

MINUTES OF THE 38th MEETING OF THE RE-CONSTITUTED EXPERT APPRAISAL COMMITTEE (EAC) ON ENVIRONMENTAL IMPACT ASSESSMENT (EIA) OF THERMAL POWER PROJECTS HELD DURING 21st February, 2020.

The 38th Meeting of the re-constituted EAC (Thermal Power) was held on 21st February, 2020 in the Ministry of Environment, Forest & Climate Change at Teesta Meeting Hall, First Floor, Vayu Wing, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi under the Chairmanship of Dr. Navin Chandra. The following members were present:

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|----|------------------------|---|----------------------|
| 1. | Dr. Navin Chandra | - | Chairman |
| 2. | Dr. N.P. Shukla | - | Member |
| 3. | Dr. Gururaj P Kundargi | - | Member |
| 4. | Dr. Jai Krishna Pandey | - | Member |
| 5. | Dr R.K. Giri | - | Member (Rep. of IMD) |
| 6. | Dr. S. Kerketta | - | Member Secretary |

Shri N.S. Mondal (Rep. of CEA), Dr. S.K. Paliwal(Rep. of CPCB), Dr. S. Lele, Dr.(Mrs.) Manjari Srivastava, Shri S.D. Vora, Shri N. Mohan Karnat and Dr. S.K. Gupta (Representative of ISM Dhanbad) could not be present due to pre-occupation.

Item No.38.0: CONFIRMATION OF THE MINUTES OF THE 37th EAC MEETING.

The Minutes of the 37th EAC (Thermal Power) meeting held on 23.1.2020 were confirmed in the presence of Members present in the meeting.

Item No. 38.0: CONSIDERATION OF PROJECTS

**(38.1) 14.5 MW Coal based Captive Co-generation Power Plant at Villages Puthukkadu, Kokkarakondi Pirivu, Puthupeerkadavu, Taluk Sathyamangalam, District Erode, Tamil Nadu by M/s Sri Andal Paper Mill Pvt. Ltd-regarding ToR.
(F.No. J-13012/02/2020-IA.I(T) & Proposal No. IA/TN/THE/140843/2020)**

(38.1.1) Project Proponent has submitted the online application on 5.2.2020 for grant of ToR for establishing 14.5 MW Captive Co-generation Project.

(38.1.2) Project Proponent along with Environmental Consultant M/s SBA Enviro Systems Pvt. Ltd., New Delhi made the presentation inter-alia submitted the following information:

- i. The company has engaged in the business of manufacturing of Kraft Paper Products. The Kraft Paper Manufacturing industry from Waste papers has been in operation and currently it is taking the power from the Grid. The capacity of Kraft manufacturing is 6000 Tons per month. The plant is under operation with the valid Consent to Operate from Tamil Nadu State Pollution Control Board.
- ii. The company has now proposed to set up 14.5 MW Co-generation Power Plant to cater to the captive requirement of Kraft Paper industry.
- iii. The proposed power project site is located at Puthupeerkadavu Village, Sathyamangalam Taluk, Erode District. The project is Category-B project. However, due to proximity of Sathyamangalam Tiger Reserve (Notified Protected Area under Wildlife (Protection) Act, 1974 at a distance of 4.2 km and 2.85 km from Notified Eco-sensitive Area, the project is to be treated as Category-A project.

- iv. The project area is 4.86 ha. The proposed land is within the premises of industrial area of Paper Mill and the land had already been acquired. There is no involvement of R&R Plan as the land is within the existing unit's area.
- v. The power project is based on Atmospheric Fluidized Bed Combustion (AFBC) system. The steam generation from the boiler is designed for 100% MCR flow of 100 TPH at 105 kg/cm² and 535±5°C while firing Imported Coal. The steam capacity of 85 TPH is will be supplied for power generation of 14.5 MW and remaining 15 TPH steam will be supplied to Kraft manufacturing facility.
- vi. The coal requirement 450 Tons/day. Estimated coal quality is GCV: 4306 kcal/kg; Ash: 2.83%; Sulphur: 0.16%. The Indonesian coal is proposed to be unloaded at Tuticorin Port and will be transported by road for a distance of 400 km.
- vii. Fresh water requirement is 297 KLD for the power project which will be met from Bhavani River located at 2 km. The permission to draw 1500 KLD from River Bhavani was already obtained from Public Works Department (Water Resource Division), Govt. of Tamil Nadu vide Order dated 20.8.2019.
- viii. Total water requirement for the complex is 3000 KLD. The break-up is as follows:

Activity	Quantity	Source
Paper manufacturing facility	2616 KLD	i. 1500 KLD from Bhavani River ii. 1500 KLD from treated effluent generated from the process.
Power Project	297 KLD	
Domestic Consumption	87 KLD	
Total	3000 KLD	

- ix. The power plant will be equipped with ESP and 70 m stack for controlling air pollution.
- x. The ash generation is 450 Tons/month and will be sold to Brick manufactures. There is no proposal to set up ash pond. All the ash will be readily sold to utilising agencies.
- xi. The effluent generation will be 69 KLD which will be treated in Combined Effluent Treatment Plant of comprising of primary, secondary & tertiary treatment. The sewage generation will be 1.8 KLD which will be disposed through septic tank and soak pit.
- xii. Hazardous waste of Spent Oil with quantity of 1 Ton/Year will be generated and will be sold to authorised recyclers as per Hazardous Waste Management Rules.
- xiii. Total estimated project cost is Rs.55 Crores. Estimated cost of Capital and Recurring EMP is Rs.1.5 Crores and 6 Lakhs/annum, respectively. The estimated employment generation in the project is 50 persons.

(38.1.3) Committee noted that the project is located near Sathyamangalam Tiger Reserve and hence it has been considered as Category-A project. The impact of power plant on Tiger Reserve needs to be studied. Project Proponent clarified that Kraft Paper Manufacturing from wastepaper pulp without deinking, bleaching and colouring does not require Environmental Clearance as per the EIA Notification. Accordingly, Proponent clarified that the present Kraft

Manufacturing facility was set up and operating based on valid Consent to Operate from Tamil Nadu Pollution Control Board and does not require prior Environmental Clearance. Further, Proponent also clarified that they are planning to expand the Kraft manufacturing facility with quantity of 24,000 Tons/month for which Consent to Establish (CTE) has been obtained from TNPCB vide dated 9.8.2019. It was also clarified that the expansion project also does not require Environmental Clearance in line with the Ministry's EIA Amendment Notification SO 1599 (E) dated 25.6.2014. However, Committee is of the opinion that the cumulative impacts of existing Kraft paper mill and proposed paper mill along with proposed power project are to be done in the EIA/EMP report as total environmental impact from complex is to be seen and mitigated appropriately. Further, the Eco-sensitive Zone Notification of Sathyamangalam Tiger Reserve was notified vide by the Ministry vide Notification dated 31.5.2019. It was informed that the ESZ was notified up to 1 km from the boundary of Tiger Reserve and the proposed project location is 2.7 km from the boundary of ESZ. Accordingly, the PP submitted that project location is out of ESZ and Tiger Reserve.

(38.1.4) Committee after detailed deliberations, **recommended for grant of following additional ToR** in addition to Standard ToR:

- i. The proposed project location is 2.7 km from the Eco-sensitive Zone of Sathyamangalam Tiger Reserve. Implementation of this project is allowed provided the proposed location is out of ESZ boundary of Sathyamangalam Tiger Reserve.
- ii. The authenticated map showing distances between Sathyamangalam Tiger Reserve, Wildlife Sanctuary/National Park, Eco-sensitive Zone *vis-à-vis* project boundary (existing paper manufacturing unit, proposed Co-generation Plant and proposed expansion of paper manufacturing project) shall be obtained from the State Wildlife Department. Further, specific comments of Chief Wildlife Warden regarding impact of proposed project including transportation of coal/ash on Sathyamangalam Tiger Reserve shall be obtained.
- iii. As per the Ministry's EIA amendment Notification vide S.O.1599(E) dated 25.6.2014 'Paper manufacturing from wastepaper pulp and ready pulp without deinking, bleaching and colouring' is exempt from obtaining Environmental Clearance. The existing and proposed Kraft paper manufacturing from wastepaper pulp (existing 6000 Tons/month and proposed 24,000 Tons/month) does not involve deinking, bleaching and colouring. Therefore, paper manufacturing process is whether in conformity with the exemptions given in the EIA Notification dated 25.6.2014 to be ensured by providing a consolidated DPR of the proposed unit.
- iv. The complete process of Kraft manufacturing along with raw material consumption and generation of emissions, discharges, solid waste, etc. shall also be incorporated in the EIA report.
- v. Impact assessment of coal transportation and ash transportation by road shall be conducted while passing through protected areas and necessary mitigation measures shall be proposed.
- vi. Cumulative impacts of proposed power project, existing Kraft Paper Manufacturing facility (6000 Tons/month) and proposed Kraft manufacturing project (24,000 Tons/month) in terms of air quality, water consumption, wastewater generation, hazardous and solid waste generation shall be assessed and the environmental management plan to be proposed accordingly.

- vii. Impact of project activities and Kraft paper mill activities on surrounding biodiversity particularly Tigers and other Scheduled I Species shall be conducted and necessary mitigation measures are to be proposed.
- viii. The EIA report shall present the necessary pipelines required from Bhavani River, details of land acquisition for laying pipeline, if any shall be submitted.
- ix. Any forest land involved for laying pipelines shall be intimated to the Ministry within one month from the date of issue of ToR.

**(38.2) 2x800 MW (Stage-III), Singrauli Super Thermal Power Project Tehsil Dudhi, Village Shaktinagar at District Sonbhadra, Uttar Pradesh by M/s NTPC Limited- reg. Environment Clearance.
(F.No.J-13012/09/2016-IA. I (T) and Online No. IA/UP/THE/117100/2016)**

(38.2.1) M/s NTPC Ltd. submitted online application on 12.09.2019 for grant of Environmental Clearance. The ToR for undertaking Environmental Impact Assessment (EIA) studies for establishing 2x660 MW expansion project has been issued by the Ministry on 6.3.2017. An amendment to the ToR has been issued for changing the configuration from 2x660 MW to 2x800 MW on 10.12.2018.

(38.2.2) The proposal for grant of Environmental Clearance was earlier considered by the EAC in its meeting held on 25.9.2019 and the committee deferred the project seeking following information:

- i. Pollution load of existing power plant from all stacks in terms of Tons of PM, SO₂ and NO_x emitted in a day. The total pollution load of existing and proposed power project and estimation of ground level concentrations considering emissions from all stacks including the proposed project.
- ii. Further, the estimation of pollution load and prediction of ground level concentrations shall be carried out considering only Stage-II and Stage-III projects as Stage-I (5x200 MW) planned to be after construction of proposed project.
- iii. The water balance diagram for proposed project (considering the air cooled condenser system) as well as existing units.
- iv. Status of implementation of pollution control equipment to meet the revised emission norms such as FGD, De-NO_x/SCR/SNCR/Low-NO_x burners for operating power plants. Status of achieving specific water consumption of 3.5 m³/MWh and installing cooling towers in line with the Ministry's Notifications dated 7.12.2015 and 28.6.2018. Whether there is any extension received from CPCB. If yes, a copy is to be submitted.
- v. Wildlife Conservation Plan is to be submitted preferably to be vetted by the Chief Wildlife Warden in the State Wildlife Department as the Schedule-I species are present in the Rihand Reservoir and within 10 km radius of the project.
- vi. Details of Ash generation, utilisation and disposal for last 5 years is to be provided. The area of ash ponds, total volume of ash pond with dyke height, quantity filled till date, available volume, co-ordinates of each ash pond, status of liner, status of disposal system (Lean slurry, medium or high slurry concentrations), AWRS, etc.
- vii. Details of whether villages in the Madhya Pradesh within 10 km radius of the project have been involved in the Public Hearing and whether Madhya Pradesh Pollution Control Board has also been involved in the Public Hearing. A clarification from UPPCB and MPPCB is to be obtained.

- viii. Reply along with action plan to the public representations received by the Ministry.
- ix. Certified EC compliance report by the Regional Office for operating power plants including permission issued for additional ash ponds. As the EC was issued before EIA Notification, 1994, the report should cover emissions from the stack, coal and ash handling units, coal transportation, fugitive emissions at transfer points and stack yard, ambient air quality, water consumption, wastewater discharge, solid waste management, ash generation/utilisation/disposal, groundwater monitoring around the ash pond, existing pollution control equipment, status of online connectivity of stacks with CPCB, 33% greenbelt out of total plant area, CSR activities, Consent conditions, etc.
- x. Water quality of Baliya nallah is polluted due to high BOD and COD. Further, Coliforms in all surface water samples in the study area are exceeding the standards. The detailed cause/inference for exceeding the threshold limits is to be ascertained. The comparative analysis of heavy metals in the ground water vis-à-vis drinking water standards is to be brought out in the report.
- xi. One month fresh baseline may be collected to ascertain the actual carrying capacity and pollution loads in the region.
- xii. Further, Hon'ble NGT vide order dated 10.07.2019 in OA No.1038/2018 kept certain restrictions for red category projects in critically polluted areas and Singrauli is severely/critically polluted area, the pollution load certificate is to be obtained from the UPPCB. Further, the status of implementation of action plan to bring down the CEPI score below 70 may also to be provided by UPPCB. Further, any specific directions/action plan was given to M/s NTPC to bring down the pollution levels from the operating power plant.
- xiii. Details of CER budget earmarked for proposed project in line with the Ministry's OM dated 01.05.2018. The cost of EMP should be revised by separating the cost towards CER.
- xiv. The status and action plan to achieve 33% greenbelt including the ash ponds. A map showing the extent of greenbelt developed till date and proposed area for greenbelt along with project boundaries and ash ponds with areas shall be submitted.

