

## **MINUTES OF THE 20<sup>TH</sup> MEETING OF THE RE-CONSTITUTED EXPERT APPRAISAL COMMITTEE (EAC) ON ENVIRONMENTAL IMPACT ASSESSMENT (EIA) OF THERMAL POWER PROJECTS**

The 20<sup>th</sup> Meeting of the re-constituted EAC (Thermal Power) was held on 30<sup>th</sup> August, 2018 in the Ministry of Environment, Forest & Climate Change at Teesta Meeting Hall, Vayu Wing, First Floor, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi under the Chairmanship of Dr. Navin Chandra. The following members were present:

1. Dr. Navin Chandra - Chairman
2. Shri Suramya D. Vora - Member
3. Dr. N. P. Shukla - Member
4. Dr. Sharachchandra Lele - Member
5. Shri N. Mohan Karnat - Member
6. Dr. Jai Krishna Pandey - Member
7. Dr. Manjari Srivastava - Member
8. Dr. S. K. Paliwal - Member (Representative of CPCB)
9. Dr. R. K. Giri - Member (Representative of IMD)
10. Shri N.S. Mondal - Member (Representative of CEA)
11. Prof. S.K. Gupta - Member (Representative of ISM/IIT Dhanbad)
12. Dr. S. Kerketta - Member Secretary

Shri Gururaj P. Kundargi could not be present due to pre-occupation.

### **Item No.20.0: CONFIRMATION OF THE MINUTES OF THE 19<sup>th</sup> EAC MEETING.**

The Minutes of the 19<sup>th</sup> EAC (Thermal Power) meeting held on 25.07.2018 were confirmed in presence of members.

*Committee observation No. 19.4.3 (vi) “RSPCB in their report mentioned that possibilities shall be explored for installation of tertiary treatment and recycling facilities at combined outlet of the complex. RSPCB said that a study report shall be submitted within six months by project proponent. In this regards, the PP has informed that **installation of Tertiary Treatment** and recycling facilities is in progress which will be submitted to RSPCB within six months.”*

*shall be replaced as*

*‘.....informed that **the study on installation of Tertiary Treatment** and recycling facilities is in progress which will be submitted to RSPCB within six months.”*

*The additional condition No. 19.4.4 (ii) “The environmental clearance is subject to **obtaining prior clearance** from the Standing Committee of National Board for Wildlife, as applicable as the project is located at 6.2 km from Ghariyal Sanctuary on River Chambal.”*

*shall be replaced as*

*“.....obtaining clearance from the Standing Committee of National Board for Wildlife, as applicable as the project is located at 6.2 km from Ghariyal Sanctuary on River Chambal.”*

The condition No.19.8.4 (iv) *“Ash content in the coal source shall be less than 34% for the sources where the distance from power plant to the mines is **less than 500 km** as per the Ministry’s Notification GSR 02(E) dated 02.01.2014.”*

shall be replaced as

*“Ash content in the coal source shall be less than 34% for the sources where the distance from power plant to the mines is **greater than 500 km** as per the Ministry’s Notification GSR 02(E) dated 02.01.2014.”*

## **Item No. 20.0: CONSIDERATION OF PROJECTS**

### **20.1 2x800 MW (Unit 3 & 4) Super Critical Coal Based Thermal Power Plant near village Pathadi, District Korba, Chhattisgarh by M/s Lanco Amarkantak Power Ltd.-reg. ToR.**

**(F.No.J-13012/10/2018-IA.I(T) & Online No. IA/CG/THE/75763/2018).**

(20.1.1) Project Proponent submitted online application on 10.7.2018 for grant of ToR for Uni-3 (1x660 MW). The proposal was considered in the 19<sup>th</sup> EAC (Thermal Power) meeting held on 25.7.2017. However, Project Proponent has not attended the meeting. Accordingly, the proposal is re-considered in the present EAC meeting. However, **Project Proponent has not attended in the present meeting also. Accordingly, the project is deferred.**

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### **(20.2) Proposed expansion of 2x660 MW Super Critical Lignite based Thermal Power Project at Villges Mudanai, Kunakurichi, Uthangal, Tehsil Vridhachalam, District Cuddalore, Tamilnadu by M/s NLC India Ltd.- reg. EC.**

**File No: J-13012/11/2016-IA.II (T)& Online No.: IA/TN/THE/60765/2016)**

(20.2.1) Project Proponent submitted online application on 13.8.2018 EC. Project Proponent along with M/S Hubert Enviro Care Systems (P) Ltd, Chennai made the presentation inter alia submitted the following information:

- i. The present expansion proposal of setting up of 2x660 MW Lignite based Super Critical Power Project which will be set up adjacent and at 1.8 km from the existing 7x210 MW (TPS-II) and 2x250 MW (TPS-II 1st Expansion) power plant under operation.
- ii. The site is falling on topo sheet nos. 58 M/6, M/7 & M/10 and situated between the GPS coordinates of Latitude 11°32’39” N and Longitude 79°24’35” E at a distance of 1.5 km towards North away from the NH-532 connecting Cuddalore and Chinnasalem.
- iii. The Terms of Reference (ToR) for the proposed power plant has been prescribed by the MoEF&CC vide letter dated 23.3.2017.
- iv. As per CEA guidelines the land requirement for 2 x 600 MW Supercritical – Lignite Based power project is 990 acres and NLCIL has optimized the land requirement to 608 Acres which is less than the stipulated land. The entire land of 608 Acres (245.78 Ha) required for the project is in possession of NLCIL. The

- land required for lignite transportation system, laying of pipeline, ROW, transmission lines etc., are in possession of NLCIL and there is no litigation.
- v. There is no forest land involved for the proposed power project and additional facilities like transmission lines, pipelines, rail lines, etc. There are no national parks, wildlife sanctuaries, elephant/tiger reserves or any other wildlife protected areas within 10 km radius of the project site. The project site does not fall in the critically polluted area.
  - vi. The proposed project will share some common facilities such as emergency ash pond and water reservoir with TPS II plant (7x210 MW & 2x250 MW).
  - vii. The primary fuel for the proposed project is Lignite which will be sourced from NLCIL's basket of mines including Mine – III allocated by Ministry of Coal. The Lignite requirement for 2x660 MW has been assessed as 8.09 Million Tons for 100% Lignite fuel every year at PLF 80 %. Lignite will be received and transported by suitable conveyor system to the project site.
  - viii. The lignite quality is Average Calorific Value: 2689 kcal/kg, Avg. Moisture: 51.58% (Min: 45% & Max: 58%), Avg. Ash content: 4.83% (Min: 2.1% & Max: 9.9%) and Avg. Sulphur content: 0.67% (Min: 0.23% & Max: 1.06%).
  - ix. The source of raw water for the proposed Thermal Power Plant is the water pumped out during mining operations from the lignite mines of NLCIL. Total water requirement is 4215 m<sup>3</sup>/hr out of which fresh water 3299 m<sup>3</sup>/hr and recycled water is 916 m<sup>3</sup>/hr. The fresh water requirement of 3299 m<sup>3</sup>/hr is worked out to be 2.49 m<sup>3</sup>/MWh.
  - x. Ambient air quality was monitored twice in a week for One (01) season (shall cover 12 weeks), i.e. during Pre-Monsoon season (March - May, 2017). PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub>, NO<sub>x</sub>, Pb, NH<sub>3</sub>, C<sub>6</sub>H<sub>6</sub>, C<sub>20</sub>H<sub>12</sub>, As, Ni, were monitored on 24 hourly basis and O<sub>3</sub> and CO were monitored on eight hourly basis.
  - xi. The measured ambient air quality in the study area during May to May 2017 shows that the PM<sub>10</sub> concentration varies from 44.4 to 95.3 µg/m<sup>3</sup> as against the stipulated limit of 100 µg/m<sup>3</sup>. PM<sub>2.5</sub> concentration varies from 15.0 to 44.6 µg/m<sup>3</sup> as against the stipulated level of 60 µg/m<sup>3</sup>. Average SO<sub>2</sub> and NO<sub>x</sub> concentration in the study area was reported to be in the range of 5 to 17.8 µg/m<sup>3</sup> and 9.8 µg/m<sup>3</sup> to 28.4 µg/m<sup>3</sup>, respectively. It is inferred from the measured baseline data that all the stipulated pollutants are well within the limits suggested under National Ambient Air Quality Norms (NAAQs).
  - xii. The total incremental maximum ground level concentrations along with the baseline status is estimated and the percentage increase and summarised for the Stack height of 275 m and 150 m:

Stack Height: 275 m							
Pollutant	Max Baseline Concentration (µg/m <sup>3</sup> )	Estimated Incremental GLC (µg/m <sup>3</sup> )	Total Concentration (µg/m <sup>3</sup> )	NAAQ Standard (µg/m <sup>3</sup> )	Distance from Source (km)	Direction	% increase
PM	95.3	1.328	96.628	100	1.45	NE	1.4
SO <sub>2</sub>	17.8	4.42	22.22	80	1.45	NE	24.8
NO <sub>x</sub>	29.1	4.42	33.54	80	1.45	NE	15.3

Stack Height: 150 m							
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Pollutant	Max Baseline Concentration ( $\mu\text{g}/\text{m}^3$ )	Estimated Incremental GLC ( $\mu\text{g}/\text{m}^3$ )	Total Concentration ( $\mu\text{g}/\text{m}^3$ )	NAAQ Standard ( $\mu\text{g}/\text{m}^3$ )	Distance from Source (km)	Direction	% increase
PM	95.3	2.13	97.43	100	1.40	NE	2.2
SO <sub>2</sub>	17.8	7.11	24.91	80	1.40	NE	39.9
NO <sub>x</sub>	29.1	7.13	36.23	80	1.40	NE	24.5

- xiii. It was observed that the maximum ground level concentrations observed due to proposed expansion for PM, SO<sub>2</sub> and NO<sub>x</sub> by considering 150 m Stack height are 2.13  $\mu\text{g}/\text{m}^3$ , 7.11  $\mu\text{g}/\text{m}^3$  and 7.13  $\mu\text{g}/\text{m}^3$ . So it can be concluded that even after the expansion of the plant the impact envisaged is minimum.
- xiv. Average day time and night time noise levels at residential areas in the study area was found to be varying from 44.9 to 54.9 dB (A) and 38.9 dB(A) to 49.6 dB(A), respectively. Significant interference from local community activities and also vehicular traffic was observed.
- xv. Surface Water sampling has been carried out at five locations in Cauvery-Coleroon river basin, Vellar river basin, Manimuthar river basin, Pennaiyar river basin & Gadilam river basin. The pH of surface water sample is found to be in the range of 7.84 to 8.61. TSS varies in the range of 500 mg/l to 999 mg/l. The Heavy metals concentrations are found to be below detectable levels. The pH of ground water sample is found to be in the range of 7.4 to 8.44, TDS varies in the range of 191-1747 mg/l. The chloride content in the ground water for study area is ranges between 42.8-325 mg/l and The Total hardness ranges is between 66-835 mg/l.
- xvi. Soil sampling was carried out at Ten (10) locations in the study area. The pH of the soil samples ranged from 6.67–7.93, Conductivity of the soil samples ranged from 244 - 533  $\mu\text{S}/\text{cm}$ . As the EC value is less than 2000  $\mu\text{S}/\text{cm}$ , the soil is found to be non- saline in nature. The water holding capacity of the soil samples varied from 20.3 – 28.5 (%), Nitrogen content ranged from 213-628 kg/ha, The Organic content ranged from 0.37% to 1.46 %, Phosphorous content ranged from 36-247kg/ha, Potassium content ranged from 185-504 kg/ha. It has been observed that the texture of the soil is clay. The common color of soil varied from reddish brown/ Yellowish brown at most of the locations.
- xvii. Electrostatic precipitators (ESPs) will be installed to control the emission of ash particles. The precipitators will be designed to limit the particulate emission to less than 30 mg/Nm<sup>3</sup>. One number twin flue stack of 150 m height will be provided based on existing CPCB /MoEF&CC norms for wider dispersion.
- xviii. The FGD system shall be provided to treat the flue gases so produced in the furnace in order to keep the SO<sub>x</sub> value within the prescribed norms. The FGD system shall be having limestone scrubber of a proven design & shall be capable of meeting plant emission requirement to prevent a visible stack plume and MOEF requirement.
- xix. DeNO<sub>x</sub> technology which is Selective Catalytic reduction technology will be installed in the boiler to meet latest NO<sub>x</sub> emission norm.
- xx. Separate Continuous Environmental Monitoring System shall be envisaged for each Unit as per Emission latest Regulation of CPCB/State PCB. CEMS shall comprise of Flue Gas Oxygen analyzer for control and monitoring, Carbon Mono Oxide, SO<sub>x</sub> / NO<sub>x</sub>, Dust & Opacity analyzer, Mercury analyser for Boiler

Emission monitoring system. The CEMS shall be interfaced with state PCB suitably.

- xxi. The waste water generation is about 1379 m<sup>3</sup>/hr and wastewater treatment system shall be designed to collect wastewater from all sources in the power plant and provide treatment to enable it to be reused in the power plant to achieve Zero Liquid Discharge (ZLD). The treated water of with quantity of 916 m<sup>3</sup> /hr will be reused for cooling water makeup and 463 m<sup>3</sup>/hr will be reused for ash handling systems.
- xxii. Sewage generation from the power plant is about 60 KLD and the Sewage Treatment Plant will be set up for treating the sewage. The Sewage Treatment Plant will be modular type based on FAB/MBBR technology followed by disinfection by Hypo and necessary tertiary treatment prior to reuse in horticulture purpose. STP sludge with approx.5-10 kg/day will be generated which will be dried in the sludge drying beds and used for horticulture.
- xxiii. The source of municipal waste in the industry & Township will be from the domestic use. The municipal solid waste (organic waste from canteen & township) generation is 450 kg/day which will be composed for preparing manure for horticulture.
- xxiv. The ash generation is 0.405 Million TPA out of which fly ash is 0.32 Million TPA and bottom ash is 0.081 Million TPA. The proposed expansion project is located in the vicinity of many cement plants and ash bricks manufacturing units. The ash management scheme for the ash generated from power plant will involve dry collection of fly ash, supply of ash to entrepreneurs for utilization, promoting ash utilization and disposal of un-used ash. The unutilised ash will be disposed in the existing ash pond in the area of 28.32 ha (69.95 acres) in case of emergency.
- xxv. NLCIL has obtained consent letter from cement manufactures namely Ramco cements Ariyalur, Dalmia Bharat Limited, Dalmiapuram & India Cements, Ariyalur for off take of the fly ash generated from the proposed project. Hence 100 % utilization of fly ash is envisaged. The possibility of using bottom ash to replace river sand as a substitute will also tried. The existing ash dyke will be used for supply of fly ash during emergency.
- xxvi. Hazardous wastes such as Used Oil 175 Tons per Annum and ETP sludge of 0.3 Tons per Month will be generated. Used oil will be sold to the authorised recyclers and ETP sludge will be sent to approved TSDF site.
- xxvii. Approximately 11.88 T/day of gypsum is expected to be generated per day from FGD. Based on the marketability, the gypsum generated will be marketed or disposed to cement plant or used for back filling in the mines.
- xxviii. Hazard Identification and Risk Analysis including identification, screening of scenarios, and consequence analysis of the various risk scenarios. Risk Assessment has done with respect to the Raw materials, Processes, Solvent & neighbouring villages.
- xxix. Public Hearing has been conducted on 15.02.2018 at Community Hall, block-29, Neyveli Township, Virudhachalam Taluk, Cuddalore District by Tamil Nadu Pollution Control Board.
- xxx. The proposed expansion project area is 245.78 ha i.e 608 acres and proposed green belt area is 160 acres i.e. 26.34% of total project area. (i.e 37% of main plant area). Over and above, NLCIL proposes to implement Green Belt as to the extent possible in all the available vacant spaces.
- xxxi. The project is expected to generate around ten million units of electricity per year which will meet the growing energy deficit in the state and will have a

tremendous positive impact on enhancement in the economy of Tamil Nadu. There will be a probable increase in the infrastructure resources due to the project in the region by the way of transport, communication, health facilities and other basic facilities to be created.

- xxxii. Regional Office, Chennai vide letter dated 19.7.2018 submitted the certified compliance report.
- xxxiii. Estimated Project Cost Rs. 8,733.49 Crore including IDC. Proposed capital and Recurring cost for Environmental Protection Measures is Rs.1123.71 Crores and Rs.140.46 Crores respectively. The estimated manpower shall be about 850 nos. during construction phase and about 1000 nos. during the operation stage including contract workmen.

(20.2.2) Committee noted that the ash pond shall be used only incase of emergency. Further, Committee noted that there are non-compliances pertaining to the existing power plant. Several non-compliances such as bottom ash and construction debris lying open here and there, fugitive dust, improper internal roads, truck parking area not having concrete platform, no engineering and biological measures to protect ash pond which led to lot of erosion, greenbelt development, not transmitting the online data of PM, ineffective fugitive dust control system and no separate environmental cell.

