

MINUTES OF THE 42ND MEETING OF THE RE-CONSTITUTED EXPERT APPRAISAL COMMITTEE (EAC) ON ENVIRONMENTAL IMPACT ASSESSMENT (EIA) OF THERMAL POWER PROJECTS HELD ON 01ST JUNE, 2023.

The 42nd Meeting of the re-constituted EAC (Thermal Power) organized by the Ministry of Environment, Forest & Climate Change, Indira Paryavaran Bhawan, Aliganj, Jor Bagh Road, New Delhi was held on 1st June, 2023 through video conference under the Chairmanship of Shri Gururaj P. Kundargi. The list of Members participated in the meeting is at **Annexure**.

Agenda Item No. 42.1: Confirmation of the Minutes of the 41st EAC meeting

The Minutes of the 41st EAC (Thermal Power) meeting held on 12th May, 2023 were confirmed in the meeting.

Agenda Item No. 42.2

Expansion of Chhabra Thermal Power Project of capacity 2x660 MW (Unit 7&8, Stage- III) located at near Chhabra town, District Baran, Rajasthan M/s Rajasthan Rajya Vidhyut Utpadan Nigam Ltd – Reconsideration for Terms of Reference – reg.

[Proposal No. IA/RJ/THE/404292/2022; F. No. J-13012/15/2009-IA.II (T)]

42.2.1 The proposal is for grant of Terms of Reference to the project for Expansion of Chhabra Thermal Power Project of capacity 2x660 MW (Unit 7&8, Stage- III) located at near Chhabra town, District Baran, Rajasthan M/s Rajasthan Rajya Vidhyut Utpadan Nigam Ltd.

42.2.2 Observation in Earlier EAC:

The proposal for grant of Terms of Reference was last considered by the EAC in its 37th EAC meeting held on 14th February, 2022. The project proponent has submitted the point-wise information on each of observation point of the EAC, the same is given as under: -

Query No.1. Plan for Ash utilization shall be submitted. Ministry.

Reply: Plan for eco-friendly ways of ash utilization as per MoEF&CC notification 31.12.2021 is adopted in RVUN and detailed plan for achieving 100 percent utilization of ash is as under:

- i. As per advisory issued on 22.02.2022 by MoP, Gol, the Chhabra Power station has initiated empanelment process of transporters/contractors through open competitive bidding for supplying the pond/mound ash at free of cost to the eligible user agencies as per MoEF&CC, Gol notification dated 31.12.2021.
 - a. Supercritical Units#5&6 -- Empanelment of transporter completed, ash being lifted since Dec 2022 for construction of bypasses at Chhabra, Chhipabarod and Aklera & few new applications from NHAI/ eligible agencies are under consideration.
 - b. Sub critical Units# 1 to 4 - Finalization of empanelment Is in progress
 - ii. Bricks block manufacturers & other user like ready mix concrete {RMC} agencies are being provided pond/mound ash on free of cost basis.
 - iii. Details of ash auctioned during one year through transparent bidding via MSTC:

| | | |
|------------------------|-----------------------|---------------------------|
| ESP Dry Fly Ash | CTPP(U #1to 4) | CSCTPP(U#15&6) |
|------------------------|-----------------------|---------------------------|

| | | |
|-----------------|-----------|-----------|
| Auctioned | 10.75 LMT | 9.59 LMT |
| To be Auctioned | 1.25 LMT | 1.91 LMT |
| Total | 12 LMT | 11.50 LMT |

- iv. The Expression of Interest for developing infrastructural rail mode transportation facilities for ash from CTPP Is in process. Two firms have participated in Eol and finalization of modality is under process.
- v. For regular and effective utilization of ash, Chhabra plant is exploring the possibilities to tie up with cement industries/big ash based products manufacturing units to establish the grinding/mixing units nearby the plant.
- vi. Public sector departments are continuously being persuaded for mandatory use of ash available at CTPP in their ongoing/projected construction projects.

Year wise details/data for three years with utilization of legacy ash for achieving 100% ash utilization has been submitted.

Query No.2. Green belt is not adequate. Submit the revised layout with 33 % green belt area.

Reply: The revised layout with 33% green belt area has been submitted. Further the details of plants and area is available as under.

| S.No | Details of plants | Plant Area (Ha) | Green Belt (Ha) | Total Land (Ha) | Green Belt (%) | No. of Plants | Species | Survival Rate |
|------|-------------------------|-----------------|-----------------|-----------------|----------------|---------------|---|---------------|
| 1. | Stage – 1 (4x250 MW) | 354 | 173 | 527 | 32.8 | 258942 | Amla, Shisham, Mango, Gulmohar, Arjun, Karanj, Neem, Babul, Jamun, Jalebi | 90% |
| 2. | Stage – 2 (2x660 MW) | 157 | 72 | 213 | 33.8 | | | |
| | Total | 511 | 245 | 740 | 33.1 | | | |

Query No.3. Monitoring of air quality data shall be conducted by third Party

Reply: Ambient air quality monitoring at Chhabra power station conducted by third party M/s Green vision testing & enviro services duly Accredited by NABL & recognized by MoEF&CC, Gol in the month of March, 2023 and April, 2023 has submitted which is stipulated as under:

| Ambient Air Quality Monitoring was done by NABL Accredited third party i.e. M/s Green vision testing & Enviro Services, at Chhabra Power station | | | | | | | | | | | | |
|--|--------------------|-------------------|-----------------|------------|------------------|---------------|----------------|---------------|------------------------|-------------------|--------------|----------------|
| | | | | | | | | | | | | March, 2023 |
| S. No | Parameter | Units | Standard (NAAQ) | Location | | | | | | | | |
| | | | | ET P Plant | CHP control Room | Watch Tower-3 | Admin Building | CW Pump House | Silo Drivers Rest Room | Colony Dispensary | Field Hostel | Bapcha Village |
| 1. | Particulate Matter | µg/m ³ | 100 | 84.52 | 72.61 | 78.51 | 76.42 | 79.48 | 78.49 | 74.68 | 73.56 | 76.61 |

| | | | | | | | | | | | | |
|----|-------------------------------------|-------------------|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | (PM-10) | | | | | | | | | | | |
| 2. | Particulate Matter (PM-2.5) | µg/m ³ | 60 | 43.27 | 37.54 | 40.68 | 38.73 | 42.63 | 42.63 | 42.53 | 41.35 | 38.45 |
| 3. | Sulphur Dioxide (SO ₂) | µg/m ³ | 80 | 28.11 | 28.16 | 27.46 | 26.53 | 27.96 | 28.09 | 27.89 | 26.98 | 27.24 |
| 4. | Nitrogen Dioxide (NO ₂) | µg/m ³ | 80 | 27.38 | 26.39 | 27.09 | 27.12 | 26.84 | 27.74 | 27.46 | 26.11 | 26.95 |
| 5. | Ozone (O ₃) | µg/m ³ | 100 | 18.09 | 18.34 | 17.58 | 17.78 | 17.76 | 18.19 | 18.78 | 17.62 | 17.91 |

Query No.4. Report from SPCB shall be submitted regarding data of Air emissions.

Reply: Stack Emissions Monitoring were conducted by Rajasthan state pollution control board team in the month of April,2023 at Chhabra Thermal Power station. The details are complied are as under:

| Stack Description | Date | NOx | Particulate Matter | SO ₂ | Remarks |
|--------------------------------|------------|--------------------|--------------------|--------------------|--|
| | | mg/Nm ³ | mg/Nm ³ | mg/Nm ³ | |
| Prescribed Limit (Unit 1 to 4) | | 450 | 50 | 600 | FGD is proposed, A&F approvals of GoR obtained. Case is under process to adhere prescribed timelines from MoEF&CC. |
| Stack of Unit -1 | 25.04.2023 | 625 | 109 | 964 | |
| Stack of Unit -2 | 25.04.2023 | 638 | 125 | 1032 | |
| Stack of Unit -3 | 25.04.2023 | 713 | 112 | 980 | |
| Stack of Unit -4 | 25.04.2023 | 735 | 116 | 1109 | |
| Prescribed Limit (Unit 5 & 6) | | 100 | 30 | 100 | Work order for FGD awarded on 18.05.2022. Execution at site is under progress to adhere prescribed timelines from MoEF&CC. |
| Stack of Unit -5 | 25.04.2023 | 675 | 54 | 964 | |
| Stack of Unit -6 | 25.04.2023 | 592 | 57 | 1055 | |

42.2.3 The details of the project submitted by project proponent and ascertained from the document submitted are mentioned below:

- i. The proposed 2 X 660 MW project is an extension of existing 2320 MW units (2x250 MW + 2x250 MW + 2x660 MW) with adequate area as shown in the Plot Plan which shows the layout of main plant including power house, steam generators, transformer yard, switch yard, coal and ash handling plant, cooling towers, other major balance of plant equipment/facilities and green

- belt. The land for this project is available for power project and totally encumbrance-free. 2
- ii. Total land area of about 726.858 Hectares / 2871.05 Bighas (2431.11 Bigha Private land + 439.14 Bigha Govt. land) was acquired by the side of the existing power project (Stage-I) which is adequate for the proposed power plant including the coal stockyard and green belt. 213 Ha of land is used for 2 X 660 MW Plant in stage II.
 - iii. Coal would be the load carrying Fuel and beneficiated (washed) coal would be used. The annual coal requirement for 2 x 660 MW units is estimated to be about 5.00 million tones/year of washed coal having an average calorific value of 4500 kCal/kg at plant load factor (PLF) of 85 %. The secondary fuel would be HFO as per IS 1593/LSHS and the start-up oil would be LDO as per IS 1460-1995
 - iv. The total water allocated for Chhabra plant is 2185 MCFT per year (1,69,508 m3/day). The allotted water would be met from Lhasi dam (300 mcft), Parbati river (300 mcft) and Parwan Major Irrigation Project/dam (1585 mcft). Water resource department, GoR has allotted additional 1320 MCFT water for proposed power project from parwan dam vide letter dt 02.09.2009.
 - v. The silent features of the project is as follows: -

Project details:

| | |
|---|---|
| Name of the Proposal | Proposal for Setting up of 2 X 660 MW Ultra Supercritical Coal Fired Expansion Thermal Power Project Unit#7&8 at Chhabra TPP in District- Baran(Rajasthan). |
| Proposal No. | IA/RJ/THE/404292/2022 |
| Location | Village: Chowki Motipura, Distt: Baran(Rajasthan) |
| Company's Name | Rajasthan Rajya Vidyut Utpadan Nigam Limited |
| Accredited Consultant and certificate No. | M/s PCRI BHEL Haridwar and accreditation certificate number is NABET/EIA/2326/IA 0111. |
| Inter- state issue involved | No inter- state issue involved |
| Seismic zone | Seismic zone II as per IS : 1893 (Part 1) 2016 |

Category details:

| | |
|--|---|
| Category of the project | Category 'A' project |
| Capacity | <p>Existing Units Stage-I Phase-I: 500 MW (2 x250 MW) Coal Fired Thermal Power Plant Stage-I Phase-II: 500 MW (2 x250 MW) Coal Fired Thermal Power Plant Stage-II :1320 MW (2 x660 MW) Supercritical technology based Coal Fired Thermal Power Plant</p> <p>Proposed Unit Stage-III: 1320 MW (2x660 MW) Ultra Supercritical technology based Coal Fired Expansion Thermal Power Plant</p> |
| Attracts the General Conditions (Yes/No) | No |
| Additional information (if any) | - |

Project Details:

| | |
|--|--|
| <p>If expansion, the details of ECs (including amendments and extension of validity) of existing Units etc.</p> | <p>Environmental Clearance of existing units, Stage-I Phase-I (2x250 MW Coal Based thermal power project) was obtained from MoEF&CC vide F.No. J-13011 / 21 / 2005-IA.II(T) dated 03.02.2006.</p> <p>Environmental Clearance of existing units, Stage-I Phase-II (2x250 MW Coal Based thermal power project) was obtained from MoEF&CC vide F.No. J-13011 / 8 / 2007-IA.II(T) dated:19.05.2008.</p> <p>Environmental Clearance of existing units, Stage-II (2x660 MW Supercritical Technology Based Coal Fired Thermal Power Project) was obtained from MoEF&CC vide F.No. J-13012/15/2009-IA.II(T) dated 23.05.2012 for unit- 5 only and for unit- 6 on dated 02.02.2015.</p> |
| <p>Amendments granted, if Yes details</p> | <p>EC was accorded for 1x660 MW (Unit 5) out of the 2x660 MW (Units 5&6) on 23.05.2012 as firm coal linkage was available only for 1x660 MW. However, EIA/EMP and public hearing was conducted for both the units i.e. 5&6.</p> <p>Based on the plan submitted by Board of Directors of RVUN and the State Government, EC was granted for Unit#6 by MoEF vide F.No. J-13012/15/2009-IA.II(T) dated 02.02.2015.</p> |
| <p>Expansion / Green Field (new): (IPP / Merchant / Captive):</p> | <p>Expansion Project</p> <p>Merchant Power Project</p> |
| <p>If expansion, the date of latest monitoring done by the Regional Office (R.O) of MoEF&CC for compliance of the conditions stipulated in the environmental and CRZ clearances of the previous phases. A certified copy of the latest R.O. monitoring report shall also be submitted.</p> | <p>Compliance of conditions stipulated in Environment clearance (EC) of the existing is being regularly submitted to Regional office of Ministry of Environment, Forest and Climate Change, GoI.</p> <p>Regional Office (R.O.) of MoEF&CC requested for certified copy of the latest monitoring report on dated 04.05.2023 and 06.05.2023.</p> |
| <p>Specific webpage address where all EC related documents (including monitoring and compliance related reports/documents) of the specific project under consideration are/will be available. Also contact details of PP's officer responsible for updating this webpage/information.</p> | <p>Environmental related documents pertaining to RVUNL projects are available at following link:-</p> <p>https://department.rajasthan.gov.in/pages/department-page/135</p> <p>Name of responsible officer – Mr. Rajeev Kumar Batra, Executive Engineer, RVUN, Jaipur. Mob-9413349958</p> |
| <p>Co-ordinates of all four corners of TPP Site:</p> | <p><u>Power Plant Area:</u></p> <p>(1) 24.652140 °N 77.036777 °E</p> <p>(2) 24.651109 °N 77.043314 °E</p> <p>(3) 24.652587 °N 77.043580 °E</p> |

| | |
|---|---|
| | <p>(4) 24.652243 °N 77.046041 °E (5) 24.641385 °N 77.044293 °E (6) 24.641649 °N 77.042485 °E (7) 24.635597 °N 77.041455 °E (8) 24.636290 °N 77.036486 °E (9) 24.636094 °N 77.036451 °E (10) 24.636444 °N 77.034047 °E</p> <p><u>Ash Pond Area:</u></p> <p>(1) 24.643819 °N 77.051159 °E (2) 24.643514 °N 77.052643 °E (3) 24.641564 °N 77.055963 °E (4) 24.641004 °N 77.055981 °E (5) 24.640964 °N 77.057081 °E (6) 24.639206 °N 77.056830 °E (7) 24.637915 °N 77.054258 °E (8) 24.631113 °N 77.050438 °E (9) 24.631352 °N 77.048574 °E</p> <p><u>Township Area:</u></p> <p>(1) 24.655686 °N 77.033944 °E (2) 24.654738 °N 77.041799 °E (3) 24.660169 °N 77.042526 °E (4) 24.659714 °N 77.039684 °E (5) 24.659833 °N 77.035503 °E (6) 24.658882 °N 77.035452 °E (7) 24.658364 °N 77.035147 °E (8) 24.658437 °N 77.034752 °E (9) 24.658159 °N 77.033944 °E (10) 24.658181 °N 77.034160 °E (11) 24.657191 °N 77.034140 °E (12) 24.657140 °N 77.034289 °E</p> |
| <p>Average height of: (a) TPP site, (b) Ash pond site etc. above MSL</p> | <p>(a) 394.6 meter (b) 390.3 meter</p> |
| <p>Whether the project is in the Critically Polluted Area (CPA) or within 10 km of CPA. If so, the details thereof:</p> | <p>No, Project is not in Critically Polluted Area (CPA) or within 10 km of CPA.</p> |
| <p>CRZ Clearance</p> | <p>For the proposed project CRZ clearance is not required.</p> |
| <p>Cost of the Project (As per EC and revised): Cost of the proposed activity in the amendment:</p> | <p>Cost of the Existing Project is Rs. 11,99,555 Lakh Cost of the Proposed Power Project is Rs. 9,60,606 Lakh</p> |

