

MINUTES OF THE 37th MEETING OF THE RE-CONSTITUTED EXPERT APPRAISAL COMMITTEE (EAC) ON ENVIRONMENTAL IMPACT ASSESSMENT (EIA) OF THERMAL POWER PROJECTS HELD DURING 23rd January 2020.

The 37th Meeting of the re-constituted EAC (Thermal Power) was held on 23rd January 2020 in the Ministry of Environment, Forest & Climate Change at Teesta Meeting Hall, First Floor, Vayu Wing, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi under the Chairmanship of Dr. Navin Chandra. The following members were present:

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

Dr. Sharachchandra Lele, Dr.(Mrs.) Manjari Srivastava, Dr. Gururaj P Kundargi could not be present due to pre-occupation.

Item No.37.0: CONFIRMATION OF THE MINUTES OF THE 37th EAC MEETING.

The Minutes of the 36th EAC (Thermal Power) meeting held on 04.12.2019 were confirmed in the presence of Members present in the meeting.

Item No. 37.0: CONSIDERATION OF PROJECTS

(37.1) Regularization of Environmental Clearances of 2×21MW Open Cycle Gas Based Thermal Power Project at Village – Baramura, Tehsil – Hawaibari, District - Khowai, Tripura by M/s Tripura Power Generation Ltd. -reg. ToR. (F.No. J-13012/01/2020-IA.I(T)& Proposal No. IA/TR/THE/125623/2019).

(37.1.1) Project Proponent has submitted the online application on 28.11.2019 for grant of ToR for regularisation of 2x21 MW Gas based Power Plant in Khowai District of Tripura which is in operation.

(37.1.2) Project Proponent along with Environmental Consultant M/s MITCON Consultancy and Engineering Services Ltd., Pune informed that the following units were commissioned without prior Environmental Clearance.

Unit No.	Capacity	Date of Commissioning	Details of EC	Project Cost (In Rs.)	Present Status
1	5 MW	1986	Environmental Clearance granted for setting of 1 X 5 MW gas Thermal Station at Baramura vide no. 25/36/84/EN-2 dated	Rs.28.32 Crores	All 3 units decommissioned in 2002.
2	5 MW	1986			
3	5 MW	1986			

			31/07/1986		
4	21 MW	27.11.2002	No EC required as per EIA Notification 1994. Hence, not taken.	Rs.95.36 Crores	Operational
5	21 WM	3.8.2010	EC was not obtained which is under violation.	Rs.80.66 Crores	Operational

(37.1.3) The project of 2x21 MW Gas based Power Plant is Category-B project and dealt by SEIAA. In case, SEIAA/SEAC is not functional, it can be dealt by the Ministry. It was informed that SEIAA/SEAC are functional at present. Further, Category-B project is considered as Category-B if the General Conditions are applicable. Project Proponent informed that the power plant was set up in 65.77 acres which was part of Reserved forest which was diverted for the said purpose under FC Act, 1980. Proponent informed that there are no Wildlife Sanctuaries/National Parks, or any other protected areas, International/Inter-state boundaries within 10 km radius of the power plant. Accordingly, the General Condition is not applicable.

(37.1.4) Project Proponent informed that Unit:1-4 are not under violation. However, Proponent admitted that Unit-5 (1x21 MW) is operational without prior Environmental Clearance and is to be considered under violation.

(37.1.5) Committee noted that since the project is category-B project and Member Secretary informed that SEIAAs were empowered for dealing violations under Ministry's Notification SO No. 637 (E) dated 28.2.2014. Further, Member Secretary informed that Ministry vide OM dated 29.9.2019 also confirms the same stating that SEIAAs have been delegated with the power to deal with violations by issuing directions. Committee noted that the Unit-5 (21 MW) is operating without prior EC and is to be considered under violation category. Committee advised Project Proponent that the operations of Unit-5 (21 MW) have to be immediately be stopped as it is running without valid Environmental Clearance. Otherwise, Proponent may have to face credible action under E (P) Act, 1986.

(37.1.6) Committee after detailed deliberations, **recommended that the proposal may be dealt by SEIAA as it is Category-B project. Further, Committee also suggested that Member Secretary may directly forward the application to SEIAA in case a provision is available at PARIVESH. In absence of provision to transfer the proposal, Proponent may directly approach SEIAA for dealing with said proposal.**

(37.2) Expansion of Supercritical Coal Based Kothagudem Thermal Power Station by Addition of 800 MW as Stage-VII at Village & Tehsil Paloncha, Distt. Khammam, Telangana by M/s Telangana State Power Generation Corporation Ltd. (TSGENCO).- reg. amendment in EC. (F.No. J-13012/24/2012-IA.II (T) & Proposal No. A/TG/THE/24790/2012)

(37.2.1) Project Proponent vide online application dated 30.12.2019 requested for amendment in EC dated 16.7.2015 to extend the operations of existing units (Units-1,2,4,5& 7: 3x60 MW & 2x120 MW) for further period of three months, i.e. till 31.3.2020.