(20.2.3) **Committee after detailed deliberations, recommended for grant of Environmental Clearance.** The following additional conditions have been stipulated in addition to the standard conditions in Thermal Sector:

- i. The average Ash content and Sulphur content in the Lignite shall be restricted to 4.83% and 0.67%, respectively.
- ii. Environmental Monitoring Cell shall be strengthened having various specialisations such as Environmental Engineering/Science, Social Scientist, Chemist and Horticulturist for the proposed power plant.
- iii. Overburden dump has to be fully stabilised with vegetation along with engineering and biological measures within one year.
- iv. Capital cost of Rs.43.66 Crores (0.5% of the project cost) shall be utilised for Corporate Environment Responsibility (CER) inline with the of Ministry's guidelines dated 01.05.2018.
- v. Transportation of the Lignite shall be by combination of closed and open conveyor system from the Lignite Mines.
- vi. Water Transportation pipeline system and the coal conveyor system shall be laid in the same corridor.
- vii. Revised emission standards as per the Ministry's notification dated 07.12.2015 and subsequent amendments notified from time to time shall be complied. In case, plant is ready for commissioning and not meeting revised emission norms, operations shall be stopped unless there is an extension given through a specific direction by MoEFCC/CPCB or amendment in notification issued.
- viii. As per the Revised Tariff Policy notified by Ministry of Power vide dated 28.01.2016, project proponent shall explore the use of treated sewage water from the Sewage Treatment Plant of Municipality/ local bodies/ similar organization located within 50 km radius of the proposed power project to minimize the water drawl from surface water bodies.

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**(20.3) 2x600 MW Coal Based Singareni Thermal Power Plant at Pegadapalli Village, Jaipur mandal, District Adilabad, Telangana by M/s Singareni Collieries Company Ltd.- reg extension of permission for road transportation. (F.No. J-13012/88/2008-IA.II (T) & Proposal No: IA/TG/THE/27854/2009).**

(20.3.1) Project Proponent submitted online application on 15.6.2018 regarding extension of permission for road transportation. The temporary permission for transportation of coal by road for a period of two years (i.e. till 09.08.2018) was issued vide Ministry's letter dated 10.08.2016 subject to conditions. The proposal was earlier considered by the EAC in its 18<sup>th</sup> meeting held on 27.06.2018 and the project was deferred due to submission of following information:

- i. Traffic Impact Assessment study which includes impact on traffic load, ambient air quality and noise levels. Line source modelling will be conducted for estimating the incremental concentrations and impact area along the road. Area source modelling shall be conducted for loading and unloading points for predicted the environmental impacts, based on baseline data collected AAQ along the roads.

(20.3.2) Project Proponent has conducted the traffic impact assessment study and submitted the report on 10.8.2018. Accordingly, the proposal is re-considered in the present meeting. Project Proponent along with the Environmental Consultants M/s Ramky Enviro Services Pvt. Ltd. have made the presentation inter alia submitted the following information:

- i. The Unit 1 COD completed on 25.09.2016 and Unit 2 COD completed on 02.12.2016 and both the units are under operation.
- ii. The required coal for both units (2x600 MW) are met from the nearby operating mines of SCCL viz. SRP OC-I, SRP OC-II, RKP OC Phase-I. The coal from this three mines are transported to SRP-CHP and SRP-OC, from here it is further distributed to various customers through rail and road network.
- iii. Transportation of coal is being done through well-developed road network and also about 50% requirement of coal through rail network which was commenced on 01.08.2018.
- iv. The state-owned mining company invested about Rs. 766 Crores to develop the railway siding of 21.175 Km length railway line between Srirampur and STPP Station to evacuate coal.
- v. 21.175 Km total length of single track railway line connecting Srirampur Coal Handling Plant with Thermal Power Plant via Srirampur Opencast Mine is completed and coal transportation through rail is commenced on 01.08.2018 after making necessary trial runs by South Central Railways (SCR).
- vi. At present it is expected to transport about 2-3 rakes daily (approx.50% to 60% of total requirement) from SRP CHP only. The balance requirement of coal is required to be met by road mode i.e. from SRP OCP to STPP.
- vii. 100% coal transportation will be done through rail mode on or before August, 2019 by completing the loading arrangements at SRP OC CHP which will take about one year including tendering process, construction, electrifications etc.
- viii. The BOBRN system containing 59 wagons and each wagon having capacity of carrying 60-65 tonnes of coal are proposed for transportation of coal to STPP. Around 3800 Tonnes of coal will be transported in each trip. It will increase transportation of coal through Rail gradually and decrease the transportation of coal by road, till the rail transportation will get stabilized.
- ix. Presently two routes are proposed which are as below:

Option	Source of Mine	Source to NH-16 (km)	NH-16 (km)	NH-16 to Power Plant (km)	Total Distance (km)
Transportation of coal by road	SRP-CHP OCP-I	8.5	6.0	3.5	18.0
	SRP OCP-II	1.5	9.0	3.5	14.0

- x. The transportation of coal from mines to SCCL STPP for 2x600 MW is around 15500 tonnes /day (4.784 MTPA). The carrying capacity of vehicles deployed for transportation of coal is 27 tonnes/truck.
- xi. The total number of trips made by trucks for movement of coal daily is around 574 trucks. 4. Considering 24 hours duration of truck movement, number of trucks movement will be around 574/24=24 trucks/hour or 89 PCU/hr. (Considering 3.7 PCU for each MAV as per IRC: 106 - 1990).
- xii. The addition of 89 PCU"s/hr loaded and 89 PCU/hr unloaded are added to worst or peak observed during 24 hours at Location 1 & 2 on NH-16. Total 178 PCU/hr are added to obtain critical impact which takes place during the day.
- xiii. Vehicles carrying coal are being covered with tarpaulin to prevent spillage.
- xiv. Baseline data for Ambient Air Quality data was collected in month of July, 2018 along the road side from four locations.
- xv. A maximum Respirable PM<sub>10</sub> concentration of 72.3 µg/m<sup>3</sup> was observed close to the truck movement area at Labour Colony. The maximum concentration of PM<sub>2.5</sub> of 42.3 µg/m<sup>3</sup> was observed at Labour colony nearby truck movement, while the minimum of 32.3 µg/m<sup>3</sup> was observed at Rasulpalli village. Maximum concentration of SO<sub>2</sub> was observed to be 18.7 µg/m<sup>3</sup> at Srirampur and minimum of 12.1 µg/m<sup>3</sup> was observed at Labour Colony. The maximum concentration of NO<sub>x</sub> of 27.5 µg/m<sup>3</sup> was observed at Srirampur area and minimum value f 22.2 µg/m<sub>3</sub> was observed at Labour Colony. The maximum ozone concentration of 25.2 µg/m<sup>3</sup> was observed at Srirampur area and minimum of 18.3 µg/m<sup>3</sup> was observed at Labour Colony. Carbon monoxide (CO): The maximum concentration of CO of 680 µg/m<sup>3</sup> was observed at Labour Colony and the minimum of 480 µg/m<sup>3</sup> was observed at Dubbapalli village.
- xvi. Impact on air quality has been predicted due to transportation, loading & unloading and wind erosion. The incremental Ground Level Concentrations are as below:

Existing Scenario (µg/m <sup>3</sup> )				
Particulars	PM <sub>10</sub>	NO <sub>x</sub>	CO	
Baseline	72.3	27.4	677	
Contribution due to coal transportation				
Area (Loading)	Source	0.21	10.9	6.6



Line Source	18.6	3.7	2.2
Area Source (Un-loading)	5.5	9.8	6.2
NAAQ Standards	100	80	2000

- xvii. The day equivalent values in the study area are varying from 49.3 to 67.8 dB(A) and the night equivalent values varying from 40.9 to 46.9 dB(A), both day and night equivalents were within the respective standards of silent zone, residential, commercial and industrial standards, except one value of silent zone the night equivalent was above the standard.
- xviii. Various traffic management measures will be taken to ensure safety within the mining area, during the transportation and at the power plant. Fugitive dust generation will be controlled by water sprinkling at loading and unloading areas.

(20.4.3) Committee noted that project proponent has already started rail transportation with nearly half the quantity of coal out of total requirement. The need for permission for road transportation is only for remaining half the quantity. Committee also noted that their temporary permission for road transportation for two years has expired on 09.08.2018. However, project proponent informed that the road transportation has been continuing since 10.08.2018 till date which is non-compliance/violation. Accordingly, Committee suggested that Ministry may take an appropriate action in this regard.

