,643.32	92,693.32
3	**Net Normative loan – Opening**	20,293.91	19,659.96	-	-	-	-
4	Add: Increase due to addition during the year / period	1007.43	1,306.20	3,230.50	4,604.60	1,050.00	-
5	Less: Decrease due to de-capitalisation during the year / period	966.10	0.00	0.00	0.00	0.00	0.00
6	Less: Decrease due to reversal during the year / period						
7	Add: Increase due to discharges during the year / period	291.24	0.00	0.00	0.00	0.00	0.00
8	Less: Repayment of Loan(8A-8B)	966.51	20966.16	3230.50	4604.60	1050.00	0.00
8A	Repayment of Loan	1932.61	20966.16	3230.50	4604.60	1050.00	0.00
8B	Repayment Adj- Decap	966.10	0.00	0.00	0.00	0.00	0.00
11	**Net Normative loan - Closing**	19,659.96	-	-	-	-	-
12	**Average Normative loan**	19,976.93	9,829.98	-	-	-	-
13	Weighted average rate of interest	7.7571	7.7705	7.7404	7.7038	7.6533	7.5827
14	**Interest on Loan**	**1549.64**	**763.84**	**0.00**	**0.00**	**0.00**	**0.00**
15	Cumulative repayment of Normative loan at the end of the period after adjustments	**62,842.06**	83,808.22	87,038.72	91,643.32	92,693.32	92,693.32

(Petitioner)

PART 1
FORM- O

Calculation of Interest on Working Capital

Name of the Company :	**NTPC Limited**
Name of the Power Station :	**Singrauli STPS**

(Amount in Rs Lakh)

S. No.	Particulars	Existing 2018-19	2024-25	2025-26	2026-27	2027-28	2028-29
1	2	3	4	5	6	7	8
1	Cost of Coal/Lignite	22,732.43	22390.98	22390.98	22390.98	22390.98	22390.98
2	Cost of Main Secondary Fuel Oil	978.10	940.10	940.10	940.10	942.68	940.10
3	Fuel Cost						
4	Liquid Fuel Stock						
5	O & M Expenses	6,502.32	10420.00	10776.67	11131.67	9828.33	10208.33
6	Maintenance Spares	15,605.58	25008.00	25864.00	26716.00	23588.00	24500.00
7	Receivables	38,591.03	47549.21	44936.59	45740.56	43120.25	43593.16
8	Total Working Capital	84409.45	106308.29	104908.34	106919.31	99870.24	101632.57
9	Rate of Interest	12.0000	11.9000	11.9000	11.9000	11.9000	11.9000
10	**Interest on Working Capital**	**10129.13**	**12650.69**	**12484.09**	**12723.40**	**11884.56**	**12094.28**

Petitioner

PART 1
FORM-T

Summary of issue involved in the petition

Name of the Company :	**NTPC Limited**	
Name of the Power Station :	**Singrauli STPS**	
1	**Petitioner:**	**NTPC Limited**
2	**Subject: Approval of tariff of Singrauli Super Thermal Power Station (2000 MW) for the period from 01.04.2024 to 31.03.2029.**	
3	**Prayer:** **i) Approve tariff of Singrauli STPS for the tariff period 01.04.2024 to 31.03.2029.** **ii) Allow the recovery of filing fees as & when paid to the Hon'ble Commission and publication expenses from the beneficiaries.** **iii) Allow reimbursement of Ash Transportation Charges directly from the beneficiaries on monthly basis subject to true up.** **iv) Allow the recovery of pay/wage revision as additional O&M over and above the normative O&M.** **v) Pass any other order as it may deem fit in the circumstances mentioned above.**	
4	**Name of Respondents**	
	1.Uttar Pradesh Power Corp. Ltd (UPPCL)	
	2.Uttarakhand Power Corporation Ltd (UPCL)	
	3.Tata Power Delhi Distribution Ltd (TPDDL)	
	4.BSES Rajdhani Power Ltd (BRPL)	
	5.BSES Yamuna Power Ltd (BYPL)	
	6.Haryana Power Purchase Centre. (HPPC)	
	7.Rajasthan Urja Vika Nigam Limited (RUVNL)	
	8.Punjab State Power Corporation Ltd. (PSPCL)	

Project Scope : Singrauli Super Thermal Power Station (2000 MW)

Cost: Approved Capital Cost of Rs 124,044.50 Lakh as on 31.03.2024

Commissioning : Station COD on 01.05.1988

5	**Claim**	**2024-25**	**2025-26**	**2026-27**	**2027-28**	**2028-29**
	AFC (in Rs Lakh)	**1,97,218.64**	**1,76,027.36**	**1,82,548.46**	**1,61,677.81**	**1,65,130.65**
	Capital cost (in Rs Lakh)	**1,50,545.92**	**1,55,160.92**	**1,61,738.92**	**1,63,238.92**	**1,63,238.92**
	Initial spare (in Rs Lakh)	included in above				
	NAPAF (Gen) (in %)	**83**				
	Any Specific					

Annexure-A1

रजिस्ट्री सं. डी.एल.-33004/99 REGD. NO. D. L.-33004/99

भारत का राजपत्र
The Gazette of India

असाधारण
EXTRAORDINARY
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पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय

अधिसूचना

नई दिल्ली, 25 जनवरी, 2016

का.आ. 254(अ).—भारत सरकार, पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय की अधिसूचना सं. का.आ. 763(अ) तारीख 14 सितंबर, 1999 (जिसे इसमें इसके पश्चात् उक्त अधिसूचना कहा गया है) में कतिपय संशोधनों का प्रारूप, जिन्हें केन्द्रीय सरकार पर्यावरण (संरक्षण) नियम, 1986 के नियम 5 के उप-नियम (3) के खंड (घ) के साथ पठित पर्यावरण (संरक्षण) अधिनियम, 1986 (1986 का 29) की धारा 3 की उप-धारा (1) और उप-धारा (2) के खंड (v) के अंतर्गत करने का प्रस्ताव करती है, भारत के राजपत्र, असाधारण, भाग II, खंड 3, उप-खंड (ii) में अधिसूचना सं. का.आ. 1396(अ), तारीख 25 मई, 2015 द्वारा प्रकाशित किया गया था, जिसके द्वारा ऐसे सभी व्यक्तियों से, जिनके उनसे प्रभावित होने की संभावना थी, उस तारीख से, जिसको उक्त प्रारूप संशोधनों को अंतर्विष्ट करने वाली राजपत्र की प्रतियां जनता को उपलब्ध करा दी जाती हैं, साठ दिनों के अवसान से पूर्व आक्षेप और सुझाव आमंत्रित किए गए थे;

और उक्त राजपत्र की प्रतियां 25 मई, 2015 को जनता को उपलब्ध करा दी गई थी;

और उक्त प्रारूप अधिसूचना के संबंध में, ऐसे सभी व्यक्तियों से, जिनके उनसे प्रभावित होने की संभावना थी, प्राप्त सभी आक्षेपों और सुझावों पर केन्द्रीय सरकार द्वारा सम्यक् रूप से विचार कर लिया गया है;

अतः, अब, केन्द्रीय सरकार पर्यावरण (संरक्षण) नियम, 1986 के नियम 5 के उप-नियम (3) के खंड (घ) के साथ पठित पर्यावरण (संरक्षण) अधिनियम, 1986 (1986 का 29) की धारा 3 की उप-धारा (1) और उप-धारा (2) के खंड (v) द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए उक्त अधिसूचना में निम्नलिखित संशोधन करती है, अर्थात् :-

1. उक्त अधिसूचना के पैरा 1 में-
   - (क) उप पैरा 1(क) में "सौ किलोमीटर" शब्दों के स्थान पर "तीन सौ किलोमीटर" शब्द रखे जाएंगे;
   - (ख) उप पैरा 3 में "100 कि.मी." अंकों और शब्दों के स्थान पर "तीन सौ किलोमीटर" शब्द रखे जाएंगे;
   - (ग) उप पैरा 5 में "सौ किलोमीटर" शब्दों के स्थान पर "तीन सौ किलोमीटर" शब्द रखे जाएंगे;
   - (घ) उप पैरा 7 में "सौ किलोमीटर" शब्दों के स्थान पर "तीन सौ किलोमीटर" शब्द रखे जाएंगे;

2. उक्त अधिसूचना के पैरा 2 में:-

(क) उप पैरा (1) के पश्चात् निम्नलिखित परंतुक अंत:स्थापित किया जाएगा, अर्थात्:-

'परन्तु यह और कि शुल्क ईएमपी फ्लाई ऐश के 20 प्रतिशत का निःशुल्क पदाय करने का निर्बंधन उन तापीय विद्युत संयंत्रों पर लागू नहीं होगा जो विहित सीमा में भी प्रतिशत फ्लाई ऐश का उपयोग करने में समर्थ है।'

(ख) उप पैरा (7) के पश्चात् निम्नलिखित उप पैरा अंत:स्थापित किए जाएंगे, अर्थात् :-

"(8) प्रत्येक कोयला या लिग्नाइट आधारित तापीय विद्युत संयंत्र (जिसके अंतर्गत कैप्टिव और/या सह उत्पादन केन्द्र भी है) अधिसूचना की तारीख से तीन साल के भीतर उसके पास उपलब्ध प्रत्येक किस्म की ऐश के स्टाक के ब्यौरे अपनी वेबसाइट पर उपलब्ध करेगा और इसके पश्चात् साल में कम से कम एक बार स्टाक की स्थिति को अद्यतन करेगा।

(9) प्रत्येक कोयला या लिग्नाइट आधारित तापीय विद्युत संयंत्र समर्पित शुल्क ऐश साइलोस अधिष्ठापित करेगा, जिसके पास पृथक् पहुंच मार्ग होंगे, जिससे कि फ्लाई ऐश के परिवहन को सुकर बनाया जा सके।

(10) कोयला या लिग्नाइट आधारित तापीय विद्युत संयंत्र से 100 किलोमीटर की परिधि के भीतर सड़क अवसंरचना परियोजनाओं या ऐश आधारित उत्पादों के संनिर्माण के लिए या कृषि संबंधित क्रियाकलापों में मृदा अनुकूलक के रूप में उपयोग के लिए ऐश के परिवहन की लागत ऐसे कोयला या लिग्नाइट आधारित तापीय विद्युत संयंत्र द्वारा वहन की जाएगी और 100 किलोमीटर की परिधि से परे और 300 किलोमीटर की परिधि के भीतर ऐसे परिवहन की लागत को उपयोक्ता और संयंत्र या लिग्नाइट आधारित तापीय विद्युत संयंत्र के बीच समान रूप से भेंट भाजित की जाएगी।

(11) कोयला या लिग्नाइट आधारित तापीय विद्युत संयंत्र अपने परिसरों के भीतर या अपने परिसरों के आस-पास ऐश आधारित उत्पाद संनिर्माण सुविधाओं का संवर्धन करेंगे, उन्हें अपनाएंगे और उनकी स्थापना करेंगे (वित्तीय और अन्य सहबद्ध अवसंरचना)।

(12) नगरों के आस-पास बने कोयला या लिग्नाइट आधारित तापीय विद्युत संयंत्र ऐश आधारित उत्पाद संनिर्माण इकाइयों का संवर्धन करेंगे और उनकी स्थापना का समर्थन और उनमें सहायता करेंगे ताकि ईंटों और अन्य भवन संनिर्माण सामग्रियों की अपेक्षाओं की पूर्ति की जा सके और साथ ही परिवहन में कमी की जा सके।

(13) यह सुनिश्चित करने के लिए कि किसी सड़क संनिर्माण का संविदाकार सड़क निर्माण में ऐश का उपयोग करता है, सड़क संनिर्माण के लिए संबद्ध प्राक्कलनों संविदाकार को किए जाने वाले भुगतान को तापीय विद्युत संयंत्र में ऐश के प्रदाय के प्रमाणीकरण के साथ जोड़ेगा।।

(14) कोयला या लिग्नाइट आधारित तापीय विद्युत संयंत्र, 300 किलोमीटर की परिधि के भीतर प्रधानमंत्री ग्रामीण सड़क योजना के अधीन सड़क संनिर्माण परियोजनाओं और भवनों सड़कों, पार्कों और इमारतों के संनिर्माण को अंतर्विष्ट करने वाले सरकार के आस्ति सृजन कार्यक्रमों के स्थल तक ऐश के परिवहन की संपूर्ण लागत का वहन करेगा।"।

3. **उक्त अधिसूचना के पैरा (2) के उप-पैरा (2क) को उप-पैरा (15) के रूप में पढ़ा जाए और उक्त उप-पैरा के अंत में निम्नलिखित उप-पैरा जोड़ा जाएगा, अर्थात् :-**

'और स्थानीय जिलों में अवस्थित कोयला या लिग्नाइट आधारित तापीय विद्युत संयंत्र स्थानीय सुरक्षा उपायों का समर्थन करेंगे, उनके संनिर्माण में सहायता करेंगे या उसमें सहबद्ध रूप से सम्मिलित होंगे।'

4. **उक्त अधिसूचना के पैरा 3 में उप-पैरा (7) के पश्चात् निम्नलिखित अंत:स्थापित किया जाएगा, अर्थात् :-**

"(8) विभिन्न संनिर्माण परियोजनाओं का अनुमोदन करने वाली राज्य प्राधिकारियों का यह उत्तरदायित्व होगा कि वे यह सुनिश्चित करें कि फ्लाई ऐश का उपयोग करने या फ्लाई ऐश आधारित उत्पादों के लिए तापीय विद्युत संयंत्रों और संनिर्माण अभिकरण या संविदाकारों के बीच करार तत्काल प्रभाव से किया जाता है।

(9) राज्य प्राधिकारी, दस लाख या अधिक की जनसंख्या वाले नगरों की भवन निर्माण संबंधी उप विधियों का संशोधन करेंगे ताकि भार वहन करने वाली संरचनाओं हेतु शहरीकरण अपेक्षाओं के अनुसार आवश्यक विनिर्देशों को ध्यान में रखते हुए ऐश आधारित ईंटों के अनिवार्य उपयोग को सुनिश्चित किया जा सके।

(10) संबद्ध प्राधिकारी सभी सरकारी स्कीमों या कार्यक्रमों में, उदाहरणार्थ महात्मा गांधी राष्ट्रीय ग्रामीण रोजगार गारंटी अधिनियम, 2005 (मनरेगा), स्वच्छ भारत अभियान, शहरी और ग्रामीण आवासन स्कीम, जहां संनिर्मित क्षेत्र एक हजार वर्ग फुट से अधिक है और अवसंरचना संबंधी संनिर्माण में, जिसके अंतर्गत अधिसूचित औद्योगिक संपदाओं या पार्कों या विशेष आर्थिक जोनों में भवन निर्माण भी है, राख आधारित ईंटों या उत्पादों के आज्ञापक उपयोग को सुनिश्चित करेंगे।

(11) कृषि मंत्रालय कृषि क्रियाकलापों में राख के मृदा अनुकूलक के रूप में उपयोग का संवर्धन करने पर विचार कर सकेगा।

5. **सभी संबद्ध प्राधिकारियों द्वारा उपरोक्त उपबंधों का अनुपालन करने की समयावधि 31 दिसंबर, 2017 है। कोयला या लिग्नाइट आधारित तापीय विद्युत संयंत्र, उनके द्वारा उत्पादित फ्लाई ऐश के 100 प्रतिशत उपयोग के अतिरिक्त उपरोक्त उपबंधों का अनुपालन 31 दिसंबर, 2017 से पूर्व करेंगे।**

[फा. सं. 9-8/2005-एचएसएमडी]

बिश्वनाथ सिन्हा, संयुक्त सचिव

टिप्पण : मूल अधिसूचना भारत के राजपत्र, असाधारण, भाग II, खंड 3, उप-खंड (ii) में अधिसूचना सं. का.आ. 763(अ), तारीख 14 सितंबर, 1999 द्वारा प्रकाशित की गई थी और उसमें पश्चातवर्ती संशोधन अधिसूचना सं. का.आ. 979(अ) तारीख 27 अगस्त, 2003 और का.आ. 2804(अ), तारीख 3 नवंबर, 2009 द्वारा किए गए थे।

MINISTRY OF ENVIRONMENT, FORESTS AND CLIMATE CHANGE

NOTIFICATION

New Delhi, the 25th January, 2016

S.O. 254(E).—Whereas a draft of certain amendments to the Government of India in the Ministry of Environment, Forests and Climate Change number S.O. 763(E), dated the 14th September, 1999 (hereinafter referred to as the said notification) which the Central Government proposes to make under sub-section (1) and clause (v) of sub-section (2) of section 3 of the Environment (Protection) Act, 1986 (29 of 1986) read with clause (d) of sub-rule (3) of rule 5 of the Environment (Protection) Rules, 1986, was published in the Gazette of India, Extraordinary, Part II, section 3, Sub-section (ii), vide S.O. 1396(E), dated the 25th May, 2015 inviting objections and suggestions from all persons likely to be affected thereby before the expiry of sixty days from the date on which copies of the Gazette containing the said draft amendments were made available to the public.

And, whereas copies of the said Gazette were made available to the public on 25th May, 2015;

And, whereas all the objections and suggestions received from all persons likely to be affected thereby in respect of the said draft notification have been duly considered by the Central Government;

Now, therefore, in exercise of the powers conferred by sub-section (1) and clause (v) of sub-section (2) of section 3 of the Environment (Protection) Act, 1986 (29 of 1986) read with clause (d) of sub-rule (3) of rule 5 of the Environment (Protection) Rules, 1986, the Central Government hereby makes the following amendments to the said notification, namely: —

1. In the said notification, in paragraph 1,

(a) in sub-paragraph (1A), for the words "hundred kilometers", the words "three hundred kilometers" shall be substituted;

(b) in sub-paragraph (3), for the figures and letters "100 km", the words "three hundred kilometers" shall be substituted;

(c) in sub-paragraph (5), for the words "hundred Kilometers", the words "three hundred Kilometers" shall be substituted;

(d) in sub-paragraph (7), for the words "hundred Kilometers", the words "three hundred Kilometers" shall be substituted.

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2. In the said notification, in paragraph 2:-

(a) after sub-paragraph (1), the following proviso shall be inserted, namely:-

"provided further that the restriction to provide 20 % of dry ESP fly ash free of cost shall not apply to those thermal power plants which are able to utilise 100 % fly ash in the prescribed manner";

(b) after sub-paragraph (2), the following sub-paragraphs shall be inserted, namely:-

"(8) Every coal or lignite based thermal power plants (including captive and or co-generating stations) shall, within three months from the date of notification, upload on their website the details of stock of each type of ash available with them and thereafter shall update the stock position at least once a Month.

(9) Every coal or lignite based thermal power plants shall install dedicated dry ash silos having seperate access roads so as to ease the delivery of fly ash.

(10) The cost of transportation of ash for road construction projects or for manufacturing of ash based products or use as soil conditioner in agriculture activity within a radius of hundred kilometers from a coal or lignite based thermal power plant shall be borne by such coal or lignite based thermal power plant and the cost of transportation beyond the radius of hundred kilometers and up to three hundred kilometers shall be shared equally between the user and the coal or lignite based thermal power plant.

(11) The coal or lignite based thermal power plants shall promote, adopt and set up (financial and other associated infrastructure) the ash based product manufacturing facilities within their premises or in the vicinity of their premises so as to reduce the transportation of ash.

(12) The coal or lignite based thermal power plants in the vicinity of the cities shall promote, support and assist in setting up of ash based product manufacturing units so as to meet the requirements of bricks and other building construction materials and also to reduce the transportation.

(13) To ensure that the contractor of road construction utilizes the ash in the road, the Authority concerned for road construction shall link the payment of contractor with the verification of ash supply from the thermal power plants.

(14) The coal or lignite based thermal power plants shall within a radius of three hundred kilometers bear the entire cost of transportation of ash to the sites of road construction projects under Pradhan Mantri Gramin Sadak Yojna and asset creation programmes of the Government involving construction of buildings, road, dams and embankments".

3. In the said notification, in paragraph 2, sub-paragraph (2A) be read as sub-paragraph (15) and at the end of the said sub-paragraph, the following sub-paragraph shall be added, namely:-

"and the coal or lignite based thermal power plants located in coastal districts shall support, assist or directly engage into construction of shore line protection measures."

4. In the said notification, in paragraph 3, after sub-paragraph (7), the following shall be inserted, namely:-

(8) It shall be the responsibility of all State Authorities approving various construction projects to ensure that Memorandum of Understanding or any other arrangement for using fly ash or fly ash based products is made between the thermal power plants and the construction agency or contractors.

(9) The State Authorities shall amend Building Bye Laws of the cities having population One million or more so as to ensure the mandatory use of ash based bricks keeping in view the specifications necessary as per technical requirements for load bearing structures.

(10) The concerned Authority shall ensure mandatory use of ash based bricks or products in all Government Schemes or programmes e.g. Mahatma Gandhi National Rural Employment Guarantee Act, 2005 (MNREGA), SWACHH BHARAT ARIYAN, Urban and Rural Housing Schemes, where built up area is more than 1000 square feet and in infrastructure construction including buildings in designated industrial Estates or Parks or Special Economic Zone.

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(11) The Ministry of Agriculture may consider the promotion of ash utilisation in agriculture as soil conditioner."

5. The time period to comply with the above provisions by all concerned authorities is 31st December, 2017. The coal or lignite based thermal power plants shall comply with the above provision in addition to 100 % utilization of fly ash generated by them before 31st December, 2017.

[F. No. 9-8/2005-HSMD]

HISHWANATH SINHA, Jt. Secy.

Note:- The principal notification was published in the Gazette of India, Extraordinary, Part II, section 3, Sub-section (ii) *vide* notification S.O. 763(E), dated the 14th September, 1999 and was subsequently amended *vide* notification S.O. 979(E), dated the 27th August, 2003 and S.O. 2804(E), dated the 1st November, 2009.

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Annexure - A

Item Nos. 01 to 03 Court No. 1

BEFORE THE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI

Original Application No. 117/2014
WITH
Original Application No. 499/2014
WITH
Original Application No. 102/2014
(M.A. No. 858/2014, M.A. No.872/2014, 42/2015, 287/2015, 694/2015 & 580/2016)

Shantanu Sharma — Applicant(s)

Versus

Union of India & Ors. — Respondent(s)

WITH

Anupam Raghav & Anr. — Applicant(s)

Versus

U.O.I. & Ors. — Respondent(s)

WITH

Sandplast (India) Ltd. & Ors. — Applicant(s)

Versus

MoEF & Ors. — Respondent(s)

Date of hearing: 20.11.2018

CORAM: HON'BLE MR. JUSTICE ADARSH KUMAR GOEL, CHAIRPERSON
HON'BLE MR. JUSTICE S.P. WANGDI, JUDICIAL MEMBER
HON'BLE MR. JUSTICE K. RAMAKRISHNAN, JUDICIAL MEMBER
HON'BLE DR. NAGIN NANDA, EXPERT MEMBER

For Applicant(s): Tasneema Ahmadi & Mahima Rathi, Advocates

For Respondent (s): Krishna Kumar Singh, Advocate for MoEF & CC
Edward Belho, K Michael, Hontethiam, Leishangthem Roshmani, Mutum Bubina, Anupama Ngangom, Advocates for State of Nagaland
K Estatoli Sema, Advocate for Nagaland PCB
Arun Mathur, Avneesh Arputham, Anuradha Arputham & Geetanjali, Advocates for State of Sikkim
G.M. Kawoosa, Advocate for State of J&K
Balendu shekhar & Srishti Prakash, Advocates
V.K. Shukla, Ms. Vijay Laxmi, Advocates for State of M.P.
Rajul Srivastav, Advocate for MPPCB
Rahul Verma, Addl. AG for State of U.K
Ankur Verma, Advocate for State of U.K
Deepak Anand, Advocate
Jayesh Gaurav, Advocate for JSPCB
Jogy Scaria, Reegan S. Bel, Advocates for KSPCB
Abhishek Paruthi, Advocate for CPCB
Mr. R. Rakesh Sharma, Advocate for TNPCB

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Mr. Shubham Bhalla, Advocate
Roopam Rai, Advocate
Hemantika Wahi, Puja Singh, Advocates for State of Gujrat & GPCB
K.V. Jagdishvaran & G. Indira, Advocates
Tayenjam Singh, Advocate for MPCB
Aprajita Mukherjee & Upendra Mishra, Advocates for State of Meghalaya
Dhruv Pal & Himanshu Pal, Advocates for GPCB
Nishe Rajen Shonker, Anu K. Joy & Alim Anvar, Advocates for State of Kerala
Ardhendhumauli Kr. Prasad , Advocate for CGSC/MOC and Mr. Shashank Saxena, Advocate for CGSC/MOC
Debojit Borkakati, Advocate for State of Assam
Rajul Shrivastav, Advocate for State of MPPCB
Shuvodeep Roy & Ritwaj Biswas, Advocates for State of Tripura
Anil Srivastav & Sujeya Bardhan, Advocates for State of Arunachal Pradesh
M. Paikaray, Advocate for State of SPCB
Devraj Ashok, Advocate for State of Karnataka
Raja Chatterjee, Piyush Sachdev & Abhinandini Yadav, Advocates for State of West Bengal
Anand Verma, S. Jain & S. Singh, Advocates
Ajit Pudussery & Ajeet Singh Verma, Advocates
Bharat Sangal & Isha Gupta, Advocates
M. Paikroy, Advocate for state of SPCB
Puja Kalra, Advocate for North & South, MCD
Shesh Juneja, Advocate for State of Chhattisgarh
Dhananjay Baijal & Nikhil Nagpal, Advocates for AACB & TSPCB
Kshitij Mudgal, Advocate for DGMS
Hemantika Wahi & Puja Singh, Advocates for State of GPCB
Soubhyajit Pani & Chittaranjan Singh, Advocates for state of Odisha
Santosh Kumar & Sarthak Agarwal, Advocates for SAIL
Guntur Prabhakar, Guntupl Pramod, Prashant Mathur, P. Venkat Reddy & Prashant Tyagi, Advocates for State of A.P
Prashant Tyagi, Advocate for State of Telangana
Tayenjam Momo Singh, Advocate
Mr. Dhruv Pal & Himanshu Pal, Advocates for GPCB
Atul Jha, Advocate
Sandeep Mahapatra, Advocate
Somesh Tiwari, Advocate for Jindal Stainless Ltd.
Jayant K Sud, Senior Advocate with Ranjith Kumar, Advocate
K. Mudgal, Advocate
Yogmaya Agnihotri, Advocate for CECB
Shubham Bhalla, Roopam Rai, Advocate
Pankaj Kr. Mishra & Ajit S. Bhasme, Advocates
Ravin Dubey, Advocate
Debovishi Bhuyan alongwith Misha Vij, Advocate for State of Goa
Priyanka Sinha & Alok K Singh, Advocates for State of Jharkhand
Abhishek Gupta, Wan Koul & Ayush Kr. Shrivastava, Advocates
Debarshi Bhadra, Advocate for NBCC Ltd.