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

- i. The Environmental Clearance was accorded for 800 MW Expansion Power Project (Stage-VII) vide Ministry's letter dated 16.7.2015.
- ii. The specific condition No.ii of the EC dated 16.7.2015 is mentioned as below:
"As committed, all the 4x60 MW and 4x120 MW units of Stages-I-IV shall be phased out latest by the end of 2019."
- iii. The details of existing units and present project are provided as below:

Stage	Unit No.	Capacity (MW)	Date of Commissioning	Present Status
I	1	60 MW	4.7.1966	Operational
	2	60 MW	27.11.1966	Operational
II	3	60 MW	27.5.1966	Phased out on 25.05.2017
	4	60 MW	8.7.1967	Operational
III	5	120 MW	13.8.1974	Operational
	6	120 MW	19.12.1974	Phased out on 03.01.2019
IV	7	120 MW	10.3.1977	Operational
	8	120 MW	10.1.1978	Phased out on 14.02.2019
V	9	250 MW	1.10.1997	Operational
	10	250 MW	1.9.1998	Operational
VI	11	500 MW	23.10.2011	Operational
VII	12	800 MW	26.12.2018	Stopped since 28.11.2019 due to damage of Strainer in Turbine.

- iv. TSGENCO board has accorded approval in 39th Board meeting held on 15.06.2019 for phasing out the remaining units 1,2,4,5 & 7 (3X60 MW & 2X120 MW) of Kothagudem TPS (O&M) by the end of December, 2019 and accordingly, it was planned to close these units by 31.12.2019.
- v. Meanwhile, the Unit – 12 (Stage – VII: 1X800 MW) of Kothagudem TPS was tripped on 28.11.2019 with higher Turbine vibrations. M/s. BHEL is yet to carry out Performance Guarantee (PG) test and hand over the unit to TSGENCO. As per the request of M/s. BHEL, this unit has been released to shut down for 30 days from 28.11.2019 for carrying out annual inspection works.
- vi. Upon inspection by M/s BHEL, the following were observed:
 - a. The M. S. Strainer (right side) was damaged.
 - b. Three (3) Nos Thermowells located along the M.S. line were found missing. Out of three (3), only two (2) Nos. thermowells found at overload and M.S. pipe lines connected to HP Turbine.
 - c. During the inspection of HP turbine by Boroscope, it was observed that third Thermowell missing was found inside the HP turbine 1st stage chamber.
- vii. M/s. BHEL, Haridwar opined that, the extent of damage caused to the HP turbine by the impact of the Thermowell and Strainer mesh material can be analysed/concluded and rectified only by opening the HP turbine inner casing

- completely. It was also ascertained that, the job repair work is tedious one and requires approximately 60-90 days for rectification.
- viii. There are about 25 lakh agricultural pump sets in Telangana state and the source is only ground water for cultivation. Kaleshwaram Lift Irrigation pumping scheme requires 3000 MW power supply during this season which needs regular power supply. The shutdown of 800 MW unit during this Rabi season will put the agriculture sector to huge hardship. At present, the power demand in Telangana state is increasing rapidly day by day due to Agriculture and Lift Irrigation loads.
 - ix. Accordingly, running of the units 1,2,4,5 & 7 of KTPS (O&M) essentially required till completion of rectification works of Unit - 12 (1X800 MW) of KTPS - VII stage and stabilization of Unit is achieved to meet the power demand for the Agriculture and Lift Irrigation loads in Telangana state.
 - x. Total time required to keep the Unit - 12 (1X800 MW) of KTPS, Stage - VII in service will be approximately three (3) months i.e. upto 31.03.2020. The units 1, 2, 4, 5 & 7 of KTPS (O&M) will be closed immediately, after the Unit -12 (1X800 MW) of KTPS, Stage - VII comes into service.
 - xi. Further, After considering the submissions made by M/s TSGENCO, the Central Electricity Authority vide letter dated 21.1.2020 recommended for extension of units (1,2,4,5 & 7: 3x60 MW & 2x120 MW) till completion of rectification works of Unit-12 (1x800 MW) or up to 31.3.2020 whichever is earlier.

(37.2.3) Committee noted that as per the conditions specified in the EC, project proponent has shutdown the capacity of 300 MW (Unit Nos.3: 60 MW, 6: 120 MW, 8: 120 MW) out of total capacity of 720 MW. The remaining units 3x60 MW and 2x120 MW are planned to shutdown by December, 2019 as per the commitment. However, due to problems in turbine of 800 MW, the unit was not in operation since November, 2019 which is expected to take another three months to complete repair works and start operations. Meanwhile, the proponent requested to run the existing units so that the power demand in the State could be met. Further, CEA vide letter dated 21.1.2020 also recommended for extension up to 31.3.2020. Committee noted that it has no objection to extend the existing units for three months as long as it is complying with the applicable emission standards as per the S.O.3305 (E) vide dated 7.12.2015, viz. PM-100 mg/Nm³, SO₂: 600 mg/Nm³ & NO_x: 600 mg/Nm³.