(38.2.3) M/s NTPC submitted the information as sought by EAC vide their letter dated 12.2.2020. Accordingly, the proposal has been placed in the EAC meeting. Project Proponent along with M/s Vimta Labs Ltd. have made the presentation and *inter-alia* submitted the following:

- i. Pollution Load from existing plant (Stage-I:5x200 MW & II:2x500 MW) and proposed power project (Stage-III: 2x800 MW) is as below:

Parameter	Stage-I & II	Proposed with FGD	Stage-III	Total Pollution Load
PM	29.15 Tons/day	18.54 Tons/day		47.69 Tons/day
SO ₂	173.36 Tons/day	43.18 Tons/day		216.54 Tons/day
NO _x	100.63 Tons/day	57.14 Tons/day		157.77 Tons/day

- ii. The stack emissions from Stage-II and proposed Stage-III were considered for predicting the air quality, as the Stage-I power plant will be de-commissioned after start of Stage-III operations. The details of stack are as below:

	Stack Height	Dia.	Vel.	Temp	PM	SO₂	NO_x
	(m)	(m)	(m/sec)	°K	g/s	g/s	g/s
STAGE-II							
Unit-VI	220	7	21	403	80.78	161.57	242.36
Unit-VII	220	7	21	403	80.78	161.57	242.36
STAGE-III							
Unit-VIII	275	8.8	18.3	333	26.50	88.40	88.40
Unit-IX	275	8.8	18.3	333	26.50	88.40	88.40

iii. Air quality has been predicted for proposed unit as well as existing units:

Parameter	Predicted max. 24 hourly incremental GLC in $\mu\text{g}/\text{m}^3$	
	Only Stage-III	Combine with Stage-II (with FGD) & Stage-III Units (with New emission Norms)
SO ₂	4.10	5.27
NO _x	4.10	5.27
PM	1.22	1.58
Distance	4.2 km	4.0 km
Direction	Towards E	Towards E

iv. The incremental concentrations were superimposed on baseline concentrations to assess the resultant concentrations and the details are as below:

Pollutant, ($\mu\text{g}/\text{m}^3$)	Maximum Concentrations ($\mu\text{g}/\text{m}^3$)		Resultant ($\mu\text{g}/\text{m}^3$)	National Standard ($\mu\text{g}/\text{m}^3$)
	Maximum baseline, ($\mu\text{g}/\text{m}^3$) in study area	Incremental ($\mu\text{g}/\text{m}^3$)		
PM ₁₀	73.6	1.58	75.18	100
SO ₂	46.1	5.27	51.37	80
NO ₂	51.3	5.27	56.57	80

v. CPCB vide Order dated 11.12.2017 fixed the following timelines for installing FGD and other pollution control equipment to meet new emission norms for the existing units:

Unit	Applicable emission Norms	Timelines	
		PM & SO ₂	NO _x
I: 200 MW	PM: 100 mg/Nm ³ SO ₂ : 600 mg/Nm ³ NO _x : 600 mg/Nm ³	December, 2021	December, 2022
II: 200 MW		December, 2021	
III: 200 MW		August, 2021	
IV: 200 MW		August, 2021	

V: 200 MW		April, 2021	
VI: 500 MW	PM: 100 mg/Nm ³	February, 2021	
VII: 500 MW	SO ₂ : 200 mg/Nm ³ NO _x : 300 mg/Nm ³	December, 2020	

- vi. R&M of ESP in all units is already in progress. The PP is in advanced stage of awarding FGD package for all the units.
- vii. NO_x control measures in coal fired power plants is presently achieved by controlling its production by adopting best combustion practices (primarily through excess air and combustion temperature optimisation). Work for combustion modification awarded and under execution to lower down NO_x emissions.
- viii. Further, the consumptive use of water at Singrauli STPS is 6,713 m³/hr (3.36 m³/Mwh).
- ix. Water balance diagram has been submitted. The fresh water drawl for Stage-I & II (Once through cooling systems) is 2,74,390 m³/hr and for proposed Stage-III is 1,575 m³/hr. The details are as below:

Stages	Fresh water consumption	Discharge
Stage-I	1,51,329	1,43,881 m ³ /hr
Stage-II	1,23,061	1,22,399 m ³ /hr
Stage-III	1575 m ³ /hr	Zero

- x. The analysis results of samples from Baliya Nala (Upstream and Downstream), NTPC, Singrauli indicates that the all the analysed values were in the conformity with the effluent standards notified vide G.S.R. 422(E) dated 19.05.1993 under Environment (Protection) Act, 1986 for discharge of effluents into inland surface water except BOD.
- xi. Ballia Nala drains off the northern part of Bina (Extn.) and southern part of Dudhichua coal mines. Further, Senduri and Hadwaria nallah, draining Khadia are also tributaries of Ballia nallah. As the Nallah carries the effluents from various coal mining areas and human settlements, the BOD & COD values are higher.
- xii. The heavy metal concentration such as iron, zinc, copper, lead and chromium are well within the permissible limits prescribed by the IS-10500 standards. However, the concentrations of cadmium, arsenic and nickel in the ground water samples of the study area were found to be below detectable level.
- xiii. CPCB vide Order dated 25.6.2019 gave an extension for installing of cooling towers for various units of existing plant up to 30.06.2022.
- xiv. A Wildlife Conservation plan has been prepared and submitted for vetting by Chief Wildlife Warden in the State Wildlife Department and implemented after approval of the project.
- xv. The following wild animals are reported in the buffer zone of project area as there are Dudhichua and Mehrauli protected forests are located at 4.1 km and 8.8 km, respectively from the project area.

Type	Details
Fauna	3 Species: Mugger Crocodile (Schedule-I & Vulnerable), Python (Schedule-I, near threatened) & Shikra (Schedule-IV & Least Concern). 11 Species: Jackals, Nilgai, Black napped Indian hare, Hanuman langur, Squirrels, Wild boars, common mongoose under Schedule-II, Schedule-III, schedule-IV, and Schedule-V of the Indian Wildlife (Protection) Act, 1972.
Avi-fauna	51 bird species of the Indian Wildlife (Protection) Act, 1972
Flora	Neem, Banyan, Peepal, Cluster Fig, Myrtaceae, Sal, Arjuna, Saaj, Karanj, Ber, Kadamb (All are local names).

- xvi. Further, no elephant is report in the study area of the project.
- xvii. The Financial outlay for Wildlife Conservation Plan is Rs 25 Lakhs/annum. The details of budget earmarked for wildlife conservation plan is provided below:

Sl. No.	Conservation Actions	Annual Budget
1	Creation of Ecological Conservation Cell for Public Education and Awareness Promotion, Survey and Monitoring, etc.	Rs. 15 Lakhs
2	Organising Workshops with Experts and Other Stakeholders	Rs. 10 Lakhs
	Total	25 Lakhs

- xviii. The details regarding existing ash dykes, their capacities and available volumes are given below:

Sl.No.	Name of Dyke and co-ordinates	Area (acres)	Total capacity (Lakh Metric Tonnes, LMT)	Quantity of ash filled till date (Lakh MT)	Available Volume (Lakh MT)	Dyke height	Remarks
1	S-1 dyke (24° 6' 53" N, 82° 42' 84" E)	400	234	155	79 (34%)	13.7 m	2 nd raising in service
2	S-2 dyke (24° 3' 22.68" N, 82° 42' 34.2" E)	400	275	124	151 (55%)	8 m	Starter dyke (OFL 3 acres)
3	Khadia dyke	600	410	410	0 (0%)	22 m	Capacity exhausted

	(24° 6' 30.2" N, 82° 44' 59.8" E)						
Total		1400 acres					

xix. The details of ash generation, ash utilization and disposal to ash ponds during last six years are as below:

Sl.No.	Ash generation/utilisation	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	
		Quantity in Lakh Metric Tonnes (Lakh MT)						
1	Ash generation	37.66	37.00	45.49	36.77	34.83	28.90	
2	Ash Utilisation:	Cement	4.45	0.62	-	-	-	-
		Asbestos	0.69	0.20	0.15	0.19	0.12	0.02
		Ash dyke raising	1.02	5.25	3.74	3.04	1.93	2.10
		Landfill	0.21	-	-	-	8.50	8.03
		Brick manufacturing	0.02	0.14	0.08	0.11	0.03	0.02
		Bottom ash cover	3.45	-	-	-	-	-
		Total Utilisation	9.84	6.21	3.97	3.34	10.58	10.17
3	Disposal to ash pond	27.82	30.79	41.52	33.43	24.25	18.73	
4	% of Utilisation	26.13	16.78	8.73	9.08	30.38	35.20	

xx. Regarding participation of villages within Madhya Pradesh in the 10 km radius of the project, a request letter along with EIA report and Executive Summary in English & Hindi was personally submitted to the Madhya Pradesh Pollution Control Board, intimating about the Public Hearing is being held on 09.07.2019. Banners/public announcement was also done in the area to attend the Public hearing to be held on 09.07.2019 at the Venue. As per the attendance list, people submitted the representation and also signed in the attendance register that people from various village adjacent to the Madhya Pradesh State have also attended the Public Hearing. Copy of the people attendance sheet has been submitted.

xxi. Three representations were received by NTPC from MOEF&CC:

- Letter dated 19.07.2019 from Shri Sarju Ram Kushwaha and Others regarding installation of 2x800 MW at NTPC Vindhyachal.
- Letter dated 29.08.2019 from Shri Hira Lal Shah and others regarding establishment of ash dyke for Vindhyachal STPS, Stage-IV.

- c. Letter dated 06.09.2019 from Shri Abdul Kalam and others regarding establishment of ash dyke for Vindhyachal STPS, Stage-IV.
- xxii. As evident from above, the letters at sl. No. b and c pertains to establishment of ash dyke for Vindhyachal STPS, Stage-IV for which EC has already been accorded and not related to the present case. Further, the letter dated 19.07.2019 mentioned at Sl. No. a pertains to installation of 2x800 MW at NTPC Vindhyachal. NTPC is not installing any new unit at Vindhyachal STPS. Nevertheless, the representations received from the above mentioned residents of the area are being replied suitably.
- xxiii. Regional office of the Ministry has submitted the Certified EC Compliance Report vide letter dated 22.11.2019. The salient observations are :
- d. Total of 1,96,000 saplings planted during 2015-20 under greenbelt development.
 - e. Ash pond has been lined with impervious lining.
 - f. Ash pond water is being recycled and used in ash slurry mixing.
 - g. S2 ash dyke is beyond HFL of Rihand Reservoir.
 - h. The ash dyke was given such a gradient that the ash water flows away from Rihand reservoir. Necessary precautions have been taken to prevent breaching and flooding of ash pond into adjacent Rihand reservoir.
 - i. The gradual movement of seepage water from ash pond is intercepted by sand chimney & sand blanket and channelized through rock toe and toe drain.
 - j. Dry flyash extraction system has been installed. Ash utilisation is limited due to lack of market for ash based products.
 - k. No groundwater contamination was observed due to leaching of ash. University of Roorkee has conducted Hydro Geological study to assess any leaching of ash and contamination of groundwater. The study recommended that there is no need for lining of ash ponds either by soil or synthetic material. Further, the report stated that submergence area of the Rihand reservoir was not encroached by M/s NTPC.
 - l. NTPC has set up five brick manufacturing plants (8000 bricks per day) for internal use which are in operation.
- xxiv. One month baseline data on Meteorology, Ambient Air quality and water quality has been monitored to assess the Water quality of Baliya nallah and ascertain the cause for high BOD and COD.
- xxv. The CEPI index for Singrauli area is already below 70 (62.59). The latest CEPI scores for 100 polluted industrial area/clusters monitored during 2018 has been acknowledged by NGT. CEPI action plan for Singrauli Power Plant has been prepared and submitted. The salient points are:
- a. To achieve PM emissions of 100 mg/Nm³, necessary contract has been awarded to M/s BHEL on 14.11.2013 for retrofitting ESP's of all 07 units. Two passes of Unit 1,2,3 & 7, Three passes of unit 6 and all 4 passes of unit 4&5 completed.
 - b. Dry ash collection system: the system was installed in 2 units of 200 MW. Work has been awarded to M/s BHEL for installation of dry collection system in all units of Stage-I and work is in progress with ESP

augmentation. For Stage-II (2x500 MW), the work for dry ash collection system is in progress by (M/s Indure Ltd). Civil work of building, compressor house, Silo completed. Erection work silo, piping, installation of compressor and receiver tank, etc. is in completion stage there after commissioning to start.

- c. Online emission data has been connected to CPCB and UPPCB. Two continuous air quality monitoring stations have been established and data linked to CPCB and UPPCB.
 - d. Hazardous waste is sent to TSDF/Authorised Recyclers as per the requirement. Oil bearing sludge will be burnt in boiler when oil tank will be cleaned.
 - e. For 100% ash utilisation: Efforts are continued to increase ash utilization by advertisement / EOI in newspaper. NTPC made provision to provide incentive in transportation cost to cement/asbestos/brick manufacturer as to enhance ash utilization. NTPC approached Northern Coalfields Limited for providing mine for backfilling with ash. As per Flyash Notification dated 25.01.2016, NTPC will bear cost of transportation in road construction projects of NHAI/State highways. Contract awarded for supply to Audi - Shaktinagar road for which awaiting clearance from PWD. Further for supply of ash in NHAI road projects (Hanuman -Varanasi) for which contract is in award stage. Land development with ash is being done in nearby area for increasing ash utilization.
 - f. Ash water recycling system has been installed to recycle overflow water from ash pond.
- xxvi. The total CER budget earmarked for Singrauli STPP Stage-III (2x800 MW) is Rs. 16.0 Crores (0.125% of Rs.11,363 Crores). This is in line with the Ministry's OM dated 01.05.2018. The activities wise details CER budget is provided as below.