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Nishant Talwar, Advocate for State of Punjab
Dileep Dhyani, Advocate for UPPCB
Mukesh Verma, Advocate
Amit Tiwari, Advocate for State of UP
Jayesh Gaurav, Advocate for JSPCB
Rahul Khurana, Mishal Vij, Proxy Counsel for Anil Grover, AAO for State of HSPCB
Mr. Shoeab, Gautam Singh & Rudreshwar Singh, Advocates for BSPCB
Debarshi Bhiyan, Advocate for CSPCB

ORDER

1. These matters raise concern of management of fly ash generated by the Thermal Power Plants [TPP]. We may refer to the pleadings in Original Application No. 117/2014, Shantanu Sharma Vs. Union of India & Ors. Other matters are said to be identical.

2. The applicant claims to be interested in protection of environment and forest. He claims to be aggrieved by non-implementation of Notifications issued by the Ministry of Environment, Forest and Climate Change [MoEF&CC] for proper utilization of fly ash generated by the coal and lignite based TPP.

3. Case of the applicant is that non-utilization and improper disposal of fly ash leads to increase in air pollution and causes severe health problems. It also affects horticulture and agricultural crops. "As at present, there are increased ash pond areas and increased height of ash dykes. Apart from air pollution, there is pollution of surface water and ground water. Major pollutants in fly ash are Arsenic and Mercury. Both the said pollutants are injurious for the land and the water bodies. Thus, there is need for 100% utilization of fly ash by all possible means such as conversion to ash based products, preventing its washing away or flying in the air. MoEF&CC has failed to ensure proper monitoring mechanism inspite of issuing notification on the subject.

4. Notification dated 14.09.1999 required use of atleast 25% of the ash for clay bricks or tiles or blocks for use in construction

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activities. The Delhi High Court vide judgment dated 05.08.2004 in Writ Petition (C) No. 2145/1999 directed the Government to make use of fly ash mandatory in roads apart from using it in bricks for construction. Land, electricity and water is required to be made available for promoting ash based production units. Vide amendment dated 03.11.2009, provision was made for its use in manufacturing of building material and in construction activity to preserve top soil by restricting excavation for disposal. Since quantum of fly ash has increased, the extent of fly ash required to be used was also increased.

3. In view of more and more concern on account of failure of efficacy of the measures already taken, a working group was constituted by the Department of Industrial Policy and Promotion, Ministry of Commerce and Industry, Govt. of India. In its report submitted in the year 2011, the said group *inter-alia* observed that increase in generation of fly ash led to increase in the requirement of land and thus target has to be of 100% utilization as against 60% utilization which was happening. The disposal process lacked transparency and it was necessary that each thermal power plant displays complete information. Other measures adopted include policy of financial institutions to require compliance of fly ash as a condition for grant of loan and incentives in rate of excise duty. The applicant has also referred to the report jointly published by the World Bank and the Department of Economic Affairs, Govt. of India pointing out the deficiencies in pro-active government policies on the subject.

5. We may now refer to the Notifications on the subject. Vide Notification dated 14.09.1999, the MoEF&CC issued directions requiring manufacturers of clay bricks or tiles or blocks or construction activities to mix atleast 25% of ash which is to be ensured by the Pollution Control Boards/Committees by

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cancelling the consent order for brick kilns or mining leases. Every thermal power plant was required to make available such ash and phase out dumping and disposal in three years to the extent of 30%. and in six years the remaining. This applied to plants permissioned subject to Environmental Clearance having such conditions. The remaining are required to phase-out the same in 15 years and compliance was required to be furnished to the Central Pollution Control Board and the concerned State Pollution Control Boards/Committees. The Electricity Boards, NTPC and the management of the power plants are to facilitate making available land, electricity and water for manufacturing activities and also to provide access to the ash lifting area and furnish annual implementation report. Manufacturers of ash based products such as cement, blocks, brick panels were to operate as per the guidelines laid down by the Bureau of Indian Standards, Indian Bureau of Mines, Indian Road Congress, Central Building Research Institute, Roorkee, Central Road Research Institute, New Delhi, Building Materials and Technology Promotion Council, New Delhi, Central Public Works Department, State Public Works Departments and other Central and State Government agencies. The said authorities are to prescribe the use of ash and ash based products in schedules of specifications. Local authorities are to specify such requirement in building bye laws.

7. Vide Notification dated 27.08.2003, certain amendments were made particularly to the effect that construction agencies were required to use the fly ash to the extent of 100% in a phased manner upto 31.08.2007.

8 Next Notification is dated 03.11.2009, revising the timelines and the period for implementation. The revised timelines apply to the construction agencies as well as thermal power plants as per

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details mentioned in the said Notification. The said Notification also provided for shifting of the fly ash by filling empty mined voids by stowing.

9. The report of the Working Group of Cement Industries for 12th Five Year Plan (2012-2017) by the Department of Industrial Policy and Promotion, Ministry of Commerce and Industry goes into the extent of the problems and challenges in tackling the issue. The report shows that if the fly ash generated is not consumed, the cost on the economy by way of disposal risks and threat to health will be very high. Thus, to conserve top soil and prevent dumping and disposal on land, proper disposal of fly ash was significant. It was recommended that the Ministry of Power, Govt. of India should make proper assessment of the level of fly ash generation. The fly ash need not be required to be supplied free by the cement manufacturers to small bricks manufacturers and should be utilized by the cement plants for their own consumption. If the cement plants are required to purchase the fly ash at a cost, it will require transportation and add to the cost unnecessarily.

10. We now note the stand of the respondents. The Ministry of Finance and Revenue, Govt. of India in its reply has stated that the excise duty is 2% without CENVAT credit and 6% with CENVAT credit. Fly ash products are covered by SSI exemption. No excise duty is payable upto a clearance value of Rs 1.5 crores.

11. The Reserve Bank of India has stated that the Banks have been advised to have an appropriate policy in this regard in the matter of giving loans.

12. The MoEF&CC has referred to the Notifications issued from time to time to deal with the problem. In respect of thermal power

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stations in its operation before 03.11.2009, extent of fly ash utilizations is as per following table

Sr. No.	Percentage Utilization of Fly Ash	Target Date
1.	At least generation 50% of fly ash	One year from the date of issue of this notification
2.	At least generation 60% of fly ash	Two years from the date of issue of this notification.
3	At least generation 75% of fly ash	Three years from the date of issue of this notification
4.	At least generation 90% of fly ash	Four years from the date of issue of this notification
5.	At least generation 100% of fly ash	Five years from the date of issue of this notification

13. For those commissioned thereafter, the extent of fly ash utilization is as follows.

Sr. No.	Percentage Utilization of Fly Ash	Target Date
1.	At least generation 50% of fly ash	One year from the date of issue of commissioning.
2.	At least generation 70% of fly ash	Two years from the date of issue of commissioning.
3.	At least generation 90% of fly ash	Three years from the date of issue of commissioning.
4	At least generation 100% of fly ash	Four years from the date of issue of commissioning

14. Conditions prescribed for utilization of fly ash are as follows.

"(a) the pond ash should be made available free of cost on "as is where is basis" to manufacturers of bricks, blocks or tiles including clay fly ash product manufacturing unit(s), farmers, the Central and the State road construction agencies, Public Works Department, and to agencies engaged in backfilling or stowing of mines.

(b) at least 20% of dry ESP fly ash shall be made available free of cost to units manufacturing fly ash or clay-fly ash bricks, blocks and tiles on a priority basis over other users and if the demand from such agencies falls short of 20% of quantity, the balance quantity can be sold or disposed of by the power station as may be possible;

Provided that the fly ash obtained from the thermal power station should be utilized only for the purpose for which it was obtained from the thermal power station or plant failing which no fly ash shall be made available to the defaulting users."

15. Under the above notification, a Monitoring Committee is to be constituted in every State/Union Territory under the Chairmanship of the Secretary, Department of Environment with representatives from Department of Power, Department of Mining, Road and Building Construction Department and State Pollution Control Board. The Committee is required to deal with

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any unresolved issue by Dispute Settlement Committee in addition to the monitoring and facilitating the implementation of the notification.

16. Monitoring Committee constituted by the MoEF&CC is to have members from Ministry of Coal., Ministry of Power., Central Pollution Control Board., Central Electricity Authority., Head, Fly Ash Unit of the Department of Science and Technology and Building Material Technology Promotion Council.

17. It is further stated, in the affidavit of the MoEF&CC, that as per the information received from Central Electricity Authority (CEA), during a meeting, the fly ash generation from 138 thermal power plants is reported to be 163.56 million tons during the year 2012-13. The overall utilization of fly ash was 100.73 million ton, which is about 61.37% of the total fly ash generated. During the year 2012-13, out of 138 (one hundred thirty-eight) thermal power stations for which data was received, 66 (sixty-six) power stations have achieved the targets of fly ash utilization as stipulated in the notification dated 03.11.2009. The remaining 33 (thirty-three) plants have achieved the level of fly ash utilization up to 75%. The 19 (nineteen) plants have achieved the level of fly ash utilization up to 60%.

18. CPCB has given a chart showing progress of fly ash generation and utilization from 1996 to 2012. Some of the State Pollution Control Boards/Committees have filed their affidavits indicating the extents to which utilization of fly ash has taken place.

19. Vide Notification dated 25.01.2016, further amendment was made to the Notification dated 14.09.1999 mainly to the effect that the area within which the fly ash is to be utilized has been increased to 300 kms. The time period to comply with the requirements of 100% utilization of fly ash was extended to 31.12.2017.

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20. The matter has been considered on several dates in the last four and a half years. Reference may be made to some of the orders passed.

21. Vide order dated 06.01.2016, the MoEF&CC, the State Governments/Union Territories were required to furnish the details of the Monitoring Committees and if such Committees were not constituted as per the mandate of the Notification, the same were directed to be constituted

22. On 03.01.2018, the States/Union Territories were directed to furnish their action plans for utilization of fly ash produced and generated by thermal power plants in accordance with the Notifications.

23. On 16.02.2018, it was noted that only eight States have submitted their action plans. MoEF&CC was directed to expedite the collection of action plans from the concerned States.

24. On 20.03.2018, the Chief Secretaries of the States, who had failed to submit action plans, were again required to do so.

25. On 12.07.2018, it was stated that 20 States have submitted their action plans out of which 13 were not complete or satisfactory. The MoEF&CC was directed to monitor the compliance of the earlier orders referred to above and submit a status report.

26. Accordingly, status report has been filed before this Tribunal on 07.09.2018 by the MoEF&CC stating that no fly ash is generated in 15 States/UTs namely Goa, Himachal Pradesh, Jammu & Kashmir, Kerala, Manipur, Mizoram, Nagaland, Sikkim, Tripura, Andaman and Nicobar, Chandigarh, Daman & Diu, Dadra & Nagar Haveli, Lakshadweep and Pondicherry. Accordingly, the said States and Union Territories and their authorities be deleted from the array of parties.

27. Twenty States have given their action plans. Only State of Arunachal Pradesh has not furnished any action plan. Since there is nothing to show that there is any fly ash generation in the said

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State, the said State or its authorities are also deleted from array of parties. We do not understand why deletion of unnecessary parties was never sought.

28. The position of each of the remaining twenty States has been mentioned. It may be noted that though the last date for achieving 100% utilization was 31.12.2017 and the said date has not been extended, the States have sought extension of time by 2 to 5 years upto the year 2023 which is wholly uncalled for. This Tribunal has no jurisdiction to grant any extension of time in conflict with the mandate of notification under the Environment (Protection) Act, 1986, particularly when such extension will enable harm to environment, in violation of statutory scheme. It is also stated by some of the States that action plans to achieve 100% utilization of fly ash has not even been furnished by some of the Thermal Power Plants.

29. We may also note that the NITI Aayog, vide order dated 12.06.2018, constituted a Committee headed by Joint Secretary, MoEF&CC, Govt. of India, to develop a focused strategy for best utilization of fly ash to manufacture end products. Issues to be gone into by the Committee are revisiting existing notifications / guidelines, transportation of fly ash, better utilization in MSME Sector, cement and allied industries, use of mobile app in data base, guidelines for ash parks, regulation of red bricks, incentives for 100% utilization, incentives to TPPs for new innovations. Draft report was circulated by MoEF&CC on 16.10.2018. The Committee noted that the existing notification needed review and the same were not being fully implemented.

30. In view of the above, only question for consideration is the directions to be issued on account of failure of 100% utilization of fly ash which has admitted adverse impact on public health and to give effect to the 'Precautionary Principle' and the 'Polluter Pays'

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Principle to be applied under Section 20 the National Green Tribunal Act, 2010

31. Since non-utilization of 100% fly ash, especially after 31.12.2017, the date fixed in the Notification of the MoEF&CC dated 25.01.2016, invites penal consequences under the provisions of the Environment Protection Act, 1986, liability in this regard is not only of the persons responsible for non-utilisation but also for generators of the fly ash. The generator cannot avoid responsibility for due disposal of any residue pollutants on account of its activity. The principle of 'extended producer's liability' is well recognized as part of 'Sustainable Development'. Applying the 'Precautionary Principle', the permission to dump fly ash in the mined voids has to be subject to all precautionary measures necessary for environment protection. Area of utilization of fly ash has been extended to 300 kms, which may call for more stringent conditions to avoid damage to the environment.

32. The adverse effect of fly ash mismanagement is well acknowledged in decision of Courts[1] as well as by public authorities[2].

33. We are of the view that a Joint Committee of the representatives of the Ministry of Environment, Forest and Climate Change, Central Pollution Control Board and IIT Roorkee and any other member considered necessary by MoEF&CC needs to be forthwith constituted to finalize action plan covering all aspects so as to not only achieve 100% utilization of fly ash but also to ensure its scientific and environmentally sound disposal. The Committee will also be required to determine the amount of damages to be paid for the violation of requirement of utilization of fly ash. Needless to say that statutory authorities under the Environment

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[1] Occupational Health and Safety Association v. Union of India & Ors. (2014) 3 SCC 547 ¶12-15

[2] http://pib.nic.in/PressReleaseDetail.aspx?PRID=1570080, https://economictimes.indiatimes.com/news/politics-and-nation/pmo-asks-agencies-to-increase-usage-of-fly-ash-by-10-times/articleshow/65814656.cms, https://energy.economictimes.indiatimes.com/news/power/from-coal-production-to-renewable-power-obligations-nda-govt-lays-down-its-3-year-agenda-for-indias-energy-sector/59486230, http://pib.nic.in/newsite/PrintRelease.aspx?relid=179785

(Protection) Act, 1986, the Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974 are entitled to assess and recover damages on 'Polluter Pay's Principle' in exercise of incidental powers to protect environment. The Committee may determine any other allied or incidental issue.

34. Accordingly, we direct constitution of such a Committee by the MoEP&CC forthwith. The Committee may give its report within two months from the date of its assuming charge to the MoEF&CC.

35. The report of the Committee may be complied with by all concerned, subject to any challenge to such report, in accordance with law.

36. Pending submissions of such report, we direct all Thermal Power Stations who have failed to dispose of 100% fly ash up to 31.12.2017, to deposit damages for environment restoration as follows:

Sl. No.	Capacity of the Thermal Power Plant	Cost of damages
1.	Thermal Power Plants upto the capacity of 500 MW	Rs. 1 Crore
2.	Thermal Power Plants upto the capacity of 1000 MW	Rs. 3 Crores
3.	Thermal Power Plants beyond the capacity of 1000 MW	Rs. 5 Crores

37. The above amount may be deposited with the CPCB within one month from today, failing which interest @ 12% p.a. will be payable for the delayed period. The amount may be spent on restoration and restitution of the environment.

38. No damages will be payable by the Thermal Power Plants which have utilized 100% of the ash generated by it in accordance with law up to 31.12.2017 and disposing it in scientific manner. In case, any such claim is found to be false by the Committee, the amount of penalty payable may be up to five times.

39. The MoEF&CC may furnish an action taken report to this Tribunal on or before 31.03.2019 by e-mail at ngt.filing@gmail.com. All the applications are disposed of.

40. Report may be put up for consideration on 9th April, 2019.

Adarsh Kumar Goel, CP

S.P. Wangdi, JM

K. Ramakrishnan, JM

Dr. Nanda, EM

December 20, 2018

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Annexure-A2

Windows XP

Windows XP follows the Fixed Lifecycle Policy.

This applies to the following editions: Home, Professional, Professional for Embedded Systems, Professional x64, Starter

> **Important**
>
> Support for this product has ended. See migration guidance below.

Support dates are shown in the Pacific Time Zone (PT) - Redmond, WA, USA.

Support Dates

Expand table

Listing	Start Date	Mainstream End Date	Extended End Date
Windows XP	Dec 31, 2001	Apr 14, 2009	Apr 8, 2014

Releases

Expand table

Version	Start Date	End Date
Service Pack 3	Apr 21, 2008	Apr 8, 2014
Service Pack 2	Sep 17, 2004	Jul 13, 2010
Service Pack 1a	Feb 3, 2003	Oct 10, 2006
Service Pack 1	Aug 30, 2002	Oct 10, 2006

Version	Start Date	End Date
Original Release	Dec 31, 2001	Aug 30, 2005

Links

- Migration guidance
- Service pack policy

> **Note**
>
> The start date for Microsoft Windows XP Professional x64 Edition was April 24, 2005.

Editions

- Home
- Professional
- Professional for Embedded Systems
- Professional x64
- Starter

Annexure-A3

भारत सरकार
Government of India
विद्युत मंत्रालय
Ministry of Power
केन्द्रीय विद्युत प्राधिकरण
Central Electricity Authority
सूचना प्रौद्योगिकी एवं साइबर सुरक्षा प्रभाग
Information Technology & Cyber Security Division

विषय : CEA (Cyber Security in Power Sector) Guidelines, 2021.

CEA is mandated to prepare 'Guidelines on Cyber Security' in Power Sector under the provision of regulation (10) of the Central Electricity Authority (Technical Standards for Connectivity to the Grid) (Amendment) Regulations, 2019. Guidelines on Cyber Security in Power Sector incorporating the cardinal principles has been prepared by CEA. In compliance to the provision of the above regulation, CEA **(Cyber Security in Power Sector) Guidelines, 2021** are issued for compliance by all entities listed in the clause 2.3 (Applicability of the Guidelines) of the guidelines.

Encl: Guidelines on Cyber Security

27/10/21
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CEA (Cyber Security in Power Sector) Guidelines, 2021

1.0 Background

1.1 Cyber intrusion attempts and Cyber-attacks in any critical sector are carried out with a malicious intent. In Power Sector it's either to compromise the Power Supply System or to render the grid operation in-secure. Any such compromise, may result in mal-operations of equipments, equipment damages or even in a cascading grid brownout/blackout. The much hyped air gap myth between IT and OT Systems now stands shattered. The artificial air gap created by deploying firewalls between any IT and OT System can be jumped by any insider or an outsider through social engineering. Cyber-attacks are staged through tactics & techniques of Initial Access, Execution, Persistence, Privilege Escalation, Defence Evasion, Command and Control, Exfiltration. After gaining the entry inside the system through privilege escalation, the control of IT network and operations of OT systems can be taken over even remotely by any cyber adversary. The gain of sensitive operational data through such intrusions may help the Nation/State sponsored or non-sponsored adversaries and cyber attackers to design more sinister and advanced cyber-attacks.

1.2 Government of India has set up the Indian Computer Emergency Response Team (CERT-In) for Early Warning and Response to cyber security incidents and to have collaboration at National and International level for information sharing on mitigation of cyber threats. CERT-In regularly issues advisories on safeguarding computer systems and publishes Security Guidelines which are widely circulated for compliances. All Central Government Ministries/ Departments and State/Union Territory Governments have been advised to conduct cyber security audit of their entire Cyber Infrastructure including websites at regular interval through CERT-In empanelled Auditors so as to identify gaps and appropriate corrective actions to be taken in cyber security practices. CERT-In extends supports to enable Responsible Entity in conducting cyber security mock drills and in assessment of their preparation to withstand cyber-attacks. The Responsible Entity must submit Reports of Cyber Audit of cyber security controls, architecture, vulnerability management, network security and periodic cyber security drills to sectoral CERT as well as CERT-In. Team of experts shall review these reports and shortcomings if any in the compliances shall be flagged by them. CERT-In on regular basis also conducts workshops and training programs to enhance Cyber awareness of all Stakeholders.

1.3 Ministry of Power has created 6(six) sectoral CERTs namely Thermal, Hydro, Transmission, Grid Operation, RE and Distribution for ensuring cyber security in Indian Power Sector. Each Sectoral CERT has prepared their sub-sector specific model Cyber Crisis Management Plan(C-CMP) for countering cyber-attacks and cyber terrorism. Each Sectoral CERT has circulated their model C-CMPs for preparation and implementation of organization specific C-CMP by each of their Constituent Utility.

1.4 All Responsible Entities, Service Providers, Equipment Suppliers/Vendors and Consultants engaged in Power Sector are equally responsible for ensuring cyber security of the Indian Power Supply System. They are to act timely upon each threat intelligence,

advisories and other inputs received from authenticated sources, for continuous improvement in their cyber security posture.

1.5 In the current Indian scenario though many cyber security directives and guidelines exists, but none of them are power sector specific. Ministry of Power has directed CEA to prepare Regulation on Cyber Security in Power Sector. And as an interim measures CEA has been directed to issue Guideline on Cyber Security in Power Sector, under the provision of Regulation 10 on Cyber Security in the "Central Electricity Authority (Technical Standards for Connectivity to the Grid) (Amendment) Regulations, 2019".

1.6 The Guidelines on Cyber Security, in the form of Articles written below, requires mandatory Compliance by all Responsible Entities. The Guidelines shall come into effect from the date of issue by Central Electricity Authority, New Delhi.

2.0 Hereby the Guidelines on Cyber Security are drawn in the form of Articles for compliance by the Requester as well as User under the following provision of Regulation 10 on Cyber Security, in the "Central Electricity Authority (Technical Standards for Connectivity to the Grid) (Amendment) Regulations, 2019".

"The requester and the user shall comply with cyber security guidelines issued by the Central Government, from time to time, and the technical standards for communication system in Power Sector laid down by the Authority."

2.1 **Objective of issuing Guideline**:

a) Creating cyber security awareness
b) Creating a secure cyber ecosystem,
c) Creating a cyber-assurance framework,
d) Strengthening the regulatory framework,
e) Creating mechanisms for security threat early warning, vulnerability management and response to security threats,
f) Securing remote operations and services,
g) Protection and resilience of critical information infrastructure,
h) Reducing cyber supply chain risks,
i) Encouraging use of open standards,
j) Promotion of research and development in cyber security,
k) Human resource development in the domain of Cyber Security,
l) Developing effective public private partnerships,
m) Information sharing and cooperation
n) Operationalization of the National Cyber Security Policy

2.2 Within the text of these Articles, '**Responsible Entity'** shall mean all:

a) Transmission Utilities as well as Transmission Licensees,
b) Load despatch centres (State, Regional and National),
c) Generation utilities (Hydro, Thermal, Nuclear, RE),
d) Distribution Utilities
e) Generation Aggregators,
f) Trading Exchanges,
g) Regional Power Committees, and
h) Regulatory Commissions.

2.3 **Applicability:**

All Responsible Entities as well as System Integrators, Equipment Manufacturers, Suppliers/Vendors, Service Providers, IT Hardware and Software OEMs engaged in the Indian Power Supply System.

2.4 **Scope:**

2.4.1 **Control Systems for System Operation and Operation Management.**

a) Grid Control and Management Systems,
b) Power Plant Control Systems,
c) Central Systems used to monitor and control of distributed generation and loads e.g. virtual power plants, storage management, central control rooms for hydroelectric plants, photovoltaic/wind power installations,
d) Systems for fault management and work force management,
e) Metering and measurement management systems,
f) Data archiving systems,
g) Parameterisation, configuration and programming systems,
h) Supporting systems required for operation of the above mentioned systems,

2.4.2 **Communication System.**

a) Routers switches and firewalls,
b) Communication technology-related network components,
c) Wireless digital systems.
d) Control Centre to Control Centre Communications for data exchange on ICCP. **(IEC 61850/60850-5/TASE.2/)**

2.4.3 **Secondary, Automation and Tele control technologies**

a) Control and Automation components,
b) Control and field devices,
c) Tele control devices,
d) Programmable logic controllers / Remote Terminal Units, including digital sensor and actuators elements,
e) Protection devices,
f) Safety components,
g) Digital measurement and metering installations,
h) Synchronisation devices,
i) Excitation Systems,

3.0 Definition of Terms:

1. **Access Management**: shall mean set of policies and procedures of the Responsible Entity for allowing Personnel, devices and IoT to securely perform a broad range of operational, maintenance, and asset management tasks either on site or remotely as laid down in Clause 5.2.5 of IS 16335.
2. **Accreditation:** shall mean the process of verifying that an organisation is capable of conducting the tests and assessments against a product/process that are required to be certified.