(37.2.4) **Committee after detailed deliberations, recommended for amendment of the Specific condition No.4A(ii) of the EC dated 16.7.2015** subject to following additional conditions:

- i. The Units Nos.3: 60 MW, 6: 120 MW, & 8: 120 MW were phased out on 25.05.2017, 03.01.2019 and 14.02.2019 respectively. Remaining Units (1, 2, 4 5 & 7: 3x60 MW and 2x120 MW) shall be phased out by 31.3.2020.
- ii. During the interim period the above units shall comply with the emission norms vide Ministry's Notification S.O.3305 (E) dated 7.12.2015, viz. PM-100 mg/Nm³, SO₂: 600 mg/Nm³ & NO_x: 600 mg/Nm³.

(37.3) Expansion of Obra TPP by addition of 2x660 MW at Obra, Tehsil Robertsganj, District Sonbhadra, Uttar Pradesh by M/s Uttar Pradesh Rajya Vidyut Utpadan Nigam Ltd.- reg. EC amendment for additional ash dyke.

(F.No.J-13012/144/2007-IA.II(T) & Proposal No.IA/UP/THE/134383/2019)

(37.3.1) Project Proponent has submitted online application on 31.12.2019 for amendment in EC for permission to construct new ash dyke.

(37.3.2) Project Proponent along with M/s NTPC Ltd. (Engineering Consultant) has made the presentation and inter-alia submitted the following information:

- i. The Environmental Clearance for 2x660 MW (Obra-C) Thermal Power Project (Expansion) vide Ministry's letter dated 21.6.2016.
- ii. Obra-C Power project was proposed within existing TPP land and no additional land was required. Ash generated from Obra-C project shall be disposed of in existing Ash pond at Chakari having area approx. 72 Ha.
- iii. The implementation of Obra 'C' was delayed and disposal of ash from existing units of Obra 'A' and Obra 'B' continued in the above Ash pond. As a result Ash pond at Chakari is about to fill completely. First raising of 5 m height of Chakari Ash Pond is in progress, which will cater to ash disposal of Obra 'B' for about one year. Second and Third Raisings of 4.5 m each are proposed in future, which will cater the requirement of Obra B & C for about 2 years.
- iv. The current proposal is for amendment in Para 4 of the EC of Obra-C TPP regarding construction of new ash dyke by acquiring additional 400.41 acres (162.04 Ha) of land near village Guroor.
- v. The status of existing and proposed projects are mentioned as below:

Name of Project	Installed Capacity	Capacity under operation	Capacity under Construction	Remarks
Obra-A	5x50 MW + 3x100 MW (1967-71)	-	-	All units shutdown in Compliance of EC condition No.A(ii)
Obra-B	5x200 MW	5x200 MW	-	
Obra-C	-	-	2x660 MW	
Total	1550 MW	1000 MW	1320 MW	

- vi. The status of existing and proposed ash ponds is mentioned below:

Sl.No.	Location	Area	Status
1	Obra Village	346 acres	Exhausted, proposed to be restored by plantations.
2	Chakari Village	175 acres	Under operation.
3	Chanchalia-Panari Tola-Guroor Village	400.41 acres (162.04 ha) Private Land- 100.14 ha Forest Land – 39.5 ha	Proposed to be acquired.

		Gram Samaj Land – 22.4 ha	
		Total – 162.04 ha	

- vii. Ash utilization at Obra TPP is very low because of its remote geographical location, cluster of power plants in region, abundant availability of ash and low demand of ash in the vicinity.
- viii. The reasons for not achieving 100% utilization from existing 5x200 MW Obra-B TPS as per MOEF&CC Notification are a) No expansion in production capacities of cement industries nearby project; b) No major construction activities like construction of highways etc.; c) Limited use of flyash for ash brick manufacturing.
- ix. EOI received from M/s ACC Ltd. for supply of fly ash @0.8-0.9 MTPA for a period of 10 years. It is in advance stage of negotiations. The process for filling ash in nearby stone quarries has been initiated. Quarries have been identified and earmarked by District Administration (Area-8.4 Acres, Volume- 6.8 Lakh Cu.m.). However, it is facing problems due to ownership dispute of the quarries.
- x. Efforts are also underway for allotment of abandoned coalmines for ash disposal.
- xi. Government bodies like NHAI, PWD, UP State Bridge Corporation etc. have been pursued for utilization of fly ash in their construction activities. But they have not yet started using ash in the construction activities.
- xii. Several advertisements in the newspapers stating availability of ash free of cost by the project made but there was no major turn-ups. Order issued from Govt. of Uttar Pradesh for the use of ash. All efforts in this regards are being taken up, however fruitful results are taking its own time.
- xiii. First raising of 5 M height of Chakari Ash Pond is in progress, which will cater to ash disposal of Obra 'B' for about one year. Second and Third Raisings of 4.5 m each are proposed in future, which will cater the requirement of Obra B & C for about 2 years.
- xiv. Therefore, in spite of best efforts for enhancement of ash utilization, due to site-specific constraints in Singrauli Region, an additional dyke is essential for uninterrupted operation of the project.
- xv. As Obra-C is in advanced stage of construction, with 60% works completed and COD of Unit-I due in July, 2021; the land for ash dyke is urgently required.
- xvi. The proposed area is an undulated area with drainage flowing towards east surrounded by hillocks on two sides covered north-west. The river Renuka is on the eastern side of the site. The existing ash pond of 5x200 MW Obra BTSPS is on the southern side.
- xvii. Out of 162 Ha, the Ash Lagoons are proposed on 125 ha. Balance land (approx. 37 Ha towards the River) shall be used as Green Belt to maintain minimum distance 500 m from HFL of River Renuka on the eastern side of the site.
- xviii. IIT shall be engaged for design and engineering of ash pond and other allied structures.
- xix. HCSD System has been envisaged for disposal of ash. AWRS shall be provided for recycling of ash pond water, if any. HDPE lining shall be provided to prevent any leaching.