(20.4.4) Committee after detailed deliberations based on the facts presented by the project proponent, **recommended for temporary permission of one year for transportation of coal with the quantity of 7,750 TPD (50% of the total coal requirement) subject to the conditions stipulated in the Ministry's permission letter dated 10.08.2016.**

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**(20.4) 4x660 MW Imported Coal based Thermal Power Plant at notified Dahej industrial area near village Suva, in Vagra Taluk, in Bharuch District, in Gujarat by M/s Adani Power Dahej Ltd.-reg. extension of EC. (File No:J-13012/39/09-IA.II(T) & Online No.: IA/GJ/THE/2082/2009).**

(20.4.1) Project Proponent submitted the online application vide dated 5.7.2018 for extending validity of environmental clearance dated 25.10.2011 for further period five years, i.e. till 25.10.2023. The validity of Environmental Clearance was for five years, i.e. till 24.10.2016. As the EC is valid on the date of EIA amendment notification dated 14.9.2016, the five years validity automatically becomes seven years. Accordingly, the EC is valid for seven years, i.e. till 24.10.2018. As per the EIA Amendment Notification dated 14.9.2016, the validity can be extended by maximum period of three years. Thus, the outer limit of the validity of EC is 10 years. However, Project Proponent has sought for extension of five years which becomes total validity of 12 years from the date of grant of EC.

(20.4.2) The proposal was earlier considered in the 19th Meeting of the EAC (Thermal Power) on 25.07.2018. However, Project Proponent did not attend the meeting. Committee noted that as per the documents submitted by Project Proponent, they have completed only some infrastructure works such as boundary wall, stores, STP, transmission line RoU, officers and Hostel. From the photographs submitted by PP, only buildings are visible. The project has not achieved any significant

progress in terms of construction activities of the BTG and BOP. The validity of seven years will get expired on 24.10.2018. Further, as per the provisions of the EIA Notification, only three years can be extended beyond seven years whereas PP sought extension of five years. Further, committee noted that the extension of three years is to be given only in case of project which have achieved substantial physical progress so that the extension will enable them to complete balance works.

(20.4.3) The proposal has been reconsidered in the present meeting. Project Proponent made the presentation inter alia submitted the following information:

- i. The project activities could not be started as the Power Purchase Agreement is not available. It is expected that the Power Purchase Agreement will be signed within 6 months time.
- ii. Detailed Engineering is completed. However, the order for BTG and BOP are yet to be issued.
- iii. It is expected that the plant construction activities will be completed in 36 months for Unit-1 followed by three months' time for each unit (Unit-2, 3 & 4).

(20.4.4) Committee noted that actual construction work of the power plant has not been started yet and the progress of the construction work in the last seven years is bare minimum accounting to boundary wall, stores, STP, transmission line RoU, officers and Hostel. Committee noted that construction work has not been initiated because PPA is not available. PPA is not available as on today and hoping to get in near future. The actual construction may start only after PPA is signed, tendering and awarding of contract for BTG & BOP is taken place. Committee opined that the total time taken for completion of construction activities would be 48 months from the zero date.

(20.4.5) Committee after deliberations, sought a PERT chart showing the timelines and completion of all the activities for commissioning the power plant within three years and **accordingly deferred the proposal** and shall be taken up in the next EAC meeting.

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**(20.5) Proposed 23 MW Municipal Solid Waste based Power Plant at Village Adampur Chhavani, Phanda Block, Huzur Tehsil, Bhopal District by M/s Bhopal Municipal Solid Waste Private Limited. - reg. EC.  
(File No: J-13012/16/2017-IA.II(T) & Online No.: IA/MP/THE/69646/2017).**

(20.5.1) The proposal for grant of Environmental Clearance has been submitted online 10.08.2018. Terms of Reference for the setting up of 23 MW Municipal Solid Waste based Power Plant in Huzur Tehsil, Bhopal District has been issued vide Ministry's letter dated 04.05.2018.

(20.5.2) The Project Proponent along with EIA Consultant made the presentation and inter alia submitted the following information:

- i. Bhopal Municipal Solid Waste Management Pvt. Ltd (BMSWPL) plans to install Integrated MSW management facility for treating 1000 TPD of unsegregated MSW (Treating by Landfill method) and the Power generation using MSW will be 23 MW.
- ii. Project will be set up in 45 acres out of which Plant area is 2.68 acres, Sanitary Landfill 22.63 acres, green belt area 14.84 acres and remaining area will be for admin block, internal roads, utility area, storage area, parking, etc.

- iii. The project does not involve any National Parks, Sanctuary, Elephant /Tiger reserves, migratory routes/wildlife corridors in the study area of 10 km around the plant. Only reserve forest Samardha area is available within less than 5 km away from project site.
- iv. Proposed project site is revenue land. The lease deed has already been executed in the name of project proponent. RoW for transmission line shall be acquired.
- v. Mass incineration technology is proposed for the generation of power plant. Essel group is having one operational WtE plant at Jabalpur, Madhya Pradesh. Collected waste shall be transferred to the closed body stationery compactor at the Mini Transfer stations by tip kart mechanism. MSW shall be either managed in existing Bhanpura dumpsite or a piece of land in the proposed Aadampur landfill site can be used to store the waste temporally. All the vehicles engaged in this project are provided with OSRT (off site Real Monitoring System) and GPS facilities.
- vi. The municipal solid waste will be brought to the project site by Garbage trucks, Garbage Compactors, Garbage Tipper from various 8 ULBs within radius of 80KM from of Bhopal. There are total 220 vehicles transport the garbage from storage point to transfer station. & from transfer station to landfill site.
- vii. Water requirement during Construction Phase: 50 KLD Operation Phase: 500 KLD. The water requirement will be sourced from Bhopal Municipal Corporation or it will be sourced from Bore wells (4 nos. of bore wells are proposed), as the case may be. No water body/nallah is passing through the site and no diversion of natural water body is not involved.
- viii. Baseline data has been collected during 03.10.2017 to 30.12.2017 for one season.
- ix. The IMD data for Bhopal indicates that the overall predominant wind direction is from the North East (16%) during the winter season. However, the annual pattern shows that the predominant combined wind direction is from North West (35%).
- x. Ambient Air Quality has been collected from 8 locations. The maximum and minimum concentrations for PM<sub>10</sub> were recorded as 105 µg/m<sup>3</sup> at Vardhaman Colony and 60 µg/m<sup>3</sup> at Project Site respectively. Sometimes it has found to be more than standards. This may be due to Kaccha internal roads in area and road widening work along main highway. The maximum and minimum concentrations for PM<sub>2.5</sub> were recorded as 47 µg/m<sup>3</sup> at Hayatkhedha & Kanasaiya and 21 µg/m<sup>3</sup> at project site respectively. The maximum and minimum SO<sub>2</sub> concentrations were recorded as 11.8 µg/m<sup>3</sup> at Hatiya Kheda and 3.0 µg/m<sup>3</sup> at Project Site respectively. The maximum and minimum NO<sub>x</sub> concentrations were recorded as 42 µg/m<sup>3</sup> at Bikhiriya Kalan and 22 µg/m<sup>3</sup> Jhiriya Keda. Carbon Monoxide, Ammonia, Ozone, Lead, Benzo Pyrene, Arsenic, Nickel were detected below limits in the study area. The Methane hydrocarbons and Non-Methane hydro carbons were below detection limits in the study area.
- xi. The ground level concentrations are computed for 24 hr average and the incremental ground level concentrations along with baseline data is as below:

Pollutant	Ground Level Concentrations in µg/m <sup>3</sup>				
	Predicted	Baseline (Max)	Total Expected	CPCB Standard	Max Concentration (Distance in km)
PM	0.25	75.9	76.15	100	
SO <sub>2</sub>	0.50	6.8	7.3	80	