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|--|---|
| <p>Employment Potential for entire project/plant and employment potential for the proposed amendment (specify number of persons and quantitative information).</p> | <p>In Existing Units: (a) Permanent Employee = 732 (b) No of Man days = 9125 (considering project life of 25 years) Total no of Permanent Man days Employment = 6679500</p> <p>(c) Temporary Employee = 3934 (d) No of Man days = 9125 (considering project life of 25 years) Total no of Contractual Man days Employment = 35897750</p> <p>In Proposed Unit: during Construction phase (a) Permanent Employee = 100 (b) No of Man days = 1350 (considering project construction period of 45 months) <i>Total no of Permanent Man days Employment = 135000</i></p> <p>(c) Temporary Employee = 1000 (d) No of Man days = 1350 (considering project construction period of 45 months) <i>Total no of Contractual Man days Employment = 1350000</i></p> <p>In Proposed Unit: during operation phase (a) Permanent Employee = 194 (b) No of Man days = 9125 (considering project life of 25 years) <i>Total no of Permanent Man days Employment = 1770250</i></p> <p>(c) Temporary Employee = 500 (d) No of Man days = 9125 (considering project life of 25 years) <i>Total no of Contractual Man days Employment = 4562500</i></p> |
| <p>Benefits of the project (specify quantitative information)</p> | <p>(1) Permanent as well as temporary employment generation. (2) Additional Electricity generation = 9829 MU per year @85% PLF.</p> |

Electricity generation capacity:

| | |
|------------------------------------|---|
| Capacity & Unit Configurations: | 1320 MW; Consisting 2 Nos.of unit of 660 MW |
| Generation of Electricity Annually | Annual Gross Generation = 9829 MkWh @ 85% PLF |

Details of fuel and Ash disposal

| | |
|--------------------------------------|----------------------------------|
| Fuel to be used: | Indigenous coal |
| Quantity of Fuel required per Annum: | 5.0 Million Tons (with 85 % PLF) |

| | |
|---------------------------------|-----------------------------|
| Stack Height (m) & Type of Flue | One multi flue 100 m height |
|---------------------------------|-----------------------------|

Water Requirement:

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|---|---|
| Source of Water: | Lhasi Dam & Parwan Dam |
| Quantity of water requirement: | Total water requirement for the proposed power plant is 86,201 m ³ /day |
| Distance of source of water from Plant: | Lhasi Dam & Parwan Dam approximately 20 km and 60 km respectively. |
| Whether barrage/ weir/ intake well/ jack well/ others proposed: | Barrage |
| Mode of conveyance of water: | Over ground pipeline |
| Status of water linkage: | Water resource department (WRD), GoR vide letter dated 02.09.2009 allocated 1320 Mcft water from Parwan dam for future projects |
| (If source is Sea water) Desalination Plant Capacity | Not Applicable |
| Mode / Management of Brine: | Not Applicable |
| Cooling system | Natural Draft Cooling Tower |

Land Area Breakup:

| | |
|---|--|
| <p>Land Requirement:</p> <p>a) TPP Site</p> <p>b) Ash Pond</p> <p>c) Township</p> <p>d) Railway Siding & Others</p> <p>e) Raw Water Reservoir</p> <p>f) Green Belt</p> <p>g) others</p> <p>Total (if expansion state additional land requirement)</p> | <p>Land requirement for the proposed expansion project is as follows:</p> <p>(a) 156 Ha consisting Railway siding and raw water reservoir</p> <p>(b) 56 Ha</p> <p>(c) 40 Ha</p> <p>(d) Included in TPP site area</p> <p>(e) Included in TPP site area</p> <p>(f) 84 Ha included in above area</p> <p>(g) Nil</p> <p>Total land required for the proposed expansion is 252 Ha</p> |
| Status of Land Acquisition: | Land required for the proposed expansion power project is under the ownership of RRVUNL |

| | |
|---|--|
| <p>Status of the project: If under construction phase: please specify the reasons for delay, works completed till date and balance works along with expected date of completion.</p> <p>If under operation phase, date of commissioning (COD) of each unit. Whether the plant was under shutdown since commissioning, details and reasons.</p> | <p>All Existing 06 units are operational COD date of Unit-1 (250 MW) is 11.06.2010 COD date of Unit-2 (250 MW) is 15.10.2011 COD date of Unit-3 (250 MW) is 19.12.2013 COD date of Unit-4 (250 MW) is 30.12.2014 COD date of Unit-5 (660 MW) is 09.08.2018 COD date of Unit-6 (660 MW) is 02.04.2019</p> <p>No site activity for the proposed 2x660 MW unit is being done.</p> |
| <p>Break-Up of land-use of TPP site:</p> <ol style="list-style-type: none"> a. Total land required for project components b. Private land c. Government land d. Forest Land | <ol style="list-style-type: none"> a. Total land required for the expansion project is 252 Ha b. NIL c. NIL d. NIL <p>No land acquisition is involved for the proposed project. Moreover, required land is already available with RRVUNL</p> |

Presence of Environmentally Sensitive areas in the study area

| Forest Land/ Protected Area/ Environmental Sensitivity Zone | Yes/No | Details of Certificate/letter/ Remarks |
|--|---|---|
| Reserve Forest/Protected Forest Land | No Reserve Forest/Protected Forest Land is located within 10 km radius of the proposed project. | |
| National Park | No National Park is located within 10 km radius of the proposed project. | |
| Wildlife Sanctuary | No Wildlife Sanctuary is located within 10 km radius of the proposed project. | |
| Archaeological sites monuments/historical temples etc | No Archaeological sites monuments/historical temples etc. is located within 10 km radius of the proposed project. | |
| Names & distance of National parks, Wildlife sanctuaries, Biosphere reserves, Heritage sites Rivers, Tanks, and Reserve Forests etc. Located within 10 Km from the plant boundary: | NIL | |
| Additional information (if any) | - | |

Availability of Schedule-I species in study area: Nil

Court case details:

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|--|--|
| Any litigation/ Court Case pertaining to the project | No litigation/Court Case pertaining to the project |
| Is the proposal under any investigation? If so, details thereof. | No, proposal is not under any investigation. |

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|---|---|
| Any violation case pertaining to the project: | No violation case pertaining to the project |
| Additional information (if any) | Nil |

42.2.4 The EAC during deliberations noted the following:

The proposal is for grant of Terms of Reference to the project for Expansion of Chhabra Thermal Power Project of capacity 2x660 MW (Unit 7&8, Stage- III) located at near Chhabra town, District Baran, Rajasthan M/s Rajasthan Rajya Vidhyut Utpadan Nigam Ltd.

The project/activity is covered under category A of item 1(d) ‘Thermal Power Plants’ of the Schedule to the Environmental Impact Assessment Notification, 2006 and requires appraisal at Central level by the sectoral EAC in the Ministry.

The EAC during deliberations observed that stack emissions monitoring carried out by the RSPCB are all above the prescribed limit whereas results of Ambient Air Quality Monitoring done by NABL accredited third party i.e. M/s Green Vision Testing & Enviro Services, at Chhabra Power Station in the month of March, 2023 were within the limits but ozone values are still considerably in high range. Existing Ash pond location is very much sensitive and very close to fresh water body which is being used for irrigation by the local farmers. There is quite possibility of mixing of ash pond leachate with the water body.

Total 250 ha shall be including additional 5 ha shall be which shall be started upcoming monsoon. 84 ha new area plantation shall be carried out in the area of Unit 7 and 8.

Commission of the new proposed expansion shall be subject to completion of green plantation and the same condition shall be imposed in EC. Committee also was of the view that this proposed expansion shall be allowed subject to compliance of green belt.

42.2.5 The EAC after detailed deliberation on the information submitted and as presented during the meeting *recommended* for grant of Standard ToR for conducting EIA study for Expansion of Chhabra Thermal Power Project of capacity 2x660 MW (Unit 7&8, Stage- III) located at near Chhabra town, District Baran, Rajasthan M/s Rajasthan Rajya Vidhyut Utpadan Nigam Ltd, under the provisions of EIA Notification, 2006, as amended along with the following additional/specific ToR:

[A] Environmental Management and Biodiversity Conservation

- i. Ambient quality specially ozone level shall be studied in detail during preparation of EIA/EMP.
- ii. Detailed action plan shall be prepared for maintenance of air pollution mitigation equipment and a fresh report duly authenticated by the SPCB showing all vital environmental parameters in range in all units be submitted.
- iii. An action plan for strengthening of bund of existing Ash pond be prepared after consultation with reputed Government expert institution and report be submitted along with EIA/EMP report.
- iv. Details of Ash management of existing and proposed project shall be submitted keeping in view that the fly ash disposal area for existing plant shall not be used for