Sr. No.	Activities	Budget in Rs. Crores
1	Approach Road/ Internal Road, Culverts, Drainage system, guarding wall, etc. Infrastructure support in Street lighting, Solar street lights at common place, etc.	6.00
2	Installation of Bore well & Water Tank, etc. Providing Hand Pumps, Drinking water in different Villages	1.00
3	Construction/ renovation of Anganwadi/ Community Hall, Shed & Chabutara in Cremation Ground. Construction/ renovation of Bus Stop/sheds, Boundary wall of Panchayat Bhawan, etc.	2.00
4	Construction/ renovation of Boundary Wall, Gate & additional rooms in School. Providing Infrastructure & Furniture in Schools. Water Tank in School. Providing Play equipment's & Sports Items in School. Assistance to Meritorious Student etc.	2.50
5	Deepening/ renovation of Ponds and Construction/ renovation of Ghat/Playground/.	1.50
6	Vocational Skill to Women of Villages-Tailoring/ Papad	0.10

	making/ Pickle making/ Beautician training, Technical Skill Development Programs, etc.	
7	Health Camp & Mobile Medical Ambulance/Augmentation of Primary Health facilities & and Infrastructure support, sanitation, Swachhata Abhiyan, etc.	1.00
8	Promotion of Rural Sports, Sports Activities in Schools and Clubs, Cultural traditions, etc.	0.40
9	Miscellaneous CD Works-As per need and requirement, contingency, etc. at disposal of BUH in consultation with local community/ administration/ Govt.	1.50
	Total	16.00

- xxvii. Actual implementation of CER would be carried out under the guidance of District Magistrate, Sonbhadra & in consultation with Stakeholders.
- xxviii. The revised cost of EMP is Rs.2459.58 Crores. The breakup of EMP is provided as below:
- xxix. A cost provision Rs. 2,459.8 crores has been kept towards environmental measures. The break-up activities under EMP are detailed below:

S. No	Item Description	Cost (Rs. in Crores)
1	Electrostatic Precipitator	253.01
2	Chimney	81.62
3	Air Cooled Condensers including Civil Works	618.96
4	Ash Handling including Ash water Recirculation	299.24
5	Ash Disposal Civil Work	296.18
6	Dust Extraction & Suppression System	8.00
7	DM Plant Waste Treatment System	9.00
8	Sewerage collection, Treatment & Disposal	8.00
9	Environmental Lab. & Monitoring Equipment	3.00
10	Green Belt, Afforestation & Landscaping and CER	9.00
11	FGD and SCR	873.57
Total (Rs in crores)		Rs.2459.58

- xxx. The total area acquired by Singrauli STPP is 4,491 acres. An area of 1478 acres has been developed as Green Belt in Township, Pump House area, MGR, Ash Dyke etc.
- xxxi. The total greenbelt area developed in the project area is Rs.1478.16 acres. For Phase-III project, 65 acres of green belt is proposed to be developed out of 562 acres which is nearly 12%.

(38.2.4) Committee noted that Wildlife Management Plan showed only Rs.25 Lakhs/annum for five years for awareness campaign. However, the budget should include the conservation of wildlife including Schedule-I Species. Further, committee noted that the reply from MPPCB and UPPCB was not received regarding participation of villages from Madhya Pradesh in the Public Hearing. However, the proceedings of Public Hearing indicated that several people from Telgava village in Madhya Pradesh participated in the Public

Hearing and raised questions. Further, the ash utilisation of the existing plant is less than 35%. The NGT constituted a committee chaired by Joint Secretary in the MoEF&CC to monitor the 100% utilisation of flyash. The project proponent has also submitted the action plan. Besides, CPCB is making guidelines to estimate the compensation/penalty for non-compliance of achieving 100% ash utilisation. Proponent should give an undertaking that they shall pay compensation as and when CPCB finalises the guidelines. Further, the project is located in Singrauli Critically Polluted Area. Ministry vide Office Memorandum dated 31.10.2019 has drawn a mechanism to deal with project requiring grant of Environmental Clearance such as imposing stricter pollution control measures, increasing greenbelt from 33% to 40%, zero liquid discharge, increasing CER cost to 2%, etc. Accordingly, the committee assessed the project and arrived at stringent pollution control measures.

(38.2.5) **Committee after detailed deliberations, recommended for grant of Environmental Clearance** with the following conditions in addition to Standard conditions:

- i. No additional ash pond is permitted for the proposed Unit. Existing ash ponds (S1: 400 acres & S2: 400 acres) are to be used only in case of emergency. High Concentrated Slurry Disposal system shall be followed. Ash water recycling system (AWRS) shall be set up to reuse the decanted water.
- ii. As the existing ash utilisation is less than 35%, an undertaking in the form of an Affidavit shall be submitted that M/s NTPC shall pay the compensation/penalty as per the guidelines framed by CPCB as part of Joint Working Group constituted by NGT on monitoring of flyash utilisation.
- iii. Ash utilisation of the proposed project shall be in compliance with the flyash utilisation notification. 100% utilisation shall be achieved within 4 years. Balance unutilised legacy ash shall be utilised in next 4 years. The ash generation, utilisation (including utilisation mode), disposal to ash ponds and % utilisation shall be submitted as part of compliance report.
- iv. As committed, existing units (Stage-I: 5x200 MW) shall be shut down after commencement of operations of the proposed project (2x800 MW). An undertaking to this effect shall be submitted.
- v. Stack height of 275 with exit flue velocity of 21-25 m/sec shall be set up as the project is located in the Critically polluted area.
- vi. Wildlife Conservation Plan shall be prepared by reputed Institution for protection of biodiversity (Habitat protection) in the study area and needs of the fauna in selection conservation activities proposed. Accordingly, budget is to be arrived for implementing conservation measures. Once the plan is prepared, vetting of Wildlife department is to be done. The report shall be submitted to the Ministry within 6 months.
- vii. Air cooled condenser system shall be established as cooling system for the project. Accordingly, water requirement shall not exceed 1620 m³/hr (39,000 m³/day, Specific water consumption: 1 m³/MWh).
- viii. Monthly water withdrawal, number of units generated, specific water consumption (m³/MWh), shall be submitted. Further, details of water consumption (including ash slurry mixing), wastewater generation, treatment, reuse and discharge shall be submitted. In any case, discharge of effluents is not permitted. Zero effluent discharge shall be implemented.
- ix. The pollution control measures to be implemented to meet new emission norms and specific water consumption for existing units shall meet the various timelines given by CPCB vide Orders dated 11.12.2017 & 25.6.2019. The status of compliance shall be submitted to the Ministry & its Regional Office.

- x. ESP, FGD (Ammonia based/Limestone based), De-NO_x (SCR/SNCR) control measures shall be implemented to meet emission norms of PM: 30 mg/Nm³, SO₂: 100 mg/Nm³ and NO_x: 100 mg/Nm³, Hg: 0.03 mg/Nm³. There shall not be any relaxation of emission norms in future considering the project location in Singrauli Critically Polluted area.
- xi. The air quality of surrounding villages in the study area where baseline was collected shall be carried out at least once a month in addition to the continuous monitoring (CAAQMS) at project location. Where CAAQMS is installed, manual sampling is also to be done by laboratory once a quarter to cross check the results. The air quality collected during every month shall be compared with the baseline results collected during EIA study.
- xii. The greenbelt of 40% of the total project area shall be developed. At present, 65 acres (12%) out of 562 acres shall be augmented to 40% by acquiring or annexing additional area. A layout map showing greenbelt around the project area along with total project area & co-ordinates shall be submitted in a month.
- xiii. The cost of CER is to be increased from proposed Rs.16 Crores to Rs.28.5 Crores (0.25% of project cost Rs.11,363 Crores).
- xiv. Transportation of coal is to be carried out by rail (MGR) only. Suitable augmentation of MGR system and unloading systems shall be implemented to accommodate additional coal required for the proposed project.
- xv. The coal requirement for the proposed expansion of Singrauli STPP Stage-III (2x800 MW) power plant shall be about 8.4 MTPA at 90% PLF. The present
- xvi. The Standing Linkage Committee (Long-Term), MoC, recommended the long term coal linkage for 6.9 MTPA to proposed Singrauli STPP Stage-III in its meeting held on 10.04.2018 and subsequently, the committee also recommended to the enhance quantity due to increase in capacity (2x660 MW to 2x800 MW) in its meeting held on 21.12.2018. Final copy of long term coal linkage issued by Ministry of Coal shall be submitted.
- xvii. Third party audit shall be conducted once a year by independent organisation to monitor and evaluation of the compliance of conditions prescribed in the EC and Consent. The audit report shall be submitted to the Ministry and its Regional Office.

**(38.3) Expansion by addition of 2x660 MW (Stage-II) Coal based Tanda Super Thermal Power Project, Village Bahadurpur, Tehsil Tanda, District Ambedkar Nagar, Uttar Pradesh by M/s NTPC Ltd-reg. extension of validity of EC.
(F.No. J-13012/96/2007-IAII(T) & Proposal No. IA/UP/THE/139691/2020)**

- (37.3.1) Project Proponent vide online application dated 13.4.2019 requested for extension of validity of EC dated 13.4.2011 for further period of one year (till 11.3.2021).
- (38.3.2) Project Proponent made the presentation inter-alia submitted the following information:
 - i. The Environmental Clearance for Tanda Power Project (Stage-II: 2x660 MW) was accorded by the Ministry on 13.4.2011. The validity of the said EC was extended till 12.4.2020 (9 years) vide Ministry's letter dated 28.5.2018. Further, an amendment was issued on 22.8.2019 for changing the flue gas emission monitoring of PM_{2.5} & PM₁₀ emissions to total PM emissions.

- ii. Unit-1 (660 MW) was commissioned on 7.11.2019 and under commercial operation. The units is operating at PLF of 90%.
- iii. Unit-2 (660 MW) is in advanced stage of commissioning and likely to be commissioned in August, 2020.
- iv. Physical work of 70% was achieved as on date. 69% of total project cost was spent till date. The details major activities along with milestones are provided as below:

S.No.	MILESTONES	Unit # 2	
		Schedule	Actual/ Anticipated
1	Start of Boiler erection	May-16	27-Oct-16
2	Start of Condenser Erection	Apr-17	20-Oct-18
3	Start of TG Erection	Jul-17	01-Dec-18
4	Boiler Hydro Test	Nov-17	18-Jan-19
5	Boiler Light up	Aug-18	<u>01-Mar-20</u>
6	TG Box up	Jun-18	30-Mar-19
7	Steam Blowing Completion	Nov-18	<u>01-May-20</u>
8	TG Oil Flushing Completion	Aug-18	29-Jan-20
9	Full Load Operation	Mar-19	<u>01-Jun-20</u>
10	COD	Jul-19	<u>01-Aug-20</u>

- v. The delay in achieving the COD of the both the units are due to Land acquisition leading to delay in Award and Ban on sand mining.
- vi. The project cost is Rs.9,842.96 Crores (including cost of FGD, Rs.653.98 Crores). Total expenditure made till date is Rs.6,782 Crores.

(38.3.3) Committee noted that Unit-1 has been commissioned within the validity period granted by the Ministry. However, Unit-2 is yet to complete its activities to achieve commissioning. Further, the status of implementation of new emission norms and installation of FGD for Unit-1 is not made available. Project Proponent should install pollution control equipment to meet new emission norms or an extension should be obtained from CPCB detailing the action plan. A condition was already stipulated in the EC extension letter dated 28.5.2018 that revised emission norms shall be met and if plant is operating without meeting norms, operations of such plant shall be stopped or otherwise an extension from CPCB/Ministry to be obtained. The committee reiterates the same condition while allowing proponent to continue construction activities of Unit-2.

(38.3.4) **Committee after detailed deliberations, recommended for extension of validity of EC dated 13.4.2011 for further period of one year, w.e.f. 13.4.2020 till 12.4.2021 (outer limit of 10 years validity)** subject to the following:

- i. Revised emission norms vide Ministry's notification dated 7.12.2015 shall be met during operations. In case plant is not meeting emission standards, either

operations shall be stopped or extension to install pollution control measures shall be obtained.

- ii. The physical and financial progress of installation of FGD and De-NOx control systems to meet new emission norms shall be submitted to Ministry and its Regional Office.

(38.4) 2x660 MW Coal Based Thermal Power Plant at village Tentulei, Ghantapada, Jagannthapur, Sana Scatland, Bada Scatland, Talcher CD Block, District Angul, Odisha by M/s NSL Nagapatnam Power and Infratech Pvt. Ltd.- reg. extension of validity of EC.

(F.No. J-13012/25/2007-IA.II(T) & Proposal No. IA/OR/THE/138675/2020)

- (38.4.1) Project Proponent has submitted online application on 24.1.2020 for extension of EC dated 25.3.2013 for further period of three years (till 24.3.2023).
- (38.4.2) Project Proponent along with QCI-NABET consultant M/s. Sri Sai Manasa Nature Tech Pvt. Ltd, Hyderabad made the presentation and inter-alia submitted the following information:
 - i. The Environmental Clearance for 2x660 Supercritical Power Project in District Angul, Odisha has been issued vide Ministry's letter dated 25.3.2013.
 - ii. As per the EC the project area is 793.89 acres and project cost is Rs.7796.78 Crores.
 - iii. The coal quantity is 6.44 MTPA Coal based on 70% Domestic Coal & 30% Imported Coal. Water requirement is 35.23 cusecs from Brahmani River.
 - iv. The Project is being implemented through amalgamation of Mahanadi Aban Power Company Ltd. (MAPCL) with NNPIIL. Further, MAPCL has signed Memorandum of Understanding (MoU) with Dept. of Energy, Govt. of Odisha (GoO) on Jun 9, 2006 for implementing this project. After the amalgamation, Supplemental MoU was signed in Jan 2014 between GoO and NNPIIL.
 - v. The project is Pithead Power project which is located near to coal mines (~ 10 km).
 - vi. Total Land required for the Project is 788.25 acres out of which 763.88 acres is Private land and 24.37 acres is Government land.
 - vii. The entire private land of 763.88 acres is acquired by IDCO (Odisha Industrial Infrastructure Development Corporation) on behalf of the company and NNPIIL has paid the compensation amount. For 455.30 acres (sufficient for main plant), lease deed is executed between IDCO and MAPCL. After amalgamation, IDCO approved for transfer of leasehold rights to NNPIIL from MAPCL by executing a transfer deed after payment of requisite transfer fee. For the balance 308.58 acres, lease deed is ready for execution.
 - viii. Mahanadi Coalfields Ltd. (MCL) issued Letter of Assurance (LoA) for supply of 4.273 MTPA (70% of the coal requirement) of Grade-F towards Long Term Coal Linkage. However, Fuel Supply Linkage is yet to be signed.
 - ix. NNPIIL project achieved financial closure and Common Loan agreement was signed with lead lender REC, PFC and Axis Bank in Sep 2012. Lenders comprising of PFC and Axis Bank did not disburse finances due to non-signing of Fuel Supply Agreement and Power Purchase Agreement (PPA).
 - x. NNPIIL has issued LoA/ Contracts to Tata Projects Ltd. (TPL) for EPC works and also paid advance. Rs.294 Crores have been paid to M/s Tata Projects Ltd. for BTG and BOP package. A letter from M/s Tata Projects Ltd. regarding receipt of amount vide dated 5.7.2012 has been submitted. However, there was no

progress in Project implementation, LOAs/Contracts were terminated with an understanding to re-execute the contract whenever the Project activities resume.

- xi. Out of 24.37 acres of Govt. Land, permissive possession for approx. 16 acres of govt. land is obtained and alienation of the balance land along with lease proposals are under various stages of approval.
- xii. The following works have been undertaken till date:
 - a. Construction of boundary wall completed for approx. 6 km, out of total 12 km.
 - b. Geo-Technical Investigation and Topography Survey completed.
 - c. Contour maps and Plot plan prepared.
 - d. Preliminary engineering and Design works completed.
 - e. Topographical & Hydrographic Survey for Intake Pump House completed.
 - f. Area drainage studies done and submitted to Irrigation department for approval.