(37.3.3) Committee has also taken note that the ash pond proposed for 2x660 MW (Obra-C) Power Project is under construction and yet to start the production

and generate ash. Committee noted that the ash utilisation percentage of 5x200 MW is 11-27% in the last five years. Further, the proponent is planning for raising of existing ash dyke in three stages (5 m, 4.5 m & 4.5 m). If the dyke height is increased by 9 m, existing ash pond can cater to some ash pond for several years. Further, Proponent has initiated the ash filling in abandoned stone quarries. The Ministry has also issued recently an Office Memorandum to enable power plants to dispose ash in abandoned mines. Further, the new ash pond is proposed in the forest land. The Committee noted that fresh land for ash dyke is to be permitted only in unavoidable situations and there is no option left open for power plants.

(37.3.4) Committee after deliberations, deferred the project for seeking the following information:

- i. The details of generation of ash from existing 2x500 MW and proposed 2x660 MW power projects. The details of coal consumption, ash content and source of coal including transportation may also be furnished.
- ii. The available volume & area of existing ash ponds vis-à-vis present generation of ash. The volume availability versus generation is to be estimated based on dyke height raise and ash generation from existing & proposed projects.
- iii. The action plan for ash disposal/utilisation for the life of power plant to achieve 100% utilisation in light of directions from Hon'ble NGT in the matter of Shantanu Sharma vs UoI.
- iv. The potential of using stone quarries/abandoned coalmines nearby power plant. The use of ash in cement industries.
- v. The plan to avoid forest land, agricultural land and community lands. Further, the status of forest land proposed for ash pond is to be provided whether it is reserve forest, protected forest or village forest.

(37.4) 3x800 MW Coal based Super-Critical Thermal Power Project (Greenfield) at Village Annapurna Khamar, Taluk Kamakhyanagar, Dhenkenal District, Odisha by M/s. Odisha Thermal Power Corporation Ltd.- reg. amendment in EC.

(F.No. J-13012/43/2012-IA.II (T) & Online no. IA/OR/THE/135333/2020)

(37.4.1) Project Proponent submitted online application on 09.01.2020 for amendment in EC dated 10.12.2019.

(37.4.2) Project Proponent along with Environmental Consultants M/s Mecon Limited have made the presentation and inter-alia submitted the following information:

- i. The Environmental Clearance for 3x800 MW Super critical project was issued vide Ministry's letter dated 10.12.2019.
- ii. The total project land was originally proposed at 1902.53 acres. However, after taking into account of CEA guidelines, the area has now been reduced to 1833.927 acres. The break-up is as follows:

Facility	Land area
Main Plant	753.475 acres
Ash Pond	489.492 acres
Township	121.95 acres
R&R Colony	52 acres

Ash slurry corridor	35.76 acres
Raw water corridor	73.18 acres
Rail corridor	298.07 acres
Office complex	10 acres
Total	1833.927 acres

- iii. The cost of Environmental control measures was earlier mentioned in the EIA report as Rs.11,854.673 Crores. The EMP cost has now been revised to Rs.1522.4673 Crores.
- iv. The cost of greenbelt development was earlier mentioned in the EIA report as Rs.250 Crores which has now been revised to Rs.25 Crores.

(37.4.3) Committee noted that the estimations of environmental protection measures and greenbelt development have been revised by the project proponent now as it was wrongly estimated. Committee also noted that out of Project cost of Rs.16265.425 Crores, Rs. 11,854.673 Crores may not be the cost of EMP which was originally estimated at high cost. Further, proponent has requested for reduction of total land area which is positive impact as the use of fresh land will be minimised.