- proposed expansion.
- v. Details of Dry Ash handling system along with supplementary coal handling system shall be submitted.
 - vi. Proper protection measures like HDPE lining, appropriate height of bund and adequate distance between proposed Ash pond and water body (minimum 60 meter) etc. shall be planned so as to reduce the possibility of mixing of leachate with any fresh water body. High Density Slurry disposal plan shall be prepared.
 - vii. Pond and ground water quality (10 locations within 2 km radius of the plant boundary) shall be studied and report be submitted along with EIA/EMP. Action plan for Ground water monitoring stations on all hotspots like schools/hospitals within 2 km radius of the plant boundary be submitted.
 - viii. Baseline Study for Heavy metals in Ground water, Surface water and soil to be carried out and incorporated in EIA/EMP report.
 - ix. Details pertaining to water source, treatment and discharge should be provided.
 - x. Zero Liquid Discharge plan shall be submitted.
 - xi. Action plan for development of green belt (33% of total project cover area) along the periphery of the project boundary shall be provided with a video clip of existing green belt.
 - xii. PP shall submit action plan for using treated Sewage/Domestic wastewater for its operations.
 - xiii. Project Proponent to conduct Environmental Cost Benefit Analysis for the project in EIA/EMP Report.
 - xiv. An action plan shall be prepared for Water shed development within 10 km radius of the plant boundary in consultation with reputed government institution.
 - xv. Undertaking from the Director that 100% ash utilization as per action plan presented by the PP during the EAC meeting and submitted vide letter no. RVUN/CE (TD-NPP)/SE(TD-NPP)/F./D. 223 dated 19.05.2023 along with table shall be submitted.
 - xvi. As PP informed that the fly ash generated in the plant shall be evacuated and disposed off by an outside agency for which separate contract shall be provided. The details of such system to be submitted with its impacts & mitigation measures.

[B] Disaster Management

- xvii. Disaster Management Plan shall be prepared and incorporated in EIA/EMP report.

[C] Miscellaneous

- xviii. Public Consultation shall be carried out by uploading the draft EIA/EMP report on Pollution Control Board's website, District collector website/office and publishing notice in newspapers (both in Hindi and English) for seeking comments from the general public. The comments received so shall be addressed in the final EIA report along with time bound action plan and financial budget allocation.
- xix. Certified compliance report of previous EC to be submitted certified by Regional office of the MoEF&CC. IRO shall provide specific observations on the status of OCMS and emission control equipment of all units of the plant.
- xx. PP shall submit details of court cases and its status for the project (if any).
- xxi. The PP should submit the photograph of monitoring stations & sampling locations. The photograph should bear the date, time, latitude & longitude of the monitoring station/sampling location. In addition to this PP should submit the original test reports and certificates of the labs which will analyze the samples.

- xxii. Arial view video of project site shall be recorded through drone and be submitted.
- xxiii. EAC shall visit the site before submission of EIA/EMP report by the PP to finalize environmental safeguards for (1) ash handling (2) coal handling (3) dry ash handling system.

Agenda Item No. 42.3

Korba Super Thermal Power Project, (1x500 MW) Stage III Coal Based, located at Village Jamnipali, Tehsil Katghora, District Korba, Chhattisgarh by M/s NTPC Ltd - Amendment in Environmental Clearance - reg.

[Proposal No. IA/CG/THE/266455/2022; F. No. J-13012/06/2009 IA.II(T)]

42.3.1 The proposal is for grant of amendment in Environment Clearance for Korba Super Thermal Power Project, (1x500 MW) Stage III Coal Based, located at Village Jamnipali, Tehsil Katghora, District Korba, Chhattisgarh by M/s NTPC Ltd. The project proponent has requested for amendment in environmental clearance for construct an Ash dyke on 248.60 acres land at village Ghamota for Korba Super Thermal Power Station, Tehsil: Katghora, Distt: Korba (Chattisgarh).

42.3.2 Observation in Earlier EAC:

The proposal for grant of amendment in Environmental Clearance was last considered by the EAC in its 24th meeting held on 09.05.2022. The EAC after detailed deliberation deferred the proposal and sought additional information on certain points and conduct site visit by EAC sub-committee to have factual status of the existing site and alternate sites.

The project proponent has submitted the point-wise information on each of observation point of the EAC, the same is given as under: -

Query 1: Submit alternate site analysis for proposed dyke. Also reduce the area for the dyke.

Reply: Three nos. of alternate sites have been studied and based on the detailed analysis Option no.-III i.e. Ghamota (248.60 acres) seems to be most suitable. Site analysis details are as under:

| Comparison of Alternate Sites for Identified Ash Dyke Area for Korba STPP | | | | |
|--|----------------------|---|--|---|
| Sr. No | Items | Option-1 | Option-2 | Option-3 |
| 1 | Location | Village: Darrabhata , Gangpur & Chhurikhurd | Village: Lotlota & Chorbhatti | Village: Ghamota |
| 2 | Vicinity | Land identified in the above village is adjacent to existing Dhanras Ash dyke just opposite to it | Land is located in the village boundaries of Lotlota and Chorbhatti towards existing ash dyky of CSEB Korba. | The site is located near Dhanras ash dyke |
| 3 | Latitude & Longitude | 22°30'10.03"N, 82°36'29.3"E | 22°29'04.23"N, 82°39'40.33"E | 22°28'13.16"N, 82°40'02.46"E |

| | | | | |
|----|--|---|---|--|
| 4 | Distance in Meter from HFL of river | 1245 | 350 | 500 |
| 5 | Land Feature | Single crop cultivated land | Single crop cultivation. | Rocky Tarrain, not suitable for agriculture. Further there Hillock which will serve as a natural barrier between nearby river and proposed dyke. |
| 6 | Proposed Land acquisition | 506.87 Acres | 414.4 Acres | 248.6 Acres |
| 7 | Land Acquisition status | Land Acquisition process to start if required which may take 3-5 years | Land Acquisition process to start if required which may take 3-5 years | Land acquired by NTPC and compensation has already been paid to PAPs. |
| 8 | Approx. No. of Project Affected Families | Habitations in village – Darrabhata – Approx. 100 nos. houses in 04 clusters. School -01 nos. Habitant-Area is 9.05 Acres approx. | Habitations: Approx. 8.10 Acres with 6 clusters. A dense Habitat of village Lotlota is in between of land identified and CSEB ash dyke in north direction. | Habitations in village – Nil. |
| 9 | Crop Cultivaton | Yes (Single Crop) | Yes (Single Crop) | No |
| 10 | Habitats | Yes | Yes | No |
| 11 | Power Transmission line | Power Transmission line is passing above proposed land | Power Transmission line is passing above proposed land | No Power Transmission line is passing above proposed land |
| 12 | Observation | 1) 04 nos. of Transmission Lines (02 nos.of NTPC & 02 nos. of CSEB) are passing through the boundaries of identified lines in the west side direction. 2) The land of village Darrabhata falls within the revenue jurisdiction of Podi Uproda Tehsil and the land of village | 01) 02 No. Transmission lines of CSEB are coming in between land identified 2) The village Lotlota which is located at the north direction of CSEB ash dyke is having dense population. With the construction of proposed NTPC ash dyke, the village Lotlota will be sandwiched in between the ash dyke of CSEB and ash dyke of NTPC and will be isolated. A provision for | 1) Ghamota ash dyke is >500 metre away from water body |

| | | | |
|--|--|---|--|
| | Gangpur and Chhurikhurd falls under Katghora/Darri Tehsil. | passage will be required to be provided for villagers of Lotlota. | |
|--|--|---|--|

The area proposed for Ghamota Ash Dyke has been analysed and based on site specific conditions (highly undulating land) and lack of availability of space in existing Dhanras Ash Dyke, the area of 248.60 acres is bare minimum for 2600 MW project and further reduction is not possible.

Query 2: Submit the study report of organisms in the benthic zone and impact of proposed activity on them.

Reply: Benthic zone study has been conducted by Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.). The study found that due to adequate provisions in existing ash dykes, there is no adverse impact on benthic zone of Hasdeo river due to existing ash dykes which are under operation for long period. The study concluded that construction of ash dyke is not likely to affect environment provided environment friendly provisions in line with existing ash dykes are made in proposed ash dykes. Study report has been submitted vide letter dated 28.04.2023.

Query 3: Submit the impact report of the project on Riparian Vegetation and community in the river basin.

Reply: As detailed above, the study on benthic zone and Riparian vegetation found that with provision of adequate measures in line with existing ash dykes there is no likely adverse impact on ecology of Hasdeo river due to proposed ash dykes. Study report has been submitted vide letter dated 28.04.2023.

Query 4: Commitment to dump fly ash at least 500 m far from the river.

Reply: The area proposed at Ghamota site is already more than 500m away from HFL of Hasdeo river. Further, as discussed during EAC, one corner of existing Dhanras Dyke was observed to be within 500m of the HFL of Hasdeo River. Based on suggestion of EAC, NTPC has already constructed a divider bund in the lagoon near river and no ash is being dumped in the area falling within 500m. Site photographs has been submitted vide letter dated 28.04.2023.