3. **Accreditation Body:** shall mean an organisation that has been accredited to verify the credentials and capabilities of the organisations that wish to become a certification body.
4. **Act:** shall mean the Information Technology Act, 2000 (21 of 2000)
5. **Asset**: shall mean anything that has value to the organization.
6. **Certification:** shall mean the process of verifying that a product has been manufactured in conformance with a set of predefined standards and/or regulations by an organisation, that is accredited to conduct the certification process
7. **Certification Body:** shall mean an organisation that has been accredited by an accreditation body to certify products / process against a certification scheme.
8. **Certification Scheme:** shall mean the processes, paperwork, tools, and documentation that define how a product or manufacturer is certified
9. **Chief Information Security Officer:** shall means the designated employee of Senior management level directly reporting to Managing Director/Chief Executive Officer/Secretary of the Responsible Entity, having knowledge of Information Security and related issues, responsible for cyber security efforts and initiatives including planning, developing, maintaining, reviewing and implementation of Information Security Policies
10. **Critical Assets:** shall mean the facilities, systems and equipment which, if destroyed, degraded or otherwise declared unavailable, would affect the reliability or operability of the Power Supply System.
11. **Critical System:** shall mean cyber assets essential to the reliable operation of critical asset. Critical System consists of those cyber assets that have at least one of the following characteristics:
    a) The cyber asset uses a routable protocol to communicate outside the electronic security perimeter.
    b) The cyber asset uses a routable protocol within a control centre.
    c) The cyber asset is dial-up accessible.
12. **Critical Information Infrastructure*:*** shall mean Critical Information Infrastructure as defined in explanation of sub-section (1) of Section 70 of the Act.
13. **Cyber Assets**: shall mean the programmable electronic devices, including the hardware, software and data in those devices that are connected over a network, such as LAN, WAN and HAN.
14. **Cyber Crisis Management Plan:** shall mean a framework for dealing with cyber related incidents for a coordinated, multi-disciplinary and broad-based approach for rapid identification, information exchange, swift response and remedial actions to mitigate and recover from malicious cyber related incidents impacting critical processes.
15. **Cyber Security Breach**: shall mean any cyber incident or cyber security violation that results in unauthorized or illegitimate access or use by a person as well as an entity, of data, applications, services, networks and/or devices through bypass of the underlying cyber security protocols, policies and mechanisms resulting in the compromise of the confidentiality, integrity or availability of data/information maintained in a computer resource or cyber asset.
16. **Cyber Security Incident:** shall mean any real or suspected adverse cyber security event that violates, explicitly or implicitly, cyber security policy of Responsible Entity resulting in unauthorized access, denial of service or disruption, unauthorized use of computer resource for processing or storage of information or changes to data or information

without authorization, leading to harm to the power grid or its critical sub-sectoral elements Generation, Transmission and Distribution.

17. **Cyber Security Policy:** shall mean documented set of business rules and processes for protecting information, computer resources, networks, devices, Industrial Control Systems and other OT resources.
18. **Electronic Security Perimeter:** shall mean the logical border surrounding a network to which the Cyber Systems of Power Supply System are connected using a routable protocol.
19. **Information Security Division:** shall mean a division accountable for cyber security and protection of the Critical System of the Responsible Entity.
20. **Protected System:** shall mean any computer, computer system or computer network of the Responsible Entity notified under section 70 of the Act, in the official gazette by appropriate Government.
21. **Security Architecture:** shall mean a framework and guidance to implement and operate a system using the appropriate security controls with the goal to maintain the system's quality attributes like confidentiality, integrity, availability, accountability and assurance.
22. **Vulnerability:** shall mean intrinsic properties of something resulting in susceptibility to a risk source that can lead to an event with a consequence
23. **Vulnerability Assessment:** shall mean a process of identifying and quantifying vulnerabilities

4.0 Standards

Reference	Description
ISO/IEC 15408	Common Criteria Certification Standard
ISO/IEC 17011	General requirements for accreditation bodies accrediting conformity assessment bodies
ISO/IEC 17025	General requirements for the competence of testing and calibration laboratories
ISO/IEC 21827	Systems Security Engineering - Capability Maturity Model (SSE-CMM)
ISO/IEC 24748-1	Systems and software engineering — Life cycle management — Part 1: Guidelines for life cycle management.
ISO 27001/2	Information Security Management
ISO/ IEC 27019	Information technology — Security techniques — Information Security controls for the energy utility industry
ISO/IEC 61508	Functional Safety of Electrical / Electronic / Programmable Electronic Safety-related Systems
IEC 61850	Communication networks and systems for power utility automation
IEC 62351	Standards for Securing Power System Communications
IEC 62443	Cyber Security for Industrial Control Systems
IS 16335	Power Control Systems – Security Requirements.

5.0 Abbreviations

Abbreviations		Description
a)	BES	Bulk Electric System

b)	CDAC	Centre for Development of Advanced Computing
c)	CEA	Central Electricity Authority
d)	CERC	Central Electricity Regulatory Commission
e)	CERT	Computer Emergency Response Team
f)	CERT-In	Indian Computer Emergency Response Team
g)	CII	Critical Information Infrastructure
h)	CISO	Chief Information Security Officer
i)	CSK	Cyber Swachhta Kendra
j)	COTS	Commercial off-the Shelf
k)	ESP	Electronic Security perimeter
l)	ICS	Industrial Control Systems
m)	ICT	Information and Communications Technology
n)	IEC	International Electro Technical Commission
o)	ISAC	Information Sharing and Analysis Centre
p)	ISD	Information Security Division
q)	ISO	International Organization for Standardization
r)	ISMS	Information Security Management System
s)	IT	Information Technology
t)	FAT	Factory Acceptance Test
u)	NABL	National Accreditation Board for Testing and Calibration Laboratories
v)	NCIIPC	National Critical Information Infrastructure Protection Centre
w)	NLDC	National Load Dispatch Centre
x)	NPTI	National Power Training Institute
y)	NSCS	National Security Council Secretariat
z)	OEM	Original Equipment Manufacturer
aa)	OT	Operational Technology
bb)	RLDC	Regional Load Dispatch Centres
cc)	SAT	Site Acceptance Test
dd)	SERC	State Electricity Regulatory Commission
ee)	SCADA	Supervisory Control and Data Acquisition Systems
ff)	SIEM	Security Information and Event Management
gg)	SLA	Service Level Agreement
hh)	SLDC	State Load Dispatch Centre
ii)	QCI	Quality Council of India

CEA (Cyber Security in Power Sector) Guidelines, 2021

Article 1. Cyber Security Policy.

a. **Cardinal Principles: The Responsible entity will strictly adhere to following cardinal principles while framing cyber security policy:**

i. There is hard isolation of their OT Systems from any internet facing IT system.
ii. May keep only one of their IT systems with internet facing at any of their site/location if required which is isolated from all OT zones and kept in a separate room under the security and control of CISO.
iii. Downloading/Uploading of any data/information from their internet facing IT system is done only through an identifiable whitelisted device followed by scanning of both for any vulnerability/malware as per the SOP laid down and for all such activities digital logs are maintained and retained under the custody of CISO for at least 6 months. The log shall be readily to carry out the forensic analysis if asked by investigation agency.
iv. List of whitelisted IP addresses for each firewall is maintained by CISO and each firewall is configured for allowing communication with the whitelisted IP addresses only.
v. Communication between OT equipment/systems is done through the secure channel preferably of POWERTEL through the fibre optic cable. Security configuration of the communication channel is also to be ensured.
vi. All ICT based equipment/system deployed in infrastructure/system mandatorily CII are sourced from the list of the "Trusted Sources" as and when drawn by MoP/CEA.

b. The Responsible Entity shall be ISO/IEC 27001 certified (including sector specific controls as per ISO/IEC 27019).
c. The Responsible Entity shall have a Cyber Security Policy drawn upon the guidelines issued by NCIIPC.
d. The Responsible Entity shall ensure annual review of their Cyber Security Policy by subject matter expert and changes shall be made therein only after obtaining the due approval from Board of Directors.
e. The process of Access Management for all Cyber Assets owned or under control of the Responsible Entity shall be detailed in the Cyber Security Policy.
f. The Cyber Security Policy shall leverage state-of-art cyber security technologies and relevant processes at multiple layers to mitigate the cyber security risks.
g. The Responsible Entity shall be solely responsible to get Cyber Security Policy implemented through its Information Security Division (ISD).
h. The CISO shall record the reason(s) for exemption required, if any, in case, unable to comply with any of the provision(s) of the Cyber Security Policy. Any exception shall be allowed only after an approval of provisions of compensatory control(s) to mitigate residual cyber security risks.

i. The CISO shall record the exemptions sought in statement of applicability controls, while getting the ISO 27001 certified. All exemptions and its justification need to be in conformance with Cyber Security Policy of the Responsible Entity.
j. The Responsible Entity shall allocate sufficient Annual budget for enhancing cyber security posture, enhanced year over year.
k. The Responsible Entity shall work in collaboration with other Industry Stakeholders as well as Academia to promote R&D activity in the domain of cyber security.
l. The Responsible Entity shall ensure that cyber security issues are taken up as agenda items in their Board meetings once in every three months.

Article 2 Appointment of CISO.

a) The Responsible Entity shall mandatorily appoint a CISO and shall confirm to qualification, if any, **laid** by Quality Council of India (QCI). In absence, the work of CISO shall be looked upon by Alternate CISO. In case qualification for appointment of Alternate CISO has been relaxed for reasons recorded thereof, Alternate CISO has to mandatorily acquire the minimum required cyber security skill sets within six months from the date of his appointment.
b) The Responsible Entity shall regularly update details of CISO and Alternate CISO, with the Sectoral CERT, as well as on ISAC-Power Portal.
c) Roles and Responsibility of CISOs shall be as laid by CERT-In and ring-fenced to ensure cyber security of the Cyber Assets of the Responsible Entity.

Article 3: Identification of Critical Information Infrastructure (CII).

a) The Responsible Entity shall submit to NCIIPC through Sectoral CERT, details of Cyber Assets which uses a routable protocol to communicate outside the Electronic Security Perimeter drawn by the Responsible Entity or a routable protocol within a control centre and dial-up accessible Cyber Assets, within 30 days from the date of their commissioning in the System.
b) The Responsible Entity shall submit details of Critical Business Processes and underlying information infrastructure along with mapped impact and Risk Profile to NCIIPC and shall get their CIIs identified in consultation with NCIIPC. The process of the notification/declaration by Appropriate Government shall follow thereafter.
c) The Responsible Entity shall review their declared/notified CIIs at least once a year to examine changes if any in the functional dependencies, protocols and technologies or upon any change in security architecture. The Responsible Entity shall review their declared/notified CIIs once in every 6 months, in case if NCIIPC has directed them to constitute an Information Security Steering Committee.
d) The Responsible Entity shall ensure that all cyber assets of their identified/notified CIIs are recorded in the asset register and considered for risk assessment as well as for finalization of controls in statement of applicability.

Article 4. Electronic Security Perimeter

a) The Responsible Entity shall identify and document the Electronic Security Perimeter(s) and all Access Points to the perimeter(s).

b) The Responsible Entity shall follow procedure of identifying "Electronic Security Perimeter" in case of distributed and/or hybrid information infrastructure, as per IEC 62443 / IS16335 (as amended from time to time).
c) The Responsible Entity shall ensure that every Critical System resides within an Electronic Security Perimeter.
d) The Responsible Entity shall perform a cyber-Vulnerability Assessment of each electronic Access Points to the Electronic Security Perimeter(s) at least once in every 6 (six) months and/or after any change in Security Architecture.
e) The Responsible Entity shall ensure that all critical, high and medium vulnerabilities identified as a result of cyber Vulnerability Assessment shall be closed and verified for the effective closure.

Article 5. Cyber Security Requirements

a) The Responsible Entity shall have an Information Security Division (ISD), headed by CISO.
b) The Responsible Entity shall ensure that the ISD must be functional on 24x7x365 basis and is manned by sufficient numbers of Engineers having valid certificate of successful completion of course on cyber security of Power Sector from the Training Institutes designated by CEA.
c) The Responsible Entity shall ensure that ISD
   1) has on-boarded Cyber Swachhta Kendra(CSK) of CERT-In, if they have public IPs.
   2) has timely acted upon the advisories, guidelines and directive of NCIIPC, CSK, CERT-In and Sectoral CERTs,
   3) has deployed an Intrusion Detection System and Intrusion Prevention System capable of identifying behavioural anomaly in both IT as well as OT Systems.
   4) shares reports on incident response and targeted malware samples with CERT-In,
   5) updates the firmware/software with the digitally signed OEM validated patches only.
   6) enables only those ports and services that are required for normal operations. In case of any emergency the procedure as laid in Access management be followed.
   7) maintains firewall logs for the last 6 months duration. Firewall logs shall be analysed and all critical and high severity comments shall be addressed for effective closure.
   8) retains document of FAT, SAT test results and report/ certificate of cyber tests carried out for compliance of Government Orders and Cyber Security Audit.*
   9) maintains all cyber logs and cyber forensic records of any incident for at least** 90 days.

      * FAT, SAT must include comprehensive cyber security tests of the component/equipment/system to be delivered/delivered at site.
      ** 90 days from date of the commissioning of the system/recovery from any incident, whichever is later.

d) The Responsible Entity shall routinely audit and test security properties of the Critical System and must act upon, in case if any new vulnerabilities is identified through testing or by the equipment manufacturer.

e) The Responsible Entity shall design a secure architecture for control system appropriate for their process control environment*.
f) All State Load Dispatch Centres(SLDCs) shall comply with the directions issued by the National Load Dispatch Centre(NLDC) as well as Regional Load Dispatch Centres(RLDCs) U/s 29 (1) of the Electricity Act, 2003 to ensure stability and cyber security of grid operation and achieve efficiency in the grid operation. In case of any non-compliance, the Head of SLDC shall be responsible and shall be liable for Penalty as per the provision of CERC/SERC.

*There are so many different types of systems in existence and so many possible solutions, it is important that the selection process ensures that the level of protection is commensurate with the business risk and the Responsible Entity shall not rely on one single security measure for its defence. *(Reference IEC/TR62351-10* Edition1.0 2012-10 *Power systems management and associated information exchange –Data and communications security – Part 10: Security architecture guidelines).*

Article 6 Cyber Risk Assessment and Mitigation Plan

a) The Responsible Entity shall document in their Cyber Security Policy a Cyber Risk Assessment and Mitigation Plans drawn upon the best practises being followed in the Power Sector, and the same shall be approved by Board of Directors.
b) The Cyber Risk Assessment and Mitigation Plans shall clearly define the matrix for assessing the cyber risk of both IT and OT environment and risk acceptance criteria.
c) The Cyber Risk Assessment Plan shall be capable to demonstrate that repeated cyber security risk assessment delivers consistent, valid and comparable results.
d) The review of cyber risk assessment shall be carried out at least once in a Quarter. The actionable of risk treatment and mitigation shall be tracked in this review for their effectiveness.
e) The CISO shall be responsible for implementation and regular review, on the basis of internal and external feedbacks, of the Cyber Risk Assessment and Mitigation Plans.

Article 7 Phasing out of Legacy System

a) As the life cycle of the Power System Equipment/System is longer than that of IT Systems deployed therein, the Responsible Entity shall ensure that all IT technologies in the Power System Equipment/System should have the ability to be upgraded.
b) The Responsible Entity shall ensure that the Information Security Division shall draw the list of all communicable equipments/systems nearing end life or are left without support from OEM. Thereafter CISO shall identify equipment/systems to be phased out from the list drawn, firm up their replacement plan and put up the replacement plan for approval before the Board of Directors.
c) The CISO shall ensure that till equipments/systems nearing end life or left without support from OEM are not replaced, their cyber security is hardened and ensured through additional controls provisioned in consultation with the OEM or alternate Supplier(s)*.
*e.g. Use of CDAC developed AppSamvid and whitelisting of applications installed may be explored across all legacy systems.
d) The Responsible Entity shall document in their Cyber Security Policy a Standard Operating Procedure for safe and secure disposal of outlived or legacy devices.

Article 8. Cyber Security Training.

a) The Responsible Entity shall establish, document, implement, and maintain an annual cyber security training program for personnel having authorized cyber or authorized physical access (unescorted or escorted) to their Critical Systems.
b) The Responsible Entity shall review annually their cyber security training program and shall update it whenever necessary. Annual Review shall record evaluation of the effectiveness of the trainings held.
c) The Responsible Entity shall ensure that Cyber Security training program designed for their IT as well as OT O&M Personnel must include following topics and as per their functional requirements and security concerns additional topics shall be added:
    1) User authentication and authorization.
    2) Cyber Security and Protection mechanisms of IT/OT/ICS Systems.
    3) Introduction to various standards i.e. ISO/IEC:15408, ISO/IEC:24748-1, ISO: 27001, ISO: 27002, ISO 27019, IS 16335, IEC/ISO:62443.
    4) Training on implementation of ISO/IEC 27001 and awareness on IEC 62443.
    5) Vulnerability Assessment in the Critical System.
    6) Monitoring and preserving of electronic logs of access of Critical Assets.
    7) Detecting cyber-attacks on SCADA and ICS systems
    8) The handling of Critical System during cyber crisis.
    9) Action plans and procedures to recover or re-establish normal functioning of Critical Assets and access thereto following a Cyber Security Incident.
    10) Hands on SCADA operation at any of the Regional Load Dispatch Centre.
    11) Handling of risks involved in the procurement of COTS Products.

d) All Personnel engaged in O&M of IT & OT Systems shall mandatorily undergo courses on cyber security of Power Sector from any of the training institute designated by CEA, immediately within 90 days from the notification of CEA Guidelines on Cyber Security in Power Sector.
e) The Responsible Entity shall ensure that none of their newly hired or the current Personnel have access to the Critical System, prior to the satisfactory completion of cyber security training programme from the Training Institutes designated in India, except in specified circumstances such as cyber crisis or an emergency.
f) NPTI in consultation with CEA shall identify and design domain specific courses on Cyber Security for different target groups. The "Governing Board for PSO Training and Certification" shall approve the content, duration etc of these courses and shall review it Annually. NPTI shall conduct these courses at all of their branches on regular basis and shall maintain the list of the Participants successfully completing the course.

Article 9 Cyber Supply Chain Risk Management

a) The Responsible Entity shall ensure that, as and when Ministry of Power, Government of India notifies the Model Contractual Clauses on cyber security, these clauses are included in their every Bid invited for procurement of any ICT based components/equipments/System to be used for Power System.
b) The Responsible Entity shall ensure that all the Communicable Intelligent Equipments and the Service Level Agreements (SLAs) for their Critical Systems shall be sourced from the list of the "Trusted Sources" as and when drawn by MoP/CEA.

c) The Responsible Entity shall ensure that, in case, for the any Communicable Intelligent Devices, if no Trusted Source has been identified, then the successful bidder in compliance with the provisions made in MoP order dated 2.7.2020 and any other relevant MoP order has got the product cyber tested for any kind of embedded malware/Trojan/cyber threat and for adherence to Indian Standards at the designated lab.

d) The Responsible Entity shall ensure that the essential cyber security tests are carried out successfully during FAT, SAT as detailed in **Annexure A.** The equipment/System besides for functionality shall also be tested in the factory for vulnerabilities, design flaws, parts being counterfeit or tainted, so as to minimize problems during on-site-testing and installation. Cyber Security Conformance Testing are to be carried out in the designated Lab as listed in **Annexure-I of MoP Order No. 12/13/2020-T&R dt. 8th June, 2021(Order at Annexure-B).**

e) The Responsible Entity shall ensure that the Equipment/System supplied by the successful bidder shall accompany with a certificate[$, #] obtained by OEM from a certification body accredited to assess devices and process for conformances to IEC 62443-4 standards during design and manufacture. The Responsible Entity shall accept the certificate submitted along with the supplied Equipment/System only if it's in line with the Testing Protocol as notified by Ministry of Power, Government of India, from time to time.

f) The Responsible Entity in compliance to the requirement of Article 9(e) shall also accept, till the setting up of an adequate certification facility in the India, a digitally signed self-declaration of conformance to the IEC 62443-4 standards during design and manufacture of the equipment/system, if submitted by the OEM.

g) The Responsible Entity shall dispose all unserviceable or obsolete Communicable Intelligent Devices as per the procedure laid in their Cyber Risk Assessment and Mitigation Plans which shall be in line with the prevailing best practices.

$ The National & International certification may be specified in the tender for critical systems/sub-systems being procured by the Responsible Entity.

Certification Schemes:
Embedded Device Security Assurance Certification is for an individual product,
System Security Assurance Certification is for a set of products in a system (possibly from different vendors)
Security Development Lifecycle Assurance Certification is for the development processes that a manufacturer uses for developing products.

Article 10 Cyber Security Incident Report and Response Plan

a) The CISO of the Responsible Entity shall report in the formats prescribed by CERT-In, all Cyber Security Incidents, classified as reportable events.

b) Root cause analysis for all reportable events shall be carried out and corrective action taken, so as to ensure that any re-occurrence of such event can be managed with ease.

c) The Responsible Entity shall mandatorily define in their Cyber Security Policy, criteria(s) identified on the basis of impact analysis, for declaring the occurrence of

Cyber Security Incident(s) as a Cyber Crisis in the System owned or controlled by them.

d) The Responsible Entity shall mandatorily designate an Officer along with his/her standby by name and designation and empower them to declare an occurrence of the incident(s) as "Cyber Crisis". The contact details of these Officers shall be updated in the C-CMP within 15 days of changes if any due to transfer or superannuation etc.
e) The CISO shall ensure that during any Cyber Security Incident, ISD monitors and minutely records every details of cyber security events and incidents in both IT as well as the OT System owned or controlled by the Responsible Entity.
f) The CISO shall ensure that each cyber incident is handled strictly as per Cyber Security Incident Response Plan detailed in the latest C-CMP approved by the Board of Directors.
g) The Responsible Entity shall ensure that the efficacy of the Cyber Security Incident Response Plan is tested annually through mock drill(s) carried out, if feasible, as simulation exercise(s) or as table top exercise(s) with wider participation of their employees, in consultation with CERT-In and sectoral CERT. In case if any shortcoming is observed in the Cyber Security Incident Response Plan suitable changes shall be made in it.
h) The Responsible Entity shall ensure that the CISO compiles details of incident detection, incident handling, learnings from each incident and damage claims made if any and shall report to CERT-In as well as upload information on ISAC-Power Portal.

Article 11 Cyber Crisis Management Plan(C-CMP)

a) The Responsible Entity shall prepare a Cyber Crisis Management Plan and submit to their sectoral-CERT for review with intimation to Ministry of Power/CISO-MoP. Responsible Entity shall update their C-CMP on the basis of comments made by sectoral-CERT and then submit for vetting to CERT-In. The C-CMP shall be updated once again to include the observations made by CERT-In before seeking approval of Board of Directors for implementation of C-CMP.
b) The Responsible Entity shall ensure that the C-CMP is reviewed at least annually. The CISO shall ensure that all changes are made in C-CMP only with the due approval of Board of Directors and the changes made in C-CMP have been communicated through a verifiable means to all the concerned Personnel of the Responsible Entity.
c) The CISOs shall be the custodian of all the cyber security related documents including Cyber Crisis Management Plan, Risk Treatment Plan, Statement of Applicability of controls, and compliance to regulator's requirement.
d) The CISO shall be accountable for ensuring enforcement of C-CMP by Information Security Division of the Responsible Entity, during a cyber-crisis, as and when declared by the designated Officer. (refer Article 10(d))

Article 12: Sabotage Reporting%

a) The Responsible Entity shall incorporate procedure for identifying and reporting of sabotage in their Cyber Security Policy within 30 days from issue of the Guidelines, or grant of licence under the appropriate legal provisions to the Responsible Entity.
b) The CISO shall be held liable for non-reporting of identified sabotage(s) as per procedure laid for identifying and reporting of sabotage in the Cyber Security Policy of the Responsible Entity.

c) The CISO shall prepare a detailed report on disturbances or unusual occurrences, identified, suspected or determined to be caused by sabotage in the Critical System of the Responsible Entity, and shall submit the report to the Sectoral CERT as well as to CERT-In within 24 hours of its occurrence.
d) The CISO shall submit to NCIIPC within 24 hours of occurrence the report on every sabotage classified as cyber incidents(s) on "Protected System".
e) The CISO upon occurrence on every sabotage shall take custody of all log records as well as digital forensic records of affected Cyber Assets, Intrusion Detection System, Intrusion Protection System, SIEM and shall preserve them for at least 90 days and shall make them available as and when called upon for investigation by the concerned Agencies.

%Disturbances or unusual occurrences, suspected or determined to be caused by sabotage.
Sabotage e.g. can be a forced intrusion in un-manned/manned facility and taking control of operation of Critical System through a communicating device.

Article 13 Security and Testing of Cyber Assets

a) The Responsible Entity shall ensure security of all in-service phase as well as standby Cyber Assets through regular firmware/Software updates and patching, Vulnerability management, Penetration testing (of combined installations), securing configuration, supplementing security controls. CISO shall maintain details of update version of each firmware and software and their certification if received from OEMs.
b) The Responsible Entity shall carry out regularly Vulnerability Assessment of all Cyber Assets owned or under their control. If a Cyber Asset is found vulnerable to any exploits or upon any patch updates or major configuration changes, then further Penetration Testing may be carried out offline or in a suitably configured laboratory test-bed to determine other vulnerabilities that may have not been identified so far.
c) The Responsible Entity shall specify security requirement and evaluation criteria during each phase of their procurement Process.
d) The Responsible Entity shall ensure that all Cyber Assets being procured shall conform to the type tests as mentioned in the specification for type testing listed in the bid document. Type test reports of tests conducted in NABL accredited Labs or internationally accredited labs (with in last 5 years from the date of bid opening) shall be mandated to be submitted along with bid. In case, the submitted Type Test reports are not as per specification, the re-tests shall be conducted without any cost implication to the Responsible Entity.
e) The Responsible Entity shall ensure that all Communicable devices are tested for communication protocol as per the ISO/IEC/IS standards listed in **MoP Order No. 12/13/2020-T&R dated 8th June, 2021(Annexure-B).**
f) The Responsible Entity shall ensure that all Critical Systems designed with Open Source Software are adequately cyber secured.
g) The Responsible Entity as a best practise upon any incidence of Cyber Security Breach shall carry out cyber security tests at any lab designated for cyber testing by Ministry of Power. These tests shall be similar to Pre Commissioning Security Test and those essential for carrying out Post Incident Forensics Analysis.