(37.4.4) Committee after detailed deliberations, **recommended for amendment in Environmental Clearance dated 10.12.2019 w.r.t. change in project area to 1833.927 acres instead of 1902.53 acres, revised EMP cost to Rs.1522.4673 Crores and cost of greenbelt development to Rs. 25 Crores.**

(37.5) **2x60 MW Imported Coal based Captive Thermal Power Plant at Village Kariajhar/Majhagawan, Rampur Naikin Taluk, Sidhi Dist., Madhya Pradesh by M/s Ultratech Cements Ltd.- reg. amendment in Environmental Clearance for change in source of coal and its transportation. (F.No.J-13012/94/2009-IA.II(T) & Proposal No.IA/MP/THE/118128/2019).**

(37.5.1) Project Proponent submitted online application on 26.09.2019 amendment in Environmental Clearance for change in source of coal and its transportation.

(37.5.2) The proposal for change in coal source and transportation was earlier considered by the EAC (Thermal) in its meeting held on 21.10.2019 and the EAC sought the following information for further consideration:

- i. Details of quantity of imported coal (Month-wise) used, mode of transportation since commissioning of the plant till date. In case of road transportation, the quantities are to be clearly specified. The details of transportation as how the imported coal is brought from Gangavaram Port is to be mentioned.
- ii. Details of operations of the power plant since commissioning and its preparedness to meet the new emission norms.
- iii. Detailed traffic impact assessment study is to be conducted.

(37.5.3) Project proponent vide their letter dated 31.12.2019 submitted the information as sought by the EAC. Accordingly, the proposal was reconsidered by the EAC in the present meeting. Project Proponent along with M/s. J.M. EnviroNet Pvt. Ltd. made the presentation inter-alia submitted the following information:

- i. The Thermal Power Plant was commissioned in 2012 by JP Associates Limited but as per the information provided by JP Associates Limited it was not operated. M/s. UltraTech Cement Limited (UTCL) took over this plant on 29th June, 2017 along with all contracts, deeds, bonds, agreements, schemes, arrangements, licenses, approvals and other instruments of whatever nature were transferred and vested in M/s. UltraTech Cement Limited by the way of scheme of arrangement approved by hon'ble National Company law Tribunal at Mumbai & Allahabad Bench on 15th February 2017 & 2nd March 2017 respectively.
- ii. Due to some conditions in Environmental Clearance the plant was remain on hold and no transportation was done till date. As per the EC dated 30th January, 2012, the mode of transportation is via rail but due to non-availability of railway siding near Sidhi Thermal Power Plant, Approx. 1000 km (from Gangavaram Port to Bela railway siding) was covered by rail and ~35 km from the Bela railway siding to CPP was covered by road. The coal requirement for the above project is 1.0 MTPA.
- iii. Adequate measures will be taken to meet the new emission norms such as:
 - a. PM: High efficiency ESP (Electrostatic Precipitator) with 6 fields has been installed to controlled the particulate emission to maintain the prescribed emissions.
 - b. SO₂: Lime dosing system has been provided for control of SO₂ emission.
 - c. NO_x: Temperature is maintained between 800 to 900 °C to maintain NO_x emission
- iv. Traffic Impact Assessment Study has been conducted. As per the EC granted by MoEF&CC, GoI, the coal transportation shall be done through rail route only. But due to delay in construction of railway siding, Company proposes to transport coal from Dhanpuri Mine of SECL (~176 km) and Bina Project Mine (Singhrauli) of NCL (~170 km) to the Power Plant site by road to meet the coal requirement.
- v. At any point of time, maximum (peak) 1.0 MTPA of coal i.e, 2740 T/Day of coal will be transported from mine pit (NCL & SECL) to plant by road.
- vi. The coal transportation is proposed to meet the demand of Sidhi Captive Cement Plant from mines of SECL & NCL using 28 tonnes capacity trucks. There would be to & fro movement of maximum 196 coal carrying trucks per day from Subsidiaries of CIL to plant premises.
- vii. The following are the routes proposed for coal transportation:

Route No.	Route	Stretches	Length & Width of Road	Type & Width of Shoulders
i.	Ultratech Captive Power plant to NCL Mine (Singrauli)	Plant gate to T point (Village - Kariyajhar)	2.3 km & 7 m	Paved & (1.5*2 = 3.0m)
		Village Kariyajhar to Village Bhargawan (Via NH 39)	~146 km & 7 m	Earthen & (1.2-2*2 = 2.4-4 m)
		Village Bhargawan to Singrauli	~27 km & 7 m	Earthen & (1.2-2*2 = 2.4-4 m)
Total length: 176 km				
ii.	Ultratech Captive Power plant to SECL Mine (Dhanpuri)	Plant gate to T point (Village - Kariyajhar)	2.3 km & 7 m	Paved & (1.5*2 = 3.0m)
		Village Kariyajhar to Sohagpur & Shahdol Intersection	~154 km & 7m	Earthen & (1.5*2 = 3 m)