Query 5: Submit the drone the pictures of proposed/selected sites for dyke.

Reply: Google pictures of the proposed site along with alternate sites are enclosed as has been submitted vide letter dated 28.04.2023.

Query 6: Commitment for no further dumping in the existing dumping site and submit remediation plan. Also submit fly ash utilization plan.

Reply: Ash Utilization plan for next five years is enclosed as under:

| Avenue/AU Plan for Korba | 2022-23 | 2023-24 | 2024-25 | 2025-26 | 2026-27 | Remarks |
|--------------------------|---------|---------|---------|---------|---------|----------------------------|
| Ash Generation | 50.7 | 51 | 51 | 51 | 51 | Based on Past 4 Year Data. |

| | | | | | | |
|----------------------------------|-------|------|------|------|-------|--|
| Wasteland Development | 0.45 | 5 | 5 | 5 | 5 | Based on Past 3 Year performance and available front. |
| Mine Filling | 4.53 | 14 | 14 | 14 | 14 | Manikpur Mine Filling with OB /New mines without OB i.e. Dugga and Beshrampur abandoned mines of SECL. Including Stowing Plant |
| Cement Industry | 0 | 7 | 10 | 10 | 10 | Based on future tie up thru BTAP/Bulkers/Ash Bagging in negotiation with various cement factories |
| | | | | | | DAES availability: |
| | | | | | | Stage I: 2 x 350 MT Stage-II: 2 x 1500 MT Under budget allocation (Dec'23) Stage III: 2 x 750 MT |
| Brick etc. | 0.81 | 3 | 4 | 4 | 4 | Based on Past 3 Year Performance and proposed plan |
| Road Projects | 18.68 | 24 | 24 | 23 | 21 | Based on Current and anticipated road projects in region. |
| Internal Construction Activities | 0 | 0 | 0 | 0 | 0 | |
| Geo Polymer Roads | | 0.3 | 0.3 | 0.3 | 0.31 | @ 4Kms per Station per annum (4000 MT/Km AU) with 3.75m wide road |
| Aggregate | - | - | 3 | 3 | 3 | Fly Ash Aggregate Plant will be commissioned in FY 2023-24 |
| Total (LMT) | 24.49 | 53.3 | 60.3 | 59.3 | 57.31 | |
| Ash Utilization(%) | 48 | 105 | 118 | 116 | 112 | |

Based on the current performance and proposed plans, fly ash utilization is expected to increase up to 112% by FY 2026-27. NTPC Korba STPP (2600MW) is one of the large thermal plants of NTPC based on high ash domestic coal. At present, it has only one dyke at Dhanras being used, which is likely to be filled up by Dec 2023. However, the Ghamota Ash Dyke is proposed for emergency ash disposal to be used in conjunction with Dhanras Ash Dyke.

It may be noted that while Korba STPS runs at high PLF >90% throughout the year, the evacuation and use of ash is not consistent and constant during the year. Therefore, ash dykes are required for alternate filling and evacuation of ash based on demand of ash. In view of the above it is proposed that both Ghamota & Dhanras Ash Dykes shall be used for emergency disposal & evacuation of ash and this may kindly be agreed to.

42.2.3 The EAC during deliberations noted the following:

The proposal is for grant of amendment in Environment Clearance for Korba Super Thermal Power Project, (1x500 MW) Stage III Coal Based, located at Village Jamnipali, Tehsil Katghora, District Korba, Chhattisgarh by M/s NTPC Ltd.

The project/activity is covered under category A of item 1(d) 'Thermal Power Plants' of the Schedule to the Environmental Impact Assessment Notification, 2006 and requires appraisal at

Central level by the sectoral EAC in the Ministry.

The EAC noted that as per recommendations of the previous EAC meeting held on 09.05.2022 the sub-committee has visited the proposed area of Ash Dyke during 17th – 20th May, 2023. The sub-committee has observed the following:

1. The proposed area of Ghamota Ash Dyke is rocky terrain with sparse vegetation and very few scattered agricultural fields. However, no habitation/ house hold was observed on the proposed land.
2. There is a hillock within the area, with the hilltop along the eastern boundary of the dyke. The Committee suggested that the hillock itself should be considered as dyke/ barrier towards the river. The PP accepted the suggestion and confirmed that this suggestion would be taken into consideration during design.
3. The committee suggested that the proposed location is very sensitive being close to the river and PP should take extra precautions/ factors of safety to prevent the breach of the dyke/ discharge of seepage into the river. The PP confirmed that the same shall be considered during design by increasing the width of embankment/ constructing another bund towards the river, design of section with impervious core etc.
4. There are depressions/ drainage paths on the either side of the hillock in the Ghamota area. PP should ensure that the construction of the dyke does not block the natural drainage nor the natural drainage poses a risk to the safety of the dyke.
5. The PP informed that as per normal practice in NTPC, the dyke shall have ash water recirculation system and all the seepage/ toe drain water shall be collected and recycled and no water shall be allowed to go into the river.
6. The committee also raised concerns over the seepage/ leachate from the dyke. The PP explained that being the rocky terrain, there is no likelihood of seepage/ leachate from the dyke. Further, due to high undulations and rocky terrain (with sharp edges/ corners), HDPE lining is not feasible/ durable. However, as a measure of precaution, the area of the entire lagoon and OFL area shall be treated with soil bentonite lining.
7. The committee observed that there is a land depression between Dhanras and Ghamota dykes, which is filled with rain water. The committee suggested that this area should be included in the dyke. The PP informed that this area is already included in the layout of the dyke as marked as Overflow Lagoon.
8. The Committee suggested that plantation of Sal Tree should be undertaken along the Hasdeo River.

The Sub-Committee visited the alternate areas for the proposed Ghamota Ash Dyke and observed the following:

1. The area under Option-2 (Lotlota) is sandwiched between the two ash dykes of CGSPGCL and located adjacent to village Lotlota.
2. There are two villages – Lotlota and Purena Khar, thickly populated.
3. Further, it involves agricultural land also, thereby creating additional social pressures due to land acquisition.
4. The area under Option-1 involves mostly agricultural land and is criss crossed by transmission lines and located along a road. The land thus has commercial value.
5. Due to involvement of agricultural land, there will be additional social pressures due to land acquisition.

The detailed site visit report is at **Annexure-A**.

The EAC deliberated on the information submitted by the PP and observations raised by the Sub-Committee and opined that due to depression on the both side of proposed ash dyke, proper designing of the ash dyke shall be done so that any incidence of water breach from the ash dyke area to the Hasdeo river can be prevented. As observed by the EAC sub- Committee a green barrier of Sal Tree with thickness between 500-300 meter may be created along the Hasdeo river in 10 km stretch (up and down stream) in consultation with state forest department in a time bound manner.

The EAC further noted that Lemru Elephant Sanctuary is within 10km radius and ESZ of the sanctuary has not been declared yet, therefore NBWL clearance becomes mandatory for the said project.

42.2.4 The EAC after detailed deliberation on the information submitted and as presented during the meeting **recommended** for grant of amendment in Environmental Clearance for Korba Super Thermal Power Project, (1x500 MW) Stage III Coal Based, located at Village Jamnipali, Tehsil Katghora, District Korba, Chhattisgarh by M/s NTPC Ltd, under the provisions of EIA Notification, 2006, as amended along with the following additional environmental safeguard conditions:

- i. The area of Dhanras Ash Dyke which is suitable for reclamation towards the river shall be reclaimed in time-bound manner applying recent scientific practices. An action plan in this regard shall be prepared and submitted to IRO within 6 months.
- ii. A green belt of Sal Tree with thickness between 500-300 meter shall be created along the Hasdeo river in 10 km stretch (up and down stream) in consultation with State Forest Department in a time bound manner. An action plan for Sal plantation with 90% survival rate in this regard shall be prepared and submitted to IRO within 6 months.
- iii. Ash dyke shall be designed in consultation with expert government institutions to avoid any incidence of water breach from the ash dyke area to the Hasdeo river.
- iv. NBWL clearance shall be obtained before the start of construction on the proposed site and any recommendation given the standing committee of NBWL, its compliance shall be submitted to six monthly compliance report.
- v. Regular monitoring of water in Hasdeo river shall be carried out for 5km downstream stretch of the river from the proposed Ash dyke area and monitoring reports shall be submitted to IRO in six monthly compliance report.
- vi. All other terms and conditions mentioned in the EC letter dated 31.08.2006 shall remain unchanged.

The meeting ended with vote of thanks to the Chair.