NO <sub>x</sub>	0.63	39.0	39.63	80	0.35
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- xii. Soil samples have been collected at 8 locations. Soil samples are loam, clay, and sandy in texture. Soil samples from all eight locations are Light brown and dark brown. Bulk density of soil in the study area is found to be in the range from 1.20 to 1.27 g/cm<sup>3</sup>. pH of soil in the study area is found to be slightly alkaline in the range of 7.1 to 7.9.
- xiii. Ground water has been analysed from 11 locations. The pH value of ground water sample is 6.9 to 7.4 and always meets the drinking water desirable standard. TDS of ground water is 230.5 to 302.0 mg/l. Total hardness value ground water sample is 148.5 to 314.0 mg/L. The iron content in ground water sample is 0.17 to 0.3 mg/l and found within the permissible limit of 0.3 mg/l. Fluoride content of water sample is 0.21 to 0.36 mg/l and meets the acceptable limit of 1 mg/l for potable water.
- xiv. The surface water sample was collected from Baigul River and the lake analyzed for physical and chemical parameters. The pH value of surface water samples was between 7.8 - 7.9 and always meets the drinking water desirable standard. TDS of surface water samples was between 205-325 mg/l and meets permissible limit of 500 mg/l. Total alkalinity of surface water samples was between is 82.2-101 mg/l and meets within the permissible limit 600 mg/l. Advanced Flue gas treatment technology with lime dosing along with bag filters shall be used.
- xv. Stack height of is 50 m will be provided to the incineration Unit. The DG Sets will be provided stack heights as per the CPCB rules. Spraying inhibitory agents or masking agent or neutralizers, as per Guidelines on Odour Monitoring & Management in Urban Municipal Solid Waste (MSW) Landfill Site will be ensured.
- xvi. Fugitive emission will take place from vehicular movement. There are total 220 vehicles transport the garbage from storage point to transfer station & from transfer station to landfill site.
- xvii. Wastewater/leachate generation is 80 KLD which will be treated through EPT comprising of Equalisation Tank, Upflow Anaerobic Sludge Blanket Reactor, Aeration Tank, Secondary Clarifier, Tube Settler, Chlorination and filtration. The treated effluent will be re-used for secondary applications like green belt, spraying on ash.
- xviii. Total 250 ton approx. ash will be generated, Out of which 40 tons (16 %) will be fly ash generated and 160 tons (64%) of Bottom ash will be generated. Other waste constitutes of 50 Tons. The Solid waste will contain the processing plant residues and pre-processing plant inerts. The fly ash will be given to brick manufacturing units. Quenched bottom ash will be disposed at Sanitary Land Fill in an area of 22.63 acres.
- xix. The plant will generate approx. 35 kg of solid wet waste and 15 kg of solid dry waste which will be disposed at the plant itself. 750 Litres of spent oil will be generated from the DG Sets annually. DG sets will only be used during power failures.
- xx. Greenbelt will be provided along the internal roads and plant boundary.
- xxi. Public Hearing for the proposed project has been conducted on 4.7.2018 at Village Koluakhurd, Arjun Nagar, Primary School, Adampur Chhavani, Bhopal, Madhya Pradesh. Major issues pertain to employment generation, arrangement of drinking water to the nearby villages, implementation of water treatment measures, odour management, transportation of solid waste through covered trucks.

- xxii. Greenbelt development of 14.84 acres will be carried out around the project site. Total manpower required during construction phase will be 300 nos. and during operation phase will be 115.
- xxiii. ESSEL group in coordination with BMC will implement CSR activities. The CSR activities will be practiced/implemented as per the Ministry of Corporate Affairs, Government of India.
- xxiv. Estimated Project cost is Rs. 293 Crores. Capital and Recurring Cost for Environmental Protection Measures is Rs.13.09 Crores and Rs.9.5 Lakhs.

(20.5.3) Committee noted that project proponent has computed the emission rates for PM, SO<sub>2</sub> and NO<sub>x</sub>. Committee, further noted that Financial Commitment towards carrying of CER/CSR activities in the surrounding area shall be adhered as per the Ministry's Notification dated 30.05.2018

(20.5.4) Committee deliberated the proposal based on the facts presented by the PP, **recommended for grant of environmental clearance** with the following additional conditions:

- (i) Permission for water drawal (Surface water/ground water) shall be submitted after it is firmed up.
- (ii) As per the commitment given in the public hearing, project proponent shall take local people to the similar plant located at Jabalpur to ensure that various facilities regarding odour and pollution control measures are in place.
- (iii) Pollutants in the stacks such as HCl, CO, TOC, Dioxins & Furans and Heavy Metals shall be monitored as per the guidelines.
- (iv) Financial Commitment for implementation of CER/CSR activities in the surrounding area inline with the Ministry's CER guidelines dated 30.05.2018 shall be ensured.
- (v) The emission standards as per the Ministry's Notification dated 07.12.2015 shall be complied with.
- (vi) As per the Revised Tariff Policy notified by Ministry of Power vide dated 28.01.2016, project proponent shall explore the use of treated sewage water from the Sewage Treatment Plant of Municipality/ local bodies/ similar organization located within 50 km radius of the proposed power project to minimize the water drawl from surface water bodies.

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**(20.6) 2x800 MW Coal Based Lara Super Thermal Power Project at Villages Armuda, Chhapora, Bodajharia, Devalpura, Mahloi, Riyapalli, Lara, Jhilgitar and Kandagarh, Taluk Pussore, District Raigarh, Chhattisgarh by M/s NTPC Ltd.-reg.ToR.  
(F.No.J-13012/11/2018-IA.I(T) & Proposal no. IA/CG/THE/75138/2018).**

(20.6.1) Project Proponent submitted the online application vide dated 20.07.2018 for grant of Terms of Reference. Project Proponent has made the presentation and inter-alia submitted the following information:

- i. The present proposal is for setting up of 2x800 MW (Stage-II) Lara Super Thermal Power Plant within the premises of Stage-I Power Plant (2x800 MW) at Villages Armuda, Chhapora, Bodajharia, Devalpura, Mahloi, Riyapalli, Lara, Jhilgitar, Kandagarh, District Raigarh, Chhattisgarh.
- ii. The main plant, township and other areas for Stage-II (2x800 MW) shall be accommodated in the land acquired for Lara STPP under Stage-I.

- iii. The Main Plant and Townships are located between 21°44'57" N to 21°46'19" N and 83°25'37" E to 83°27'56" E. Further, the proposed Ash dyke is located between 21°41'43" N to 21°42'32" N and 83°25'56" E to 83°27'39" E.
- iv. A total of 2400 acres of land has been acquired to accommodate plant, township and ash dyke of Lara STPP. Approx. 1400 acres land is under utilization for construction of Stage-I units, ancillary facilities, ash disposal area, township and remaining shall be used for Stage-II units.
- v. The break-up of 1000 acres land proposed for Stage-II is Main Plant including greenbelt: 320 acres; Ash disposal area: 400 acres; Reservoir: 200 acres; Miscellaneous: 80 acres.
- vi. No Wildlife Sanctuaries/ National Parks or any Ecologically Sensitive area of national importance exists within 10 km radius from project boundary. Gajmar and Hargan Reserve Forests exist at about 6.5 and 7.5 km, respectively in the North-East direction; and Holsar Dungri Reserve Forest exist at about 10 km in South-East direction from the periphery of the project boundary. No archaeological monument of national importance & defence installations exist within 10 km radius of the proposed site.
- vii. The boundary between States of Chhattisgarh and Odisha exist at about 1.5 km East from the project site.
- viii. The site is more than 15 km away from nearest highway (NH200) and Raigarh railway station is 30 km away from site. There are no major industries nearby.
- ix. The Environmental Clearance for Stage-I (2x800 MW) Power Project has been issued vide Ministry's letter dated 13.12.2012. Stage-I (2x800 MW) is under construction since 2012 and is in advanced stages of commissioning. Stage-I (1x800 MW) has been commissioned on 23.03.2018.
- x. Coal requirement for Lara STPP, Stage-II (2x800 MW) would be about 7.0 MTPA at 90% PLF and shall be met from Talaipalli coal block allotted to NTPC. Mode of coal transportation from the coal mines to the power plant is by MGR/ IR.
- xi. Make up water requirement for Lara-II (2x800 MW) project would be about 4080 m<sup>3</sup>/hr with ash water recirculation system and about 5300 m<sup>3</sup>/hr with once through ash water system. WRD, Govt. of Chhattisgarh have accorded Water availability confirmation of 45 MCM (5137 m<sup>3</sup>/hr) for Stage-I (2x800 MW) and 68 MCM (7763 m<sup>3</sup>/hr) for Stage-II of Lara STPP from Saradih Barrage on River Mahanadi.
- xii. A closed cycle cooling water system using Induced Draft cooling towers is proposed for the project.
- xiii. About 80% of the ash shall be generated as Fly Ash while 20% of the ash shall be generated as bottom ash. With average annual coal requirement of 7 MTPA, it is estimated that about 3.0 MTPA of ash shall be generated annually. Gypsum generated from FGD plant shall also be utilized.
- xiv. The ash management scheme for fly ash and bottom ash involves dry collection of fly ash, supply of ash to entrepreneurs for utilisation, promoting ash utilisation and safe disposal of unused ash. NTPC shall make maximum efforts to utilise the fly ash for various purposes. Unused fly ash and bottom ash shall be disposed off in the ash pond. A blanket of water shall be maintained over the entire ash pond to control fugitive dust

emission. After the ash pond is abandoned, it shall be reclaimed through green vegetation.