Article 14 Cyber Security Audit

a) The Responsible Entity shall implement Information Security Management System (ISMS) covering all its Critical Systems.
b) The Responsible Entity shall through a CERT-In Empanelled Cyber Security OT Auditor shall get their IT as well as OT System audited at least once in every 6 (six) months and shall close all critical and high vulnerabilities within a period of one month and medium as well as low non-conformity before the next audit. Effective closure of all non-conformities shall be verified during the next audit.
c) The Cyber Security Audit shall be as per ISO/IEC 27001 along with sector specific standard ISO/IEC 27019, IS 16335 and other guidelines issued by appropriate Authority if any. These mentioned standards shall be current with all amendments if any and in case if any standard is superseded, the new standard shall be applicable. CISO shall ensure immediate closure of non-conformance, based on the criticality and by means all non-conformances are to be closed before the next audit.
d) The Responsible Entity shall ensure that CISO has all the required systems and documents in place, as mandated by NSCS for base line cyber security audit.

FAT & SAT

1. During FAT stage, the customer has to verify all types test reports / certificates including Communication protocol and security conformance tests of the devices offered for FAT.
2. FAT of SCADA involves testing as a whole system in the integrated scale down set up. For SCADA, Indian standard IS 15953: 2011 "SCADA System for Power System Applications" provides definition and guidelines for the specification, performance analysis and application of SCADA systems for use in electrical utilities (for transmission & Distribution) including guidance on Tests and inspections.
3. The SAT will be done at customer site as per the SAT document mutually agreed by buyer and supplier. For SAT also, guidance from IS 15953: 2011need to be applied.
4. IEC 61850-10-3 Communication Networks and Systems For Power Utility Automation-Functional testing of IEC 61850 systems (in draft stage - CDTR) covers testing of applications within substations covering

    a. A methodical approach to the verification and validation of a substation solution
    b. The use of IEC 61850 resources for testing in Edition 2.1
    c. Recommended testing practices for different use cases
    d. Definition of the process for testing of IEC 61850 based devices and systems using communications instead of hard wired system interfaces (ex. GOOSE and SV instead of hardwired interfaces)
    e. Use cases related to protection and control functions verification and testing.

    This standard may be used as a guidelines for FAT & SAT for Substation Automation System (SAS) based on IEC 61850.

Annexure - B

Annexure – 1

List of designated laboratories for cyber security conformance testing

Table -A. Field Equipment /Operational Technology (OT)

Sl. No.	Equipment	Communication Protocol Conformance Standards	Protocol Security Conformance Standards	Designated Laboratories
1	Remote Terminal Units (RTUs) & PLCs with IEC communications protocols	IEC 60870-5 -101 / IEC 60870-5 -104 (Test Details Annexure 2)	IEC 60870-5- 7 Security extension & IEC 62351 series (specifically IEC 62351-100 parts 1 & 3) (Test Details Annexure-2	Central Power Research Institute (CPRI), Prof Sir C V Raman Road, Sadashivanagar P O, Bengaluru – 560080, Karnataka
2	Intelligent Electronic Equipment / Numerical Protection Relays / Bay Control Units / Bay Protection Units, Gateways, Transformer Tap controller/ changer, etc. with IEC 61850 communication protocol	IEC 61850 – 5 to IEC 61850 – 10 (Test Details Annexure 2)		CPRI
3	Smart meters with IEC 62056 communication protocols	IEC 62056 series / DLMS & IS 15959 series and IS 16444 series (Test details Annexure 2)	IEC 62056 series / DLMS & IS 15959 series and IS 16444 series (Test Details Annexure 2)	1. CPRI 2. Electrical Research and Development Association (ERDA), ERDA Road, GIDC, Makarpura, Vadodara - 390 010 Gujarat 3. Yadav Measurements Pvt. Ltd. (YMPL) 373-375, RIICO Bhamashah Industrial Area Kaladwas 313003 Udaipur – Rajasthan

Information Technology (IT) Equipment (Main / Backup / Disaster recovery (DR) Control Centre / Substation control centre IT equipment)

All IT products procured /supplied shall have a valid Certificate of Common Criteria as per ISO/IEC 15408 issued by signatories of the Common Criteria Recognition Agreement (CCRA) (www.commoncriteriaportal.org).

Import/procurement/supplied from vendors sourcing from prior reference countries, the Certificate for Common Criteria shall be from Government Laboratories in India according to the IC3S scheme operated by Ministry of Electronics and Information Technology, which is a signatory to CCRA.

https://www.commoncriteria-india.gov.in/

Details of tests for various identified products

Remote Terminal Units (RTUs) (Sl. No. 1 of Table – A of Annexure – 1)

Test protocol:

Utilities / manufacturers will submit the sample along with all the required technical documentation for taking up testing to the designated laboratory.

Reference standards

1) IEC 60870-5-101 & IEC 60870-5-104 as applicable

2) IEC 60870-5-7 Telecontrol equipment and systems - Part 5-7: Transmission protocols - Security extensions to IEC 60870-5-101 and IEC 60870-5-104 protocols (applying IEC 62351)

3) IEC 62351-100-1 & IEC 62351-100-3 and other cross referenced standards.

Test cases

Extract from standard (IEC 62351-100-1)

The conformance test cases are divided into four clauses:

- Clause 5: Verification of configuration parameters. This clause contains the configuration parameters affecting the message contents and/or the protocol behaviour.
- Clause 6: Verification of communication. The goal of this clause is to verify that Device Under Test (DUT) is able to implement the security extension messages as described in IEC TS 60870-5-7.
- Clause 7: Verification of procedures. The goal of this clause is to verify that DUT is able to execute the security extension procedures as described in IEC TS 62351-5.
- Clause 8: Test result chart. This clause contains the results of the test cases listed in Clauses 6 and 7 for each supported value of the configuration parameters listed in Clause 5.

The test cases are organized in tables. They are numbered; their numbering syntax is: Subclause number (where the Table is located) + test case number.

In the column 'reference' each test case has a direct reference to IEC TS 62351-5 or IEC TS 60870-5-7 where the clause under test is defined.

Test cases are mandatory depending on the description in the column 'Required'. The following situations are possible:

M= Mandatory test case. The test is referencing a clause that is mandatory in IEC TS 62351-5 or IEC TS 60870-5-7.

Protocol Information Conformance Statement (PICS) x, x = Mandatory test case if the functionality is enabled in the PICS (by marking the applicable check box), with a reference to the section number of the PICS (x.x).

Conformance testing of security extension procedures

The security extension procedures can be summarized as follows:

- User management
- Update key maintenance
- Session key maintenance
- Challenge/Reply authentication
- Aggressive Mode authentication

Extract from standard (IEC 62351-100-3)

IEC 62351-3 defines the requirements related to the authentication/encryption protocol, procedures and methods to be implemented at TCP/IP (transport) level.

The conformance test cases are divided into three clauses:

- Clause 5: Verification of configuration parameters. This clause contains the parameters specified by the standards referencing IEC 62351-3 (see IEC 62351-3:2014/AMD1:2018, Clause 7) and affecting the protocol behaviour.
- Clause 6: Verification of IEC 62351-3 requirements. The goal of this clause is to verify that DUT is conformant to the requirements of the IEC 62351-3.
- Clause 7: Test result chart. This clause contains the results of the test cases listed in Clause 6 for each supported value of the configuration parameters listed in Clause 5.

The test cases are organized in tables. They are numbered, their numbering syntax is: Subclause number (where the table is located) + test case number.

In the column 'Reference' each test case has a direct reference to IEC 62351-3 where the clause under test is defined. PICS or Protocol Implementation eXtra Information for Testing (PIXIT) could be found in the "Reference" column for some test cases whenever the execution of the test case shall take into account specific parameter values declared in the PICS or PIXIT of the DUT.

Test cases are mandatory depending on the description in the column 'Required'. The following situations are possible:

M = Mandatory test case. The test is referencing to a clause that is mandatory in IEC 62351-3.

PICS

or

PIXIT = Mandatory test case if the functionality is enabled in the PICS or PIXIT by marking the applicable check box or declaring the applicable value.

Intelligent Electronic Devices (IEDs) (Sl. No. 2 of Table – A of Annexure – 1)

Utilities / manufacturers will submit the sample along with all the required technical documentation for taking up testing to the designated laboratory.

Reference standards

IEC 61850 series

Specifically IEC 61850-5, IEC 61850-6, IEC 61850-7, IEC 61850-8, IEC 61850-9 and IEC 61850-10

Test cases

Communication protocol conformance as per IEC 61850 -10. This part of standard defines methods and abstract test cases for conformance testing of client, server and sampled values devices used in power utility automation systems, the methods and abstract test cases for conformance testing of engineering tools used in power utility automation systems, and the metrics to be measured within devices according to the requirements defined in IEC 61850-5. Further this part of standard specifies standard techniques for testing of conformance of client, server and sampled value devices and engineering tools, as well as specific measurement techniques to be applied when declaring performance parameters. The use of these techniques will enhance the ability of the system integrator to integrate IEDs easily, operate IEDs correctly, and support the applications as intended.

Smart Meters (Sl. No. 3 of Table – A of Annexure – 1)

Utilities / manufacturers will submit the sample along with all the required technical documentation for taking up testing to the designated laboratory.

IEC 62056 series of standards (Electricity metering data exchange – The DLMS/COSEM suite) specifies details of communication protocol requirements, conformance testing and security requirements. The Part 5-3 (DLMS/COSEM application layer) specifies the DLMS/COSEM application layer in terms of structure, services and protocols for DLMS/COSEM clients and servers, and defines rules to specify the DLMS/COSEM communication profiles. It defines services for establishing and releasing application associations, and data communication services for accessing the methods and attributes of COSEM interface objects, defined in IEC 62056-6-2 using either logical name (LN) or short name (SN) referencing.

Clause 5 and sub clauses specifies security requirements. It cover security concepts, Identification and authentication, Cryptographic algorithms, Cryptographic keys – overview, Key used with symmetric key algorithms, Keys used with public key algorithms and Applying cryptographic protection.

Note: All above referred standards shall be latest with amendments if any at the time of submission of sample(s) for testing.

Testing Criteria

1) Supply from Trusted Sources

The sample size shall be as specified by CEA as per the approved criteria for Trusted Vendors

2) Supply from other than trusted vendors

The sample size shall be shall be 5% of the supply lot / ordered quantity (minimum one). The manufacturer shall submit request to the Nodal agency along with vendor's / manufacturer's certifications for supply chain management system practices and secure product development process implementations based on any one or more of standards ISO / IEC 27036, ISO / IEC 20243, IEC 62443 for verification.

After scrutiny of vendor's / manufacturer's certifications the supplier / utilities shall be asked to submit product to the designated laboratory for communication and cyber security conformance testing.

The supply lot shall stand rejected on failure to comply with the test requirements.

3) Supply from prior reference countries

The utility shall obtain prior permission from the Government of India for importing the product / system from prior reference countries.

The sample size shall be shall be 10 % of the supply lot / ordered quantity (minimum one). The manufacturer shall submit request to the Nodal agency along with vendor's / manufacturer's certifications for supply chain management system practices and secure product development process implementations based on any one or more of standards ISO / IEC 27036, ISO / IEC 20243, IEC 62443 for verification.

After scrutiny of vendor's / manufacturer's certifications the supplier / utilities shall be asked to submit product to the designated Government / Government controlled Autonomous laboratory for type tests (Annexure – 4) and communication & cyber security conformance testing.

The supply lot shall stand rejected on failure to comply with the test requirements.

Type Tests

Products imported from prior reference countries shall also undergo type testing as per following standards in addition to communication protocol and security conformance testing at the designated Government / Government controlled Autonomous laboratory:

Type test standards for RTUs

1. IEC 60870-1-2:1989 Telecontrol equipment and systems. Part 1: General considerations. Section Two: Guide for specifications.
2. IEC 60870-2-1:1995 Telecontrol equipment and systems - Part 2: Operating conditions - Section 1: Power supply and electromagnetic compatibility.
3. EC 60870-2-2:1996 Telecontrol equipment and systems - Part 2: Operating conditions -Section 2: Environmental conditions (climatic, mechanical and other non-electrical influences).
4. IEC 60870-3:1989 Telecontrol equipment and systems. Part 3: Interfaces (electrical characteristics)

Type test standard for IEDs / Numerical Protection Relays / Bay controls units

1. IEC 61850-3: 2013, Ed. 2 Communication networks and systems for power utility automation – Part 3: General requirements.

Type test standards for Smart meters

1. IS 16444: 2015 AC static direct connected watthour smart meter class 1 and 2 – Specification.
2. IS 16444 Part 2: 2017 AC static transformer operated watthour and var - Hour smart meters, class 0.2 S, 0.5 S and 1.0 S: Part 2 specification transformer operated smart meters.

Note:

1. All above referred standards shall be latest with amendments if any at the time of submission of sample(s) for testing.
2. Type tests generally covers functionality, environmental, mechanical, EMI/ EMC and electrical safety related tests.

Annexure-A4

Technical Proposal

Symphony Plus HMI upgrade

NTPC Limited

1. Basis of Offer

NTPC Limited has a large fleet of ABB Symphony Harmony control system. This system is utilized for realizing various functions required for control, monitoring and operation.
Present Operating System of these stations mentioned below -

SN	Generating Station	Application	Operating System
1	NTPC Sipat	Station LAN	Server 2016
2	NTPC Sipat- Unit 3&4	Station C&I	Windows10
3	NTPC Barh -Stage 2	Station LAN, SAC, AHP, CHP, Water Makeup, Water System, Station C&I	Windows 7
4	NTPC Farraka- Stage 1	Station C&I	Windows 7
5	NTPC Singraulli -Stage 1	Station C&I	Windows Xp
6	NTPC Kahalgaon-Unit 5	Station C&I	Windows Xp
6	NTPC Kahalgaon-Unit 6 & 7	Station C&I	Windows 10
7	NTPC Kahalgaon	Station LAN	Server 2016
8	NTPC Vindhyachal-Stage 1	Station C&I	Windows 7

Symphony Plus forms one of the largest fleets of DCS for Power Generation applications. ABB is leader in providing lifecycle support to this fleet thereby ensuring uninterrupted Generation. As part of lifecycle management, we at ABB keep customer well informed about the lifecycle solutions to mitigate OS and Computer obsolescence. Due to end of support from Microsoft, i.e. no maintenance patch or Anti-virus support is available for the existing windows platforms. The computer OEM have also withdrawn support to the models installed at your generating stations.

This proposal summarizes the solutions for mitigating the obsolescence situation at the above-mentioned generating stations of M/S NTPC.

The Solution described herein is based on the existing system architecture and customer inputs about the evolution of the HMI to latest applicable versions and other required accessories in DCS. The objective is to upgrade the Operating Systems and the computer hardware of the Servers, OWS to the latest supported versions along with the application viz. ABB HMI Symphony Plus Operations.

The proposed evolution shall bring following value proposition:

a. The system shall be evolved to latest applicable OS, IT platforms & ABB Application software. This is to mitigate the End of Support announcement of Microsoft Windows XP, Windows 7 and Server 2003/2008/2012.
b. ABB shall provide support to its HMI application software for period of 10 Years as per lifecycle policy of Evolution without obsolesce. For bought out Items & Microsoft Package support shall be as per respective OEMs lifecycle announcement.
c. Supported Computer models from the respective OEMs with spares support.
d. OEMs Software Patch support for the Operating system and the Antivirus.
e. System being equipped with the latest applicable security updated from Microsoft and Antivirus OEM.
f. Latest applicable Symphony Plus application software with full patch support.
g. Link to DCS Lifecycle Mentioned below & attached along with Proposal
Distributed Control Systems - LifeCycle Parts Services (abb.com)

2. MAJOR CONSIDERATIONS AND ASSUMPTIONS

1. The offer covers upgradation of present HMI (Win 7 & Win XP based) to the latest compatible operating system.
2. Upgrade of present HMI to latest Symphony plus Application Software.

3. We have offered Server with windows Server 2019 & Workstation with Windows 10 Operating system.
4. Offered Historian for generating units & offsites is compatible for seamless migration of old historian database and historical data. Historization of only Analog Signals is considered in the proposal.
5. Station LAN Hardware & Software Configuration has been considered in accordance with the recent discussion with NTPC EOC – Architecture Enclosed.
6. The Station LAN functionality shall be to consolidate data from the down line system HMI and transfer key KPI data to OSIsoft PI system. In addition, there shall be provision for PC station (remote client) as per quantity mentioned in the BOM. The station LAN system shall not have History & report functionality.
7. The station LAN functionality will be completely achieved once all units & offsite of respective locations are commissioned.
8. ABB shall handover the system in the exact same auto loop condition as it will be handed over for upgradation by NTPC.
9. Multi trend group with 1 trend group accommodating max of 20 tags considered.
10. ABB shall conduct site survey before upgradation to ensure smooth upgradation during short shutdown & also collect system data/backup in assistance with NTPC Team. NTPC to Ensure all existing drawing, architect & relevant documents are available at Site.
11. **NTPC Sipat & NTPC Kahalgaon**: - Station LAN & HMI was upgraded recently and is on Windows 10 / Server 2016. The existing Station LAN (Non-Redundant Server) & HMI with installed hardware (Server, Workstation, Switches, accessories, etc) for units shall be retained except NTPC Kahalgaon unit 5. We have considered Cyber Security solution for these systems.
12. **NTPC Farakka** - Common system is excluded from present scope & shall be retained with existing version.
13. Bought out items will be supplied as per approved OEM mentioned in BOM.
14. Makes and models of all switches and IT hardware shall be according to this offer. It is envisaged that the existing switches at site shall be replaced by the ones quoted herein.
15. For workstations, servers existing consoles, server racks will be reused.
16. The upgrade of Any IT Hardware or PC that is not exclusively mentioned in the offer which may be used in the Plant/Office network and that lies outside the proposed System Architecture, the machine shall be in the scope of M/S NTPC.
17. We have not envisaged any change or modification in the Operation/Control philosophy.
18. In case any cabling/feeder/distribution consideration other than mentioned is required, shall be in the scope of customer.
19. The new HMI license shall be in line with the proposed configuration.
20. The Tag capacity of the system shall be as per the present and no enhancement in the same is considered.
21. Electronic earthing will be checked by ABB representative during the upgradation process, and if required shall be under customer scope with materials.
22. Customer will assign an Engineer in Charge to coordinate, data approval with ABB to enable speedy execution of the job.
23. Establishing the connectivity including cable supply, laying, termination, convertors etc for PC station shall be in NTPC Scope
24. Graphical Interface Unit (GIU) for Remote Monitoring and Operation are excluded from scope of this offer.
25. Supply, laying, termination of power, grounding cable shall be in NTPC Scope.
26. FO cable supply & laying from Units to Station LAN shall be in NTPC Scope.
27. Any installation and commissioning of ABB system will be carried out under standard guidelines followed by ABB for smooth hassle-free operation of new system for long duration, however if any changes required as per site convenience, same will be done only after mutual agreement between the two parties keeping in view the suitability & long-term performance of plant.
28. The current offer is towards HMI upgrade and cybersecurity. In case of any hardware found faulty at the backend side (i.e. Controller, IO module, communication etc.) shall be in customer scope.

Technical Proposal

Cybersecurity Suite

NTPC Limited

1. EXECUTIVE SUMMARY

Operational Technology (OT) cyber security is an increasing priority for operating companies and regulators alike and the industry statistics show why this is:

- 350,000 new malicious programs (malware) are detected each day! Adding to the total amount of over 1.2B known ones
- 81% of CISOs in energy sector has seen a clear rise in attacks over past 12 months.

Understanding and managing the risks associated with a cyber-attack and then protecting against these or mitigating the consequences can seem a daunting prospect especially when this needs to be done in conjunction with the day job of keep a plant up and running. The old adage of it's a journey not a destination is very true when it comes to OT cyber security.

In today's business environment, cyber security is critical to ensuring the safe and reliable operation of Industrial Automation and Control Systems (IACS). Legislators and regulators have decided to enforce companies to take action and to provide evidence that protective systems are in place to mitigate the risk of a cyber-attack causing harm. To identify, understand and mitigate cyber security risks, all organisations should have implemented an ongoing Cyber Security Management System (CSMS). A CSMS is an excellent way to manage risk within a large and complex organization, but it is equally effective within smaller companies too. ABB offer a wide range of cyber security services to help organizations of all sizes establish and maintain a CSMS, tailored to their specific needs and risk appetite.

Cybersecurity Risk Reduction portfolio

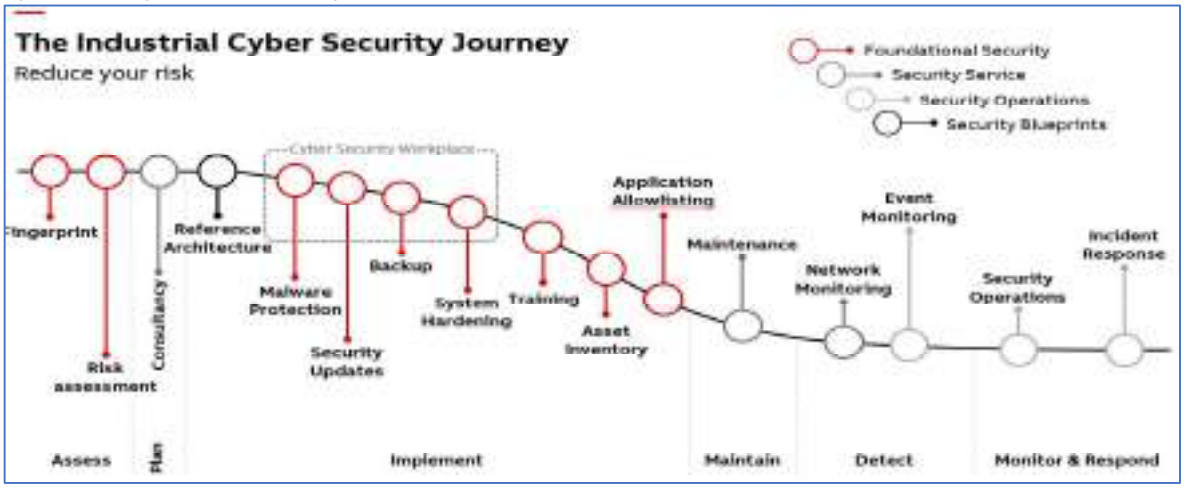

ABB provides a range of cyber security solutions that minimize cyber risks and provide the highest level of protection for automation assets. ABB cyber security solutions have been uniquely developed for industrial systems like yours.

ABB addresses cyber security at each phase of an automation asset's life cycle, from design and development to operations and maintenance. We work with our customers to develop processes that ensure the highest level of protection for all automation assets against cyber-attacks and security breaches. We follow a process that includes identifying what must be protected, actively protecting the automation assets, detecting security breaches, responding to cyber-attacks and establishing. backup and recovery plans. We also work with our customers to restore systems and recover information in case they are impacted.

2 BASIS OF OFFER

DCS vendor has to implement centralized Cyber Security suite which will include centralized policy-based Account Management, Hardening, antivirus and malware protection, do gap analysis with respect to latest Cyber security standard, Security Information/ incident and Event Management (SIEM) and Dashboard. The coverage of the solution shall be Station LAN and Units. DCS vendor must implement a log repository solution for native DCS network architecture and its underlying ICS components (including System logs, Security logs, Windows event logs, Error logs, Network logs, End points logs) for all domains having capacity of storage for a minimum period of one Year. The solution shall also include a backup server which will maintain the integrity and availability of all backups including logs even in case of non-availability or compromise of the main system."

- This proposal is based on the NTPC requirements cybersecurity solutions for ABB S+ DCS at six sites.
- This proposal intends to bring out the details of the technical aspects associated with cyber security solutions & outlines the standard tasks that will be carried out for existing ABB S+ DCS at various sites.
- Deliverables
  - Project Management
  - Configuration and setup of supplied software.
  - Site Acceptance Testing (SAT)
  - Maintenance Activities

  ➔ Phone and email support
  ➔ Review Log files
  ➔ Health check
  ➔ Installation of security hotfixes and bug fixes
  ➔ Generation of Results reports.

3 SCOPE SUMMARY

- ABB is pleased to provide you with the opportunity to address numerous cyber threats and regulatory compliance requirements with Cyber Security portfolio solutions.
- This portfolio benefits both plant personnel and corporate security teams by automating & simplifying routine security tasks and providing corporate teams with greater visibility and assurances of security tasks being executed.
- In addition, site-level status reporting is used to support evidence requirements for national regulatory and corporate policy compliance and significantly expedite vulnerability management tasks.
- This proposal details the Cyber Security solution, the scope, limitations, and customer requirements to deliver the solution.
- Our portfolio of cyber security services covers the entire lifecycle of plant operations - patch updates, log aggregation, asset inventory, vulnerability assessment and security operations.
- As your trusted partner, ABB provides the validated services and solutions to protect, monitor, and manage your most valuable assets from one simplified security platform.