ATTENDANCE

| S. No. | Name | Role | Attendance |
|---------------|-------------------------------|------------------|-------------------|
| 1. | Shri Gururaj P. Kundargi | Chairman | P |
| 2. | Shri K. B. Biswas | Member | P |
| 3. | Shri Suramya Dolarray Vora | Member | P |
| 4. | Sheo shanker Rai | Member | P |
| 5. | Dr. Santosh Kumar Hampannavar | Member | P |
| 6. | Dr. Umesh Kahalekar | Member | P |
| 7. | Shri M. P. Singh | Member | P |
| 8. | Prof (Dr.) Nandini N | Member | P |
| 9. | Shri Yogendra Pal Singh | Member Secretary | P |

APPROVAL OF THE CHAIRMAN

From: gpkundargi@gmail.com

To: "Yogendra Pal Singh" <yogendra78@nic.in>

Sent: Sunday, June 18, 2023 12:28:58 PM

Subject: Re: Draft_MOM_thermal_42_EAC_01_June_2023

Dear Dr. Yogendra ji

Draft Minutes are fine with me & Approved for further needful.

Rajasthan vidyut Utpadan Nigam (42.2) at 42.2.3 under table project details has mentioned that

Ash disposal system will be outsourced, We can put a condition in TOR that details of such system to be submitted with its impacts & mitigation measures.

Thank you

G P Kundarai

EAC (Sub-Committee) Site Visit Report of the visit of Korba Super Thermal Power Project, (1x500 MW) Stage III Coal Based, located at Village Jamnipali, Tehsil Katghora, District Korba, Chhattisgarh by M/s NTPC Ltd. from 17th – 20th May, 2023

1.0 Background

NTPC owns and operates Korba Super Thermal Power Station (KSTPS), a coal-based power plant of 2600 MW capacity at Jamanipali, District Korba of Chhattisgarh state. The project has been commissioned in three stages as follows:

- Stage I: 3x200 MW (Unit 1, Unit 2, Unit 3) – Commissioned on 01.08.1983, 01.01.1984 & 01.06.1984
- Stage II: 3x500 MW (Unit 4, Unit 5, Unit 6) – Commissioned on 01.03.1988, 01.04.1989 & 01.06.1990
- Stage III: 1x500 MW (Unit 7) – Commissioned on 21.03.2011

Coal requirement of KSTPP is fulfilled by Gevra mine of SECL. KSTPS has a dedicated railway track for transportation of this coal from mines to the plant. The coal available in Gevra mines is from Upper and Lower Kusmunda coal seams. The water requirement is met from the Right Bank Canal (RBC) of Hasdeo reservoir.

The Environmental Clearance (EC) for Korba Super Thermal Power Plant were accorded as follows:

- EC for Stage-I (3x300 MW) & Stage-II (3x500 MW) was accorded by Deptt. of Science & Technology vide OM 10/1/1/76-Evn. Dated 22.03.1977.
- EC for Dhanras Ash Dyke for Korba STPP, Stage-I and II was accorded by MOEF vide letter No. J-13012/2/93-IA-II dated 12.08.1993.
- EC for Korba STPP Stage-III (1x500 MW) was accorded by MOEF vide letter No. J-13011/9/2006.IA-II(T) dated 31.08.2006.

Korba STPP has following two dykes (as shown in Exhibit-2):

- (a) Charpara Ash Dyke (900 Acres at Bottom/ 531 Acres at Top after five raisings), Was under Operation since 1983, abandoned in 2000 after completely filled with ash (55.64 MCM) and eco-rehabilitated with mycorrhizal organo-biofertilizer, massive tree plantation (3,00,000 trees) and development of eco-park.
- (b) Dhanras Ash Dyke (1500 Acres), which is currently in use and likely to be completely filled up by December, 2023.

NTPC proposed to construct an ash dyke on 248.60 acres of land at Ghamota village, adjacent to existing Dhanras Ash Dyke. NTPC submitted application for Amendment in Environmental Clearance Conditions for Construction of additional Ash Dyke on 248.60 acres of land at village Ghamota on 07.04.2022. Proposal was considered & discussed in detail during 24th EAC Meeting held on 09.05.2022, during which it was decided to conduct site visit by EAC Sub-committee to have factual status of the existing site and alternate sites. Minutes of the EAC meeting held on 09.05.2022 is enclosed at **Annexure-I**.

Accordingly, a sub-committee of EAC, comprising of the following members visited site during 17-20 May, 2023.

1. Shri S D Vohra, Member (EAC)
2. Prof. Sheo Shanker Rai, Member (EAC) - Representative of ISM, Dhanbad
3. Dr. (Mrs.) Nandini N., Member (EAC)
4. Shri Y. P. Singh, Additional Director (MOEF&CC)

During the visit, the sub-Committee interacted with Smt. Premlata Yadav, DFO-Kathghora on 19.05.2023. The list of NTPC Officials interacted during the visit is enclosed at **Annexure-II**.

2.0 Sites Visited

The Sub-Committee visited the following areas:

1. Existing Dhanras Dyke and Hasdeo River
2. Proposed area for Ghamota Dyke
3. Alternate sites for Proposed Ghamota Dyke
4. Abandoned and Reclaimed Charpara Dyke
5. Cooling Towers
6. Lemru Elephant Reserve

In addition, the Committee also participated in Girls Empowerment Mission Programme of NTPC.

3.0 Observations

3.1 Dhanras Dyke & Hasdeo River:

The committee visited Dhanras Ash Dyke and the surrounding areas, up to river Hasdeo and observed the following:

1. Dhanras Ash Dyke is very well constructed and maintained with respect to structure, slope protection (covered with grass).
2. The Dyke has ash water recirculation system and overflow is being recirculated back to the plant for ash handling.
3. The committee travelled along the pipeline corridor for ash slurry and ash water recirculation system, from plant to ash dyke area. No leakage in the pipeline/ spillage along the corridor was observed.
4. No spillage/ deposits of ash was observed in the nearby land areas.
5. The area in general showed a diverse group of plants and several species of grasses & butterflies indicating the good ecological balance of the area.
6. The committee walked up to the river bank of Hasdeo. The water of the river was observed to be clean and free from pollution/ ash deposits.
7. The presence of aquatic plants in the river also confirmed the good water quality of the river and good ecological balance of the area.
8. However, a villager encountered near the river communicated about poor quality of water in his village wells and diseases in his cattle.



Figure 1: Sub-committee with Dhanras Ash Dyke in Background



Figure 2: Sub-committee on 4th Raising of Dhanras Ash Dyke



Figure 3: Sub-committee Near Hasdeo River Bank (Village Dhangaon)



Figure 4: Sub-committee Near Hasdeo River Bank (Village Dhangaon)



Figure 5: Sub-committee Near Hasdeo River Bank (Village Dhangaon)

3.2 Ghamota Ash Dyke:

The committee visited the area of proposed Ghamota Ash Dyke.



Figure 5: Photograph of Ghamota Dyke (Dhanras on the North)



Figure 5: Photograph of Ghamota Dyke (Dhanras on the North)



Figure 5: Photograph of Ghamota Dyke (Hasdeo in Horizon)

The first concern of the sub-committee was the distance of the proposed dyke from Hasdeo river. The Project Proponent confirmed that all the corners of the proposed ash dyke are more than 500 meters away from the HFL of the Hasdeo River. A Drawing submitted in support of the above is as follows:



Figure 5: Distance of Ghamota Dyke from Hasdeo

The sub-committee observed the follows:

9. The proposed area of Ghamota Ash Dyke is rocky terrain with sparse vegetation and very few scattered agricultural fields. However, no habitation/ house hold was observed on the proposed land.
10. There is a hillock within the area, with the hilltop along the eastern boundary of the dyke. The Committee suggested that the hillock itself should be considered as dyke/ barrier towards the river. The PP accepted the suggestion and confirmed that this suggestion would be taken into consideration during design.
11. The committee suggested that the proposed location is very sensitive being close to the river and PP should take extra precautions/ factors of safety to prevent the breach of the dyke/ discharge of seepage into the river. The PP confirmed that the same shall be considered during design by increasing the width of embankment/ constructing another bund towards the river, design of section with impervious core etc.
12. There are depressions/ drainage paths on the either side of the hillock in the Ghamota area. PP should ensure that the construction of the dyke does not block the natural drainage nor the natural drainage poses a risk to the safety of the dyke.
13. The PP informed that as per normal practice in NTPC, the dyke shall have ash water recirculation system and all the seepage/ toe drain water shall be collected and recycled and no water shall be allowed to go into the river.
14. The committee also raised concerns over the seepage/ leachate from the dyke. The PP explained that being the rocky terrain, there is no likelihood of seepage/ leachate from the dyke. Further, due to high undulations and rocky terrain (with sharp edges/ corners), HDPE lining is not feasible/ durable. However, as a measure of

precaution, the area of the entire lagoon and OFL area shall be treated with soil bentonite lining.