		Sohagpur & Shahdol Intersection to Village Burhar	~8 km & 7 m	Paved & (1.5*2 = 3.0m)
Total length: 170 km				

The Incremental PCU/hr due to increase in traffic 98 trucks/day (to and fro: 196) is 24.48 PCU/hr. The traffic projections against existing volumes are as below:

Road	Existing Traffic (PCU/hr)	Incremental Traffic (PCU/hr)	Total traffic	Recommended service volume (PCU/hr)	Percentage Utilisation
NH-75	266	24.48	290.48	625	46%
SH-9	173	12.24	185.24	625	29%

- viii. There are 67 villages along both routes within 100 m of the road. Further, there are several protected and reserved forests along the road. The proposed routes cross Son river at three locations.
- ix. Ambient air quality has been monitored near the villages located near to the road connecting Captive Power Plant and NCL (Bina Project) and SECL (Dhanpuri Coal Mine).

Parameter	Maximum Baseline value ($\mu\text{g}/\text{Nm}^3$)	Incremental concentrations ($\mu\text{g}/\text{Nm}^3$)	Resultant concentrations ($\mu\text{g}/\text{Nm}^3$)	NAAQ Standard ($\mu\text{g}/\text{Nm}^3$)
PM ₁₀	91.23	0.4	91.63	100
SO ₂	10.8	0.86	11.66	80
NO ₂	42.3	1.29	43.59	80

- x. The following environmental protection measures shall be implemented during transportation:
- The transportation of coal will be done by road via trucks covered with tarpaulin to prevent air borne dust, blowing, dropping, leaking or otherwise escaping from the vehicle.
 - Water sprinkling will be done on top layer of coal to prevent fugitive dust emission during coal transportation.
 - During loading and unloading of the coal into trucks, the drop height of coal shall be minimized to the lowest possible height to prevent fugitive emissions.
 - Vehicle with valid Pollution Control Certificate will be used for transportation.
 - Overloading of the material will be avoided.
 - Establish a maximum speed limit or install traffic calming devices to reduce speeds to a rate that prevents off- property transport of dust entrained by vehicles.
 - Proper maintenance, oiling and greasing of vehicles will be done.

- h. Plantation of local species to be taken up along the approach road on either side will be done.
 - i. Monitoring on coal carrying trucks to ensure compliances such as covering of trucks by tarpaulin, spillage on roads, avenue plantation etc.
 - xi. It is observed that the existing road network will be adequate to accommodate the additional traffic load and complied with IRC guidelines. There will be marginal additional impact on the air quality in the transportation route due to proposed transportation.
- (37.5.4) Committee noted that incremental trucks are 98 day (196 to and fro) due to proposed transportation and the utilisation of roads is in the range of 30-46% and accordingly, Committee expressed no objection to allow coal transportation for three years. However, committee noted that the railway siding should be constructed at the power plant as the rail facilities are equally important for other raw materials and movement of cement from the complex as it has cement plant and power plant.
- (37.5.5) **Committee after detailed deliberations, recommended for amendment in EC for change in coal source from imported coal to domestic coal (NCL-Singrauli and SECL-Dhanpuri mines) subject to following additional conditions:**
- i. Coal transportation by road from NCL-Singrauli mines (176 km) and SECL-Dhanpuri mines (170 km) for a period of three years. The quantities transported from each route along with source of coal shall be submitted in the compliance reports.
 - ii. Project Proponent shall establish its own railway siding and connecting to nearest railway line for keeping the railway facilities ready for coal transportation. The physical and financial progress shall be submitted along with compliance report.
 - iii. Emissions monitoring from the flue stack of captive power plant inline with the new emission standards vide dated 7.12.2015 carried out and the results shall be submitted in comparison with standards.
 - iv. As proposed, the ash content in domestic coal (SECL/NCL mines) shall be less than 36%. No additional ash pond is permitted while permitting the switching of coal source from imported to domestic coal.
 - v. Monthly quantities of ash generation and utilisation (including type of utilisation) and mode of transportation shall be submitted along with compliance reports.

ANY OTHER ITEM WITH THE PERMISSION OF THE CHAIR

(37.6) 2x800 MW Imported Coal based Godda Thermal Power Project at Villages Motia, Patwa, Gangta and Nayabad of Godda Block and Sondiha, Petbi, Gayghat, Ranganiya and Mali villages of Poraiyahaat Block, Distt. Godda, Jharkhand by M/s Adani Power (Jharkhand) Limited- reg. amendment in Environmental Clearance.

(37.6.1) Project Proponent submitted online application on IA/JH/THE/54853/2016 dated 23.12.2019 for amendment in EC dated 31.8.2017.