(38.4.3) Committee noted that Project Proponent acquired 763.88 acres of land which is nearly 98% of total land requirement and disbursed Rs.294 Crores which is 38% of project cost. Proponent could not implement the activities due to non-disbursement of finances from lenders due to absence of PPA and FSA. Committee opined that Proponent should also include the budget for installing pollution control equipment such as FGD, De-NOx measures to meet revised pollution control norms. As the land has been acquired and Contract was once awarded with advance money, committee is of the opinion that if the project activities can be completed within three years, if commenced now.

(38.4.4) **Committee after detailed deliberations, recommended for extension of validity of EC dated 25.3.2013 for further period of three years, w.e.f. 25.3.2020 till 24.3.2023 (outer limit of 10 years validity)** subject to following additional conditions:

- i. Emission Standards for Thermal Power Plants as per Ministry's Notification S.O. 3305(E) dated 7.12.2015, G.S.R.593(E) dated 28.6.2018 and as amended from time to time shall be complied w.r.t. emissions and specific water consumption.
- ii. Revised project cost is to be estimated by including pollution control systems (FGD & De-NOx control measures) to meet new emission norms and the details to be submitted.
- iii. Date of commencement of Project construction activities shall be informed to the Ministry. A copy of FSA and PPA after signing the agreements shall be submitted to the Ministry.
- iv. The status of physical and financial progress of pollution control systems (FGD & De-NOx controls) to be submitted.
- v. The construction activities shall also include laying of rail connectivity from nearest take off point and private railway siding. The progress of rail connectivity and siding shall be separately submitted.

(38.5) 2x10 MW Coal Based Captive Thermal Power Plant at Village Tatisilwai, District Ranchi in Jharkhand by M/s. Usha Martin Ltd. – reg. amendment in EC for change in coal source and mode of transportation. (F. No.J-13012/122/2008-IA.II (T) & Proposal No. IA/JH/THE/138854/2020)

(38.5.1) Project Proponent submitted online application on 27.01.2020 for amendment in EC for seeking permission to transport coal by road from routes other than approved earlier by the Ministry.

(38.5.2) Project Proponent along with Environmental Consultants M/s Min Mec Consultancy Pvt. Ltd. have made the presentation and inter-alia submitted the following information:

- i. The Environmental Clearance (EC) 2x10 MW Captive Power Project was accorded vide Ministry's letter dated 07.04.2011. As per EC, the coal shall be obtained from captive Lohari coal block in Jharkhand and road transportation of coal was permitted for a limited period of three years only. The Environmental Clearance for 3x800 MW Super critical project was issued vide Ministry's letter dated 10.12.2019.
- ii. Subsequently, Ministry vide letter dated 9.10.2019 ex-post facto permission for sourcing of coal through e-auction and transportation by road for a period of three years i.e. till 31.03.2018; permission to transport coal by road for further period of three years, i.e. till 31.03.2021; and granted amendments regarding sourcing coal through e-auction and land requirement.
- iii. The 2x10 MW Captive Power Plant was established to ensure the uninterrupted power supply to Steel Wire and Wire rope plant to prevent breakage of wire to ensure internationally acceptable wire ropes particularly for use in critical safety applications. The wire rope plant is providing employment to 4400 workmen.
- iv. Hon'ble Supreme Court vide its judgment dated 25.8.2014 and 24.9.2014 cancelled allocation of Lohari Coal Block which was to cater coal requirement to the captive power plant.
- v. The plant started its operations with commissioning of 1st Unit on 31.3.2012 and 2nd Unit on 31.12.2012. At present, the company has been sourcing coal through e-auction from nearby mines of Central Coalfields Ltd. But during recent times e-auction is very much irregular which resulted in coal shortage as well as high production costs. In the last three quarters, the company was forced to stop its production of one unit for 82 days.

Month	No. of days production stopped
April'19	11
May'19	7
Aug'19	24
Sept'19	11
Oct'19	6
Nov'19	11
Dec'19	12
Total	82

- vi. Spot E-auction was held only 5 times from April'19 to Dec'19 in current financial year. The summarised details are provided as below:

FY	No of Auction	Qty of Coal in MT offered in E-auction Platform		Total (MT)	Auction qty for UML in MT (PWR+Amrapali+Magadh+Rohani)	Reduction in Coal Qty. Offered wrt 2017-18 (in %)
		M JUNCTION LIMITED	MSTC LIMITED			
17-18	12	7779050	2173430	9952480	5125000	-
18-19	7	1714680	3546190	5260870	2050000	47
19-20 (Up to Dec'19)	5	2442150	1640300	4082450	1687000	59

- vii. The auctioned quantity has reduced by 47% and 59% in FY 19 and FY20(till Dec 2019) respectively as compared to quantity offered during FY18. This has resulted in a situation, where the supply of coal through e- auction has reduced considerably considering the demand. Chances of winning the required quantity of coal have reduced and in practice we have not been able to procure the required quantity of coal for the Power Plant.
- viii. Accordingly, it is proposed to procure coal from a) West Bokaro Ghato Mines & Jamadoba Mines of Tata Steel, b) from HEC, Ranchi through Bilateral agreement / Window Sale, & c) Procurement of imported coal from nearest port.
- ix. Traffic Study Report on assessment of impacts due to transportation of coal by road from West Bokaro Open Cast Mine of Tata Steel and that from Heavy Engineering Corporation Ltd., Ranchi has been prepared.
- x. The following routes have been proposed for coal transportation

Route No.	From-To	Length, km	Remarks
1	HEC Plant to CPP via Tangtangtoli, Nawasarai and Manatu on Ring Road, Mesra & Khelgaon	64.8	<ul style="list-style-type: none"> ➤ Stretch from RW-09 to RW-12 is about 40 km long and is a 6 lane ring road. However, 100 m between RW-10 to RW-11 is a temporary bypass of 10 m width, to be used till the time an under-construction flyover parallel to RW-10 to RW-11 gets completed. ➤ About 9 km road from RW-12 to RW-15 is part of NH-33 (four lane).

Route No.	From-To	Length, km	Remarks
2	West Bokaro OC coal mine of Tata Steel to CPP via Ramgarh, Ormanjhi, Mesra & Khelgaon	66.8	<ul style="list-style-type: none"> ➤ About 45 km between RW-25 to RW-15 (Buti-More) is a part of NH-33. ➤ About 10 km road from mine to RW-25 is under Other District Road (ODR) categories.

Note: 8.8 km of route from RW-15 to RW-19 (till CPP) is common for both the routes.

- xi. Coal requirement of the plant is 0.183 MTPA. On an average it amounts to 500 tonnes of coal transportation per day involving to & fro movement of 40 tippers per day having capacity 25 tonnes.

Sl. No.	Source	Via Route	Maximum Quantity		Maximum daily to & fro tippers movement, Nos. (Maximum)
			Annual (MTPA)	Approx. Daily (TPD)	
1.	HEC Plant, Ranchi	Route-1	0.183	500	40
2.	West Bokaro OC coal mine of Tata Steel	Route-2	0.183	500	40

- xii. At any point of time maximum 500 TPD of coal will be transported from any of the above sources as per the availability of coal, which will form the worst case scenario. It may also be possible that the required 0.183 MTPA of coal will be fulfilled from all of the sources collectively. Presently 500 TPD of coal is being transported from Amrapali mine part of Route-2.

Routes	Length, km	Length of Stretch (in km) w.r.t. Type				Type of road
		Single Lane (<5.5 m)	Intermediate (≥ 5.5 m)	Two Lane (≥ 7 m)	Multi-lane (≥ 10 m)	
Route-1	64.77	0.90	2.80	2.02	59.05	Black top: 64.57 & Concrete: 0.2 km
Route-2	66.76	0.90	0.00	0.30	65.56	Black Top: 66.76 km

- xiii. The traffic sufficiency assessment has been conducted. The road capacity, existing traffic and incremental traffic have been estimated and the details area as below:

Road Width	Baseline Traffic (PCU/day)	Incremental Traffic (PCU/day)	Resultants Traffic (PCU/day)	Design Service Volume (PCU/day)	% Utilisation
Urban Areas					
26 m	24453	120	24573	35000	70.2%
24 m	11059	120	11179	35000	31.9%
18 m	36617	120	36617	49000	74.7%
10 m	17319	120	17439	24150	72.2%
Rural Areas					
Road Width	Baseline Traffic (PCU/hr)	Incremental Traffic (PCU/hr)	Resultants Traffic (PCU/hr)	Design Service Volume (PCU/hr)	% Utilisation
15 m	1373	9	1382	3600	38.4%
12.6 m	1731	9	1740	1500	116%
7 m	765	9	774	1500	51.6%

- xiv. The details of forests passing through two routes are as below:

Route	Length of the route (km)	Length of the route passing through or adjoining or within 100 m of forest boundary (m)	% of the route passing through or adjoining or within 100 m of forest boundary
Route-1	64.8	Nil	Nil
Route-2	66.8	5.5	8.2

- xv. The baseline air quality has been collected at various locations along the route. The details are as below:

Station No.	Location	Distance (m) from road edge, aerial	Air Quality Parameters, $\mu\text{g}/\text{m}^3$				Located on routes	
			PM ₁₀	PM _{2.5}	SO ₂	NO ₂	Route-1	Route-2
AQ-01	Core zone nr. Guest House	15	75.6	47.8	13	22.2	√	√
AQ-02	Lalgang Village	50	78.5	46	12.4	17.7	√	√
AQ-03	Meshra Village	70	63.2	36.9	8.5	15.9		√

AQ-04	Ormanjhi Village	60	61.4	35.9	7.9	13.3		√
AQ-05	Ara Village	20	64.0	33.3	12.1	21.0		√
AQ-06	Sarubera Village	15	71.1	42.0	14.6	26.0		√
AQ-07	Daladili, near Ring Road	25	61.1	29.2	8.1	12.1	√	
AQ-08	Tuk Tuk Restaurant	15	63.0	32.5	9.6	15.2	√	
AQ-09	Near Durba new market	120	72.2	42.0	13.1	19.2	√	
	Minimum		61.1	29.2	7.9	12.1		
	Maximum		78.5	47.8	14.6	26.0		
	Permissible Limit as per NAAQS 2009		100	60	80	80		

- xvi. Incremental concentrations have been predicted and the results are within the ambient air quality standards.

Parameters	Maximum observed air quality value at an air quality station/Study area			Maximum Incremental GLC Values from air prediction modelling at AQ04	Maximum Resultant	NAAQS - 2009
	Route	At AQ Location	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)
1			2	3	3 = (2+3)	4
PM10	Route-1&2	AQ-02:Lalgang Village	78.5	4.46	82.96	100
PM2.5	Route-1&2	AQ-03:Core zone near Guest House	47.8	1.08	48.88	60
SO ₂	Route-2	AQ-06:Sarubera Village	14.6	0.27	14.87	80
NO ₂	Route-2	AQ-06:Sarubera Village	26.0	2.99	28.99	80

- xvii. The places where existing traffic is exceeding the design service volume of the road, it is proposed to restrict the movement to during 9 pm to 8 am only, when the traffic is within DSV limits.

xviii. All other environmental and safety measures will be implemented such as dust control measures at unloading point, covering trucks with tarpaulin cover, maintenance of vehicles and following Central Motor Vehicles Act and Rules for maintaining road safety.

(38.5.3) Committee noted that there is only additional traffic of 20 trucks on new routes (40 trips to and fro) which will have minimum impact on road. However, wherever the baseline traffic is already exceeding the design service volumes at Tati Village near Power Plant and near CTO market along Route-1 from HEC Ltd, it has been proposed to transport coal during lean traffic period (9 pm to 8 am).

(38.5.4) **Committee after detailed deliberations, recommended for the additional two routes for sourcing coal from West Bokaro Ghato Mines & Jamadoba Mines of Tata Steel Ltd. and Heavy Heavy Engineering Corporation Ltd., Ranchi obtained through bilateral agreements/window sales for a period two years** subject to following additional conditions:

- i. The coal shall be transported through Route-1: HECL, Ranchi during lean traffic period (9 pm to till 8 am).
- ii. Water sprinkling is to be carried out at the road stretch near Tatisilwai village to control secondary dust.

(38.6) 1x660 MW Ennore Supercritical Thermal Power Project (Expansion), Ernavur Village, Tiruvottiyur Taluka, Thiruvallur District, Tamil Nadu by M/s Tamil Nadu Generation and Distribution Corporation Ltd (TANGEDCO)- reg. amendment in EC. (F.No. J-13012/15/2018-IA-I(T) & Online no. IA/TN/THE/139166/2020)

(38.6.1) Project Proponent submitted online application on 29.01.2020 for seeking amendment in Environmental Clearance dated 11.12.2019. The Environmental Clearance for 1x660 MW Ennore Supercritical Thermal Power Project was accorded vide letter dated 11.12.2019.

(38.6.2) Project Proponent has made the presentation inter-alia submitted the following information:

- i. The District name as mentioned in the EC to be changed to Thiruvallur District instead of Ennore District.
- ii. Emissions of Particulate Matter (PM) as stipulated in the EC at condition 29 (vi) to be changed to 30 mg/Nm³ instead of 100 mg/Nm³.
- iii. In para 6 of EC, it was written that 'Further, draft EIA has been uploaded on Tamil Nadu Pollution Control Board (TNPCB) for seeking comments/concerns from the public' is to be changed to 'draft EIA has been uploaded on MoEF&CC website which is accessible by public to view and offer their comments/concerns to the authorities concerned viz. MoEF&CC, TNPCB and State Government' as there is no scope to upload the EIA report in TNPCB website as per the prevailing conditions since the public hearing has been exempted by MoEF&CC vide letter dated 10.7.2019.

(38.6.3) Committee noted that the first two changes w.r.t. district are emission standard are factual details and can be modified as per the request of Proponent.

(38.6.4) W.r.t. matter of uploading of EIA on TNPCB and obtaining comments is concerned, Committee first needs to understand the sequence of events since

the exemption of Public Hearing by the Ministry till the EAC's recommendations for grant of EC before making any recommendations.

(38.6.5) The relevant paragraph of Public Hearing exemption vide Ministry's letter dated 10.7.2019 is reproduced below:

"In view of the justification submitted by you and as outlined in para 4 above, the Ministry hereby exempts the Public Hearing for the above mentioned project."