15. The committee observed that there is a land depression between Dhanras and Ghamota dykes, which is filled with rain water. The committee suggested that this area should be included in the dyke. The PP informed that this area is already included in the layout of the dyke as marked as Overflow Lagoon.
16. The Committee suggested that plantation of Sal Tree should be undertaken along the Hasdeo River.

3.3 Alternate Ash Dykes:

The committee visited the alternate areas for the proposed Ghamota Ash Dyke and observed the following:

6. The area under Option-2 (Lotlota) is sandwiched between the two ash dykes of CGSPGCL and located adjacent to village Lotlota.
7. There are two villages – Lotlota and Purena Khar, thickly populated.
8. Further, it involves agricultural land also, thereby creating additional social pressures due to land acquisition.
9. The area under Option-1 involves mostly agricultural land and is criss crossed by transmission lines and located along a road. The land thus has commercial value.
10. Due to involvement of agricultural land, there will be additional social pressures due to land acquisition.

3.4 Abandoned and Reclaimed Charpara Dyke

The committee visited Charpara ash dyke which was abandoned in 2001 and has already been reclaimed with dense vegetation. All the members appreciated the efforts of NTPC towards reclamation of the ash dyke. The reclaimed dyke, with dense population of large and medium tree and shrubs represented an excellent natural habitat and well maintained ecosystems. The committee observed the following:

1. A study may be undertaken to assess the carbon sequestration potential of ash dyke. PP informed that such study has already been undertaken in the year 2016. However, the same shall be repeated again.
2. Plantation of climbers may be undertaken along the large trees to increase bio-mass and green cover and also to enhance the bio-diversity of the area.
3. Some of the trees are very old which may be harvested as they do not contribute much to the carbon sequestration. Further there are spaces created due to dead/broken tree, which need to be replaced. NTPC, with the help of Forest Department/ Forestry Expert may conduct a training program for Rejuvenation of Charpara Ash Dyke area and other area which have been afforested long back.
4. The reclamation methodology adopted at Charpara dyke is a showcase project should be replicated at other abandoned ash dyke.



Figure 6: Tree Plantation at Charpara Ash Dyke



Figure 7: Visit to Charpara Ash Dyke



Figure 8: Charpara Ash Dyke

3.5 Cooling Towers

The sub-committee visited the Induced Draft Cooling Towers at Korba STPP and Natural Draft Cooling Towers at CGSPGCL. The function and working of the Cooling Towers were explained by the PP to the committee members.



Figure 9: Induced Draft Cooling Towers at Korba STPP

3.6 Lemru Elephant Reserve

On 19th May 2023 the committee visited the southern boundary of Lemru Elephant Reserve located across the river Hasdeo. The Elephant Reserve, with a total area of 450 sq. km. was notified in the year 2022. However, there is no elephant corridor. Further the Eco Sensitive Zone of the Elephant Reserve is yet to be Notified. Map of the elephant reserve with its buffer area and the location of Korba STPP and its Ash Dykes marked is enclosed at **Annexure-III**.

The proposed Ghamota Ash dyke is located within the Buffer area of the reserve. The local enquiry revealed that the elephant are normally confined to the core area and do not visit the project area. The PP also submitted that Hasdeo River and the Darri Dam exist at natural barrier between the reserve and the power plant area. Further none of the activity of the project are undertaken towards the reserve area. Therefore, the impact of project activity on the elephant reserve are likely to be insignificant.

However, the committee express that the Eco Sensitive Zone of the Lemru Elephant Reserve shall be considered as 10 km from its boundary till the actual Eco sensitive zone is notified.

3.7 Meeting with DFO-Kathghora

During the meeting, DFO, Kathghora confirm that there is no notified elephant corridor for Lemru Elephant Reserve and Eco sensitive zone for the reserve is yet to be notified. The committee suggested that NTPC and CGSPCL should undertake afforestation activity with support from forest department.

DFO assured to extend all cooperation in this regard.

3.8 Participation in Girls Empowerment Mission Programme

It was informed that “Girl Empowerment Mission” is a flagship programme of NTPC organized every year across all NTPC Stations. This campaign has been started so that NTPC can contribute appropriately to the "Beti Bachao Beti Padhao" campaign of the Government of India.

In this workshop, the aim is the holistic development of the girl child to make them aware about the necessary education, health and self-defense programs. For this, programs are being organized covering basic communication skills, mathematics, hygiene, nutrition, yoga, dance, music, personality development, and elementary education in sports in Hindi and English.

This year 124 students are enrolled in the workshop. These students are from 38 Government primary schools of nearby villages. One month workshop has been organized from 16th May 2023 to 15th June 2023 for the empowerment of class 5 girls (in the age group of 10 to 12 years) studying in government schools in the project affected villages and adjoining areas.

The sub-committee members met the participating children, interacted with them and encouraged them.



Figure 11: Participation in GEM Program



Figure 12: Participation in GEM Program



Figure 13: Participation in GEM Program

Annexure-I

MINUTES OF THE 24th MEETING OF THE RE-CONSTITUTED EXPERT APPRAISAL COMMITTEE (EAC) ON ENVIRONMENTAL IMPACT ASSESSMENT (EIA) OF THERMAL POWER PROJECTS HELD ON 9TH MAY, 2022

The 24th Meeting of the re-constituted EAC (Thermal Power) organized by the Ministry of Environment, Forest & Climate Change, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi was held on 9th May 2022 through video conference under the Chairmanship of Shri Gururaj P. Kundargi. The list of Members participated in the meeting is at Annexure - A.

Agenda Item No.24.1:

Confirmation of the Minutes of the 23rd EAC meeting

The Minutes of the 23rd EAC (Thermal Power Project) meeting held on 7th April, 2022 were confirmed.

Agenda Item No. 24.2:

Lara Super Thermal Power Project, (2x800 MW) Stage-II Coal Based located at villages Armuda, Chhapora, Bodajharia, Devalpura, Mahloi, Riyapalli, Lara, Jhilgitar and Kandagarh, Tehsil Pussore, District Raigarh, Chhattisgarh by M/s NTPC Ltd - Amendment in Terms of Reference - reg.

[Proposal No. IA/CG/THE/268608/2022; F. No. J-13012/11/2018-IA.I (T)]

24.2.1 The Project Authorities informed during the meeting that they want to submit the revised proposal with certain modifications. The PP therefore requested for deferment of the proposal. The EAC accepted the request made by the PP and deferred the proposal.

Agenda Item No. 24.3:

Korba Super Thermal Power Project, (1x500 MW) Stage III Coal Based, located at Village Jamnipali, Tehsil Katghora, District Korba, Chhattisgarh by M/s NTPC Ltd - Amendment in Environmental Clearance - reg. [Proposal No. IA/CG/THE/266455/2022; F. No. J-13012/06/2009 IA.II(T)]

24.3.1 The proposal is for grant of amendment in environmental clearance granted by the Ministry vide letter dated 31st August, 2006 in favour of M/s NTPC to the project for Korba Super Thermal Power Project, Stage-III (1x500 MW) at Korba (Chhattisgarh).

24.3.2 The project proponent has requested for amendment in environmental clearance for construct an Ash dyke on 248.60 acres land at village Ghamota for Korba Super Thermal Power Station, Tehsil: Katghora, Distt: Korba (Chhattisgarh).

24.3.3 The EAC during deliberations observed that the proposed site for new ash dyke is very much close to river Hasdeo, there is a possibility of adverse impacts on the river ecosystem due to construction of ash dyke in such a close proximity. The committee has further inquired from the project proponent about the alternate site analysis.

23.3.4 The EAC after detailed deliberation on the information submitted and as presented during the meeting decided to conduct site visit by EAC sub-committee comprising following members to have factual status of the existing site and alternate sites suitable for emergency dumping of fly ash along with minimum requirement of land:

- (i) Shri K. B. Biswas
- (ii) Dr. Nandini N
- (iii) Professor S S Rai,
- (iv) Representative from MoEF&CC

The EAC further decided that the site visit will be conducted as and when the project proponent submits the following additional information: -

- i. Submit alternate site analysis for proposed dyke. Also reduce the area for the dyke.*
- ii. Submit the study report of organisms in the benthic zone and impact of proposed activity on them.*
- iii. Submit the impact report of the project on Riparian Vegetation and community in the river basin.*
- iv. Commitment to dump fly ash at least 500 m far from the river.*
- v. Submit the drone pictures of the proposed/selected sites for dyke.*
- vi. Commitment for no further dumping in the existing dumping site and submit remediation plan. Also submit fly ash utilization plan.*

The proposal was therefore **deferred** on the above lines.