- xv. Estimated employment due to proposed project is during construction phase, the total number of workers likely to be employed will be about 1000.
- xvi. Commercial Operation Date (COD) of first 800 MW unit of Lara STPP Stage-II will be in 52 months from the Investment approval and subsequent unit after an interval of 6 months thereafter.
- xvii. Preparation of ToR is in-house activity of NTPC. The QCI-NABET Consultant for conducting EIA studies shall be hired through limited tender process from the shortlisted NABET consultants.
- xviii. Estimated project cost would be about Rs. 9415.57 Crore.

(20.6.2) Committee noted that Project Proponent is yet to appoint a QCI-NABET accredited consultants. Ministry's Circular dated 22.03.2010 mentions that the proposal for expansion of projects to which EC has been granted can be considered only once the implementation for the earlier phase has commenced. In the present project, Project Proponent mentioned that the Stage-I Lara Power Project (2x800 MW) is under construction. Since, the construction work had already been started and the construction is in the advanced stage, Committee opined that the Circular dated 22.03.2010 may not be applicable to this project. Further, Project Proponent has proposed for another ashdyke for Stage-II Project. As per the flyash notification, the flyash has to be utilised within four years. During the meeting, Project Proponent has agreed for using the Stage-I ash pond for the proposed Stage-II also and there will not be any additional ash pond. Undertaking to this effect is to be submitted.

(20.6.3) Committee after detailed deliberations, **recommended for grant of ToR subject** to submission of the compliance of the Ministry's Office Memorandum dated 04.08.2009 and undertaking by the Project Proponent that there will not be any additional ash pond.

(20.3.4) **Committee stipulated the following additional conditions in addition to the Standard ToR:**

- i. As proposed, baseline data three seasons shall be collected for all environmental parameters. Groundwater samples shall also be collected from the villages located within 10 km.
- ii. The project site is located in Chhattisgarh. However, the project is located near the inter-state boundary of Chhattisgarh and Odisha. The Public Hearing shall be conducted by covering all villages within 10 km radius including villages in Odisha. State Pollution Control Board, Odisha shall also be involved for ensuring the participation of villages in Odisha.
- iii. As agreed, no additional ash pond is allowed.
- iv. As proposed, air cooled condenser systems shall be planned to reduce water requirement from 4800 m<sup>3</sup>/hr to 1600 m<sup>3</sup>/hr.
- v. Air Quality Modelling shall be carried out considering the stack heights of the proposed power project and existing units of power plants for prediction of Ground Level Concentrations.
- vi. As per the Revised Tariff Policy notified by Ministry of Power vide dated 28.01.2016, project proponent shall explore the use of treated sewage water from the Sewage Treatment Plant of Municipality/ local bodies/ similar organization

located within 50 km radius of the proposed power project to minimize the water drawl from surface water bodies.

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**(20.7) 2x660 MW Super-Critical Coal based Meja Thermal Power Plant near Kohadar, Bhagdeva & Mai Kalam Villages, Taluk Meja, Distt. Allahabad, Uttar Pradesh by M/s Meja Urja Nigam Pvt. Ltd.- reg.- Amendment in EC. (File No: J-13012/03/2008-IA.II(T) & Online no: IA/UP/THE/52631/2011).**

(20.7.1) Project Proponent submitted online application on 23.07.2018 for temporary permission for transportation of coal with quantity of 10 Lakh Metric Tons by road up to 20.07.2018.

(20.7.2) The Environmental Clearance for 2x660 MW Super Critical above mentioned project has been issued vide Ministry's letter dated 10.01.2011. It has been noted that the validity of EC was five years, i.e. till 09.01.2016. However, as per new EIA amendment notification dated 14.09.2016, the EC is valid for seven years. Accordingly, the validity of the said EC is assumed as seven years, i.e till 09.01.2018. The temporary permission for a period of one year for transportation of 2 Lakh Tons of coal by road or till the commissioning of railway siding whichever is earlier has been issued vide Ministry's letter dated 21.07.2017. Further, the validity of Environmental Clearance dated 10.01.2011 has been extended for further period of one year, i.e. till 09.01.2019. Subsequently, Sub-committee of the EAC conducted the site visit on 25.5.2018 and made certain observations. Site visit report has been placed before EAC in its meeting held on 25.05.2018 and stated that till the satisfactory submission of the action plan and details sought in the Sub-committee site visit, the project may be deferred. Accordingly, Ministry vide letter dated 28.06.2018 requested Project Proponent to submit the action plan for the observations of the sub-committee. Action plan has been submitted by the Project Proponent on 23.07.2018

(20.7.3) Project Proponent has now requested for transportation of 10 Lakhs Metric Tons of coal by road for a period of one year till 20.07.2019. Project Proponent along EIA Consultant M/s Min Mec Consultancy Pvt. Ltd. has made the presentation and inter alia submitted the following information:

- i. The coal requirement is to be met from South Eastern Coalfields Ltd. (SECL). Although the project is in advanced stage of construction, commissioning of Railway siding of the project has been delayed due to land acquisition.
- ii. The railway siding is 26 km long track off from Meja & Unchdih Railway stations of North Central Railways up to plant premises. The work on construction of Railway siding is in full swing (in one of the loop viz. Unchdih loop) and the same is expected to be commissioned partly by August, 2018 and completion by December, 2018. The other loop viz. Meja Road loop is expected to be commissioned by August, 2019.
- iii. Unit-1 (660 MW) is synchronised on 31.03.2018. The coal is required for trial operations, COD and operation of the Unit-1 after COD scheduled from August, 2018.
- iv. To start trial operations, COD and operation of Unit-1 after COD, it is proposed to bring coal from SECL to Naini Railway yard and Iradatganj Railway station Allahabad- Mughal Sarai section through railways and from Naini yard and



Iradatganj Railway station to Meja Power Project by road through trucks/tippers/dumpers to augment the supplies.

Route No.	Via	Length	To and fro length	Number of trips (To and fro) 20 Ton trucks	Remarks
From Naini Railway Yard to Meja TPP (3480 MT/day)					
Route-1	Naini-Ghurpur-Karchana-Kohdar	52.1 km	101 km	348 trips	<ul style="list-style-type: none"> <li>➤ About 25 km of road from near Ramsagar to Gauhani Village is NH 30.</li> <li>➤ Road from Naini yard to NH-30 via FCI road is a PWD road.</li> <li>➤ 12 hrs. only on all the three routes</li> </ul>
Route-2	Naini-Rampur-Karchana-Kohdar	50.4 km	101 km		<ul style="list-style-type: none"> <li>➤ About 19 km of road from Naini to Pachdevra is NH-35 (Allahabad Mirzapur Highway)</li> <li>➤ Rest of the road via Karchana and Kohdar is PWD road.</li> <li>➤ “No entry” timings from 9 AM to 9 PM is applicable on this stretch from Naini to Pachdevra.</li> </ul>
Route-3	Naini-Rampur-Meja Road-Kohdar Road	59.7 km	120 km		<ul style="list-style-type: none"> <li>➤ About 34 km of the route from Naini to Panti village is NH-35. Rest of the road stretch till Plant via Kohdar is PWD road.</li> <li>➤ “No Entry” timing from 9 AM to 9 PM is applicable on this route from</li> </ul>

					Naini till Panti village.
From Iradatganj Railway siding to Meja TPP (1740 MT/day)					
Route-4	Ghurpur-Karchana-Kohdar	41.1 km	82 km	174 trips	➤ About 4 km of road from near Iradatganj railway siding to Gauhani Village is a part of NH-30. While rest of the route via Karchana to plant is PWD road.
Total trips and quantity of coal				522 Trips	5,220 MT/day

v. Summary of carrying capacity calculation for Road transportation is as below:

	% Utilised (Max. Capacity)			
	Current in 2018	In future after start of transportation of 10 LTPA	Resultant future (after 1 year)	Increment
Min. Urban	28.2	32.6	33.2	0.6
Max. Urban	206.3	206.9	211.0	4.1
Min. Rural	20.8	23.0	23.4	0.4
Maximum Rural	72.1	77.7	79.1	1.4

- vi. The carrying capacity is getting exceeded at Rampur, which is a common point for both Route-2 and Route-3. To understand this, an analysis of the traffic volume has been carried out on hourly basis. It is found that the transportation will take place during 9 PM to 9 AM. Of these 12 hours, in 11 hours the existing traffic is well within the carrying capacity. The carrying capacity is exceeded only during 8:00-9:00 AM due to existing traffic. Thus, addition of coal trucks will further increase the traffic volume. As it is not possible for MUNPL to reduce existing traffic (except for its own coal trucks), it is recommended that coal trucks should not ply during 8:00-9:00 AM on this road section. It may be noted that the road is under widening to 18 m and after widening, the road will have sufficient carrying capacity to support the existing and projected traffic volume.
- vii. It can be seen from the above table that the current traffic volume and the additional traffic volume on the roads passing through Urban areas along the transportation route will vary between 33.2% to 211.0% (before widening) and 86.2% (after widening) of the maximum capacity of the road. Thus, the present road width at Census Points 1, 5 and 6 are sufficient for supporting the present as well as the additional traffic. It may be noted, road is under widening to 18 m at Census point 2. After widening, the road will have sufficient carrying capacity to support the existing traffic as well as projected traffic volume.
- viii. In case of rural area, present road widths at all the locations is sufficient to carry existing traffic volume as well as additional traffic volume in future, even after 1

year. The percentage utilization even after 1 year will be vary between 23.4% to 79.1% of the maximum carrying capacity of the road.