(38.6.6) The EIA Notification, 2006 and its amendments describes the Public Consultation process and relevant paras of the notification are reproduced below:

"ii. The Public Consultation shall ordinarily have two components comprising of:-

- a) a public hearing at the site or in its close proximity- district wise, to be carried out in the manner prescribed in Appendix IV, for ascertaining concerns of local affected persons;*
- b) obtain responses in writing from other concerned persons having a plausible stake in the environmental aspects of the project or activity."*

"iii. For obtaining responses in writing from other concerned persons having a plausible stake in the environmental aspects of the project or activity, the concerned regulatory authority and the State Pollution Control Board (SPCB) or the Union territory Pollution Control Committee (UTPCC) shall invite responses from such concerned persons by placing on their website the Summary EIA report prepared in the format given in Appendix IIIA by the applicant along with a copy of the application in the prescribed form, within seven days of the receipt of a written request for arranging the public hearing. Confidential information including non-disclosable or legally privileged information involving Intellectual Property Right, source specified in the application shall not be placed on the web site. The regulatory authority concerned may also use other appropriate media for ensuring wide publicity about the project or activity. The regulatory authority shall, however, make available on a written request from any concerned person the Draft EIA report for inspection at a notified place during normal office hours till the date of the public hearing. All the responses received as part of this public consultation process shall be forwarded to the applicant through the quickest available means."

"vii. After completion of the public consultation, the applicant shall address all the material environmental concerns expressed during this process, and make appropriate changes in the draft EIA and EMP. The final EIA report, so prepared, shall be submitted by the applicant to the concerned regulatory authority for appraisal....."

(38.6.7) The EAC while appraising the project for grant of EC in its meeting held on 23.8.2019 noted the following:

"Further, Public Hearing has been exempted. However, TNPCB has not furnished any letter that whether any comments have been received from public after uploading the EIA reports."

The EAC deferred the proposal for want of certain requisite information including uploading of EIA and obtaining responses from the public.

(38.6.8) The Proponent submitted the information on 18.9.2019. The Proponent in their reply submitted that based on TANGEDCO's request, TNPCB has informed vide their letter dt.18.9.2019 that TNPCB has so far not received any comments

from the Public after uploading of the EIA Report of ETPS Expansion TPP (1 x 660 MW). The copy of the letter is enclosed herewith.

Further, the letter produced from the Member Secretary, Tamil Nadu Pollution Control Board vide dated 18.9.2019 mentioned the following information:

"The 32nd meeting of Re-constituted expert appraisal committee (EAC) on EIA of Thermal Power Projects was held on 23.8.2019 at New Delhi, in which the proposal of Ennore Thermal Power Station was discussed. The minutes have been received on 16.9.2019.

One of the comments of the committee is as follows "TNPCB has not furnished any letter that whether any comments have been received from public after uploading the EIA reports."

Hence the unit has requested the details of the status of the above for onward submission to MoEF&CC, New Delhi.

In view of the above, it is informed that TNPCB so far has not received any comments from the public after uploading of the EIA report of the Unit M/s. Ennore Thermal Power Station, Thiruvallur District."

(38.6.9) The proposal was taken up in the EAC meeting held on 25.9.2019 and the committee has taken note of TNPCB's letter. The committee in its deliberations has made an assumption that the EIA report was uploaded on TNPCB website on request of Proponent for following reasons:

- a. Both TNPCB letter and M/s TANGEDCO (Proponent) are silent on uploading of EIA in their letters such as date of request to TNPCB by M/s TANGEDCO for completing public consultation process, date of uploading of EIA & keeping the EIA for one month on TNPCB's website and publishing the notice in newspapers for obtaining public comments. Further, M/s TANGECO did not inform that when the request for uploading of EIA was submitted to TNPCB.
- b. Public Consultation process of EIA Notifications entrusts the part-b of the Public Consultation process (obtaining written responses) with State Pollution Control Board.
- c. During EAC deliberations, M/s TANGEDCO was sought regarding uploading of EIA and obtaining comments. M/s TANGEDCO verbally informed that it has been uploaded and comments have not been received.

Further, EAC after addressing all issues including stakeholder consultation, recommended for grant of EC.

(38.6.10) Based on EAC recommendations, the Ministry vide letter dated 11.12.2019 granted Environmental Clearance and the relevant para-28 is reproduced below:

"The Public Hearing for the project has been exempted. Further, the draft EIA/EMP report has been uploaded on Tamil Nadu Pollution Control Board for seeking comments/concerns from the Public. The TNPCB has informed vide their letter dated 18.9.2019 that no comments have been received so far after uploading of EIA report."

(38.6.11) It is evident from the EC letter that the same assumption was made by the Ministry that EIA report was uploaded on TNPCB's and no comments were received. Committee noted that the letter of TNPCB (dated 18.9.2019), it referred a request letter of Proponent dated 17.9.2019. On close scrutiny of this letter, it was observed that M/s TANGEDCO approached TNPCB on 17.9.2019

and TNPCB provided a reply on 18.9.2019. Hence, the comments from the public cannot be obtained in two days. Further, M/s TANGEDCO has not produced any letter that they have approached TNPCB after obtaining ToR or PH exemption letter. But, Committee can make out that M/s TANGEDCO has concealed the information. Now only after grant of EC, M/s TANGEDCO is informing that there is no scope to upload on TNPCB website as per prevailing conditions since public hearing has been exempted by the Ministry.

- (38.6.12) Member Secretary has also informed that the Ministry has filed an affidavit before High Court of Madras in a Writ Petition concerning the present project stating even though public hearing was exempted, public consultation process has been completed by giving opportunity to public for getting responses by way of uploading the EIA report on TNPCB website, the same has also been confirmed by the Tamil Nadu State Pollution Board on 18.09.2019.
- (38.6.13) TNPCB has clarified that the EIA report has been uploaded in their website vide letter dated 18.09.2019 and informed that no comments from the public on the same has been received. **Therefore, the said amendment has been considered by the EAC but not recommended.**
- (38.6.14) Further, Committee also opined that Ministry may take a separate call with the PP regarding action against the concerned officers responsible for concealing the information.

(38.7) Expansion of 1000 MW (4x250 MW) by addition of 4x600 MW (2400 MW) Coal Based Thermal Power Plant at Village Tamnar, Taluk Gharghoda, Raigarh District, Chhattisgarh by M/s Jindal Steel & Power Ltd.- reg. re-consideration of amendment in EC for coal transportation by road. (F.No.J-13012/117/2008-IA.II(T)& Proposal No.IA/CG/THE/119664/2019)

- (38.7.1) Project Proponent submitted online application dated 30.09.2019 for amendment in EC for extending the coal transportation by road till December, 2020 and permitting the use of coal crusher permanently as it was installed within the plant.
- (38.7.2) The Environmental Clearance for 4x600 MW power project was issued on 18.3.2011 (2x600 MW) and 4.11.2011 (2x600 MW). An amendment to EC was accorded on 10.1.2014 for permitting transportation of coal by road temporarily for three years. Another amendment to EC was issued on 27.3.2015 for allowing transportation of coal by road for two years. These permissions have been extended till 30.4.2017 vide Ministry's letter dated 22.12.2016. Further, transportation of coal by road has been permitted for another 30 months (till 25.10.2019) vide Ministry's letter dated 26.4.2017.
- (34.7.3) The proposal was earlier considered by the EAC in its meeting held on 21.10.2019 and the Committee Project Proponent has made the presentation and the committee deferred the proposal for submission of revised Traffic Impact Assessment Study.
- (34.7.4) The traffic impact assessment study report was submitted by proponent on 4.2.2020. Accordingly, the proposal was considered by the EAC in its present meeting. Project Proponent along with M/s Min Mec Consultancy Pvt. Ltd. inter-alia submitted the following information:

- i. The company has an operational Closed Circuit Pipe Conveyor (CCPC) to transport coal from Gare Pelma coal block and same is being used to transport coal to the plant.
- ii. Company has Fuel Supply Agreement (FSA) with South Eastern Coalfields Ltd. (SECL) and M/s Mahanadi Coalfields Ltd. (MCL) for supply of coal for 2 units of 4x600 MW only.
- iii. It was anticipated that it may get FSA for coal supply for entire 4x600 MW from MCL mines and thus planned to construct a Cross Country Pipe Conveyor (CCPC) from Kulda Mines of MCL to the Power Plant, passing through Odisha & Chhattisgarh states.
- iv. Consent to Establish were obtained from OSPCB & CECB vide letters dated 16.09.2014 and 04.11.2015, respectively.
- v. Its construction in Chhattisgarh area had commenced and Rs. 13.643 Crores has already been spent till date.
- vi. There are some challenges in using Pipe Conveyor:
 - a. Coal allocation policy underwent a change and Govt. decided to do away with FSA system and conduct auction of coal under 'SHAKTI' Scheme for the power sector.
 - b. In today's changed scenario there is no likelihood of JPL getting the required quantity of coal for 4x 600 MW from single source i.e. MCL mines located at Kulda/ Basundhara.
 - c. Unless company has a dedicated coal allocation from a mine, the CCPC even if completed cannot be put into operation.
 - d. Moreover, there are serious issues as the terminating part of CCPC near the plant will be passing through the coal block already allocated to the Gujarat Govt.
- vii. To reduce dependence on road, JPL plans to develop bulk rail transportation system to transport coal from various mines of SECL and MCL.
- viii. East Rail Corridor from Kharsia to Dharamjaygarh with a spur line from Gharghoda to Gare Pelma is being developed by the concessionaire "Chhattisgarh East Railway Limited" and is being constructed by M/s IRCON International Ltd.
- ix. The East corridor is being constructed to mainly cater for outward traffic to evacuate coal from Gare Pelma sector.
- x. JPL will have advantage to use this East corridor with inward bound traffic to transport coal. Bhalumuda railway station is being constructed on the spur line from Gharghoda to Gare-Pelma.
- xi. JPL is developing a Railway siding, taking off from the Bhalumuda Railway station so that coal can be transported by rail from SECL and MCL mines.
- xii. The coal transported by rail needs to be crushed in the crusher permanently installed in the land of 4x 600 MW.
- xiii. NOC from Chhattisgarh East Railway Limited (CERL) for taking off a private siding from Bhalumuda Station Yard of 'Gharghoda-Donga Mahua Spur Line' was given vide letter dated 9.1.2019 and In-Principle Approval from South Eastern Central Railway, Bilaspur was obtained on 22.3.2019 for constructing a private siding with a direction that the take off point should

be revised such a way that the trains coming to JPL should move without interfering the station working, submission of Detailed Project Report and 2% of codal chagrges estimated cost.

- xiv. M/s JPL has already deposited Rs. 60.68 Lakhs to SECR, Bilaspur towards Payment of Codal Charges.
- xv. Work orders for Survey, DPR and detailed engineering & Construction supervision were given to M/s Maven Infra & Consultants Pvt Ltd. Field topography Survey work completed and draft DPR has been prepared. The final DPR will be submitted to CERL for approval.
- xvi. Rail line section from Kharsia to Gharghoda commissioned in March, 2019 by Chhattisgarh East Railway Ltd. (CERL). Further, section from Gharghoda to Korichhapar commissioned on 12th October, 2019. Section between Gharghoda to Bhalumunda is at an advanced stage of completion and slated to get operational by December, 2020
- xvii. Till then the coal for the project need to be transported partly from existing CCPC from Gare Pelma 4/ 2 & Gare Pelma 4/3 to the plant and partly by road.
- xviii. Coal is being transported to Power Plant partly by road from mines of MCL (Kulda & Basundhra) and mines of SECL (Baroud, Jampali & Chhal) and partly by CCPC from Gare Pelma coal mines. The details of routes and distances are provided as below:

Route No.	MINES /SOURCES	Length of route (km)	Remarks
1.	Kulda/ Basundhara Mines of M/s MCL	43.1 km	<ul style="list-style-type: none"> ➤ Kulda mine: 41.3 km. ➤ Basundhara mine: 43.1 km. ➤ A new bypass is under construction near Kulda mine. This bypass has two roads separated by 2.5 m wide divider as follows: <ul style="list-style-type: none"> ➤ 14 m wide road specially for HMV(Trucks, buses etc.) ➤ 10 wide road dedicated for LMV (car, motor cycle, jeep etc.) <p>The construction work is almost complete. Vehicles are plying on the road. Only black topping is to be carried out soon. Since this report is being prepared for coal transportation by trucks, hence, the width of bypass road considered for calculation purpose is the width dedicated for HMV only (RW03 to RW04) i.e. 14 m (refer description below this table).</p> <ul style="list-style-type: none"> ➤ No-Entry timings for trucks from 9.00-10.30 AM and 4.00-5.00 PM apply in Bilemunda

			Village. ➤ Earlier No-Entry timing was also applicable in Gopalpur village. But due to construction of an unpaved bypass road for trucks, No-Entry timings has been waived off in this village.
2.	Baroud/ Jampali mine of SECL	44.6 km	➤ Baroud mine: 38.1 km. ➤ Jampali mine: 44.6 km. ➤ Hence, amongst the above two distances, the maximum of the two, 44.6 km till Jampalli mine has been considered for this report since Baroud lies on the same route & gets covered within the longer route analysis.
3.	Chhal Mine of SECL	50.8 km	--

- xix. The quantity of raw coal being transported by road till 26.10.2019 as per existing permission was sufficient to meet the requirement of the power plant in conjunction with the quantities received via CCPC from Gare Pelma coal mines.
- xx. The company does not envisage, any increase in coal requirement based on the pattern of power generation and power demand of the last 3 years.
- xxi. The previous and present status of coal requirement is as follows:

Reference	Coal requirement
EC amendment dated 26.04.2017 (100% domestic coal for Unit 3&4)	4.81 MTPA (all units ~9.62 MTPA)
Current coal consumption (April 2018-March 2019)	4.23 MTPA
Anticipated requirement up to December 2020	4.23 MTPA
Coal transported by road	2.99 MTPA
Coal transported by existing CCPC	1.24 MTPA

- xxii. No change in coal quantity and the same consumption pattern is anticipated to continue till December 2020 (as proposed) using 21 T tippers/dumpers/trucks.