रजिस्ट्री सं. डी.एल.- 33004/99 REGD. No. D. L.-33004/99

भारत का राजपत्र
The Gazette of India

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असाधारण
EXTRAORDINARY

भाग II—खण्ड 3—उप-खण्ड (ii)
PART II—Section 3—Sub-section (ii)

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पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय

अधिसूचना

नई दिल्ली, 31 दिसम्बर, 2021

का.आ. 5481(अ).—केन्द्रीय सरकार ने भारत सरकार के तत्कालीन पर्यावरण और वन मंत्रालय की अधिसूचना सं. का.आ. 763 (अ) तारीख 14 सितम्बर, 1999 द्वारा कोयला या लिग्नाइट आधारित ताप विद्युत संयंत्रों से तीन सौ किलोमीटर के विनिर्दिष्ट व्यास के भीतर ईंटों के विनिर्माण के लिए उपजाऊ मिट्टी के उत्खनन को प्रतिबंधित करने के लिए और भवन निर्माण सामग्री के विनिर्माण में और संनिर्माण क्रियाकलाप में फ्लाई-राख के उपयोग को बढ़ावा देने के लिए निदेश जारी किए हैं;

और, प्रदूषणकर्ता भुगतान सिद्धांत (पीपीपी) के आधार पर, ऐसा करके कोयला या लिग्नाइट आधारित ताप विद्युत संयंत्रों द्वारा फ्लाई-राख का 100 प्रतिशत उपयोग सुनिश्चित करते हुए और फ्लाई-राख प्रबंधन प्रणाली की संधारणीयता के लिए पूर्वोक्त अधिसूचना को और अधिक प्रभावकारी ढंग से कार्यान्वित करने हेतु, केंद्रीय सरकार ने मौजूदा अधिसूचना की समीक्षा की;

और प्रदूषणकर्ता भुगतान सिद्धांत के आधार पर पर्यावरणीय प्रतिकर निर्धारित किए जाने की आवश्यकता है;

और, विनिर्माण को बढ़ावा देकर तथा निर्माण कार्य के क्षेत्र में राख आधारित उत्पादों तथा भवन निर्माण सामग्रियों के प्रयोग को अनिवार्य करके उपजाऊ मिट्टी को संरक्षित करने की आवश्यकता है;

और, सड़क बनाने, सड़क एवं फ्लाई ओवर के रेलिंग बनाने, तटरेखा की सुरक्षा का उपाय करने, अनुमोदित परियोजनाओं के निचले क्षेत्रों को भरने, खनित स्थलों को फिर से भरने में मिट्टी की सामग्रियों से भरने के विकल्प के रूप में राख उपयोग को बढ़ावा देकर उपजाऊ मिट्टी और प्राकृतिक संसाधनों को संरक्षित करने की आवश्यकता है;

और, पर्यावरण को सुरक्षित करना तथा कोयला अथवा लिग्नाइट आधारित ताप विद्युत संयंत्रों से सृजित फ्लाई राख के निक्षेपण तथा निपटान की रोकथाम करना आवश्यक है;

और, उक्त अधिसूचना में जो 'राख' शब्द का प्रयोग किया गया है उसमें कोयला या लिग्नाइट आधारित ताप विद्युत संयंत्रों से सृजित फ्लाई-राख और बॉटम-राख दोनों शामिल हैं;

और, केंद्रीय सरकार प्रदूषणकर्ता भुगतान सिद्धांत के आधार पर, पर्यावरणीय प्रतिकर की प्रणाली सहित राख के उपयोग के लिए एक व्यापक ढांचा लाना चाहती है;

अत: पर्यावरण (संरक्षण) नियम, 1986 के नियम (5) के उप-नियम (3) के खंड (घ) के साथ पठित पर्यावरण (संरक्षण) अधिनियम, 1986 (1986 का 29) की धारा 3 की उप-धारा (1) और उप-धारा (2) के खंड (v) द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए, भारत सरकार के पर्यावरण एवं वन मंत्रालय की अधिसूचना जो का.आ. 763 (अ) तारीख 14 सितम्बर, 1999 द्वारा भारत के राजपत्र, असाधारण भाग ।।, खंड 3, उप खंड (i) में प्रकाशित का अधिक्रमण करते हुए, कोयला या लिग्नाईट आधारित ताप विद्युत संयंत्रों द्वारा राख के उपयोग के संबंध में प्रारूप अधिसूचना जो सा.का.नि. 285 (अ) तारीख 22 अप्रैल, 2021 द्वारा भारत के राजपत्र, असाधारण, भाग-2, धारा 3, उप धारा (i) में प्रकाशित की गई थी जिसमें उन सभी व्यक्तियों से जिनका इससे प्रभावित होना सामान्य है उस तारीख से, जिसको उक्त प्रारूप उपबंधों की शासकीय राजपत्र में अंतर्विष्ट प्रतियां जनता को उपलब्ध करा दी गई थी, साठ दिनों के अवसान से पूर्व आक्षेप और सुझाव आमंत्रित किए गए थे।

और उक्त प्रारूप अधिसूचना के संबंध में उससे संभावित तौर पर प्रभावित होने वाले सभी व्यक्तियों से प्राप्त आक्षेपों और सुझावों पर केंद्रीय सरकार द्वारा सम्यक रूप से विचार कर लिया गया है;

अत: पर्यावरण (संरक्षण) नियम, 1986 के नियम (5) के उप-नियम (3) के खंड (घ) के साथ पठित पर्यावरण (संरक्षण) अधिनियम, 1986 (1986 का 29) की धारा 3 की उप-धारा (1) और उप-धारा (2) के खंड (v) द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए और अधिसूचना का.आ. 763 (अ) तारीख 14 सितम्बर, 1999 का उन बातों के सिवाय अधिकांत करते हुए जिन्हें ऐसे अधिक्रमण से पूर्व किया गया है या करने का लोप किया गया है, केन्द्रीय सरकार कोयलों या लिग्नाईट आधारित ताप विद्युत संयंत्रों से राख के उपयोग के संबंध में निम्नलिखित अधिसूचना जारी करती है, जो इस अधिसूचना के प्रकाशन की तिथि से प्रवृत्त होगी, अर्थात्

क. फ्लाई-राख और बॉटम-राख का निपटान करने हेतु ताप विद्युत संयंत्रों (टीपीपी) के उत्तरदायित्व.-

(1) प्रत्येक कोयला या लिग्नाइट आधारित ताप विद्युत संयंत्र (जिनमें कैप्टिव और/या सह-उत्पादन केंद्र शामिल हैं या दोनों) की यह प्राथमिक जिम्मेदारी होगी कि वह अपने द्वारा सृजित राख (फ्लाई-राख और बॉटम-राख) का उप पैरा (2) में दिए गए पारि-अनुकूल तरीके से 100 प्रतिशत उपयोग सुनिश्चित करे;

(2) कोयला या लिग्नाइट आधारित ताप विद्युत संयंत्रों से सृजित राख का उपयोग केवल निम्नलिखित पारि-अनुकूल प्रयोजनों के लिए किया जाएगा, अर्थात्:-

(i) फ्लाई राख पर आधारित उत्पाद अर्थात्: ईंट ब्लॉक टाइल, फाइबर सीमेंट शीट, पाइप, बोर्ड, पैनल का विनिर्माण;

(ii) सीमेंट विनिर्माण, रेडी-मिक्स कंक्रीट;

(iii) सड़क निर्माण और फ्लाई-ओवर के रेलिंग का निर्माण, राख और जिओ-पॉलीमर आधारित निर्माण सामग्री;

(iv) बांध का निर्माण;

(v) निचले क्षेत्र को भरना;

(vi) खनन कार्य से रिक्त हुए स्थान को भरना;

(vii) सिंटर्ड या शीत–बद्ध राख संचय का विनिर्माण;

(viii) मृदा परीक्षण के आधार पर नियंत्रित तरीके से कृषि;

(ix) तटीय जिलों में तटरेखा संरक्षण संरचनाओं का निर्माण;

(x) अन्य देशों को राख का निर्यात;

(xi) समय-समय पर यथाधिसूचित किसी अन्य पारि-अनुकूल प्रयोजन के लिए।

(3) अध्यक्ष, केंद्रीय प्रदूषण नियंत्रण बोर्ड (सीपीसीबी) की अध्यक्षता में एक समिति गठित की जाएगी जिसमें पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय (एमओईएफसीसी), विद्युत मंत्रालय, खान मंत्रालय, कोयला मंत्रालय, सड़क परिवहन और राजमार्ग मंत्रालय, कृषि अनुसंधान एवं शिक्षा विभाग, सड़क कांग्रेस संस्थान तथा राष्ट्रीय सीमेंट एवं भवन सामग्री परिषद के प्रतिनिधियों को सदस्यों के रूप में शामिल किया जाएगा, जिसका प्रयोजन राख के उपयोग के पारि-अनुकूल तौर-तरीकों की जांच करना, उनकी समीक्षा एवं अनुशंसा करना तथा प्रौद्योगिकीय विकासों तथा पणधारी से प्राप्त अनुरोधों के आधार पर उप-पैरा (2) में यथोल्लिखित ऐसे तौर-तरीकों की सूची में समिति द्वारा सुझाए गए तौर-तरीकों को शामिल करना या किसी तौर-तरीके को सूची से हटाना या उसमें संशोधन करना है। जब भी इस प्रयोजन के लिए अपेक्षित हो, यह समिति राज्य प्रदूषण नियंत्रण बोर्ड या प्रदूषण नियंत्रण समिति, ताप विद्युत संयंत्र और खानों के प्रचालकों को आमंत्रित कर सकती है। इस समिति सिफारिश के आधार पर, पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय ऐसे पारि-अनुकूल प्रयोजन प्रकाशित करेगा।

(4) प्रत्येक कोयला या लिग्नाइट आधारित ताप विद्युत संयंत्र उस वर्ष के दौरान सृजित राख (फ्लाई-राख और बॉटम-राख) का 100 प्रतिशत उपयोग करने हेतु उत्तरदायी होगा; तथापि, किसी भी स्थिति में, किसी वर्ष में राख का उपयोग 80 प्रतिशत से नीचे नहीं होगा और साथ ही, उस ताप विद्युत संयंत्र को तीन वर्ष की अवधि में 100 प्रतिशत औसत राख के उपयोग का लक्ष्य प्राप्त करना होगा :

परंतु, यह और कि पहली बार के लिए लागू तीन वर्ष के चक्र को ऐसे ताप विद्युत संयंत्रों, जहां राख का उपयोग 60-80 प्रतिशत के बीच होता है, एक वर्ष के लिए और ऐसे संयंत्रों, जहां राख का उपयोग 60 प्रतिशत से कम है, दो वर्ष के लिए बढ़ाया जा सकता है, और राख के उपयोग की प्रतिशतता की गणना के प्रयोजन के लिए वर्ष 2021-2022 में उपयोग की प्रतिशत प्रमात्रा को नीचे दी गई तालिका के अनुसार ध्यान में रखा जाएगा:

तापीय विद्युत संयंत्रों के उपयोग की प्रतिशतता	100 प्रतिशत उपयोगिता प्राप्त करने के लिए प्रथम अनुपालन चक्र	100 प्रतिशत उपयोगिता प्राप्त करने के लिए द्वितीय अनुपालन चक्र
>80 प्रतिशत	3 वर्ष	3 वर्ष
60-80 प्रतिशत	4 वर्ष	3 वर्ष
<60 प्रतिशत	5 वर्ष	3 वर्ष

परन्तु, ताप विद्युत संयंत्रों के लिए 80 प्रतिशत न्यूनतम उपयोग प्रतिशतता, क्रमश: 60-80 प्रतिशत और <60 प्रतिशत की उपयोगिता की श्रेणी के तहत आने वाले ताप विद्युत संयंत्रों के लिए प्रथम अनुपालन चक्र के पहले वर्ष और पहले दो वर्षों पर लागू नहीं होगी।

परन्तु, अनुपालन चक्र के अंतिम वर्ष में सृजित 20 प्रतिशत राख को अगले चक्र में भी ले जाया जाएगा जिसका उपयोग उस अनुपालन चक्र के दौरान सृजित राख के साथ अगले तीन वर्षों में किया जाएगा।

(5) अप्रयुक्त संचित राख अर्थात् लीगेसी राख, जिसका इस अधिसूचना के प्रकाशन से पहले भंडारण किया गया है, को ताप विद्युत संयंत्र (टीपीपी) द्वारा इस रीति से क्रमिक रूप से उपयोग में लाया जाएगा, कि लीगेसी राख को इस अधिसूचना के प्रकाशन की तिथि से दस वर्षों के भीतर पूरी तरह उपयोग कर लिया जाएगा और यह उस विशिष्ट वर्ष के चालू संचालनों के माध्यम से राख उत्सर्जन के लिए निर्धारित उपयोग लक्ष्यों से अतिरिक्त होगा।

परन्तु, निम्नलिखित प्रतिशतताओं में यथा उल्लिखित लीगेसी राख की न्यूनतम मात्रा का उपयोग तास्थानी वर्ष के दौरान कर लिया जाएगा और लीगेसी राख की न्यूनतम मात्रा की ताप विद्युत संयंत्र की संस्थापित क्षमता के अनुसार वार्षिक राख उत्सर्जन के आधार पर की जानी है।

प्रकाशन की तिथि से वर्ष	पहला	दूसरा	तीसरा-दसवां
लीगेसी राख का उपयोग (वार्षिक राख की प्रतिशतता)	कम से कम 20 प्रतिशत	कम से कम 35 प्रतिशत	कम से कम 50 प्रतिशत

परन्तु, यह और कि लीगेसी राख का उपयोग वहां अपेक्षित नहीं है, जहां राख के तालाब या डाइक स्थिर हो गए हैं और हरित पट्टी के निर्माण या पौध रोपण से पुनरूद्धार किया गया है और संबंधित राज्य प्रदूषण नियंत्रण बोर्ड इस संबंध में प्रमाणित करेगा। किसी राख तालाब या डाइक के स्थिरीकरण और भूमि-उद्धार का कार्य, जिसमें केन्द्रीय प्रदूषण नियंत्रण बोर्ड या राज्य प्रदूषण नियंत्रण बोर्ड द्वारा प्रमाणन शामिल है, इस अधिसूचना के प्रकाशन की तारीख से एक वर्ष के भीतर किया जाएगा। अन्य सभी राख के कुंड या डाइक में शेष बचे राख का उपयोग ऊपर उल्लिखित समय-सीमाओं के अनुसार क्रमिक रूप से किया जाएगा।

टिप्पण: राख के उपयोग के लक्ष्यों को हासिल करने के लिए उप पैरा (4) और (5) के अधीन दायित्व 01 अप्रैल, 2022 की तारीख से लागू होंगे।

(6) किसी भी नए तापीय विद्युत संयंत्र (टीपीपी) में 0.1 हेक्टेयर प्रति मेगावाट (एमडब्ल्यू) क्षेत्रफल के साथ आपातकालीन या अस्थायी राख कुंड की अनुमति दी जा सकती है। राख के तालाब या डाइकों का तकनीकी विर्निदेश, केन्द्रीय विद्युत प्राधिकरण (सीईए) के परामर्श से केन्द्रीय प्रदूषण नियंत्रण बोर्ड द्वारा बनाए गए दिशानिर्देशों के अनुसार होगा और ये दिशानिर्देश राख के कुंड या डाइक के संबंध में इसकी सुरक्षा, पर्यावरणीय प्रदूषण, उपलब्ध प्रमात्रा, निपटान का तरीका, निपटान में जल की खपत या संरक्षण, राख जल पुनर्चक्रण और ग्रीन बेल्ट आदि के वार्षिक प्रमाणन के लिए कार्यविधि भी निर्धारित करेंगे और इस अधिसूचना के प्रकाशन की तारीख से तीन महीनों के भीतर प्रस्तुत किए जाएंगे।

(7) प्रत्येक कोयला या लिग्नाईट आधारित ताप विद्युत संयंत्र यह सुनिश्चित करेगा कि राख की लदाई, उतराई, ढुलाई, भंडारण और निपटान पर्यावरणीय दृष्टि से अनुकूल रीति से किया गया है और वायु और जल प्रदूषण की रोकथाम के लिए सभी ऐहितयात किए गए हैं और इस संबंध में स्थिति की सूचना इस अधिसूचना में संलग्न अनुबंध में संबंधित राज्य प्रदूषण नियंत्रण बोर्ड (एसपीसीबी) या प्रदूषण नियंत्रण समिति (पीसीसी) को दी जाएगी।

(8) प्रत्येक कोयला या लिग्नाइट आधारित तापीय विद्युत संयंत्र, संस्थापित क्षमता पर आधारित राख के कम से कम 16 घंटों के भंडारण के लिए समर्पित शुष्क फ्लाई राख साइलोस प्रतिष्ठापित करेगा, जिनके पास पृथक पहुंच मार्ग होंगे, जिससे कि राख पहुंचाने के कार्य को सुगम बनाया जा सके। इसकी सूचना संबंधित राज्य प्रदूषण नियंत्रण बोर्ड (एसपीसीबी) या प्रदूषण नियंत्रण समिति (पीसीसी) को उपाबंध में दी जाएगी और केन्द्रीय प्रदूषण नियंत्रण

बोर्ड (सीपीसीबी) या राज्य केन्द्रीय प्रदूषण नियंत्रण बोर्ड (एसपीसीबी) या प्रदूषण नियंत्रण समिति द्वारा समय-समय पर निरीक्षण किया जाएगा।

(9) प्रत्येक कोयला या लिग्नाईट आधारित तापीय विद्युत संयंत्र (जिसके अंतर्गत कैप्टिव या सह उत्पादन केन्द्र भी है या दोनों), वास्तविक उपयोगकर्ता (उपयोगकर्ताओं) के हित के लिए केन्द्रीय प्रदूषण नियंत्रण बोर्ड के वेब पोर्टल या मोबाईल फोन एप्प का लिंक उपलब्ध कराकर ताप विद्युत संयंत्र के पास राख की उपलब्धता के वास्तविक आंकड़े प्रदान करेगा।

(10) राख के 100 प्रतिशत उपयोग का वैधानिक दायित्व, जहां भी लागू हो, विधि में बदलाव के रूप में माना जाएगा।

ख. राख के उपयोग के प्रयोजनार्थ, उत्तरवर्ती उप पैराग्राफ लागू होंगे .-

(1) ऐसे सभी अभिकरण (सरकारी, अर्द्धसरकारी और निजी), जो सड़क बिछाने, सड़क और फ्लाई ओवर के किनारों, तटीय जिलों में तटरेखा की सुरक्षा संरचनाओं और लिग्नाईट या कोयला आधारित ताप विद्युत संयंत्र से 300 किमी के भीतर बांधों जैसे निर्माण संबंधी कार्यकलापों में लगे हुए हैं, इन कार्यकलापों में अनिवार्य रूप से राख का उपयोग करेंगे :

परंतु इसको परियोजना स्थल पर निशुल्क पहुंचाया जाए और परिवहन लागत, ऐसे कोयला या लिग्नाईट आधारित ताप विद्युत संयंत्रों द्वारा वहन की जाए।

परंतु यह और कि ताप विद्युत संयंत्र पारस्परिक सहमत हुई शर्तों के अनुसार राख की लागत और परिवहन के लिए शुल्क ले सकता है उस मामले में जहां ताप विद्युत संयंत्र अन्य माध्यम से राख का निपटान करने में समर्थ है और ये अभिकरण इसके लिए प्रर्थाना कर सकते हैं और बिना लागत और बिना परिवहन शुल्क के राख उपलब्ध कराने के प्रावधान तभी लागू होंगे यदि उसके लिए ताप विद्युत संयंत्र उस निर्माण अभिकरण को नोटिस जारी करता है।

(2) उक्त कार्यकलापों में राख का उपयोग भारतीय मानक ब्यूरो, भारतीय रोड कांग्रेस, केन्द्रीय भवन अनुसंधान संस्थान, रूड़की, केन्द्रीय सड़क अनुसंधान संस्थान, दिल्ली, केन्द्रीय लोक निर्माण विभाग, राज्य लोक निर्माण विभागों और अन्य केन्द्रीय और राज्य सरकार के अभिकरणों द्वारा निर्धारित किए गए विनिर्देशों और दिशानिर्देशों के अनुसार किया जाएगा।

(3) तापीय विद्युत संयंत्र की 300 किलोमीटर की परिधि के भीतर अवस्थित सभी खानों के लिए विस्तारित उत्पादक उत्तरदायित्व (ईपीआर) के तहत खुली आवर्त खानों में राख का पृष्ठ भंडारण करना या अधिक भार के ढेरों के साथ राख का मिश्रण करना बाध्यकारी होगा। सभी खान के स्वामी या प्रचालक (चाहे सरकारी, सार्वजनिक और निजी क्षेत्र के हो) कोयला या लिग्नाईट आधारित तापीय विद्युत संयंत्रों से तीन सौ किलोमीटर (सड़क द्वारा) के भीतर, महानिदेशक, खान सुरक्षा (डीजीएमएस) के दिशानिर्देशों के अनुसार ओवर बर्डन के बाह्य निक्षेप खान की बैकफिलिंग अथवा स्टोविंग (प्रचालित या छोड़ी गई खानों, जैसा भी मामला हो) के लिए उपयोग की गई सामग्रियों के भार-दर-भार के आधार पर कम से कम 25 प्रतिशत राख को मिश्रित करने के लिए उपाय करेंगे :

परंतु ऐसे तापीय विद्युत केन्द्र नि:शुल्क राख प्रदान करके और परिवहन की लागत को वहन करके या पारस्परिक सहमत हुई शर्तों पर लिए गए निर्णय के अनुसार लागत या परिवहन व्यवस्था करके राख की अपेक्षित मात्रा की उपलब्धता को सुकर बनायेंगे और खानों के खाली स्थानों और ढेरो में अधिकभार के साथ राख को मिश्रित करना, सृजित अधिभार के लिए इस अधिसूचना के प्रकाशन की तिथि से लागू होगा और उक्त कार्यकलापों में राख का उपयोग, केंद्रीय प्रदूषण नियंत्रण बोर्ड, महानिदेशक खान सुरक्षा और भारतीय खदान ब्यूरो द्वारा निर्धारित दिशा-निर्देशों के अनुसार किया जाएगा।

स्पष्टीकरण .- इस उप-पैरा के प्रयोजन के लिए यह भी स्पष्ट किया जाता है कि लागत मुक्त राख और नि:शुल्क परिवहन के उपबंध केवल तभी लागू होंगे यदि ताप विद्युत संयंत्र इसके लिए खान मालिक को नोटिस देते हैं और अधिभार वाले ढेर के साथ मिश्रित करने और खान में खाली स्थान को भरने के लिए राख के 25 प्रतिशत हिस्से के उपयोग का अधिदेश तब तक लागू नहीं होगा जब तक कि ताप विद्युत संयंत्र द्वारा खान मालिक को नोटिस न दिया गया हो।

(5) (i) सभी खान मालिकों को खान में खाली स्थानों में राख को समायोजित करने के लिए खान बंद योजना (प्रगामी और अंतिम) तैयार करनी होगी और खान में खाली स्थान में राख के निपटान और अधिभार वाले ढेर के साथ राख को मिश्रित करने के लिए खान योजनाओं को संबंधित प्राधिकारी अनुमोदित करेगा। पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय द्वारा ताप विद्युत संयंत्रों और कोयला खदानों की पर्यावरणीय मंजूरी की अपेक्षा से छूट देने के साथ-साथ ऐसे निपटान के लिए अपनाए जाने वाले दिशानिर्देशों के संबंध में तारीख 28 अगस्त, 2019 को दिशानिर्देश जारी किए गए।

(ii) मंत्रालय, केन्द्रीय प्रदूषण नियंत्रण बोर्ड, महानिदेशक, खान सुरक्षा (डीजीएमएस) और भारतीय खान ब्यूरो (आईबीएम) के साथ परामर्श करके, खानों में खाली स्थानों में राख के निपटान करने तथा अधिभार वाले ढेरो में इसे मिश्रित करना सुगम बनाने के लिए समय-समय पर आगे भी दिशानिर्देश जारी कर सकता है और यह खान मालिकों की जिम्मेदारी होगी कि वे ऐसी खानों को अभिज्ञात करने की तिथि से एक वर्ष के भीतर विभिन्न विनियामक प्राधिकरणों द्वारा जारी की गई अनुमतियों में आवश्यक संशोधन या परिवर्तन प्राप्त करेंगे।

(6) (i) पर्यावरणीय प्रदूषण के संदर्भ में सुरक्षा, व्यवहार्यता (आर्थिक व्यवहार्यता नहीं) और पहलुओं की जांच सहित राख से खान में खाली स्थान को वापस भरने/अधिभार वाले ढेर के साथ राख को मिश्रित करने के लिए खानों की पहचान करने के लिए पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय, विद्युत मंत्रालय, खान मंत्रालय, कोयला मंत्रालय, महानिदेशक खान सुरक्षा और भारतीय खान ब्यूरो से प्रतिनिधियों को शामिल करते हुए अध्यक्ष, केन्द्रीय प्रदूषण नियंत्रण बोर्ड (सीपीसीबी) की अध्यक्षता में एक समिति का गठन किया जाएगा और यह समिति पणधारी मंत्रालयों या विभागों के लिए अभिज्ञात खानों (भूमिगत और खुली, दोनों) के संबंध में तैयार की गई तिमाही रिपोर्टों को अद्यतन करेगी और यह समिति, इस अधिसूचना के प्रकाशन के तुरंत पश्चात उपयुक्त खानों की पहचान करना आरंभ करेगी।

(ii) ताप विद्युत संयंत्र या खानें, उपरोक्त अनुसार अधिदेशित उपयोग लक्ष्यों को पूरा करने के लिए उपर्युक्त समिति द्वारा पहचान किए जाने तक राख के निपटान हेतु प्रतीक्षा नहीं करेंगी।