**List of NTPC Officials Present During the Visit of Sub-Committee of EAC
to Korba STPP on May 17-20, 2023**

Project

1. Shri B Ramchandra Rao, CGM & Head of Project
2. Shri Madhu S., GM (O&M), Korba STPS
3. Shri Amber Kumar, GM (Ash Dyke Management)
4. Shri P. K. Nandi, DGM (EMG)
5. Shri Manoj Kumar Sahoo. Sr. Manager (Ash Dyke Management)
6. Shri Suraj Singh Rawat, Manager (EMG)

Corporate Center

1. Dr. Vijay Prakash, CGM (Engg. Services)

Vicinity Maps of Korba STPP

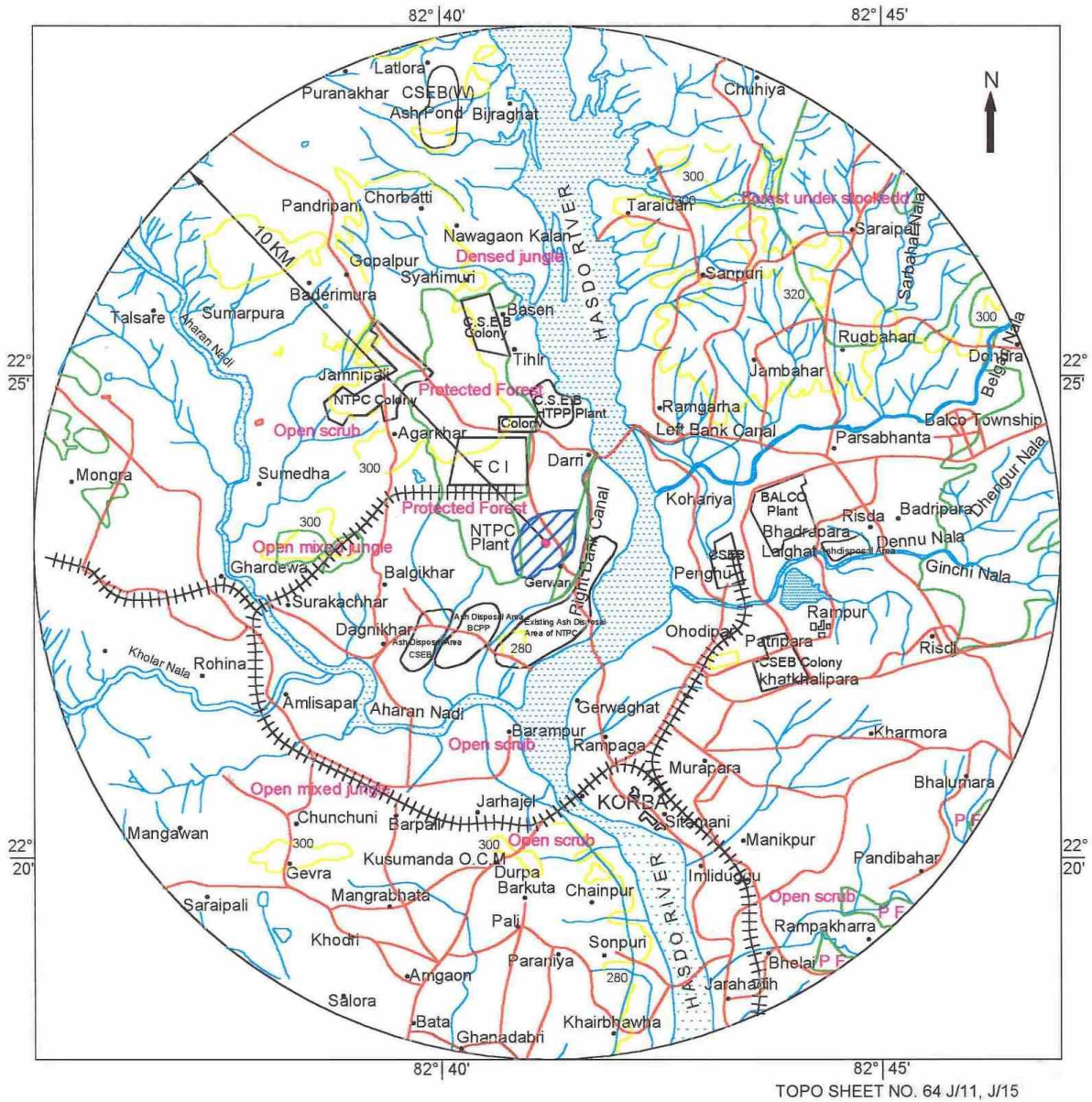


Exhibit-1: Vicinity Map of Korba STPS

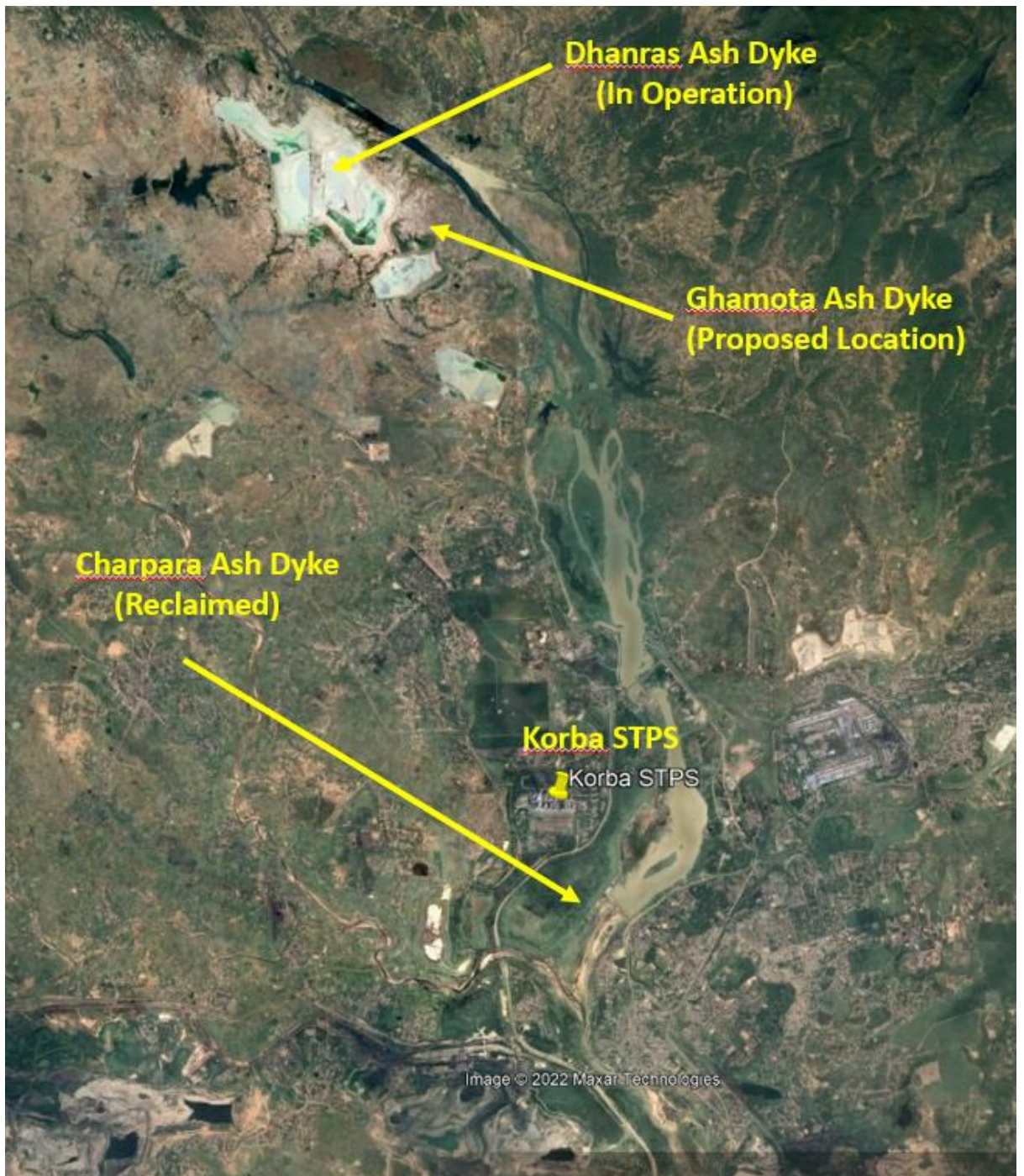


Exhibit-2: Ash Dykes of Korba STP