S.No	Source	Via Route	Distance(km)	Quantity (TPD)	No. of trucks /day (21 T)	No. of trucks/day (to & fro)	No. of trucks/hr
1.	Kulda (MCL)	Route - 1	41.3 km	4187	200	400	17
2.	Basundhara (MCL)		43.1 km				
3.	Baroud (SECL)	Route- 2	38.1 km	4009	191	382	16
4.	Jampali (SECL)		44.6 km				

5.	Chhal (SECL)	Route-3	50.8 km				
TOTAL				8196	391	782	33

xxiii. The details of width and type of road are provided below for each route:

Route no.	Scenario	Length, km	Length of stretch (in km)				Type of road			
			Single Lane (<5.5 m)	Intermediate (>=5.5 m)	Two Lane (> 7 m)	Multi-lane (>=10 m)	Black top	Concrete	Unpaved road	Haul Road
Route-1	Present	43.05	0	0	35.43	7.62	86.5	4.4	6.3	2.9
	Future	43.05	0	0	35.43	7.62	92.8	4.4	0.0	1.2
Route-2	Present	44.61	0	26.14	18.47	0	85.2	0.0	14.8	0.0
	Future	44.61	0	26.14	18.47	0	100.0	0.0	0.0	0.0
Route-3	Present	50.84	0	15.11	34.64	1.09	91.1	0.3	6.8	1.8
	Future	50.84	0	15.11	34.67	1.09	97.9	0.3	0.0	1.8

xxiv. The existing traffic and incremental traffic due to proposed transportation have been compared to with design service volumes of the Road. The details are provided as below:

Baseline (PCU/ Day)	Increased traffic (PCUs/Day)	Resultant traffic (PCU/Day)	Width of road (m)	DSV#, PCU/day	% utilised of DSV
Rural Areas					
13797	1146	14943	6	8400	177.9
7056	1200	8256	15.7	17250	47.9
9391	1200	10591	7	15000	70.6
9124	1200	10324	14	17250	59.8
MIN.	3335	0	6	8400	30.23
MAX.	13797	1200	15.7	17250	177.89
Urban Areas					
Baseline Traffic (PCU/hr)	Increase traffic (PCU/Day)	Resultant traffic (PCU/hr)	Width of road (m)	DSV#, PCU/hour	% utilised of DSV
166	0	166	6.4	1500	11.1

xxv. The road widths at several stretches (Kudumkera village, Baroud Village, Samaruma Village) is not sufficient to support the traffic as against design service volume. However, the resultant traffic will remain within the maximum capacity of the road.

- xxvi. The ambient air quality monitoring was carried out at six locations along the routes by M/s Ultimate Enviroltysical Solutions, Raipur in November, 2019. The results are presented as below:

Air Quality	MINIMUM ($\mu\text{g}/\text{m}^3$)	MAXIMUM ($\mu\text{g}/\text{m}^3$)	NAAQS Standards ($\mu\text{g}/\text{m}^3$)
PM ₁₀	66	84	100
PM _{2.5}	32.7	46.2	60
SO ₂	10.9	15.9	80
NO _x	16.8	22.5	80

- xxvii. All the parameters of ambient air quality are well within the permissible value specified in NAAQS, 2009. Since the trucks are already plying and the incremental air quality due to proposed traffic was already captured in the baseline data, no air quality predictions were estimated.

- xxviii. The ambient noise monitoring was also carried out at the same locations that of air quality. The baseline noise level were found well within the permissible limit of the National Ambient Air Quality Standards with respect to ambient noise, both during day time and night time for Industrial zone. The results are presented as below:

Station code	Location and date of monitoring	Category/ zone	Noise levels (Leq) in dB(A)		Permissible Limits	
			Day	Night	Day	Night
N-01	Nawapara	Industrial	65.2	48.4	75	70
N-02	Teram	Industrial	60.4	46.2	75	70
N-03	Amaghat	Industrial	62.8	49.8	75	70
N-04	Kapardin	Industrial	59.2	52.0	75	70
N-05	Dhaurabhat a	Industrial	72.0	62.2	75	70
N-06	Bilaimunda	Industrial	68.0	64.80	75	70

- xxix. The number of villages lying within 100 m on both sides of the road, along the entire length (Route-1, 2 and 3) were identified as follows:

Route	No. of villages
Route-1	14
Route-2	11
Route-3	14
Total	39

- xxx. The details of forests passing through proposed routes is given as below:

Route	Length of route (km)	Length of route passing through forest (km)	% of route passing through forest
Route-1	43.1 km	2.58 km	5.9%
Route-	44.6 km	8.76 km	19.6%

2			
Route-3	50.8 km	13.35 km	26.3%

- (34.7.5) Committee noted that the Rail Corridor Project of South East Central Railway (SECR), Kharsia (take off point & station on main line of Indian Railways) to Dharamjaigarh railway project is under construction by M/s Chhattisgarh East Railway Limited for sending coal produced from that region. It was informed that a section of that line from Kharsia Station to Korichhapar (44 Kilometres) was already laid and first goods train was started in October, 2019. On this line, a spur line is being built up to Gare Pelma from Gharghoda Station. This stretch (Gharghoda-Gare Pelma) is advantageous to Power Plant. Balumuda is station in between Gharghoda-Gare Pelma Rout wherein Proponent intended to draw a line and private siding so that coal can be transported till the plant. It was informed that the line up to Balumuda is in advanced stage and is expected to commission by December, 2020. Simultaneously, Proponent was asked to prepare DPR and submit for approval of SECR which is under preparation. Proponent is hopeful that their private siding will be constructed by that time Balumuda line is completed by Chattisgarh East Railway Ltd.
- (34.7.6) Further, committee noted that the three road stretches at Kudumkera village, Baroud Village, Samaruma Village and Jhingolpara villages along the routes of Kulda/Basundhara mines and Chaal/Baroud mines, the traffic (including traffic from proposed transportation) is exceeding the design services. However, it was informed that the traffic is within the maximum capacity of the road. Committee opined that traffic marshals are to be deployed at cost of Proponent to streamline the traffic at these places. Further, traffic census is to be conducted regularly to assess the situation. Though total coal requirement is 4.81 MTPA, the actual coal consumption is 4.23 MTPA out of which 1.24 MTPA is brought by closed pipe conveyor from Gare Pelma mines.
- (34.7.7) **Committee after detailed deliberations recommended for transportation of coal by road for maximum quantity of 3 MTPA from MCL mines (Kulda/Basundhara-43.1 km) and SECL mines (Baroud/Jampalli- 44.6 km & Chhal-50.8 km) and remaining 1.24 MTPA is to be transported by Pipe Conveyor (CCPC) from Gare Pelma mines** subject to following additional conditions:
- i. The temporary permission to transport coal by road is allowed w.e.f. 25.10.2019 till December, 2020 from three proposed routes.
 - ii. Coal crusher inside the plant premises is permitted which is to be set up with bag filters/dust supression to control air pollution generated due to coal crushing, coal transfer, etc. Air quality monitoring is to be done in and around the Crusher house once a month to assess the pollution causing in the vicinity.
 - iii. The progress and readiness of railway line being constructed by M/s Chhattisgarh East Railway Limited from Gharghoda till Bhalumuda shall be submitted along with compliance report.
 - iv. The physical and financial progress of private siding by the company and take off line from Bhalumuda station shall be submitted. A copy of Detailed Project Report (DPR) approved by South East Central Railway (SECR) is also to be submitted.
 - v. Traffic marshals at Kudumkera village, Baroud Village, Samaruma Village and Jhingolpara village along the route of Kulda/Basundhara mines and

Chaal/Baroud mines shall be deployed at the cost of Project Proponent to streamline the traffic as the total traffic is exceeding the Design Volumes of the existing roads.

- vi. Water sprinkling on the road shall be done during transportation along the routes.
- vii. Avenue plantation shall be carried out in consultation with Social Forestry Department of the State Govt. along the proposed routes.

As there being no agenda item left, the meeting ended with a vote of thanks to the Chair.

Terms of Reference (TOR):

- i) The proposed project shall be given a unique name in consonance with the name submitted to other Government Departments etc. for its better identification and reference.
- ii) Vision document specifying prospective long term plan of the project shall be formulated and submitted.
- iii) Latest compliance report duly certified by the Regional Office of MoEF& CC for the conditions stipulated in the environmental and CRZ clearances of the previous phase(s) for the expansion projects shall be submitted.
- iv) The project proponent needs to identify minimum three potential sites based on environmental, ecological and economic considerations, and choose one appropriate site having minimum impacts on ecology and environment. A detailed comparison of the sites in this regard shall be submitted.
- v) Executive summary of the project indicating relevant details along with recent photographs of the proposed site (s) shall be provided. Response to the issues raised during Public Hearing and the written representations (if any), along with a time bound Action Plan and budgetary allocations to address the same, shall be provided in a tabular form, against each action proposed.
- vi) Harnessing solar power within the premises of the plant particularly at available roof tops and other available areas shall be formulated and for expansion projects, status of implementation shall also be submitted.
- vii) The geographical coordinates (WGS 84) of the proposed site (plant boundary), including location of ash pond along with topo sheet (1:50,000 scale) and IRS satellite map of the area, shall be submitted. Elevation of plant site and ash pond with respect to HFL of water body/nallah/River and high tide level from the sea shall be specified, if the site is located in proximity to them.
- viii) Layout plan indicating break-up of plant area, ash pond, green belt, infrastructure, roads etc. shall be provided.
- ix) Land requirement for the project shall be optimized and in any case not more than what has been specified by CEA from time to time. Item wise break up of land requirement shall be provided.
- x) Present land use (including land class/kism) as per the revenue records and State Govt. records of the proposed site shall be furnished. Information on land to be acquired including coal transportation system, laying of pipeline, ROW, transmission lines etc. shall be specifically submitted. Status of land acquisition and litigation, if any, should be provided.
- xi) If the project involves forest land, details of application, including date of application, area applied for, and application registration number, for diversion under FCA and its status should be provided along with copies of relevant documents.
- xii) The land acquisition and R&R scheme with a time bound Action Plan should be formulated and addressed in the EIA report.
- xiii) Satellite imagery and authenticated topo sheet indicating drainage, cropping pattern, water bodies (wetland, river system, stream, nallahs, ponds etc.), location of nearest habitations (villages), creeks, mangroves, rivers, reservoirs etc. in the study area shall be provided.
- xiv) Location of any National Park, Sanctuary, Elephant/Tiger Reserve (existing as well as proposed), migratory routes / wildlife corridor, if any, within 10 km of the project site shall be specified and marked on the map duly authenticated by the Chief Wildlife Warden of the State or an officer authorized by him.

- xv) Topography of the study area supported by toposheet on 1:50,000 scale of Survey of India, along with a large scale map preferably of 1:25,000 scale and the specific information whether the site requires any filling shall be provided. In that case, details of filling, quantity of required fill material; its source, transportation etc. shall be submitted.
- xvi) A detailed study on land use pattern in the study area shall be carried out including identification of common property resources (such as grazing and community land, water resources etc.) available and Action Plan for its protection and management shall be formulated. If acquisition of grazing land is involved, it shall be ensured that an equal area of grazing land be acquired and developed and detailed plan submitted.
- xvii) A mineralogical map of the proposed site (including soil type) and information (if available) that the site is not located on potentially mineable mineral deposit shall be submitted.
- xviii) Details of fly ash utilization plan as per the latest fly ash Utilization Notification of GOI along with firm agreements / MoU with contracting parties including other usages etc. shall be submitted. The plan shall also include disposal method / mechanism of bottom ash.
- xix) The water requirement shall be optimized (by adopting measures such as dry fly ash and dry bottom ash disposal system, air cooled condenser, concept of zero discharge) and in any case not more than that stipulated by CEA from time to time, to be submitted along with details of source of water and water balance diagram. Details of water balance calculated shall take into account reuse and re-circulation of effluents.
- xx) Water body/Nallah (if any) passing across the site should not be disturbed as far as possible. In case any Nallah / drain is proposed to be diverted, it shall be ensured that the diversion does not disturb the natural drainage pattern of the area. Details of proposed diversion shall be furnished duly approved by the concerned Department of the State.
- xxi) It shall also be ensured that a minimum of 500 m distance of plant boundary is kept from the HFL of river system / streams etc. and the boundary of site should also be located 500 m away from railway track and National Highways.
- xxii) Hydro-geological study of the area shall be carried out through an institute/ organization of repute to assess the impact on ground and surface water regimes. Specific mitigation measures shall be spelt out and time bound Action Plan for its implementation shall be submitted.
- xxiii) Detailed Studies on the impacts of the ecology including fisheries of the River/Estuary/Sea due to the proposed withdrawal of water / discharge of treated wastewater into the River/Sea etc shall be carried out and submitted along with the EIA Report. In case of requirement of marine impact assessment study, the location of intake and outfall shall be clearly specified along with depth of water drawl and discharge into open sea.
- xxiv) Source of water and its sustainability even in lean season shall be provided along with details of ecological impacts arising out of withdrawal of water and taking into account inter-state shares (if any). Information on other competing sources downstream of the proposed project and commitment regarding availability of requisite quantity of water from the Competent Authority shall be provided along with letter / document stating firm allocation of water.
- xxv) Detailed plan for rainwater harvesting and its proposed utilization in the plant shall be furnished.
- xxvi) Feasibility of near zero discharge concept shall be critically examined and its details submitted.