(7) राख से निचले क्षेत्र को भरने का कार्य, अनुमोदित परियोजनाओं के लिए राज्य प्रदूषण नियंत्रण बोर्ड की पूर्व अनुमति से और केन्द्रीय प्रदूषण नियंत्रण बोर्ड द्वारा निर्धारित दिशा-निर्देशों के अनुसार किया जाएगा और राज्य प्रदूषण नियंत्रण बोर्ड या प्रदूषण नियंत्रण समिति द्वारा अनुमोदित स्थलों, अवस्थान, क्षेत्र और अनुमत मात्रा को अपनी वेबसाइट पर प्रतिवर्ष प्रकाशित किया जाएगा।

(8) केन्द्रीय प्रदूषण नियंत्रण बोर्ड, संगत पणधारी के साथ मिलकर, राज्य प्रदूषण नियंत्रण बोर्ड (एसपीसीबी) या प्रदूषण नियंत्रण समिति (पीसीसी) द्वारा अनुमति प्रदान करने के लिए समयबद्ध ऑनलाइन आवेदन प्रक्रिया प्रस्तुत करने के साथ-साथ इस अधिसूचना के अधीन परिकल्पित सभी प्रकार के कार्यकलापों के लिए एक वर्ष के भीतर दिशानिर्देश प्रस्तुत करेगा।

(9) कोयला या लिग्नाइट आधारित तापीय ऊर्जा संयंत्र से तीन सौ किलोमीटर के दायरे में स्थित सभी भवन निर्माण परियोजनाएं (केंद्रीय, राज्य और स्थानीय प्राथिकरणों सरकारी उपक्रमों, अन्य सरकारी अभिकरणों तथा सभी निजी अभिकरणों) राख की ईटों, टाईल्स, धातुमल राख अथवा अन्य राख आधारित उत्पादों का उपयोग करेंगी बशर्ते कि वे वैकल्पिक उत्पादों की कीमत से अधिक कीमत पर उपलब्ध न हो।

(10) राख आधारित उत्पादों के विनिर्माण और ऐसे उत्पादों में राख के उपयोग में भारतीय मानक ब्यूरो, भारतीय सड़क कांग्रेस और केंद्रीय प्रदूषण नियंत्रण बोर्ड द्वारा निर्धारित विनिर्देशों और दिशानिर्देशों की अनुपालना होगी।

ग. गैर-अनुपालन के लिए पर्यावरणीय प्रतिकर .-

(1) तीन वर्ष के चक्र के प्रथम दो वर्षों में, यदि कोयला या लिग्नाइट आधारित तापीय ऊर्जा संयंत्र (कैप्टिव और/ या सह-उत्पादक स्टेशनों या दोनों सहित) ने कम-से-कम 80 प्रतिशत राख (फ्लाई-राख और बॉटम-राख) उपयोग नहीं की है तो ऐसे गैर-अनुपालन ताप विद्युत संयंत्रों पर प्रस्तुत की गई वार्षिक रिपोर्टों के आधार पर वित्तीय वर्ष के

अंत में अप्रयुक्त राख पर 1000 रुपए प्रति टन की दर से पर्यावरणीय प्रतिकर लगाया जाएगा और यदि यह तीन वर्ष के चक्र के तीसरे वर्ष में 100 प्रतिशत राख का उपयोग करने में असमर्थ रहता है, तो वह अप्रयुक्त मात्रा पर 1000 रुपए प्रति टन की दर से पर्यावरणीय प्रतिकर के भुगतान का पात्र होगा, जिस पर पहले पर्यावरणीय प्रतिकर नहीं लगायी गयी है।

परंतु पर्यावरणीय प्रतिकर को पैरा क के उप-पैरा (4) में उल्लिखित विभिन्न उपयोगी श्रेणियों के अनुसार प्रथम अनुपालन चक्र के अंतिम वर्ष के अंत में अनुमान लगाया जाएगा और अधिरोपित किया जाएगा।

(2) अधिकारियों द्वारा एकत्रित पर्यावरणीय प्रतिकर को केन्द्रीय प्रदूषण नियंत्रण बोर्ड के निर्दिष्ट खाते में जमा किया जाएगा।

(3) लैगेसी राख के मामले में, यदि कोयला या लिग्नाइट आधारित तापीय ऊर्जा संयंत्र (कैप्टिव या सह-उत्पादक स्टेशनों या दोनों सहित) ने स्थापित क्षमता पर आधारित उत्पन्न राख का कम-से-कम 20 प्रतिशत (प्रथम वर्ष के लिए), 35 प्रतिशत (द्वितीय वर्ष के लिए), 50 प्रतिशत (तीसरे से दसवें वर्ष तक) उपयोग के बराबर लक्ष्य प्राप्त नहीं किया है तो उस वित्तीय वर्ष के दौरान अप्रयुक्त लैगेसी राख पर 1000 रुपए प्रति टन की दर से पर्यावरणीय प्रतिकर लगाया जाएगा और यदि 10 वर्ष के अंत में लैगेसी राख का उपयोग नहीं किया जाता है तो 1000 रुपए प्रति टन की दर से शेष अप्रयुक्त मात्रा पर पर्यावरणीय प्रतिकर लगाया जाएगा जिस पर पहले पर्यावरणीय प्रतिकर नहीं लगाया गया है।

(4) अधिकृत खरीददारों या उपभोक्ता अभिकरणों तक राख भेजने की जिम्मेदारी परिवाहकों या वाहन मालिक की जिम्मेदारी है और यदि इसका अनुपालन नहीं किया जाता है, तो अनधिकृत उपयोगकर्ताओं अथवा गैर-अधिकृत उपयोगर्ताओं को ऐसी मात्रा गलत तरीके से वितरित करने पर 1500 रूपए प्रति टन की दर से पर्यावरणीय प्रतिकर लगायी, इसके अतिरिक्त राज्य प्रदूषण नियंत्रण बोर्ड (एसपीसीबी) या प्रदूषण नियंत्रण समिति (पीसीसी) द्वारा गैर अनुपालनकर्ता परिवाहकों पर अभियोजन लागू होगा।

(5) इस अधिसूचना के पैरा ख में विहित पर्यावरण अनुकूल तरीके में राख के उपयोग की जिम्मेदारी खरीददार या उपभोगकर्ता एजेंसियों की है और ऐसा नहीं करने पर केन्द्रीय प्रदूषण नियंत्रण बोर्ड (एसपीसीबी) या प्रदूषण नियंत्रण समिति (पीसीसी) द्वारा 1500 रूपए प्रति टन की दर से पर्यावरणीय प्रतिकर लगाया जाएगा।

(6) यदि उपयोगकर्ता अधिकरण पैरा ख के अधीन निर्धारित सीमा तक अथवा पैरा घ के उप-पैरा (1) के अधीन, दिए गए नोटिस के माध्यम से सूचित की गई सीमा, इनमें से जो भी कम हो, तक राख का उपयोग नहीं करती है, वे अतिरिक्त राख की मात्रा का 1500 रूपए प्रति टन की दर से भुगतान करने के लिए उत्तरदायी होंगी।

परंतु भवन निर्माण के संबंध में पर्यावरणीय प्रतिकर निर्मित क्षेत्र के 75 रूपये प्रति वर्ग फीट की दर से वसूल किया जाएगा।

(7) (i) ताप विद्युत संयंत्रों अन्य बकायादारों से केन्द्रीय प्रदूषण नियंत्रण बोर्ड द्वारा लगायी गई का पर्यावरणीय प्रतिकर उपयोग अप्रयुक्त राख के सुरक्षित निपटान हेतु किया जाएगा और राख आधारित उत्पादों सहित राख के उपयोग के संबंध में और अधिक अनुसंधान करने के लिए भी निधि का उपयोग किया जा सकता है।

(ii) अप्रयुक्त मात्रा पर लगाए गए पर्यावरणीय प्रतिकर के पश्चात भी राख के उपयोग का उत्तरदायित्व ताप विद्युत संयंत्रों की होगी और यदि पश्चातवती चक्रों में पर्यावरणीय प्रतिकर लगाने के पश्चात ताप विद्युत संयंत्र, किसी विशेष चक्र की राख के उपयोग के लक्ष्य को प्राप्त करता है तो अगले चक्र के दौरान अप्रयुक्त मात्रा पर एकत्र की गई पर्यावरणीय प्रतिकर में 10 प्रतिशत कटौती के पश्चात उक्त रकम ताप विद्युत संयंत्र को वापस कर दी जाएगी और पश्चातवती चक्रों में राख के उपयोग के मामले में एकत्र की गई पर्यावरणीय प्रतिकर की 20 प्रतिशत, 30 प्रतिशत और उसी क्रम में कटौती की जानी है।

घ. राख या राख आधारित उत्पादों की आपूर्ति हेतु प्रक्रिया ._

(1) ताप विद्युत संयंत्रों के स्वामी अथवा राख की ईटों या टाईल्स या धातुमल आधारित राख के विनिर्माता उन व्यक्तियों या अभिकरणों को लिखित सूचना देंगे जो बिक्री या परिवहन या दोनों के लिए प्रस्तुत राख या राख आधारित उत्पादों के उपयोग के लिए उत्तरदायी हैं।

(2) ऐसे व्यक्ति या उपयोगकर्ता अभिकरणों जिन्हें ताप विद्युत संयंत्रों के स्वामी द्वारा या राख की ईटों या टाईल्स या धातुमल आधारित राख के उत्पादकों द्वारा सूचना दी गई है, यदि वे पहले ही राख या राख उत्पादों के उपयोग के प्रयोजन से अन्य अभिकरणों के साथ जुड़े हुए हैं, यदि वे किसी भी राख/राख उत्पादों का उपयोग नहीं कर सकते हैं अथवा कम मात्रा का उपयोग कर सकते हैं, तदनुसार ताप विद्युत संयंत्र को सूचित करेंगे।

ड. प्रवर्तन, निगरानी, लेखा परीक्षा और प्रतिवेदन करना

(1) केंद्रीय प्रदूषण नियंत्रण बोर्ड (सीपीसीबी) और संबंधित राज्य प्रदूषण नियंत्रण बोर्ड (एसपीसीबी) या प्रदूषण नियंत्रण समिति (पीसीसी), उपबंधों के अनुपालना सुनिश्चित करने के लिए प्रवर्तन और निगरानी प्राधिकरण होंगे। सीपीसीबी या एसपीसीबी या पीसीसी तिमाही आधार पर राख के उपयोग की निगरानी करेंगे और सीपीसीबी इस प्रयोजन के लिए अधिसूचना की प्रकाशन की तारीख से छ: माह के भीतर एक पोर्टल विकसित करेगा। संबंधित जिला अधिकारी के पास इस अधिसूचना के उपबंधों को लागू करने और निगरानी करने के लिए समवर्ती अधिकारिता होगी।

(2) (i) ताप विद्युत संयंत्र, राख उत्सर्जन और उपयोग से संबंधित मासिक सूचना वेब पोर्टल पर अगले महीने की 5 तारीख तक अपलोड करेगा। कोयला या लिग्नाइट आधारित ताप ऊर्जा संयंत्रों द्वारा केंद्रीय प्रदूषण नियंत्रण बोर्ड, संबंधित राज्य प्रदूषण नियंत्रण बोर्ड या प्रदूषण नियंत्रण समिति (पीसीसी), केंद्रीय विद्युत प्राधिकरण (सीईए) और पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय के संबंधित एकीकृत क्षेत्रीय कार्यालयों को इस अधिसूचना के उपबंधों के अनुपालन संबंधी सूचना उपलब्ध कराते हुए वार्षिक कार्यान्वयन रिपोर्ट प्रत्येक वर्ष (1 अप्रैल से 31 मार्च तक की अवधि के लिए) अप्रैल माह के 30वें दिन तक प्रस्तुत की जाएगी। सीपीसीबी और सीईए द्वारा सभी ताप विद्युत संयंत्रों द्वारा प्रस्तुत वार्षिक रिपोर्टों का समेकन किया जाएगा और उसे पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय को 31 मई तक प्रस्तुत किया जाएगा।

(ii) सभी अन्य उपयोगकर्ता अधिकरण पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय या राज्य स्तरीय पर्यावरण प्रभाव आकलन प्राधिकरण (एसईआईएए) द्वारा जारी पर्यावरणीय मंजूरी (ईसी) अथवा राज्य प्रदूषण नियंत्रण बोर्ड (एसपीसीबी) या प्रदूषण नियंत्रण समिति (पीसीसी) द्वारा जारी संचालन की सहमति (सीटीओ), जो भी लागू हो, की अनुपालना रिपोर्ट में इस अधिसूचना में आज्ञापकता के अनुसार राख के उपभोग या उपयोग या निस्तारण तथा राख आधारित उत्पादों के उपयोग संबंधी सूचना प्रस्तुत करेंगे। केन्द्रीय प्रदूषण नियंत्रण बोर्ड (सीपीसीबी) या राज्य प्रदूषण नियंत्रण बोर्ड (एसपीसीबी) या प्रदूषण नियंत्रण समिति (पीसीसी) अधिसूचना के उपबंधों के प्रभावी कार्यान्वयन की समीक्षा करने हेतु ताप विद्युत संयंत्रों के अतिरिक्त अन्य सभी अधिकरणों की राख उपयोग की वार्षिक रिपोर्ट प्रकाशित करेंगे।

(3) इस अधिसूचना के उपबंधों की निगरानी और कार्यान्वयन के प्रयोजन के लिए केन्द्रीय प्रदूषण नियंत्रण बोर्ड (सीपीसीबी) की अध्यक्षता में एक समिति का गठन किया जाएगा जिसके सदस्य विद्युत मंत्रालय, कोयला मंत्रालय, खनन मंत्रालय, पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय, सड़क परिवहन और राजमार्ग मंत्रालय और भारी उद्यम विभाग से होने के साथ-साथ समिति के अध्यक्ष द्वारा नामित किए जाने वाले कोई संबंधित पणधारी होंगे। यह समिति संगत पणधारी को आमंत्रित कर सकती है। यह समिति इस अधिसूचना के उपबंधों के प्रभावी और दक्ष कार्यान्वयन के लिए सिफारिशें कर सकती है। यह समिति छ: माह में कम से कम एक बार एक बैठक करेगी और वार्षिक कार्यान्वयन रिपोर्टों की समीक्षा करेगी और यह समिति, इस अधिसूचना द्वारा आजापक किए गए अनुसार छ: महीनों में कम से कम एक बार संगत पणधारी (को) को आमंत्रित करके राख के उपयोग की निगरानी करने के लिए पणधारी से साथ परामर्शदात्री बैठकें आयोजित करेगी। यह समिति पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय (एमओईएफसीसी) को छ: मासिक रिपोर्ट प्रस्तुत करेगी।

(4) ताप विद्युत संयंत्रों और राख के उपयोगकर्ताओं या राख आधारित उत्पादों के विनिर्माताओं के बीच के विवाद का समाधान करने के प्रयोजन से राज्य सरकारें या संघ राज्यक्षेत्र की सरकारें इस अधिसूचना के प्रकाशन की तारीख से तीन माह के भीतर राज्य प्रदूषण नियंत्रण बोर्ड (एसपीसीबी) या प्रदूषण नियंत्रण समिति (पीसीसी) की अध्यक्षता में एक समिति का गठन करेंगी जिसमें विद्युत विभाग के प्रतिनिधि और एक प्रतिनिधि उस विभाग का होगा, जो विवाद वाले संबंधित अभिकरण का कार्य देख रहे हैं।

(5) केन्द्रीय प्रदूषण नियंत्रण बोर्ड (सीपीसीबी) द्वारा प्राधिकृत लेखा परीक्षकों द्वारा ताप विद्युत संयंत्रों और उपयोगकर्ता अभिकरणों द्वारा किए गए राख के निपटान की अनुपालन लेखा परीक्षा संचालित की जाएगी और लेखा परीक्षा की रिपोर्ट प्रत्येक वर्ष 30 नवम्बर तक केन्द्रीय प्रदूषण नियंत्रण बोर्ड (सीपीसीबी) और संबंधित राज्य प्रदूषण नियंत्रण बोर्ड (एसपीसीबी) या प्रदूषण नियंत्रण समिति (पीसीसी) को प्रस्तुत की जाएगी। केन्द्रीय प्रदूषण नियंत्रण बोर्ड (सीपीसीबी) और संबंधित राज्य प्रदूषण नियंत्रण बोर्ड (एसपीसीबी) या प्रदूषण नियंत्रण समिति (पीसीसी) लेखा परीक्षा की रिपोर्ट प्राप्त होने के पंद्रह दिनों के भीतर अनुपालन न करने वाले ताप विद्युत संयंत्रों के विरूद्ध कार्रवाई प्रारंभ करेगें।

[फा. सं. एचएसएम-9/1/2019-एचएसएम]

नरेश पाल गंगवार, संयुक्त सचिव

उपाबंध

31 मई तक अथवा उससे पहले प्रस्तुत की जाने वाली राख संबंधी उपबंधों की अनुपालन रिपोर्ट (01 अप्रैल से 31 मार्च की अवधि के लिए) ।

क्र.सं.	**ब्यौरा**	
1.	विद्युत संयंत्र का नाम	
2.	कंपनी का नाम	
3.	जिला	
4.	राज्य	
5.	पत्राचार के लिए डाक का पता :	
6.	ई-मेल :	
7.	विद्युत संयंत्र की संस्थापित क्षमता (मेगा वॉट) :	
8.	संयंत्र लोड फैक्टर (पीएलएफ) :	
9.	उत्पादित यूनिटों की संख्या (एमडब्ल्यूएच) :	
10.	विद्युत संयंत्र के अंतर्गत कुल क्षेत्र (हेक्टेयर) (राख कुंडों के अधीन क्षेत्र सहित) :	
11.	रिपोर्टिंग की अवधि के दौरान कोयला खपत की मात्रा (प्रति वर्ष मीट्रिक टन) :	
12.	औसत राख सामग्री प्रतिशतता में (%) :	
13.	रिपोर्टिंग की अवधि के दौरान वर्तमान में उत्पादित राख की मात्रा (प्रति वर्ष मीट्रिक टन) : फ्लाई राख (प्रति वर्ष मीट्रिक टन) : बॉटम राख (प्रति वर्ष मीट्रिक टन) :	
14.	ड्राई फ्लाई राख भंडारण गड्ढा (गड्ढों) की क्षमता (मीट्रिक टन) :	
15.	**रिपोर्टिंग की अवधि के दौरान वर्तमान में उत्पादित राख के उपयोग का ब्यौरा:** (क) रिपोर्टिंग की अवधि के दौरान वर्तमान में उपयोग की गई राख की	

	कुल मात्रा (एमटीपीए) : (ख) उपयोग की गई फ्लाई राख की मात्रा (एमटीपीए) : i. फ्लाई-एश आधारित उत्पाद (ईंट या ब्लॉक या टाइल्स या फाइबर सीमेंट शीट या पाइप या बोर्ड/पैनल) : ii. सीमेंट विनिर्माण : iii. रेडी मिक्स कंक्रीट : iv. राख और जीओ-पॉलिमर आधारित निर्माण सामग्री : v. सिंटर्ड या कोल्ड बॉन्डेड राख एग्रीगेट का निर्माण : vi. सड़कों, सड़क और फ्लाई ओवर के पुश्तों का निर्माण : vii. बांधों का निर्माण : viii. निम्न भू-क्षेत्र का भराव : ix. खनिज क्षेत्रों का भराव : x. अधिभार वाले डम्पों में उपयोग : xi. कृषि : xii. तटीय जिलों में तटरेखा सुरक्षा संरचनाओं का निर्माण : xiii. अन्य देशों को राख का निर्यात : xiv. अन्य (कृपया विनिर्दिष्ट करें) : (ग) उपयोग किए गए तल के राख की मात्रा (एमटीपीए) : i. फ्लाई-एश आधारित उत्पाद (ईंट या ब्लॉक या टाइल्स या फाइबर सीमेंट शीट या पाइप या बोर्ड या पैनल) : ii. सीमेंट विनिर्माण : iii. रेडी मिक्स कंक्रीट : iv. राख और जीओ-पॉलिमर आधारित निर्माण सामग्री : v. सिंटर्ड या कोल्ड बॉन्डेड राख एग्रीगेट का निर्माण : vi. सड़कों, सड़क और फ्लाईओवर के पुश्तों का निर्माण : vii. बांधों का निर्माण : viii. निम्न भू-क्षेत्र का भराव : ix. खनिज क्षेत्रों का भराव : x. अधिभार वाले डम्पों में उपयोग : xi. कृषि : xii. तटीय जिलों में तटरेखा सुरक्षा संरचनाओं का निर्माण : xiii. अन्य देशों को राख का निर्यात : xiv. अन्य (कृपया विनिर्दिष्ट करें) : रिपोर्टिंग की अवधि के दौरान वर्तमान में अप्रयुक्त राख की कुल मात्रा (एमटीपीए :	
16.	रिपोर्टिंग की अवधि के दौरान वर्तमान में उत्पादित राख का प्रतिशतता उपयोग (%) :	
17.	**राख कुंडों में राख के निपटान का ब्यौरा** क) तारीख 31 मार्च तक (रिपोर्टिंग की अवधि को छोड़कर) राख कुण्ड (कुण्डों) में निपटान किए गए राख की कुल मात्रा (मीट्रिक टन):	

	ख) रिपोर्टिंग की अवधि के दौरान राख कुण्ड (कुण्डों) में निपटान किए गए राख की मात्रा (मीट्रिक टन): ग) रिपोर्टिंग की अवधि के दौरान राख कुण्डों में गारा निस्सरण हेतु खपत हुए जल की कुल मात्रा (मी^{3}): घ) राख कुण्डों की कुल संख्या: (i) सक्रिय: (ii) खाली किए गए (पुन: भरा जाना है) (iii) पुन: भरे गए: ड.) राख कुण्डों के अधीन कुल क्षेत्र (हेक्टेयर):	
18.	**अलग-अलग राख कुण्ड का ब्यौरा** *राख कुण्ड 1,2 आदि (यदि राख कुण्डों की संख्या एक से अधिक हो, तो कृपया निम्नलिखित ब्यौरा अलग से उपलब्ध कराएं)* क) स्थिति: निर्माणाधीन या सक्रिय या खाली किया गया या पुन: भरा गया ख) राख कुण्ड में राख का निपटान शुरू करने की तारीख/महीना/वर्ष या महीना/वर्ष): ग) राख कुण्ड की क्षमता पूर्ण किए जाने के पश्चात् उसमें राख निपटान रोकने की तारीख (तारीख/महीना/वर्ष या महीना/वर्ष): (सक्रिय राख कुण्डों के लिए लागू नहीं) ग) क्षेत्र (हेक्टेयर): घ) डाइक की ऊंचाई (मी.): घ) आयतन (मी^{3}): ड.) तारीख 31 मार्च तक निपटान किए गए राख की मात्रा (मीट्रिक टन): च) उपलब्ध आयतन का प्रतिशत (%) और आगे निपटान किए जा सकने वाले राख की मात्रा (मीट्रिक टन): छ) राख कुण्ड के भरे जाने की अनुमानित अवधि (वर्षों और महीनों की संख्या): ड.) निर्देशांक (अक्षांश और देशान्तर): (कृपया न्यूनतम 4 निर्देशांकों को विनिर्दिष्ट करें) ज) राख कुण्ड में की गई लाइनिंग का प्रकार: एचडीपीई लाइनिंग या एलडीपीई लाइनिंग या क्ले लाइनिंग या कोई लाइनिंग नहीं छ) निपटान की विधि: शुष्क निपटान या नम गारा (नम गारा के मामले में कृपया विनिर्दिष्ट करें कि क्या एचसीएसडी या एमसीएसडी या एलसीएसडी है) ज) राख का अनुपात: गारा मिश्रण में जल (1:____): झ) संस्थापित और कार्यशील राख जल पुनर्चक्रण प्रणाली (एडब्ल्यूआरएस): हां या नहीं ञ) जमीन के अंदर या जल निकाय में राख कुण्ड से निस्सरित अपशिष्ट जल की मात्रा (मी^{3}): ट) डाइक की स्थिरता का अध्ययन कराए जाने की पिछली तारीख और उस संगठन का नाम जिसने अध्ययन किया: ठ) लेखा-परीक्षा किए जाने की पिछली तारीख और उस संगठन का नाम जिसने लेखा-परीक्षा की:	
19.	उपयोग किए गए पुराने राख की मात्रा (एमटीपीए): i. फ्लाई-एश आधारित उत्पाद (ईंट या ब्लॉक या टाइल्स या फाइबर	

	सीमेंट शीट या पाइप या बोर्ड या पैनल): ii. सीमेंट विनिर्माण: iii. रेडी मिक्स कंक्रीट: iv. राख और जीओ-पॉलिमर आधारित निर्माण सामग्री: v. सिंटर्ड या कोल्ड बॉन्डेड राख एग्रीगेट का निर्माण: vi. सड़कों, सड़क और फ्लाई ओवर के पुश्तों का निर्माण: vii. बांधों का निर्माण: viii. निम्न भू-क्षेत्र का भराव: ix. खनिज क्षेत्रों का भराव: x. अधिभार वाले डम्पों में उपयोग: xi. कृषि: xii. तटीय जिलों में तटरेखा सुरक्षा संरचनाओं का निर्माण: xiii. अन्य देशों को राख का निर्यात xiv. अन्य (कृपया विनिर्दिष्ट करें):	

20.	**सार :**			
	ब्यौरा	सृजित मात्रा (एमटीपी)	उपयोग की गई मात्रा (एमटीपी) और (%)	शेष मात्रा (एमटीपी)
	रिपोर्टिंग की अवधि के दौरान राख			
	पुरानी राख			
	कुल			
21.	कोई अन्य सूचना : वार्षिक अनुपालन रिपोर्ट, और विद्युत संयंत्रों और राख कुण्डों की शेप फाइलों की सॉफ्ट कॉपी ई-मेल:- moefcc-coalash@gov.in पर भेजी जाए।			
22.	प्राधिकृत हस्ताक्षरकर्ता के हस्ताक्षर			

MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

NOTIFICATION

New Delhi, the 31st December, 2021

S.O. 5481(E).—Whereas by notification of the Government of India in the erstwhile Ministry of Environment and Forests *vide* S.O.763 (E), dated the 14th September, 1999, as amended from time to time, the Central Government, issued directions for restricting the excavation of top soil for manufacturing of bricks and promoting the utilisation of fly ash in the manufacturing of building materials and in construction activity within a specified radius of three hundred kilometres from the coal or lignite based thermal power plants;

And whereas, to implement the aforesaid notification more effectively based on the polluter pays principle (PPP) thereby ensuring 100 per cent utilisation of fly ash by the coal or lignite based thermal power plants and for the sustainability of the fly ash management system, the Central Government reviewed the existing notification; and whereas environmental compensation needs to be introduced based on the polluter pays principle;

And whereas, there is a need to conserve top soil by promoting manufacture and mandating use of ash based products and building materials in the construction sector;

And whereas, there is a need to conserve top soil and natural resources by promoting utilisation of ash in road laying, road and flyover embankments, shoreline protection measures, low lying areas of approved projects, backfilling of mines, as an alternative for filling of earthen materials;

And whereas, it is necessary to protect the environment and prevent the dumping and disposal of fly ash discharged from coal or lignite based thermal power plants on land;

And whereas, in the said notification the phrase 'ash', has been used which includes both fly ash as well as bottom ash generated from the Coal or Lignite based thermal power plants;

And whereas, the Central Government intends to bring out a comprehensive framework for ash utilisation including system of environmental compensation based on polluter pays principle;

And whereas, a draft notification on ash utilisation by coal or lignite thermal power plants in supersession of the notification of the Government of India, Ministry of Environment and Forests published in the Gazette of India, Extra Ordinary part II, section 3, sub-section (i) *vide* S.O.763 (E), dated the 14th September, 1999, by notification in exercise of the powers conferred under sub-section (1) and clause (v) of sub-section (2) of section 3 of the Environment (Protection) Act, 1986 (29 of 1986) read with clause (d) of sub-rule (3) of rule (5) of the Environment (Protection) Rules, 1986, was published in the Gazette of India, Extraordinary, Part II, section 3, sub-section (i), *vide* G.S.R. 285(E), dated the 22nd April, 2021 inviting objections and suggestions from all persons likely to be affected thereby before the expiry of sixty days from the date on which copies of the Gazette containing the said draft provisions were made available to the public;

And, whereas all the objections and suggestions received from all persons likely to be affected thereby in respect of the said draft notification have been duly considered by the Central Government;

Now, therefore, in exercise of the powers conferred by sub-section (1) and clause (v) of sub-section (2) of section 3 of the Environment (Protection) Act, 1986 (29 of 1986) read with clause (d) of sub-rule (3) of rule (5) of the Environment (Protection) Rules, 1986, and in supersession of the Notification S.O.763 (E), dated the 14th September, 1999 except as respect things done or omitted to be done before such supersession, the Central Government hereby issues the following notification on ash utilisation from coal or lignite thermal power plants which shall come into force on the date of the publication of this notification, namely:-

A. Responsibilities of thermal power plants to dispose fly ash and bottom ash.—

(1) Every coal or lignite based thermal power plant (including captive or co-generating stations or both) shall be primarily responsible to ensure 100 per cent utilisation of ash (fly ash, and bottom ash) generated by it in an eco-friendly manner as given in sub-paragraph (2);

(2) The ash generated from coal or lignite based thermal power plants shall be utilised only for the following eco-friendly purposes, namely:-

(i) Fly ash based products viz. bricks, blocks, tiles, fibre cement sheets, pipes, boards, panels;

(ii) Cement manufacturing, ready mix concrete;

(iii) Construction of road and fly over embankment, Ash and Geo-polymer based construction material;

(iv) Construction of dam;

(v) Filling up of low lying area;

(vi) Filling of mine voids;

(vii) Manufacturing of sintered or cold bonded ash aggregate;

(viii) Agriculture in a controlled manner based on soil testing;

(ix) Construction of shoreline protection structures in coastal districts;

(x) Export of ash to other countries;

(xi) Any other eco-friendly purpose as notified from time to time.

(3) A committee shall be constituted under the chairmanship of Chairman, Central Pollution Control Board (CPCB) and having representatives from Ministry of Environment, Forest and Climate Change (MoEFCC), Ministry of Power, Ministry of Mines, Ministry of Coal, Ministry of Road Transport and Highways, Department of Agricultural Research and Education, Institute of Road Congress, National Council for Cement and Building Materials, to examine and review and recommend the eco-friendly ways of utilisation of ash and make inclusion or exclusion or modification in the list of such ways as mentioned in Sub-paragraph (2) based on technological developments and requests received from stakeholders. The committee may invite State Pollution Control Board or Pollution Control Committee, operators of thermal power plants and mines, cement plants and other stakeholders as and when required for this purpose. Based on the recommendations of the Committee, Ministry of Environment, Forest and Climate Change (MoEFCC) may publish such eco-friendly purpose.

(4) Every coal or lignite based thermal power plant shall be responsible to utilise 100 per cent ash (fly ash and bottom ash) generated during that year, however, in no case shall utilisation fall below 80 per cent in any year, and the thermal power plant shall achieve average ash utilisation of 100 per cent in a three years cycle:

Provided that the three years cycle applicable for the first time is extendable by one year for the thermal power plants where ash utilisation is in the range of 60-80 per cent, and two years where ash utilisation is below 60 per cent and for the purpose of calculation of percentage of ash utilisation, the percentage quantity of utilisation in the year 2021- 2022 shall be taken into account as per the table below:

Utilisation percentages of thermal power plants	First compliance Cycle to meet 100 per cent utilisation	Second compliance cycle onwards, to meet 100 per cent utilisation
>80 per cent	3 years	3 years
60-80 per cent	4 years	3 years
<60 per cent	5 years	3 years

Provided further that the minimum utilisation percentage of 80 per cent shall not be applicable to the first year and first two years of the first compliance cycle for the thermal power plants under the utilisation category of 60-80 per cent and <60 per cent, respectively.

Provided also that 20per cent of ash generated in the final year of compliance cycle may be carried forward to the next cycle which shall be utilised in the next three years cycle along with the ash generated during that cycle.

(5) The unutilised accumulated ash i.e. legacy ash, which is stored before the publication of this notification, shall be utilised progressively by the thermal power plants in such a manner that the utilization of legacy ash shall be completed fully within ten years from the date of publication of this notification and this will be over and above the utilisation targets prescribed for ash generation through current operations of that particular year:

Provided that the minimum quantity of legacy ash in percentages as mentioned below shall be utilised during the corresponding year and the minimum quantity of legacy ash is to be calculated based on the annual ash generation as per installed capacity of thermal power plant.

Year from date of publication	1st	2nd	3rd -10th
Utilisation of legacy ash (in percentage of Annual ash)	At least 20 per cent	At least 35 per cent	At least 50 per cent

Provided further that the legacy ash utilisation shall not be required where ash pond or dyke has stabilised and the reclamation has taken place with greenbelt or plantation and the concerned State Pollution Control Board shall certify in this regard. Stabilisation and reclamation of an ash pond or dyke including certification by the Central Pollution Control Board (CPCB) or State Pollution Control Board (SPCB) or Pollution Control Committee (PCC) shall be carried out within a year from the date of publication of this notification. The ash remaining in all other ash ponds or dykes shall be utilised in progressive manner as per the above mentioned timelines.

Note: The obligations under sub-paragraph (4) and (5) above for achieving the ash utilisation targets shall be applicable from 1st April, 2022.

(6) Any new as well as operational thermal power plant may be permitted an emergency or temporary ash pond with an area of 0.1 hectare per Mega Watt (MW). Technical specifications of ash ponds or dykes shall be as per the guidelines of Central Pollution Control Board (CPCB) made in consultation with Central Electricity Authority (CEA) and these guidelines shall also lay down a procedure for annual certification of the ash pond or dyke on its safety, environmental pollution, available volume, mode of disposal, water consumption or conservation in disposal, ash water recycling and greenbelt, etc., and shall be put in place within three months from the date of publication of this notification.

(7) Every coal or lignite based thermal power plant shall ensure that loading, unloading, transport, storage and disposal of ash is done in an environmentally sound manner and that all precautions to prevent air and water pollution are taken and status in this regard shall be reported to the concerned State Pollution Control Board (SPCB) or Pollution Control Committee (PCC) in Annexure attached to this notification.

(8) Every coal or lignite based thermal power plant shall install dedicated silos for storage of dry fly ash silos for at least sixteen hours of ash based on installed capacity and it shall be reported upon to the concerned State Pollution Control Board (SPCB) or Pollution Control Committee (PCC) in the Annexure and shall be inspected by Central Pollution Control Board (CPCB) or State Pollution Control Board (SPCB) or Pollution Control Committee (PCC) from time to time.

(9) Every coal or lignite based thermal power plant (including captive or co-generating stations or both) shall provide real time data on daily basis of availability of ash with Thermal Power Plant (TPP), by providing link to Central Pollution Control Board's web portal or mobile phone App for the benefit of actual user(s).

(10) Statutory obligation of 100 per cent utilisation of ash shall be treated as a change in law, wherever applicable.

B. **For the purpose of utilisation of ash, the subsequent sub-paras shall apply.—**

(1) All agencies (Government, Semi-government and Private) engaged in construction activities such as road laying, road and flyover embankments, shoreline protection structures in coastal districts and dams within 300 kms from the lignite or coal based thermal power plants shall mandatorily utilise ash in these activities:

Provided that it is delivered at the project site free of cost and transportation cost is borne by such coal or lignite based thermal power plants.

Provided further that thermal power plant may charge for ash cost and transportation as per mutually agreed terms, in case thermal power plant is able to dispose the ash through other means and those agencies makes a request for it and the provisions of ash free of cost and free transportation shall be applicable, if thermal power plant serves a notice on the construction agency for the same.

(2) The utilisation of ash in the said activities shall be carried out in accordance with specifications and guidelines laid down by the Bureau of Indian Standards, Indian Road Congress, Central Building Research Institute, Roorkee, Central Road Research Institute, Delhi, Central Public Works Department, State Public Works Departments and other Central and State Government Agencies.

(3) It shall be obligatory on all mines located within 300 kilometres radius of thermal power plant, to undertake backfilling of ash in mine voids or mixing of ash with external Overburden dumps, under Extended Producer Responsibility (EPR). All mine owners or operators (Government, Public and Private Sector) within three hundred kilometres (by road) from coal or lignite based thermal power plants, shall undertake measures to mix at least 25 per cent of ash on weight to weight basis of the materials used for external dump of overburden, backfilling or stowing of mine (running or abandoned as the case may be) as per the guidelines of the Director General of Mines Safety (DGMS):

Provided that such thermal power stations shall facilitate the availability of required quantity of ash by delivering ash free of cost and bearing the cost of transportation or cost or transportation arrangement decided on mutually agreed terms and mixing of ash with overburden in mine voids and dumps shall be applicable for the overburden generated from the date of publication of this notification and the utilisation of ash in the said activities shall be carried out in accordance with guidelines laid down by the Central Pollution Control Board, Director General of Mines Safety and Indian Bureau of Mines.

Explanation.- For the purpose of this sub-paragraph, it is also clarified that the provisions of ash free of cost and free transportation shall be applicable, if thermal power plants serve a notice on the mine owner for the same and the mandate of using 25 per cent of ash for mixing with overburden dump and filling up of mine voids shall not be applicable unless a notice is served on the mine owner by thermal power plant.

(4) (i) All mine owners shall get mine closure plans (progressive and final) to accommodate ash in the mine voids and the concerned authority shall approve mine plans for disposal of ash in mine voids and mixing of ash with overburden dumps. The Ministry of Environment, Forest and Climate Change (MoEFCC) has issued guidelines on 28th August, 2019 regarding exemption of requirement of Environmental Clearance of thermal power plants and coal mines along with the guidelines to be followed for such disposal.

(ii) The Ministry in consultation with Central Pollution Control Board (CPCB), Director General of Mine Safety (DGMS) and Indian Bureau of Mines (IBM) may issue further guidelines time to time to facilitate ash disposal in mine voids and mixing with overburden dumps and it shall be the responsibility of mine owners to get the necessary amendments or modifications in the permissions issued by various regulatory authorities within one year from the date of identification of such mines.

(5) (i) There shall be a committee headed by Chairperson, Central Pollution Control Board (CPCB) with representatives from Ministry of Environment, Forest and Climate Change, Ministry of Power, Ministry of Mines, Ministry of Coal, Director General of Mine Safety and Indian Bureau of Mines for identification of mines for backfilling of mine voids with ash or mixing of ash with overburden dump including examination of safety, feasibility (not economic feasibility) and aspects of environmental contamination and the committee shall get updated quarterly reports prepared regarding identified mines (both underground and opencast) for the stakeholder Ministries or Departments and the committee shall start identifying the suitable mines immediately after the publication of this notification.

(ii) Thermal power plants or mines shall not wait for disposal of ash till the identification is done by the above mentioned committee, to meet the utilisation targets mandated as above.

(6) Filling of low lying areas with ash shall be carried out with prior permission of the State Pollution Control Board or Pollution Control Committee for approved projects, and in accordance with guidelines laid down by Central Pollution Control Board (CPCB) and the State Pollution Control Board or Pollution Control Committee (PCC) shall publish approved sites, location, area and permitted quantity annually on its website.

(7) Central Pollution Control Board after engaging relevant stakeholders, shall put in place the guidelines within one year for all types of activities envisaged under this notification including putting in place time bound online application process for the grant permission by State Pollution Control Boards (SPCBs) or Pollution Control Committees (PCCs).

(8) All building construction projects (Central, State and Local authorities, Govt. undertakings, other Govt. agencies and all private agencies) located within a radius of three hundred kilometres from a coal or lignite based thermal power plant shall use ash bricks, tiles, sintered ash aggregate or other ash based products, provided these are made available at prices not higher than the price of alternative products.

(9) Manufacturing of ash based products and use of ash in such products shall be in accordance with specifications and guidelines laid down by the Bureau of Indian Standards, Indian Road Congress, and Central Pollution Control Board.

C. Environmental compensation for non-compliance.—

(1) In the first two years of a three years cycle, if the coal or lignite based thermal power plant (including captive or co-generating stations or both) has not achieved at least 80 per cent ash (fly ash and bottom ash) utilisation, then such non-compliant thermal power plants shall be imposed with an environmental compensation of Rs. 1000 per ton on unutilised ash during the end of financial year based on the annual reports submitted and if it is unable to utilise 100 per cent of ash in the third year of the three years cycle, it shall be liable to pay an environmental compensation of Rs. 1000 per ton on the unutilised quantity on which environmental compensation has not been imposed earlier:

Provided that the environmental compensation shall be estimated and imposed at the end of last year of the first compliance cycle as per the various utilisation categories as mentioned in sub-paragraph (4) of Para A.

(2) Environmental compensation collected by the authorities shall be deposited in the designated account of Central Pollution Control Board.

(3) In case of legacy ash, if the coal or lignite based thermal power plant (including captive or co-generating stations or both) has not achieved utilisation equivalent to at least 20 per cent (for the first year), 35 per cent (for the second year), 50 per cent (for third to tenth year) of ash generated based on installed capacity, an environmental compensation of Rs. 1000 per ton of unutilised legacy ash during that financial year shall be imposed and if the utilization of legacy ash is not completed at the end of 10 years, an environmental compensation of Rs.1000 per ton shall be imposed on the remaining unutilised quantity which has not been imposed earlier.

(4) It shall be the responsibility of the transporters or vehicle owner to deliver ash to authorised purchaser or user agency and if it is not complied, then an environmental compensation of Rs. 1500 per ton on such quantity as mis-delivered to unauthorised users or non- delivered to authorised users will be imposed besides prosecution of such non-compliant transporters by State Pollution Control Board (SPCB) or Pollution Control Committee (PCC).

(5) It is the responsibility of the purchasers or user agencies to utilise ash in an eco-friendly manner as laid down at para B of this notification and if it is not complied, then an environmental compensation of Rs. 1500 or per ton shall be imposed by State Pollution Control Board (SPCB) or Pollution Control Committee (PCC).

(6) If the user agencies do not utilise ash to the extent obligated under para B or the extent to which they have been intimated through Notice(s) served under sub-paragraph (1) of para D, whichever is lower, they shall be liable to pay Rs. 1500 per ton of ash for the quantity they fall short off:

Provided that the environmental compensation on building constructions shall be levied at Rs.75/- per square feet of built up area of construction.

(7) (i) The environmental compensation collected by Central Pollution Control Board from the thermal power plants and other defaulters shall be used towards the safe disposal of the unutilised ash and the fund may also be utilised for advancing research on use of ash including ash based products.

(ii) The liability of ash utilisation shall be with thermal power plants even after imposition of environmental compensation on unutilised quantities and in case thermal power plant achieves the ash utilisation of any

particular cycle after imposition of environmental compensation in subsequent cycles, the said amount shall be returned to thermal power plant after deducting 10 per cent of the environmental compensation collected on the unutilised quantity during the next cycle and deduction of 20 per cent, 30 per cent, and so on, of the environmental compensation collected is to be made in case of utilisation of ash in subsequent cycles.

D. Procedure for supply of ash or ash based products.—

(1) The owner of thermal power plants or manufacturers of ash bricks or tiles or sintered ash aggregate shall serve written notice to persons or agencies who are liable to utilise ash or ash based products, offering for sale, or transport or both.

(2) Persons or user agencies who have been served notices by owner of thermal power plants or manufacturers of ash bricks or tiles or sintered ash aggregate, if they have already tied up with other agencies for the purpose of utilisation of ash or ash products, shall inform the thermal power plant accordingly, if they cannot use any ash or ash products or use reduced quantity.

E. Enforcement, Monitoring, Audit and Reporting.—

(1) The Central Pollution Control Board (CPCB) and the concerned State Pollution Control Board (SPCB) or Pollution Control Committee (PCC) shall be the enforcing and monitoring authority for ensuring compliance of the provisions and shall monitor the utilisation of ash on quarterly basis. Central Pollution Control Board shall develop a portal for the purpose within six months of date of publication of the notification. The concerned District Magistrate shall have concurrent jurisdiction for enforcement and monitoring of the provisions of this notification.

(2) (i) Thermal power plants shall upload monthly information regarding ash generation and utilisation by 5th of the next month on the web portal. Annual implementation report (for the period 1st April to 31st March) providing information about the compliance of provisions in this notification shall be submitted by the 30th day of April, every year to the Central Pollution Control Board, concerned State Pollution Control Board or Pollution Control Committee (PCC), Central Electricity Authority (CEA), and concerned Integrated Regional Office of Ministry of Environment, Forest and Climate Change by the coal or lignite based thermal power plants. Central Pollution Control Board and Central Electricity Authority shall compile the annual reports submitted by all the thermal power plants and submit to Ministry of Environment, Forest and Climate Change by 31st May.

(ii) All other user agencies shall submit consumption or utilisation or disposal of ash and use of ash based products as mandated in this notification in the compliance report of Environmental Clearance (EC) issued by Ministry of Environment, Forest and Climate Change or State Level Environment Impact Assessment Authority (SEIAA) or Consent to Operate (CTO) issued by State Pollution Control Board (SPCB) or Pollution Control Committee (PCC), whichever is applicable. The Central Pollution Control Board (CPCB) or State Pollution Control Board (SPCB) or Pollution Control Committee (PCC) shall publish annual report of ash utilisation of all other agencies except thermal power plants to review the effective implementation of the provisions of the notification.

(3) For the purpose of monitoring the implementation of the provisions of this notification, a committee shall be constituted under the Chairperson, Central Pollution Control Board (CPCB), with members from Ministry of Power, Ministry of Coal, Ministry of Mines, Ministry of Environment, Forest and Climate Change, Ministry Road Transportation and Highways, Department of Heavy Industry as well as any concerned stakeholder(s), to be nominated by the Chairman of the committee. The committee may make recommendations for effective and efficient implementation of the provisions of the notification. The committee shall meet at least once in six months and review annual implementation reports and the committee shall also hold stakeholder consultations for monitoring of ash utilisation as mandated by this notification by inviting relevant stakeholder(s) at least once in six months. The committee shall submit the six monthly report to Ministry of Environment, Forest and Climate Change (MoEFCC).

(4) For the purpose of resolving disputes between thermal power plants and users of ash or manufacturer of ash based products, the State Governments or Union territory administration constitute a Committee within three months from the date of publication of this notification under the Chairman, State Pollution Control Board (SPCB) or Pollution Control Committee (PCC) with representatives from Department of Power, and one representative from the Department which deals with the subject of concerned agency with which dispute is made.

(5) The compliance audit for ash disposal by the thermal power plants and the user agency shall be conducted by auditors, authorised by Central Pollution Control Board (CPCB) and audit report shall be submitted to Central Pollution Control Board (CPCB) and concerned State Pollution Control Board (SPCB) or Pollution Control Committee (PCC) by 30th November every year. Central Pollution Control Board (CPCB) and concerned State Pollution Control Board (SPCB) or Pollution Control Committee (PCC) shall initiate action against non-compliant thermal power plants within fifteen days of receipt of audit report.

[F. No. HSM-9/1/2019-HSM]

NARESH PAL GANGWAR, Jt. Secy.

Annexure

Ash Compliance Report (for the period 1st April-31st March) to be submitted on or before 31st May.

Sl. No.	Details	
1.	Name of Power Plant	
2.	Name of the company	
3.	District	
4.	State	
5.	Postal address for communication:	
6.	E-mail:	
7.	Power Plant installed capacity (MW):	
8.	Plant Load Factor (PLF):	
9.	No. of units generated (MWh):	
10.	Total area under power plant (ha): (including area under ash ponds)	
11.	Quantity of coal consumption during reporting period (Metric Tons per Annum):	
12	Average ash content in percentage (per cent):	
13.	Quantity of current ash generation during reporting period (Metric Tons per Annum): Fly ash (Metric Tons per Annum): Bottom ash (Metric Tons per Annum):	
14.	Capacity of dry fly ash storage silo(s) (Metric Tons) :	
15	Details of utilisation of current ash generated during reporting period (a) Total quantity of current ash utilised (MTPA) during reporting period: (b) Quantity of fly ash utilised (MTPA): (i) Fly ash based products (bricks or blocks or tiles or fibre cement sheets or pipes or boards or panels) (ii) Cement manufacturing:	

	(iii) Ready mix concrete: (iv) Ash and Geo-polymer based construction material: (v) Manufacturing of sintered or cold bonded ash aggregate: (vi) Construction of roads, road and fly over embankment: (vii) Construction of dams: (viii) Filling up of low lying area: (ix) Filling of mine voids: (x) Use in overburden dumps: (xi) Agriculture: (xii) Construction of shoreline protection structures in coastal districts; (xiii) Export of ash to other countries: (xiv) Others (please specify): (c) Quantity of bottom ash utilised (MTPA): (i) Fly ash based products (bricks or blocks or tiles or fibre cement sheets or pipes or boards or panels): (ii) Cement manufacturing: (iii) Ready mix concrete: (iv) Ash and Geo-polymer based construction material: (v) Manufacturing of sintered or cold bonded ash aggregate: (vi) Construction of roads, road and flyover embankment: (vii) Construction of dams: (viii) Filling up of low lying area: (ix) Filling of mine voids: (x) Use in overburden dumps: (xi) Agriculture: (xii) Construction of shoreline protection structures in coastal districts: (xiii) Export of ash to other countries: (xiv) Others (please specify): Total quantity of current ash unutilised (MTPA) during reporting period:	
16.	Percentage utilisation of current ash generated during reporting period (per cent):	
17.	Details of disposal of ash in ash ponds (a) Total quantity of ash disposed in ash pond(s) (Metric Tons) as on 31st March (excluding reporting period): (b) Quantity of ash disposed in ash pond(s) during reporting period (Metric Tons): (c) Total quantity of water consumption for slurry discharge into ash ponds during reporting period (m^3): (d) Total number of ash ponds: (i) Active: (ii) Exhausted (yet to be reclaimed): (iii) Reclaimed: (e) total area under ash ponds (ha):	
18.	Individual ash pond details *Ash pond-1,2, etc (please provide below mentioned details separately, if number of ash ponds is more than one)* (a) Status: Under construction or Active or Exhausted or	

	Reclaimed (b) Date of start of ash disposal in ash pond (DD/MM/YYYY or MMYYYY): (c) Date of stoppage of ash disposal in ash pond after completing its capacity (DD/MM/YYYY or MM/YYYY): (Not applicable for active ash ponds) (c) area (hectares): (d) dyke height (m): (d) volume (m^3): (e) quantity of ash disposed as on 31st March (Metric Tons): (f) available volume in percentage (per cent) and quantity of ash can be further disposed (Metric Tons): (g) expected life of ash pond (number of years and months): (e) co-ordinates (Lat and Long): (please specify minimum 4 co-ordinates) (f) type of lining carried in ash pond: HDPE lining or LDPE lining or clay lining or No lining g) mode of disposal: Dry disposal or wet slurry (in case of wet slurry please specify whether HCSD or MCSD or LCSD) (h) Ratio of ash: water in slurry mix (1:___): (i) Ash water recycling system (AWRS) installed and functioning: Yes or No (j) Quantity of wastewater from ash pond discharged into land or water body (m3): (k) Last date when the dyke stability study was conducted and name of the organisation who conducted the study: (l) Last date when the audit was conducted and name of the organisation who conducted the audit:	
19.	Quantity of legacy ash utilised (MTPA): i. Fly ash based products (bricks or blocks or tiles or fibre cement sheets or pipes or boards or panels): ii. Cement manufacturing: iii. Ready mix concrete: iv. Ash and Geo-polymer based construction material: v. Manufacturing of sintered or cold bonded ash aggregate: vi. Construction of roads, road and flyover embankment: vii. Construction of dams: viii. Filling up of low lying area: ix. Filling of mine voids: x. Use in overburden dumps: xi. Agriculture: xii. Construction of shoreline protection structures in coastal districts; xiii. Export of ash to other countries: xiv. Others (please specify):	
20.	Summary:	