- ix. The concentrations of SO<sub>2</sub> and NO<sub>2</sub> are low compared to the 80 µg/m<sup>3</sup> NAAQS permissible limit for residential, rural and other areas. The concentrations of PM<sub>10</sub> and PM<sub>2.5</sub> are within limits at three locations as per the National Ambient Air Quality Standard. While PM<sub>10</sub> and PM<sub>2.5</sub> are found beyond the permissible limit at three locations namely, near Meja Power Plant, Rampur area and Naini area.
- x. The ambient noise level, only at the two locations monitored namely, Project site and Ghurpur are within the prescribed standards for industrial and residential category. While at four other location i.e. near India Hotel in Naini, Kohdar, Rampur and Badhava village, the noise level was found beyond the limits. The existing noise level in Naini and Badhava village is already exceeding the prescribed limits. The contribution to the existing noise level in the area due to proposed movement of additional trucks will be of very small value.
- xi. There are about 48 villages lying within 100 m on both sides of the road, along its entire length (Route Nos. 1, 2 and 3).

(20.7.4) Committee after detailed deliberations, **recommended for grant of temporary permission for transportation of 5,220 Metric Tons per day till 31.03.2019 w.e.f. 21.07.2017.**

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**(20.8) 2x800 MW Uppur Supercritical Thermal Power Plant and CRZ Clearance of the foreshore facilities (cooling water intake and outfall structures), at Village Uppur, Valamavoor & Thiruppalaikudi, Tehsil Tiruvadanai, District Ramanathapuram, Tamil Nadu by M/s TANGEDCO- reg. EC amendment (F.No. J-13012/01/2012-IA II (T) & Proposal No: IA/TN/THE/10259/2011).**

(20.8.1) Project Proponent applied for amendment in EC on 13.08.2018. Project Proponent has made the presentation inter-alia submitted the following information:

- i. The Environmental Clearance for establishing 2x800 MW Uppur Supercritical Thermal Power Project in Villages Uppur, Valamavoor & Thiruppalaikudi, Tehsil Tiruvadanai, District Ramanathapuram, Tamil Nadu in an area of 1013 acres has been accorded vide Ministry's letter dated 18.05.2016 in favour of M/s Tamil Nadu Generation & Distribution Corporation Ltd.
- ii. Specific condition in the EC letter dated 18.05.2016 has been stipulated that no water body shall be diverted while setting up of the power plant. The condition is reproduced as below:

Specific Condition No.xliv: *"No water bodies including natural drainage system in the area shall be disturbed due to activities associated with the setting up/operation of the power plant"*.

- iii. The issue of surplus water channels passing through the project area has been discussed in the Expert Appraisal Committee (EAC) meetings held during 25-26<sup>th</sup> June, 2015 and 29<sup>th</sup> February-1<sup>st</sup> March, 2016. The Hydro-geological study report prepared by Anna University has been submitted to the Ministry where in it stated that channels from the water tanks to the Sea will get disturbed due to proposed project. Accordingly, it is proposed to desilt and deepen the nearby tanks so that water received from the water shed is stored in the tanks. Further,

it has been proposed by the project proponent to connect the Naganendhal tank and Valamavur tank by constructing a canal of 2.2 km length & 6 m wide so that excess water can be diverted to Periyar River on the Southern side of the project boundary.

- iv. EAC in its meeting held during 25-26<sup>th</sup> June, 2015 sought project proponent to submit the details as *“Diversion of existing nallahs shall be done in such a way that it shall not dry up the creeks and it shall be ensured that water flows perennially in the creeks so as to preserve the mangroves. Anna University, who has conducted the hydro-geological study, shall present the same in the next meeting. 29<sup>th</sup> February-1<sup>st</sup> March, 2016”*.
- v. Subsequent to the observations of the EAC during 25-26<sup>th</sup> June, 2015, Project Proponent has proposed to re-align the canal which will take detour along the southern boundary of the project and meet the creek on the eastern side of the project site where it was originally draining into the Bay Bengal when the project was not envisaged. Accordingly, the drainage of surplus water from water tanks (Naganathal and Valamavur) and the health of the creek where the channel was originally meeting for discharge in to the Bay of Bengal has been ensured by proposing a detour channel. EAC in its meeting held during 29<sup>th</sup> February-1<sup>st</sup> March, 2016 deliberated the issue and accordingly stipulated the following condition.  
*“The flow of fresh water into the creek shall be monitored to study the impact on water availability for the mangroves. In case of adverse impact, mitigative measures shall be undertaken.”*
- vi. However, the diversion of the water body has not been reflected in the Environmental Clearance.
- vii. A case viz. Writ Petition No. 33821 of 2017 in the matter of Anaithu Vivasayigal Paadhukappu Nala Sangam vs of State of Tamil Nadu & Ors. Has been filed before the Hon’ble High Court of Madras, Chennai Bench regarding not to divert the natural water body from the project site as it is mandatory condition in the Environmental Clearance.
- viii. The Ministry’s Southern Regional Office has been requested to submit the factual report based on the site visit. Accordingly, Regional Office conducted the site visit on 19.07.2018 and submitted the report on 23.07.2018. As per the site visit report, the project area has been reduced from 1013 acres to 995.16 acres out of which 227.36 acres is Poromboke land, 499.272 acres is Patta Land (Dry) and 268.499 acres is Patta Land (Wet) falling the Villages Thiruppalaikudi, Valamavoor, Uppur. The Survey Nos. 110, 114, 116 and 146 admeasuring the area of 74.40 ha in Uppur Village which are part of the project are classified as ‘Marukal’ as per revenue records, i.e. pathway for surplus water outlet.
- ix. The site visit report stated that there are about 37 water storage tanks located on the upstream of Uppur Thermal Power Plant site. Out of 37 tanks, 2 tanks namely Naganathal and Valamavur tanks share their boundary with the Uppur Thermal Power Plant. Surplus water from Naganathal tank reaches Valamavur tank. Further, the surplus water from Valamavur tank will join the Bay of Bengal by crossing the portion of the Power Project site through the Survey Nos.110, 114, 116 and 146 of Uppur Village. Project Proponent is yet to execute the diversion of the surplus of water through detour canal.

- x. Regional Office reported that there is no water present in both Naganathal and Valamavur tanks during the inspection. Further, RO reported that as per the revenue records, the excess water from Valamavur tank crossing the portion of project site is not being used for agriculture related activities and directly drains in to the Sea.

(20.8.2) The committee noted that the issue of diversion water bodies from the project site and re-aligning the artificial channel in such a way that it maintains the water flows perennially to preserve mangroves in the creeks has already been discussed in the EAC in its meeting held during 25-26<sup>th</sup> June, 2015. Subsequently, the Hydro-geological study report prepared by Anna University along with re-diversion of the artificial canal as suggested by EAC has been submitted to the Ministry.

(20.8.3) **Committee after detailed deliberations, recommended for amendment of EC condition no.xliv as follows:**

*“No water bodies including natural drainage system in the area shall be disturbed due to activities associated with the setting up/operation of the power plant”.*

Shall be substituted as

*“Artificial canal shall be constructed to divert the surplus water from the Nagananthal and Valamavur Tanks (as it was originally flowing through the project site) across the southern boundary of the project (partly crossing through small strip of the project) and shall meet the creek on the Southern side of the project where it was originally discharging into the creek to maintain the water flows to preserve mangroves.”*

(20.8.4) The following additional condition shall be imposed:

- (i) Revised emission standards as per the Ministry’s notification dated 07.12.2015 and subsequent amendments notified from time to time shall be complied. In case, plant is ready for commissioning and not meeting revised emission norms, operations shall be stopped unless there is an extension given through a specific direction by MoEFCC/CPCB or amendment in notification issued.
- (ii) As per the Revised Tariff Policy notified by Ministry of Power vide dated 28.01.2016, project proponent shall explore the use of treated sewage water from the Sewage Treatment Plant of Municipality/ local bodies/ similar organization located within 50 km radius of the proposed power project to minimize the water drawl from surface water bodies.