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

- i. The Environmental Clearance (EC) for 2x800 MW Imported coal based Thermal Power Project proposed in District Godda, Jharkhand was issued to M/s Adani Power (Jharkhand) Ltd. vide Ministry's letter dated 31.8.2017.
- ii. The Ministry also amended the EC for change in water source from Chir River to Ganga River vide letter dated 3.9.2019.
- iii. Para 5 of EC amendment dated 03.9.2019 mentioned as below:

“Storage reservoir earlier planned in 441 acres has been reduced to 156 acres as the water drawl period has now been increased from 4 months to **6 months.**”

- iv. As per the water allocation of 36 MCM/annum made by Water Resource Dept., Govt. of Jharkhand vide letter dated 15.01.2018 stipulated that the water is to be drawn during June till December (07 months). Accordingly, water reservoir will accommodate the water drawn for seven months. Accordingly, the following change is required.

“Storage reservoir earlier planned in 441 acres has been reduced to 156 acres as the water drawl period has now been increased from 4 months to **7 months.**”

- v. Condition No.7(i) of the EC amendment dated 3.9.2019 stipulates that Stage-I forest clearance to be submitted and formal amendment to be issued after furnishing the Stage-I Clearance.

As the Stage-I Forest Clearance was accorded by the Ministry's Regional Office, Ranchi vide letter dated 28.6.2019 for diversion of 13.3293 ha for laying water pipeline from Chir River to Power plant, this condition may now be deleted.

- vi. Project Proponent vide their letter dated 16.12.2019 submitted that the said project has now been designated as Special Economic Zone (SEZ) under SEZ Act, 2005 vide Ministry of Commerce and Industry letter dated 20.8.2019 and Notification No.S.O.3327(E) dated 16.9.2019 for an area of 222.668 ha (550.23 acres). The area has been classified as Sector Specific Economic Zone for Power.
- vii. The Environmental Clearance for Power Plant was issued under Sl.1(d) of the Schedule of EIA Notification.
- viii. In view of the new classification of power plant in the SEZ, the project also requires Environmental Clearance under Sl.No.7(c): Special Economic Zone (SEZ) of the Schedule of EIA Notification, 2006. Obtaining fresh EC is a long process. As there is no change in project configuration and scope or entity even after notification of SEZ, the said EC may also be granted under SEZ.
- ix. As per the EC and its amendment, project area was 558 acres. As per the notification of Ministry of Commerce and Industry, SEZ area is 550.23 acres.

(37.6.3) Committee noted that project is exclusively meant for export of Power/electricity, and hence notified under Special Economic Zone. Proponent mentioned that the EC was issued for stand alone Thermal Power Plant. Even after notification of SEZ, it remains to be the Single Unit SEZ and there no change in the scope/configuration of the project. The differential area of 7.7

acres shall be developed with greenbelt by project proponent. Member Secretary informed that Infrastructure-1 Sector of IA Division has also recommended for giving amendment in EC for inclusion of project category under SEZ.

(37.6.4) Committee after detailed deliberations, recommended for amendment in EC regarding inclusion of SEZ, storage of water reservoir area to 7 months, deletion of condition on Forest Clearance subject to following additional condition.

- i. The area of 7.7 acres (Originally proposed: 558 acres & Notified land: 550.23 acres) shall be developed with greenbelt. Demarcation of this land with co-ordinates and progress of greenbelt is to be submitted in the compliance report.

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

Terms of Reference (TOR):

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

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

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

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

- xxxviii) One complete season site specific meteorological and AAQ data (except monsoon season) as per latest MoEF Notification shall be collected and the dates of monitoring shall be recorded. The parameters to be covered for AAQ shall include PM₁₀, PM_{2.5}, SO₂, NO_x, CO and Hg. The location of the monitoring stations should be so decided so as to take into consideration of the upwind direction, pre-dominant downwind direction, other dominant directions, habitation and sensitive receptors. There should be at least one monitoring station each in the upwind and in the pre-dominant downwind direction at a location where maximum ground level concentration is likely to occur.
- xxxix) In case of expansion project, air quality monitoring data of 104 observations a year for relevant parameters at air quality monitoring stations as identified/stipulated shall be submitted to assess for compliance of AAQ Standards (annual average as well as 24 hrs).
- xl) A list of industries existing and proposed in the study area shall be furnished.
- xli) Cumulative impacts of all sources of emissions including handling and transportation of existing and proposed projects on the environment of the area shall be assessed in detail. Details of the Model used and the input data used for modeling shall also be provided. The air quality contours should be plotted on a location map showing the location of project site, habitation nearby, sensitive receptors, if any. The windrose and isopleths should also be shown on the location map. The cumulative study should also include impacts on water, soil and socio-economics.
- 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.
- xliv) A Disaster Management Plan (DMP) along with risk assessment study including fire and explosion issues due to storage and use of fuel should be carried out. It should take into account the maximum inventory of storage at site at any point of time. The risk contours should be plotted on the plant