Details	Quantity generated (MTP)	Quantity utilised (MTP) and (per cent)	Balance quantity (MTP)

	Current ash during reporting period			
	Legacy ash			
	Total			
21.	Any other information: Soft copy of the annual compliance report, and shape files of power plant and ash ponds may be e-mailed to:- moefcc-coalash@gov.in			
22.	Signature of Authorised Signatory			

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Item Nos. 05 to 12 (Court No. 1)

BEFORE THE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI

(By Video Conferencing)

Original Application No. 164/2018
(Earlier O.A.No.276/2013)

Ashwani Kumar Dubey Applicant

Versus

Union of India & Ors. Respondent(s)

WITH

Original Application No. 194/2020
(Earlier O.A.No.47/2020(CZ)
(I.A. No. 90/2020)

Suresh Kumar Pandey & Anr. Applicant(s)

Versus

Union of India & Ors. Respondent(s)

WITH

Original Application No. 94/2020
(I.A. No. 188/2020 I.A. No. 189/2020
& I.A. No. 205/2020)

Ashwani Kumar Dubey Applicant

Versus

Sasan Ultra Mega Power Plant & Ors. Respondent(s)

WITH

Original Application No. 148/2020
(Earlier O.A. No. 31/2020 (CZ))

Hiralal Bais Applicant

Versus

Reliance Sasan Power P. Ltd. & Ors. Respondent(s)

WITH

Original Application No. 107/2020 (CZ)

Jagnarayan Shah & Ors. Applicant(s)

Versus

Sasan Power Ltd. & Ors. Respondent(s)

WITH

Original Application No. 117/2014

Shantanu Sharma Applicant

Versus

Union of India & Ors. Respondent(s)

WITH

Original Application No. 499/2014

Anupam Raghav & Anr. Applicant(s)

Versus

U.O.I. & Ors. Respondent(s)

WITH

Original Application No. 102/2014

Sandplast (India) Ltd. & Ors. Applicant(s)

Versus

MoEF & Ors. Respondent(s)

Date of hearing: 18.01.2022

CORAM: HON'BLE MR. JUSTICE ADARSH KUMAR GOEL, CHAIRPERSON
HON'BLE MR. JUSTICE SUDHIR AGARWAL, JUDICIAL MEMBER
HON'BLE MR. JUSTICE BRIJESH SETHI, JUDICIAL MEMBER
HON'BLE PROF. A. SENTHIL VEL, EXPERT MEMBER
HON'BLE DR. AFROZ AHMAD, EXPERT MEMBER

Applicant(s): Mr. Ashwani Kumar Dubey, Advocate for Applicant in OA Nos. 164/2018 & OA 94/2020
Mr. Dharamvir Sharma, Advocate for Applicant in OA 148/2020
Ms. Srishti Agnihotri, Advocate for Applicant in OA 107/2020 (CZ)

Respondent(s): Mr. K.M Nataraj, ASG with Mr. Sailesh Madiyal, Advocate for R-10
Mr. Sanjay Jain, ASG with Mr. Adarsh Tripathi, Advocate for R - 19 & 20
Mr. Nalin Kohli, Advocate for Sasan Power Ltd.
Mr. Ashish Prasad, Advocate for Hindalco Ltd.
Mr. Rajat Jariwal, Advocate for R-17

Mr. A.K. Prasad, Adv. for R - 4 in OA 194/2020
Dr. Sapna Aggarwal, Adv. for MoEF & CC in OA 148/2020
Mr. Raj Kumar, Advocate for CPCB
Mr. Pradeep Misra & Mr. Daleep Dhyani, Advocates for UPPCB
Mr. Rahul Khurana, Adv. for HSPCB
Mr. Soumyajit Pani Adv. for the State of Odisha

ORDER

The Issue

1. The common issue in all the above eight matters is the remedial action against violation of environmental norms by the Thermal Power Plants (TPPs) in the light of facts found and recommendations of the fact-finding committees, set out inter alia in para 15 of this order. There is resultant air water and land pollution due to not installing requisite air pollution control and monitoring devices (FGDs and CAAQMS) to mitigate air pollution during operation of TPPs, unscientific handling and storage of fly ash beyond capacity of flyash dykes/ponds resulting in devastating accidents due to their breach. Such breaches have resulted in contamination of water sources, damage to crops, loss of human lives and flora and fauna. Accumulated fly ash has been found to be **1670.602 Million Tonnes as on 31.12.2021.** The same is source of continuing damage to public health and environment. Several Industrial areas (about 100), particularly Singrauli and Sonebhadra in Madhya Pradesh and Uttar Pradesh about which factual reports are on record of present case are categorized as polluted industrial clusters on the basis of Comprehensive Environment Pollution Index (CEPI) prepared by CPCB. Associated issue of Pollution by stone crushers, coal mining and transportation in the area is also for consideration.

Procedural History and scope of today's proceedings

Points for determination

14. Points for determination are remedial action against pollution due to failure to scientifically manage and utilise the flyash, accountability for damage due to breach of Rihand reservoir and due to breach of ash pond, resulting in deaths and injuries and damage to the crops and environment. As already mentioned, legacy fly ash is 1670.602 Million Tonnes as on 31.12.2021 which has potential for serious damage to the environment as shown by incidents of dyke breaches contaminating sources of water and air pollution making industrial areas critically polluted. Air control devices are not installed in many TPPs. There are incidents of deaths, injuries and loss of flora and fauna.

15. We have considered the data furnished in the reports furnished in pursuance of earlier orders of this Tribunal dated 04.11.2020 in OA No. 117/2014, 14.07.2020 in OA No. 164/2018 and 29.6.2020 in OA No. 148/2020, including the recommendations for remedial action. The compliance status as projected in the reports of the Joint Committees/Oversight Committees shows huge gap in storing, handling, management and utilization of fly ash and consequential continuing damage to the environment and public health. Such huge gaps are patent from the recommendations part in the reports. Deficiencies noted in respect of some individual TPPs appear to be of representative nature and may exist in almost all TPPs, unless shown otherwise on the ground and not in the form of self-serving denial. In the light of the said recommendations, further remedial action needs to be taken to enforce the principle of sustainable development under section 20 of the NGT Act. The recommendations are reproduced below:

"M/s NTPC Limited Shakti Nagar Sonbhadra:

Recommendations of the Committee

- *The unit should immediately take required measures to* ***stop the discharge of ash pond overflow into the Rihand reservoir.***
- *The unit may be asked to* ***relocate the OCEMS in order to achieve the desired iso-kinetic sampling for particulate matter.***
- *The unit may be asked to complete the installation of the third CAAQMS at the earliest.*
- *The unit may be asked to ensure that the* ***CAAQMS is connected to the CPCB/SPCB server at the earliest****.*
- *The unit may be asked to submit a* ***time-bound action plan for 100% fly ash utilization at the earliest.***
- ***The process of installation and commissioning of the FGD system needs to be expedited in realization of the revised timeline.***
- *The unit may be asked to properly treat the MSW generated from their residential colony.*
- ***The unit shall take immediate measures to control fugitive emission in ash dyke area.***

Further, the committee recommends for imposing environmental compensation (EC) of Rs 27,60,000/- for discharging ash pond overflow water into the Rihand reservoir.

M/s NTPC Limited Rihand Super Thermal Power (Power Plant)

Recommendations of the Committee

1. ***The unit may be asked to ensure that the CAAQMS is connected to the CPCB/SPCB server at the earliest.***

2. ***The unit may be asked to submit a time-bound action plan for 100% fly ash utilization at the earliest.***

3. ***The process of installation and commissioning of the FGD system needs to be expedited in realization of the revised timeline.***

M/s Anpara Thermal Power Plant (Power Plant)

Recommendations of the Committee

- ***The unit may be asked to install flow meters to measure the amount of ash slurry discharged into the ash pond and the amount of water recovered and recycled from it.***

The committee shall submit the six monthly report to Ministry of Environment, Forest and Climate Change (MoEFCC).

(4) For the purpose of resolving disputes between thermal power plants and users of ash or manufacturer of ash based products, the State Governments or Union territory administration constitute a Committee within three months from the date of publication of this notification under the Chairman, State Pollution Control Board (SPCB) or Pollution Control Committee (PCC) with representatives from Department of Power, and one representative from the Department which deals with the subject of concerned agency with which dispute is made.

(5) The compliance audit for ash disposal by the thermal power plants and the user agency shall be conducted by auditors, authorised by Central Pollution Control Board (CPCB) and audit report shall be submitted to Central Pollution Control Board (CPCB) and concerned State Pollution Control Board (SPCB) or Pollution Control Committee (PCC) by 30th November every year. Central Pollution Control Board (CPCB) and concerned State Pollution Control Board (SPCB) or Pollution Control Committee (PCC) shall initiate action against non-compliant thermal power plants within fifteen days of receipt of audit report."

Directions:

21. In the light of above discussion, it is patent that remedial measures are required in terms of recommendations set out in para 15 above in respect of individual TPPs or other projects as well as general issues applicable to all the TPPs such as timely installation of air pollution control and monitoring devices, timely utilisation and disposal of fly ash, scientific designing of fly ash dykes and safety norms, addressing public health issues, steps for restoration of deteriorated environment by bringing down CEPI scores in the entire area, restoration of Rihand Reservoir and other damaged/degraded areas, providing arrangement for public health facilities, including water supply and by coordinated and concerted efforts and high level monitoring. The PP are to be accountable for past violations and are under obligation to remedy the violations and follow the norms for future. The regulators are to enforce the same and higher authorities are to oversee. Accordingly, following direction are issued:

i. We direct constitution of a fly ash management and utilization Mission to be jointly headed by the Secretaries, MoEF&CC, Coal and Power, GoI and Chief Secretaries of UP and MP. The Secretary, MoEF&CC will be the nodal agency for coordination and compliance. The Mission will coordinate and monitor issues relating to handling and disposal of flyash as well as all associated issues in the light of above discussion. It may hold its first meeting within one month to take stock of the situation and to prepare action plan in the light of recommendations of Joint Committees quoted earlier in para 15 above in respect of individual plants as well as road map generally. Thereafter, it may meet atleast once in a month for one year to review the progress. The resolutions of the Mission and quarterly progress may be placed on the website of MoEF&CC for information of the stake holders and inhabitants in the area. The Mission will be free to interact with the concerned Government Departments/ Expert institutions/ individuals/other stakeholders. The Mission may in its first meeting require voluntary financial contribution by all the projects in proportion of the financial capacity of the projects out of CSR funds or otherwise. The contribution, alongwith compensation which may be collected may be credited to a separate environment restoration account for restoration of environment and relief to the victims of damage to the environment in such manner as may be found necessary by the Mission. Any victim or aggrieved party will be free to approach the Mission for providing such relief. The Mission may also consider the safeguards laid down in the Notification dated 31.12.2021, particularly for safety audits of the ash dykes which should be conducted particularly for structural stability, as far as possible within six months. Advisory issued by the Ministry of Power

dated 22.9.2021 will not be enforced being against the spirit of notification dated 31.12.2021 and obstructing much needed speedy utilisation/disposal of legacy flyash. The Mission may evolve mechanism for interaction with stake holders, including associations of brick kiln owners. Guidelines be also issued for siting, design and engineering standards for the location, disposal, maintenance and regulation of Ash Ponds as breach of a fly ash ponds result in great disaster. Public health and risk impact assessment in the areas of operation of TPPs and generators of fly ash may be got conducted. The Mission may also monitor scientific management and utilization of fly ash by power projects outside Singrauli and Sonebhadra, in coordination with Chief Secretaries of concerned States and adopting safety measures for ash dykes, installing devices to control air pollution, (including FGDs, OCEMS) in a time bound manner and restoration of environment and public health. The Mission may also consider use of beneficiated coal. It may in particular consider on-site and off-site crisis management plans with regard to fly ash ponds and dykes. As noted earlier, legacy fly ash is 1670.602 Million Tonnes as on 31.12.2021 and data of ash generation and utilization of legacy fly ash is as follows:

"***Summary of Ash Generation and Utilization during year 2020-21***

No. of Thermal Power Stations	*: 191*
Capacity (MW)	*: 2,13,030 MW*
Coal consumed	*: 672.130 Million Tonnes*
Fly Ash Generation	*: 222.789 Million Tonnes*
Fly Ash Utilization	*: 205.098 Million Tonnes*
Percentage Utilization	*: 92.06%*
Legacy flyash	:1670.602 Million Tonnes

The Committee of Secretaries, in coordination with PPs and statutory regulators, may draw a roadmap for utilization and disposal of entire legacy fly ash for Sonebhadra and Singrauli areas

as well as for all the Power Plants located in clusters or standalone with tagging the sources to utilize fly ash on voluntary and compulsion mode for which required mechanism be laid down.

ii. With regard to past violations, the PPs remain liable and the Joint Committee of CPCB, State PCB and jurisdictional District Magistrates may determine compensation following due process, on the principles laid down inter alia in M.C. Mehta, (1987) 1 SCC 395, Sterlite (2013) 4 SCC 575 and Goel Ganga (2018) 18 SCC 257, having regard to the period of violation and financial capacity of the unit. The PPs may take remedial measures as per recommendations of the Committee and as per law, failing with coercive measures for continuing or future violations be taken by concerned authorities.

iii. Statutory regulators may take action in terms of need for compliances in the light of recommendations with regard to individual Plants as well as generally so as to require the concerned PPs to comply, failing which coercive measures be taken by the statutory regulators in accordance with law.

iv. In respect of incident dated 10.04.2020, compensation paid to heirs of the deceased at the rate of Rs. 10 lakhs per death is increased to Rs. 15 lakhs on principles laid down inter alia in Sarla Verma (2009) 6 SCC 121 and Uphaar Cinema (2011) 14 SCC 481. We direct the remaining amount to be paid within one month. This order will not debar the heirs of the victims to claim higher compensation by approaching appropriate forum. If the salaries to persons appointed as compensation to the victims are below minimum wages, the PP may ensure compliance of law on the subject which may be also looked into by the concerned Labour Departments of the State of UP and MP. The statutory regulators may take further remedial action

in terms of recommendations of the Committee in OA 148/2020, quoted earlier for restoration of environment and preventing such incidents.

v. With regard to breach of Rihand Reservoir also, further remedial measures be taken in terms of recommendations on the subject, quoted in para 15 above.

All the matters (including IAs) will stand disposed of accordingly. If any grievance survives, aggrieved parties are free to take remedies as per law.

A copy of this order be forwarded to the Secretaries, MoEF&CC, Coal and Power, GoI and Chief Secretaries of UP and MP, CPCB, State PCBs, SEIAAs, PCCFs (HoFF) UP and MP, District Magistrates, Singrauli and Sonebhadra, Labour Commissioners, UP and MP, State Disaster Management Authorities of UP and MP and SSPs by e-mail for compliance. CPCB may also circulate the same by email to all TPPs or other concerned to facilitate compliance.

Adarsh Kumar Goel, CP

Sudhir Agarwal, JM

Brijesh Sethi, JM

Prof. A. Senthil Vel, EM

Dr. Afroz Ahmad, EM

January 18, 2022
Original Application No. 164/2018
(Earlier O.A.No.276/2013) and other connected matters
DV

Annexure-A7

No. 11/86/2017-Th.II
Government of India
Ministry of Power

Shram Shakti Bhawan, Rafi Marg,
New Delhi, dated the 8th October, 2021

To,

1. Principal Secretary/Secretary in charge of Energy/Power Departments, All States/UTs
2. Chairman, CEA
3. CMDs of all CGSs

Subject: Revised Policy for Biomass Utilisation for Power Generation through Co-firing in Coal based Power Plants

Sir/Madam,

The undersigned is directed to refer to this Ministry's "Policy for Biomass Utlisation for Power Generation through Co-firing in Pulverised Coal Fired Boilers" issued in November, 2017

2. In order to further promote use of biomass pellets in coal based thermal power plants, the above Policy is further modified. A copy of "Revised Policy for Biomass Utlisation for Power Generation through Co-firing in Coal based Power Plants" is enclosed for information and necessary action please.

Yours faithfully

Encls: As Above

Kumar Saurabh
Deputy Director(Thermal)
Ministry of Power

Copy to:
(i) PS to Hon'ble Minister,
(ii) PS to Hon'ble MoS for Power,
(iii) Sr. PPS to Secretary(Power),
(iv) PPS to AS(SKGR), PPS to AS&FA, PPS to AS(VKD)
(v) All Joint Secretaries/EA/Chief Engineer, Ministry of Power
(vi) Incharge, NIC, Ministry of Power - with a request to upload this document on the website of MoP.

REVISED POLICY OF MINISTRY OF POWER FOR BIOMASS UTILIZATION FOR POWER GENERATION THROUGH CO-FIRING IN COAL BASED POWER PLANTS

1. The current availability of biomass in India is estimated at about 750 million metric tonnes per year. The estimated surplus biomass availability is at about 230 million metric tonnes per annum covering agricultural residues.

2. Ministry of Power (MoP) vide its policy dated 17-11-2017 on biomass utilization for power generation had advised that all fluidized bed and pulverized coal units (coal based thermal power plants) except those having ball and tube mill, of power generation utilities, public or private, located in India, to use 5-10% blend of biomass pellets made, primarily, of agro residue along with coal after assessing the technical feasibility, viz. safety aspect etc.

3. In order to further promote use of biomass pellets in coal based thermal power plants, the above Policy is further modified. The modifications in the above Policy are as under:

(i). All coal based thermal power plants of power generation utilities with **bowl mill**, shall on annual basis mandatorily use 5 percent blend of biomass pellets made, primarily, of agro residue along with coal with effect from one year of the date of issue of this guideline. The obligation shall increase to 7 percent with effect from two years after the date of issue of this order and thereafter.

(ii). All coal based thermal power plants of power generation utilities with **ball & race mill**, shall on annual basis mandatorily use 5 % blend of biomass pellets (torrefied only) made, primarily, of agro residue along with coal. This is to be complied within one year starting from this order. Two years from the date of issue of this order and thereafter the obligation will increase to 7 percent.

(iii). All coal based thermal power plants of power generation utilities with **ball & tube mills**, shall on annual basis mandatorily use 5 % blend of torrefied biomass pellets with volatile content below 22%, primarily made of agro residue along with coal. This is to be complied within one year.

(iv). Generating Utilities having certain units under Reserve Shutdown or not being despatched due to MOD (Merit Order Despatch) consideration would ensure to increase the percentage of co-firing up to 10 % in their other operating units/ plants (5 % in plants having ball and tube mills).

(v). Any power plants seeking exemptions / relaxation from co-firing may be considered on case to case basis, based on recommendations of CEA. A Committee headed by Chief Engineer (TE&TD), CEA, including representatives from NTPC, BHEL, CPRI, Ministry of Agriculture and Mission

Directorate shall examine the request of power plants for their exemption/relaxation from mandatory co-firing of biomass, as mentioned at para (i) to (iv) above.

(vi). The policy for co-firing of biomass would be in force for 25 years or till the useful life of the thermal power plant whichever is earlier. The minimum percentage of biomass for co-firing will be reviewed from time to time.

(vii) The minimum contract period for procurement of biomass pellets by generating utilities shall be for 7 years so as to avoid delay in awarding contracts by generating companies every year and also to build up long term supply chain. There may be provision of firm price of biomass pellets for the first year of the contract and yearly rate variation from second year onwards where rates can vary as per terms and conditions of the contract. In order to enable its implementation, a model RfP and contract shall be issued by MOP by 15.11.2021 for adhering to by all generating utilities. However, the ongoing process of contracting for biomass co-firing by generating utilities shall not be affected till issue of Model Contract.

(viii). Provisions related to tariff determination and scheduling shall be as given below:

a. For projects set up under Section 62 of the Electricity Act 2003, the increase in cost due to co-firing of biomass pellets shall be pass through in Energy Charge Rate (ECR).
b. For projects set up under Section 63 of the Electricity Act 2003, the increase in ECR due to biomass co-firing can be claimed under Change in Law provisions.
c. Such additional impact on ECR shall not be considered in deciding Merit Order Despatch (MOD) of the power plant.
d. Obligated Entities such as Discoms can meet their Renewable Purchase Obligations (RPO) by buying such generation of co-firing.

*****

Annexure-A8

कमाण्डेन्ट का कार्यालय
केन्द्रीय औद्योगिक सुरक्षा बल
(गृह मंत्रालय)

इकाई : एसएसटीपीएस शक्तिनगर,
पोस्ट : शक्तिनगर–231222
जिला : सोनभद्र (उ0प्र0)

सं0आईसी–11099 / केओसुब / एसएसटीपीएस / आसू / विविध / 2023– 708 दिनांक: 22 / 03 / 2023

सेवा में,

समूह महाप्रबंधक
ए0टी0पी0सी0 सिंगरौली

Sub: PENDING RECOMMENDATIONS OF IB INSPECTION TEAM : REG.

Kindly refer to this office letter No. (1375) Dated 24.12.2017, even No. (435) dated 21.04.2018 No. (830) dated 23.07.2018, No. (702) Dated 17.06.2019, No. (1046) dated 04.09.2019, No. (380) dated 23.03.2020, No. (811) dated 28.05.2020, No. (1650) dated 15.09.2020 , No.(309) dated 10.02.2021 and No.(1489 (A) dated 01.10.2021.,No 3042(E) dt 28.02.2022, NO 3958(E) dt 11.07.2022, NO 4112(E) dt 21.09.2022 The above said letters were sent to management to comply the observations/recommendations of IB Industrial Security Inspection. The following points of IB Industrial Security Inspection Team are still pending.

01. **The recommendation given by the Industrial Security Inspection team of IB on 05-06/08/2014 .**

1. The perimeter wall may be raised to a uniform height of 10' wherever it is less. It may be provided with 2.5' concertina coil overhang.
2. Construction/maintenance of track for vehicular patrolling around the perimeter wall of installation is required.
3. Adequate number of watch towers needs to be constructed at strategic locations along the perimeter wall for surveillance.
4. Entry to Control Rooms of all the generating units (turbine sections) and control room of coal handling plant may be provided with biometric access control system.
5. Adequate illumination may be provided along the perimeter wall to enable security Personnel to keep watch as well as for effective CCTV coverage during night.

02. **The recommendation given by the Industrial Security Inspection team of IB on 20-21/09/2016**

1. The management may maintain a database in respect of each of the Casual/contract labourer employed in the installation which will have all relevant background details of the person including his/her photograph, name, address, DoB, present & permanent residential address, details of parents/ immediate family and photocopies of ID proof like ration card, driving license, voter ID card etc. so that they can be traced in case of any eventuality.

Contd.P/02

2. Technical devices like pen drives may be issued/allowed by the management only and a record of their uses may be maintained by the concerning unit in charge. Carrying such private drives inside the installation by the employees may be discouraged.

03. <u>The recommendation given by the Industrial Security Inspection team of IB on 19-20/12/2019</u>

1. There is no continuous patrolling track inside the installation. A contiguous patrolling track may be constructed inside along the perimeter wall.

2. High mast light should be installed at main gate and other important location including CHP area for proper illumination of the plant.

3. Perimeter wall is not fully under cover of CCTV cameras. CCTV cameras need to be installed along the perimeter wall and other important locations of the installation to check the suspicious movement/activities.

4. All gates made up of steel frame/grill is see-through, thereby exposing the premises and the security personnel deployed there. Steel plates or suitable [illegible] be installed at the gates for protection of security personnel.

5. Hydrogen plant should be provided biometric access control system or deployed security personnel round the clock. Two CCTV cameras for incoming and outgoing commuters should also be installed at the gate.

6. Height of the all entry gates should be matched with height of the perimeter wall. Damaged gate should be repaired/replaced and made strong.

7. Elevated bridge should be made at each entry and exit railway track to observe roof of incoming and outgoing railway rack.

8. CCTV cameras may be installed at the corridor of Admin building.

9. CCTV cameras may be installed at all entry/exit gates including railway gates at person's height to capture face of people as well as number plates of vehicles and its driver/occupants approaching the gates. CCTV cameras may also be installed at all vital places inside the plant for proper vigil.

10. Management should ensure for clear CCTV footage recording even in bad weather as well as night. Recording of CCTV cameras may be scrutinized periodically and be recorded for 90 days.

11. DFMD and X-ray machine may be installed at the gate of Admin building to check baggage.

12. All employees including contractual workers, visitors should be display their passes while at workplace so that they can be identified easily.

13. Data base management system may be created with photo and personal details of contract workers employed by the SSTPS to verify the facts whenever required.

14. Anti-sabotage checks of vehicles entering through main gate may be carried out at the entry point.

Contd.P/3

15. I-card of regular employees should be made in house and security features should be incorporated in the I-card to avoid cloning.

16. Visitors' passes should have name of officer and place to be visited upon. Visitor passes should be signed by the visited upon officers (name on the pass) with date and time, so that the possibilities of their over staying in other area can be checked.

17. Access to the server room should be controlled through bio-metric system and also have CCTV surveillance.

18. Mobile phone should be banned in the operational areas.

19. All Railway gates should be deployed armed guard and should be kept closed if not in use. Elevated bridge should be made at each entry and exit railway track to observe roof of incoming and outgoing railway rack.

05. Hence, once again it is requested to take necessary action to comply the pending recommendations on priority basis and the progress report may be sent to this Office for onward submission to higher authority please.

21/03/2023

सुपरिण्टेण्डेन्ट
केऔसुब इकाई एसएसटीपीएस शक्तिनगर

21-03-23

प्रतिलिपी.

1. अपर महाप्रबंधक, (मानव संसाधन) : उचित कार्यवाही हेतु।
एनटीपीसी सिंगरौली ।