- xxvii) Optimization of Cycles of Concentration (COC) along with other water conservation measures in the project shall be specified.
- xxviii) Plan for recirculation of ash pond water and its implementation shall be submitted.
- xxix) Detailed plan for conducting monitoring of water quality regularly with proper maintenance of records shall be formulated. Detail of methodology and identification of monitoring points (between the plant and drainage in the direction of flow of surface / ground water) shall be submitted. It shall be ensured that parameter to be monitored also include heavy metals. A provision for long-term monitoring of ground water table using Piezometer shall be incorporated in EIA, particularly from the study area.
- xxx) Socio-economic study of the study area comprising of 10 km from the plant site shall be carried out through a reputed institute / agency which shall consist of detail assessment of the impact on livelihood of the local communities.
- xxxi) Action Plan for identification of local employable youth for training in skills, relevant to the project, for eventual employment in the project itself shall be formulated and numbers specified during construction & operation phases of the Project.
- xxxii) If the area has tribal population it shall be ensured that the rights of tribals are well protected. The project proponent shall accordingly identify tribal issues under various provisions of the law of the land.
- xxxiii) A detailed CSR plan along with activities wise break up of financial commitment shall be prepared. CSR component shall be identified considering need based assessment study and Public Hearing issues. Sustainable income generating measures which can help in upliftment of affected section of society, which is consistent with the traditional skills of the people shall be identified. Separate budget for community development activities and income generating programmes shall be specified.
- xxxiv) While formulating CSR schemes it shall be ensured that an in-built monitoring mechanism for the schemes identified are in place and mechanism for conducting annual social audit from the nearest government institute of repute in the region shall be prepared. The project proponent shall also provide Action Plan for the status of implementation of the scheme from time to time and dovetail the same with any Govt. scheme(s). CSR details done in the past should be clearly spelt out in case of expansion projects.
- xxxv) R&R plan, as applicable, shall be formulated wherein mechanism for protecting the rights and livelihood of the people in the region who are likely to be impacted, is taken into consideration. R&R plan shall be formulated after a detailed census of population based on socio economic surveys who were dependant on land falling in the project, as well as, population who were dependant on land not owned by them.
- xxxvi) Assessment of occupational health and endemic diseases of environmental origin in the study area shall be carried out and Action Plan to mitigate the same shall be prepared.
- xxxvii) Occupational health and safety measures for the workers including identification of work related health hazards shall be formulated. The company shall engage full time qualified doctors who are trained in occupational health. Health monitoring of the workers shall be conducted at periodic intervals and health records maintained. Awareness programme for workers due to likely adverse impact on their health due to working in non-conducive environment shall be carried out and precautionary measures like use of personal equipments etc. shall be provided. Review of impact of various

health measures undertaken at intervals of two to three years shall be conducted with an excellent follow up plan of action wherever required.

- xxxviii) One complete season site specific meteorological and AAQ data (except monsoon season) as per latest MoEF Notification shall be collected and the dates of monitoring shall be recorded. The parameters to be covered for AAQ shall include PM₁₀, PM_{2.5}, SO₂, NO_x, CO and Hg. The location of the monitoring stations should be so decided so as to take into consideration of the upwind direction, pre-dominant downwind direction, other dominant directions, habitation and sensitive receptors. There should be at least one monitoring station each in the upwind and in the pre-dominant downwind direction at a location where maximum ground level concentration is likely to occur.
- xxxix) In case of expansion project, air quality monitoring data of 104 observations a year for relevant parameters at air quality monitoring stations as identified/stipulated shall be submitted to assess for compliance of AAQ Standards (annual average as well as 24 hrs).
- xl) A list of industries existing and proposed in the study area shall be furnished.
- xli) Cumulative impacts of all sources of emissions including handling and transportation of existing and proposed projects on the environment of the area shall be assessed in detail. Details of the Model used and the input data used for modeling shall also be provided. The air quality contours should be plotted on a location map showing the location of project site, habitation nearby, sensitive receptors, if any. The windrose and isopleths should also be shown on the location map. The cumulative study should also include impacts on water, soil and socio-economics.
- xl ii) Radio activity and heavy metal contents of coal to be sourced shall be examined and submitted along with laboratory reports.
- xl iii) Fuel analysis shall be provided. Details of auxiliary fuel, if any, including its quantity, quality, storage etc should also be furnished.
- xl iv) Quantity of fuel required, its source and characteristics and documentary evidence to substantiate confirmed fuel linkage shall be furnished. The Ministry's Notification dated 02.01.2014 regarding ash content in coal shall be complied. For the expansion projects, the compliance of the existing units to the said Notification shall also be submitted
- xl v) Details of transportation of fuel from the source (including port handling) to the proposed plant and its impact on ambient AAQ shall be suitably assessed and submitted. If transportation entails a long distance it shall be ensured that rail transportation to the site shall be first assessed. Wagon loading at source shall preferably be through silo/conveyor belt.
- xl vi) For proposals based on imported coal, inland transportation and port handling and rail movement shall be examined and details furnished. The approval of the Port and Rail Authorities shall be submitted.
- xl vii) Details regarding infrastructure facilities such as sanitation, fuel, restrooms, medical facilities, safety during construction phase etc. to be provided to the labour force during construction as well as to the casual workers including truck drivers during operation phase should be adequately catered for and details furnished.
- xl viii) EMP to mitigate the adverse impacts due to the project along with item - wise cost of its implementation in a time bound manner shall be specified.
- xl ix) A Disaster Management Plan (DMP) along with risk assessment study including fire and explosion issues due to storage and use of fuel should be carried out. It should take into account the maximum inventory of storage at site at any point of time. The risk contours should be plotted on the plant

layout map clearly showing which of the proposed activities would be affected in case of an accident taking place. Based on the same, proposed safeguard measures should be provided. Measures to guard against fire hazards should also be invariably provided. Mock drills shall be suitably carried out from time to time to check the efficiency of the plans drawn.

- l) The DMP so formulated shall include measures against likely Fires/Tsunami/Cyclones/Storm Surges/Earthquakes etc, as applicable. It shall be ensured that DMP consists of both On-site and Off-site plans, complete with details of containing likely disaster and shall specifically mention personnel identified for the task. Smaller version of the plan for different possible disasters shall be prepared both in English and local languages and circulated widely.
- li) Detailed scheme for raising green belt of native species of appropriate width (50 to 100 m) and consisting of at least 3 tiers around plant boundary with tree density of 2000 to 2500 trees per ha with a good survival rate of around 80% shall be submitted. Photographic evidence must be created and submitted periodically including NRSA reports in case of expansion projects. A shrub layer beneath tree layer would serve as an effective sieve for dust and sink for CO₂ and other gaseous pollutants and hence a stratified green belt should be developed.
- lii) Over and above the green belt, as carbon sink, plan for additional plantation shall be drawn by identifying blocks of degraded forests, in close consultation with the District Forests Department. In pursuance to this the project proponent shall formulate time bound Action Plans along with financial allocation and shall submit status of implementation to the Ministry every six months.
- liii) Corporate Environment Policy
 - a. Does the company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be detailed in the EIA report.
 - b. Does the Environment Policy prescribe for standard operating process / procedures to bring into focus any infringement / deviation / violation of the environmental or forest norms / conditions? If so, it may be detailed in the EIA.
 - c. What is the hierarchical system or Administrative order of the company to deal with the environmental issues and for ensuring compliance with the environmental clearance conditions. Details of this system may be given.
 - d. Does the company has compliance management system in place wherein compliance status along with compliances / violations of environmental norms are reported to the CMD and the Board of Directors of the company and / or shareholders or stakeholders at large? This reporting mechanism should be detailed in the EIA report.

All the above details should be adequately brought out in the EIA report and in the presentation to the Committee.

- liv) Details of litigation pending or otherwise with respect to project in any Court, Tribunal etc. shall invariably be furnished.

Standard EC Conditions for Thermal Power Sector

A. Statutory compliance:

1. Emission Standards for Thermal Power Plants as per Ministry's Notification S.O. 3305(E) dated 7.12.2015, G.S.R.593(E) dated 28.6.2018 and as amended from time to time shall be complied.
2. Part C of Schedule II of Municipal Solid Wastes Rules, 2016 dated 08.04.2016 as amended from time to time shall be complied for power plants based on Municipal Solid Waste.
3. MoEF&CC Notification G.S.R 02(E) dated 2.1.2014 as amended time to time regarding use of raw or blended or beneficiated/washed coal with ash content not exceeding 34% shall be complied with, as applicable.
4. MoEF&CC Notifications on Fly Ash Utilization S.O. 763(E) dated 14.09.1999, S.O. 979(E) dated 27.08.2003, S.O. 2804(E) dated 3.11.2009, S.O. 254(E) dated 25.01.2016 as amended from time to time shall be complied.
5. Thermal Power Plants other than the power plants located on coast and using sea water for cooling purposes, shall achieve specific water consumption of 2.5 m³/MWh and Zero effluent discharge.
6. The recommendation from Standing Committee of NBWL under the Wildlife (Protection) Act, 1972 should be obtained, if applicable.
7. No Objection Certificate from Ministry of Civil Aviation be obtained for installation of requisite chimney height and its siting criteria for height clearance.
8. Groundwater shall not be drawn during construction of the project. In case, groundwater is drawn during construction, necessary permission be obtained from CGWA.

B. Ash content/ mode of transportation of coal:

1. EC is given on the basis of assumption of ___% of ash content and ___km distance of transportation in rail/road/conveyor/any other mode. Any increase of %ash content by more than 1 percent, and/or any change in transportation mode or increase in the transport distance (except for rail) require application for modifications of EC conditions after conducting the 'incremental impact assessment' and proposal for mitigation measures.

C. Air quality monitoring and Management:

1. Flue Gas Desulphurisation System shall be installed based on Lime/Ammonia dosing to capture Sulphur in the flue gases to meet the SO₂ emissions standard of 100 mg/Nm³.
2. Selective Catalytic Reduction (SCR) system or the Selective Non-Catalytic Reduction (SNCR) system or Low NOX Burners with Over Fire Air (OFA) system shall be installed to achieve NO_x emission standard of 100 mg/Nm³.

3. High efficiency Electrostatic Precipitators (ESPs) shall be installed in each unit to ensure that particulate matter (PM) emission to meet the stipulated standards of 30 mg/Nm³.
4. Stacks of prescribed height ___m shall be provided with continuous online monitoring instruments for SO_x, NO_x and Particulate Matter as per extant rules.
5. Exit velocity of flue gases shall not be less than 20-25 m/s. Mercury emissions from stack shall also be monitored periodically.
6. Continuous Ambient Air Quality monitoring system shall be set up to monitor common/criteria pollutants from the flue gases such as PM₁₀, PM_{2.5}, SO₂, NO_x within the plant area at least at one location. The monitoring of other locations (at least three locations outside the plant area covering upwind and downwind directions at an angle of 120° each) shall be carried out manually.
7. Adequate dust extraction/suppression system shall be installed in coal handling, ash handling areas and material transfer points to control fugitive emissions.
8. Appropriate Air Pollution Control measures (DEs/DSs) be provided at all the dust generating sources including sufficient water sprinkling arrangements at various locations viz., roads, excavation sites, crusher plants, transfer points, loading and unloading areas, etc.

D. Noise pollution and its control measures:

1. The Ambient Noise levels shall meet the standards prescribed as per the Noise Pollution (Regulation and Control) Rules, 2000.
2. Persons exposed to high noise generating equipment shall use Personal Protective Equipment (PPE) like earplugs/ear muffs, etc.
3. Periodical medical examination on hearing loss shall be carried out for all the workers and maintain audiometric record and for treatment of any hearing loss including rotating to non-noisy/less noisy areas.

E. Human Health Environment:

1. Bi-annual Health check-up of all the workers is to be conducted. The study shall take into account of chronic exposure to noise which may lead to adverse effects like increase in heart rate and blood pressure, hypertension and peripheral vasoconstriction and thus increased peripheral vascular resistance. Similarly, the study shall also assess the health impacts due to air polluting agents.
2. Baseline health status within study area shall be assessed and report be prepared. Mitigation measures should be taken to address the endemic diseases.
3. Impact of operation of power plant on agricultural crops, large water bodies (as applicable) once in two years by engaging an institute of repute. The study shall also include impact due to heavy metals associated with emission from power plant.
4. Sewage Treatment Plant shall be provided for domestic wastewater.

F. Water quality monitoring and Management:

1. Induced/Natural draft closed cycle wet cooling system including cooling towers shall be set up with minimum Cycles of Concentration (COC) of 5.0 or above for power plants using fresh water to achieve specific water consumption of 2.5 m³/MWhr. (Or) Induced/Natural draft open cycle cooling system shall be set up with minimum Cycles of Concentration (COC) of 1.5 or above for power plants using sea water.
2. In case of the water withdrawal from river, a minimum flow 15% of the average flow of 120 consecutive leanest days should be maintained for environmental flow whichever is higher, to be released during the lean season after water withdrawal for proposed power plant.
3. Records pertaining to measurements of daily water withdrawal and river flows (obtained from Irrigation Department/Water Resources Department) immediately upstream and downstream of withdrawal site shall be maintained.
4. Rainwater harvesting in and around the plant area be taken up to reduce drawl of fresh water. If possible, recharge of groundwater to be undertaken to improve the ground water table in the area.
5. Regular (at least once in six months) monitoring of groundwater quality in and around the ash pond area including presence of heavy metals (Hg, Cr, As, Pb, etc.) shall be carried out as per CPCB guidelines. Surface water quality monitoring shall be undertaken for major surface water bodies as per the EMP. The data so obtained should be compared with the baseline data so as to ensure that the groundwater and surface water quality is not adversely impacted due to the project & its activities.
6. The treated effluents emanating from the different processes such as DM plant, boiler blow down, ash pond/dyke, sewage, etc. conforming to the prescribed standards shall be re-circulated and reused. Sludge/ rejects will be disposed in accordance with the Hazardous Waste Management Rules.
7. Hot water dispensed from the condenser should be adequately cooled to ensure the temperature of the released surface water is not more than 5 degrees Celsius above the temperature of the intake water.
8. Based on the commitment made by the Project Proponent, Sewage Treatment Plants within the radius of 50 km from proposed project, the treated sewage ofKLD from STP (name) shall be used as an alternative to the fresh water source to minimize the fresh water drawl from surface water bodies.
9. Wastewater generation ofKLD from various sources (viz. cooling tower blowdown, boiler blow down, wastewater from ash handling, etc) shall be treated to meet the standards of pH: 6.5-8.5; Total Suspended Solids: 100 mg/l; Oil & Grease: 20 mg/l; Copper: 1 mg/l; Iron:1 mg/l; Free Chlorine: 0.5; Zinc: 1.0 mg/l; Total Chromium: 0.2 mg/l; Phosphate: 5.0 mg/l;
10. Sewage generation ofKLD will be treated by setting up Sewage Treatment plant to maintain the treated sewage characteristics of pH: 6.5-9.0; Bio-Chemical Oxygen Demand (BOD): 30 mg/l; Total Suspended Solids: 100 mg/l; Fecal Coliforms (Most Probable Number): <1000 per 100 ml.

G. Risk Mitigation and Disaster Management:

1. Adequate safety measures and environmental safeguards shall be provided in the plant area to control spontaneous fires in coal yard, especially during dry and humid season.
2. Storage facilities for auxiliary liquid fuel such as LDO and HFO/LSHS shall be made as per the extant rules in the plant area in accordance with the directives of Petroleum & Explosives Safety Organisation (PESO). Sulphur Content in the liquid fuel should not exceed 0.5%.
3. Ergonomic working conditions with First Aid and sanitation arrangements shall be made for the drivers and other contract workers during construction phase.
4. Safety management plan based on Risk Assessment shall be prepared to limit the risk exposure to the workers within the plant boundary.
5. Regular mock drills for on-site emergency management plan and Integrated Emergency Response System shall be developed for all kind of possible disaster situations.