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**(20.9) 2x300 MW Coal Based TPP at villages Bhengari, Nawpara, Katangih and Khokhrama, Ghargoda Tehsil, Raigarh District, Chhattisgarh by M/s TRN Energy Pvt. Ltd.- reg. amendment in EC.  
(F.No. J-13012/44/2009-IA.II (T) & Proposal No:IA/CG/THE/20427/2011).**

(20.9.1) Project Proponent applied for amendment in EC on 14.03.2018 for transportation of coal by road. The proposal was earlier placed before EAC in its 16<sup>th</sup> and 17<sup>th</sup> meetings held on 19.04.2018 and 25.5.2018. As the Project Proponent did not attend the meeting, EAC has deferred the project in both the meetings. The proposal has been again placed in the present meeting. However, Project Proponent did not attend the meeting for the third time. **Accordingly, the proposal is deferred.**

**(20.9.2) As the proposal is listed thrice before EAC and there is no communication received from the PP, Committee recommended for returning the proposal with a suggestion that they may submit the proposal afresh as and when PP is ready. Now, the proposal will be delisted from the pendency list of the Ministry.**

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

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**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.
- xxxii) 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.
- xxxiii) 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.
- xxxiiii) 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.
- xxxv) 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.
- xxxvi) 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.
- xxxvii) 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.
- xxxviii) 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 PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub>, NO<sub>x</sub>, 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.
- xlii) Radio activity and heavy metal contents of coal to be sourced shall be examined and submitted along with laboratory reports.
- xliii) Fuel analysis shall be provided. Details of auxiliary fuel, if any, including its quantity, quality, storage etc should also be furnished.
- xliv) 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
- xlv) 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.
- xlvi) 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.
- xlvii) 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.

- xlviii) 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.
- xlix) 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 CO<sub>2</sub> 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.

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**Specific Conditions related to Thermal Power Projects:**

- (i) Vision document specifying prospective plan for the site shall be formulated and submitted to the Regional Office of the Ministry within **six months**.
- (ii) Harnessing solar power within the premises of the plant particularly at available roof tops shall be carried out and status of implementation including actual generation of solar power shall be submitted along with half yearly monitoring report.
- (iii) A long term study of radio activity and heavy metals contents on coal to be used shall be carried out through a reputed institute and results thereof analyzed every two year and reported along with monitoring reports. Thereafter mechanism for an in-built continuous monitoring for radio activity and heavy metals in coal and fly ash (including bottom ash) shall be put in place.
- (iv) Online continuous monitoring system for stack emission, ambient air and effluent shall be installed.
- (v) High Efficiency Electrostatic Precipitators (ESPs) shall be installed to ensure that particulate emission does not exceed 30 mg/Nm<sup>3</sup> or as would be notified by the Ministry, whichever is stringent. Adequate dust extraction system such as cyclones/bag filters and water spray system in dusty areas such as in coal handling and ash handling points, transfer areas and other vulnerable dusty areas shall be provided along with an environment friendly sludge disposal system.
- (vi) Adequate dust extraction system such as cyclones/ bag filters and water spray system in dusty areas such as in coal handling and ash handling points, transfer areas and other vulnerable dusty areas shall be provided.
- (vii) Monitoring of surface water quantity and quality shall also be regularly conducted and records maintained. The monitored data shall be submitted to the Ministry regularly. Further, monitoring points shall be located between the plant and drainage in the direction of flow of ground water and records maintained. Monitoring for heavy metals in ground water shall also be undertaken and results/findings submitted along with half yearly monitoring report.
- (viii) A well designed rain water harvesting system shall be put in place within six months, which shall comprise of rain water collection from the built up and open area in the plant premises and detailed record kept of the quantity of water harvested every year and its use.
- (ix) No water bodies including natural drainage system in the area shall be disturbed due to activities associated with the setting up/operation of the power plant.
- (x) Additional soil for leveling of the proposed site shall be generated within the sites (to the extent possible) so that natural drainage system of the area is protected and improved.
- (xi) Fly ash shall be collected in dry form and storage facility (silos) shall be provided. Mercury and other heavy metals (As, Hg, Cr, Pb etc.) shall be monitored in the bottom ash. No ash shall be disposed off in low lying area.
- (xii) No mine void filling will be undertaken as an option for ash utilization without adequate lining of mine with suitable media such that no leachate shall take place at any point of time. In case, the option of mine void filling is to be adopted, prior detailed study of soil characteristics of the mine area shall be undertaken

- from an institute of repute and adequate clay lining shall be ascertained by the State Pollution Control Board and implementation done in close co-ordination with the State Pollution Control Board.
- (xiii) Fugitive emission of fly ash (dry or wet) shall be controlled such that no agricultural or non-agricultural land is affected. Damage to any land shall be mitigated and suitable compensation provided in consultation with the local Panchayat.
  - (xiv) Green Belt consisting of three tiers of plantations of native species all around plant and at least 50 m width shall be raised. Wherever 50 m width is not feasible a 20 m width shall be raised and adequate justification shall be submitted to the Ministry. Tree density shall not be less than 2500 per ha with survival rate not less than 80 %.
  - (xv) Green belt shall also be developed around the Ash Pond over and above the Green Belt around the plant boundary.
  - (xvi) The project proponent shall formulate a well laid Corporate Environment Policy and identify and designate responsible officers at all levels of its hierarchy for ensuring adherence to the policy and compliance with the conditions stipulated in this clearance letter and other applicable environmental laws and regulations.
  - (xvii) CSR schemes identified based on need based assessment shall be implemented in consultation with the village Panchayat and the District Administration starting from the development of project itself. As part of CSR prior identification of local employable youth and eventual employment in the project after imparting relevant training shall be also undertaken. Company shall provide separate budget for community development activities and income generating programmes.
  - (xviii) For proper and periodic monitoring of CSR activities, a CSR committee or a Social Audit committee or a suitable credible external agency shall be appointed. CSR activities shall also be evaluated by an independent external agency. This evaluation shall be both concurrent and final.

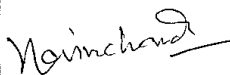
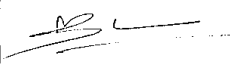
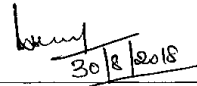

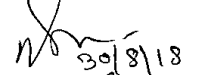
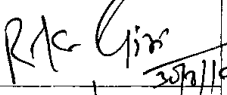
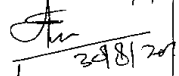
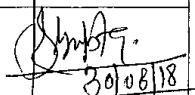
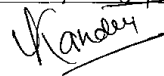
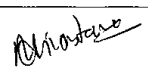

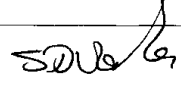
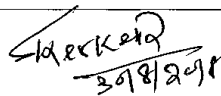
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LIST OF MEMBERS(Attendance Sheet)

**20<sup>th</sup> EXPERT APPRAISAL COMMITTEE MEETING (Thermal)**

DATE & TIME : 30<sup>th</sup> August, 2018, 10:00 AM

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

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

9/11/2018

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Subject: **MoM of August month**

Date: 09/08/18 04:52 PM

To: "Dr S. Kerketta" <s.kerketta66@gov.in>,  
"Dr S. Kerketta" <s.kerketta66@nic.in>,  
"Dr S. Kerketta" <sunamani1466@gmail.com>,  
"Dr S. Kerketta" <suna1466@rediffmail.com>,  
"N. SUBRAHMANYAM" <n.subrahmanyam@nic.in>,  
"N. SUBRAHMANYAM" <n.subrahmanyam@gov.in>

From: navin chandra <navinchandrarr1@yahoo.com>

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08/08/2018

Dear Dr. Kerketta,

I have gone through the Minutes of the EAC Meeting of the Thermal sector held on 30th August, 2018. The minutes are in order and can be uploaded on the web site of the MoEF&CC.

Regards,

(NAVIN CHANDRA)

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Dr. Navin Chandra,  
Director General  
M P Council of Science and Technology (MPCST),  
Vigyan Bhawan, Nehru Nagar, Bhopal - 462003 (M.P.) India  
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