H. Green belt and Biodiversity conservation:

1. Green belt shall be developed in an area of 33% of the total project with indigenous native tree species in accordance with CPCB guidelines. The green belt shall inter-alia cover an entire periphery of the plant.
2. *In-situ/ex-situ* Conservation Plan for the conservation of flora and fauna should be prepared and implemented.
3. Suitable screens shall be placed across the intake channel to prevent entrainment of life forms including eggs, larvae, juvenile fish, etc., during extraction of seawater.

I. Waste management:

1. Solid waste management should be planned in accordance with extant Solid Waste Management Rules, 2016.
2. Toxicity Characteristic Leachate Procedure (TCLP) test shall be conducted for any substance, potential of leaching heavy metals into the surrounding areas as well as into the groundwater.
3. Ash pond shall be lined with impervious liner as per the soil conditions. Adequate dam/dyke safety measures shall also be implemented to protect the ash dyke from getting breached.
4. Fly ash shall be collected in dry form and ash generated shall be used in phased manner as per provisions of the Notification on Fly Ash Utilization issued by the Ministry and amendment thereto. By the end of 4th year, 100% fly ash utilization should be ensured. Unutilized ash shall be disposed off in the ash pond in the form of High Concentration Slurry. Mercury and other heavy metals (As, Hg, Cr, Pb, etc.) will be monitored in the bottom ash as also in the effluents emanating from the existing ash pond. Flyash utilization details shall be submitted to concerned Regional Office along with the six-monthly compliance reports and utilization data shall be published on company's website.
5. Unutilized ash shall be disposed off in the ash pond in the form of High Concentration Slurry/Medium Concentration Slurry/Lean Concentration Slurry method. Ash water recycling system shall be set up to recover supernatant water.

6. In case of waste-to-energy plant, major problems related with environment are fire smog in MSW dump site, foul smell and impacts to the surrounding populations. Therefore, the following measures are required to be taken up:
 - i) Water hydrant at all the dumpsites of MSW area to be provided so that the fire and smog could be controlled.
 - ii) Sprayer like microbial consortia may be provided for arresting the foul smell emanating from MSW area.

J. Monitoring of compliance:

1. Environmental Audit of the project be taken up by the third party for preparation of Environmental Statement as per Form-V & Conditions stipulated in the EC and report be submitted to the Ministry.
2. Resettlement & Rehabilitation Plan as per the extant rules of Govt. of India and respective State Govt. shall be followed, if applicable.
3. Energy Conservation Plan to be implemented as envisaged in the EIA / EMP report. Renewable Energy Purchase Obligation as set by MoP/State Government shall be met either by establishing renewable energy power plant (such as solar, wind, etc.) or by purchasing Renewable Energy Certificates.
4. Monitoring of Carbon Emissions from the existing power plant aswell as for the proposed power project shall be carried out annually from a reputed institute and report be submitted to the Ministry's Regional Office.
5. Energy and Water Audit shall be conducted at least once in two years and recommendations arising out of the Report should be followed. A report in this regard shall be submitted to Ministry's Regional Office.
6. Environment Cell (EC) shall be constituted by taking members from different divisions, headed by a qualified person on the subject, who shall be reporting directly to the Head of the Project.
7. The project proponent shall (Post-EC Monitoring):
 - a. send a copy of environmental clearance letter to the heads of Local Bodies, Panchayat, Municipal bodies and relevant offices of the Government;
 - b. upload the clearance letter on the web site of the company as a part of information to the general public.
 - c. inform the public through advertisement within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the SPCB and may also be seen at Website of the Ministry of Environment, Forest and Climate Change (MoEF&CC) at <http://parviesh.nic.in>.
 - d. upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same periodically;
 - e. monitor the criteria pollutants level namely; PM (PM₁₀& PM_{2.5}incase of ambient AAQ), SO₂, NO_x (ambient levels as well as stack emissions) or critical

sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company;

- f. submit six monthly reports on the status of the compliance of the stipulated environmental conditions including results of monitored data (both in hard copies as well as by e-mail) to the Regional Office of MoEF&CC, the respective Zonal Office of CPCB and the SPCB;
- g. submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company;
- h. inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project and the date of commencement of the land development work.

K. Corporate Environmental Responsibility (CER) activities:

1. CER activities will be carried out as per OM No. 22-65/2017-IA.II dated 01.05.2018 or as proposed by the PP in reference to Public Hearing or as earmarked in the EIA/EMP report along with the detailed scheduled of implementation with appropriate budgeting.

L. Marine facilities:

1. As the seawater intake systems are required for the plant fall in CRZ area, recommendations from State Coastal Zone Management Authority (SCZMA) as per CRZ Notification shall be implemented.
2. Marine intake and outfall pipelines shall be located as per the recommendations State Coastal Zone Management Authority (SCZMA).

M. Sea Water Intake:

1. Seawater intake system shall be so designed and constructed to ensure sufficient sweater in terms of quantity and quality.
2. The withdrawal of seawater shall be preferably through a pipeline with a riser equipped with a velocity cap arrangement and bar screen to arrest the impingement of large marine organisms.
3. In all tide conditions (particularly at spring low tides) the riser head must be flooded with the required submergence of seawater above its top.

N. Effluent Release:

1. At the effluent release point, maximum temperature of the discharge water shall not be more than 5°C and salinity shall not exceed 50 ppt with respect to that of the ambient seawater.
2. Use of antifouling agents like chlorine / hypochlorite, shall be carefully controlled. The chlorine concentration shall not exceed 0.2 ppm at the effluent release point.

3. The effluent when released at the selected location shall attain sufficient dilution so that near ambient water quality (particularly temperature and salinity) is attained within 500 m from the release location, at low tide.
4. The location of the diffuser shall be marked with a solar lighted buoy to avoid accidents.
5. The site selected based on mathematical modeling shall ensure absence of recirculation of the effluent plume in the seawater intake area under all tidal conditions.
6. The effluent shall be released through a properly designed multiport diffuser above the seabed to facilitate its efficient initial mixing with the receiving seawater.
7. Efficacy of the diffuser shall be ascertained at least once in 2 years through scientific studies and corrective actions such as cleaning of the diffuser from marine growth, removal of silt deposits, etc. shall be taken up, if warranted.
8. Continuous online monitoring system for Temperature and Salinity shall be installed to monitor the quality of effluent.

O. Common to intake and effluent:



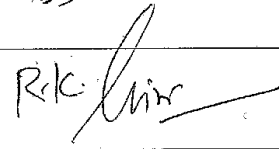
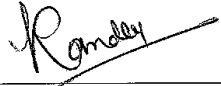
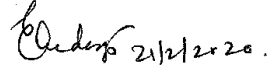
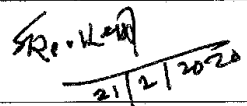
1. The pipeline shall be buried below the seabed at a depth to ensure its stability under rough sea conditions particularly during cyclone / tsunami. The depth of burial will depend on the seafloor strata but normally the top of the pipeline shall be at least 1 m below the bed level. In the surf and intertidal zones, the pipeline shall be buried below the maximum scour level.
2. In case of open channel, the channel shall be constructed as per the recommendations of State Coastal Zone Management Authority (SCZMA).
3. If the substratum is rocky the pipeline may be anchored to the rock provided the geology of the area satisfactorily supports the structure which shall be ascertained through geo-technical investigations.
4. Exposed pipeline section and riser shall be protected by armour stone from waves, boats anchoring, fishing activities etc.
5. The location of the riser & diffuser shall be marked with a solar lighted buoy to avoid accidents from boats.
6. Marine / Sea water quality shall be monitored at effluent release location at the center. Parameters to be monitored shall be as follows:
 - a. *Physico-chemical*: Temperature, Salinity, pH and Dissolved Oxygen.
 - b. *Biological*: Primary Productivity, Phytoplankton (Chlorophyll a, Phaeophytin, Population, Species), Zooplankton (Biomass, Population, Species) and Benthos (Biomass, Population, Species).
7. In case of Coastal Power Plants, the Mangrove plantation shall be taken up in an area ofha, along the coast/ on the banks of Estuary.

Attendance Sheet

38th EXPERT APPRAISAL COMMITTEE MEETING (Thermal)

DATE & TIME : 21st February 2020, 10:30 AM

VENUE : Teesta Hall, Vayu Wing, Indira Paryavaran Bhawan, New Delhi

Sr.No.	Name of Member	Signature
1.	Dr. Navin Chandra Chairman	
2.	Shri Suramya D. Vora, IFS (Retd.) Member	- Abs -
3.	Dr. Narmada Prasad Shukla Member	
4.	Sh. N. Mohan Karnat, IFS Member	Abs.
5.	Dr. Sharachchandra Lele Member	- Abs -
6.	Sh. N.S. Mondal, CEA Member	- Abs -
7.	Dr. R.K. Giri, IMD Member	
8.	Dr. S.K. Paliwal, CPCB Member	- Abs -
9.	Prof. S.K. Gupta (ISM/ IIT Dhanbad) Member	Abs.
10.	Dr. Jai Krishna Pandey Member	
11.	Dr. Manjari Srivastava Member	- Abs -
12.	Dr. Gururaj P Kundargi Member	
13.	Dr. S. Kerketta Member Secretary, MoEFCC	

Approval of Minutes by the Chairman-EAC

2/27/2020 Email: Re: Minutes of 38th EAC (Thermal Power) meeting held on 21.2.2020 reg.

<https://email.gov.in/#2> 1/1

in:inbox **Dr S Kerketta**

Mail Contacts Calendar Tasks Briefcase Preferences Video Tutorials Re: Minutes of

Close Reply Reply to All Forward Archive Delete Spam Actions

From:

Re: Minutes of 38th EAC (Thermal Power) meeting held on 21.2.2020 reg.

To:

27/02/2020

Dear Dr. Kerketta Ji,

I have gone through the Minutes of the EAC (Thermal) meeting held on 21/02/2020 sent by you. As informed by you, the only member wh
mail.

After going through the MoM, I have found them to be in order and these are ready for uploading on the web site of Ministry of Environme

With regards,

yours sincerely,

(NAVIN CHANDRA)

Dr. Navin Chandra,

Vice Chancellor, IES University, Bhopal

Chairman, Coal Mining & Thermal Power,

MoEF&CC, GOI, New Delhi.

Ex-Director General MPCST, Bhopal,

(Retd.) Director (Actg.), CSIR-AMPRI, Bhopal

Member, RC, CSIR-AMPRI, Bhopal.

Phone (Res.) **91-755-2454600**

navinchandrarrl@yahoo.com, navinchandraampri@gmail.com

On Thursday, 27 February, 2020, 04:42:49 pm IST, Dr S Kerketta <s.kerketta66@gov.in> wrote:

Dear Sir,

The draft Minutes of 38th EAC (Thermal Power) meeting held on 21.2.2020 have been circulated to all members of the EAC. The comments from Dr. R.K. Giri have been

navin chandra

Dr S Kerketta

AGENDA OF 38th MEETING OF THE RE-CONSTITUTED EXPERT APPRAISAL COMMITTEE ON THERMAL POWER PROJECTS

DATE : 21st February, 2020
TIME : 10.30 A.M. ONWARDS
VENUE : TEESTA MEETING HALL, FIRST FLOOR, VAYU WING,
 IPB,JORBAGH ROAD, NEW DELHI-110003.

ITEM	
Item No. 38.0	CONFIRMATION OF MINUTES OF 37th EAC (THERMAL) MEETING
Item No.	CONSIDERATION OF PROJECTS
38.1	14.5 MW Coal based Captive Co-generation Power Plant at Villages Puthukkadu, Kokkarakondi Pirivu, Puthupeerkadavu, Taluk Sathyamangalam, District Erode, Tamil Nadu by M/s Sri Andal Paper Mill Pvt. Ltd. -reg. ToR. (F.No. J-13012/02/2020-IA.I(T) & Proposal No. IA/TN/THE/140843/2020)
38.2	2x800 MW (Stage-III), Singrauli Super Thermal Power Project Village Shaktinagar, Tehsil Dudhi, District Sonbhadra, Uttar Pradesh by M/s NTPC Limited. - reg. re-consideration of Environment Clearance. (F.No. J-13012/09/2016-IA.I(T) & Online No.IA/UP/THE/117100/2016)
38.3	Expansion by addition of 2x660 MW (Stage-II) Coal based Tanda Super Thermal Power Project, Village Bahadurpur, Tehsil Tanda, District Ambedkar Nagar, Uttar Pradesh by M/s NTPC Ltd. -reg. extension of validity of EC. (F.No. J-13012/96/2007-IA.II(T) & Proposal No. IA/UP/THE/139691/2020)
38.4	2x660 MW Coal Based Thermal Power Plant at village Tentulei, Ghantapada, Jagannthapur, Sana Scatland, Bada Scatland, Talcher CD Block, District Angul, Odisha by M/s NSL Nagapatnam Power and Infratech Pvt. Ltd.- reg. extension of validity of EC. (F.No. J-13012/25/2007-IA.II(T) & Proposal No. IA/OR/THE/138675/2020)
38.5	2x10 MW Coal Based Captive Thermal Power Plant at Village Tatisilwai, District Ranchi in Jharkhand by M/s. Usha Martin Ltd. - reg. amendment in EC for change in coal source and mode of transportation. (F.No.J-13012/122/2008-IA.II(T) & Proposal No.IA/JH/THE/138854/2020)
38.6	1x660 MW Ennore Supercritical Thermal Power Project (Expansion), Ernavur Village, Tiruvottiyur Taluka, Thiruvallur District, Tamil Nadu by M/s Tamil Nadu Generation and Distribution Corporation Ltd (TANGEDCO)- reg. amendment in EC. (F.No. J-13012/15/2018-IA-I(T) & Online no. IA/TN/THE/139166/2020)
38.7	Expansion of 1000 MW (4x250 MW) by addition of 4x600 MW (2400 MW) Coal Based Thermal Power Plant at Village Tamnar, Taluk Gharghoda, Raigarh District, Chhattisgarh by M/s Jindal Steel & Power Ltd.- reg. re-consideration of amendment in EC for coal transportation by road. (F.No.J-13012/117/2008-IA.II(T) & Proposal No.IA/CG/THE/119664/2019)
38.8	ANY OTHER ITEM WITH THE PERMISSION OF THE CHAIR.