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

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

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

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

Standard EC Conditions for Thermal Power Sector

A. Statutory compliance:

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

B. Ash content/ mode of transportation of coal:

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

C. Air quality monitoring and Management:

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

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

D. Noise pollution and its control measures:

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

E. Human Health Environment:

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

F. Water quality monitoring and Management:

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

G. Risk Mitigation and Disaster Management:

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

H. Green belt and Biodiversity conservation:

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

I. Waste management:

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

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

J. Monitoring of compliance:

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

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

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

K. Corporate Environmental Responsibility (CER) activities:

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

L. Marine facilities:

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

M. Sea Water Intake:

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

N. Effluent Release:

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

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

O. Common to intake and effluent:

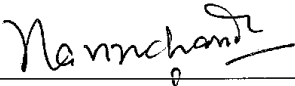
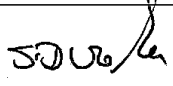

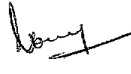
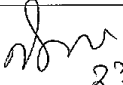
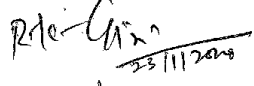
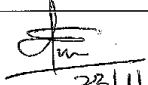
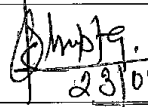
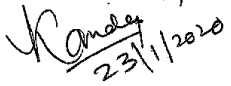
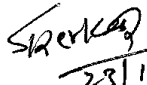
1. The pipeline shall be buried below the seabed at a depth to ensure its stability under rough sea conditions particularly during cyclone / tsunami. The depth of burial will depend on the seafloor strata but normally the top of the pipeline shall be at least 1 m below the bed level. In the surf and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

Attendance Sheet

37th EXPERT APPRAISAL COMMITTEE MEETING (Thermal)

DATE & TIME : 23rd January 2020, 10:30 AM

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

Sr.No.	Name of Member	Signature
1.	Dr. Navin Chandra Chairman	
2.	Shri Suramya D. Vora, IFS (Retd.) Member	
3.	Dr. Narmada Prasad Shukla Member	
4.	Sh. N. Mohan Karnat, IFS Member	 23/1/2020
5.	Dr. Sharachchandra Lele Member	- Abs -
6.	Sh. N.S. Mondal, CEA Member	 23/01/2020
7.	Dr. R.K. Giri, IMD Member	 23/1/2020
8.	Dr. S.K. Paliwal, CPCB Member	 23/1/2020
9.	Prof. S.K. Gupta (ISM/ IIT Dhanbad) Member	 23/01/2020
10.	Dr. Jai Krishna Pandey Member	 23/1/2020
11.	Dr. Manjari Srivastava Member	- Abs -
12.	Dr. Gururaj P Kundargi Member	- Abs -
13.	Dr. S. Kerketta Member Secretary, MoEFCC	 23/1/2020

Approval of Minutes by the Chairman-EAC

Email s.kerketta66@gov.in

Re: Minutes of 37th EAC meeting held on 23.1.2020 for Thermal Power Plants reg.

Thu, Feb 06, 2020 01:10 PM

06/02/2020

Dear Dr. Kerketta Ji,

I have gone through the Minutes of the EAC (Thermal) meeting held on 23.01.2020.

The Minutes are in order and ready for uploading on the web site of MoEF&CC, New Delhi.

Regards,

yours truly,

(NAVIN CHANDRA)

Dr. Navin Chandra,
Vice Chancellor, IES University, Bhopal
Chairman, Coal Mining & Thermal Power,
MoEF&CC, GOI, New Delhi.
Ex-Director General MPCST, Bhopal,
(Retd.) Director (Actg.), CSIR-AMPRI, Bhopal
Member, RC, CSIR-AMPRI, Bhopal.
Phone (Res.) 91-755-2454600
navinchandrarrl@yahoo.com, navinchandraampri@gmail.com

AGENDA OF 37th MEETING OF THE RE-CONSTITUTED EXPERT APPRAISAL COMMITTEE ON THERMAL POWER PROJECTS

DATE : 23rd January, 2020
TIME : 10.30 A.M. ONWARDS
VENUE : TEESTA MEETING HALL, FIRST FLOOR, VAYU WING,
 IPB,JORBAGH ROAD, NEW DELHI-110003.

ITEM	
Item No. 37.0	CONFIRMATION OF MINUTES OF 36th EAC (THERMAL) MEETING
Item No.	CONSIDERATION OF PROJECTS
37.1	Regularization of Environmental Clearances of 2×21MW Open Cycle Gas Based Thermal Power Project at Village – Baramura, Tehsil – Hawaibari, District - Khowai, Tripura by M/s Tripura Power Generation Ltd. -reg. ToR. F.No. J-13012/01/2020-IA.I(T)& Proposal No. IA/TR/THE/125623/2019.
37.2	Expansion of Supercritical Coal Based Kothagudem Thermal Power Station by Addition of 800 MW as Stage-VII at Village & Tehsil Paloncha, Distt. Khammam, Telangana by M/s Telangana State Power Generation Corporation Ltd. (TSGENCO).- reg. amendment in EC. F.No. J-13012/24/2012-IA.II (T) & Proposal No. A/TG/THE/24790/2012
37.3	Expansion of Obra TPP by addition of 2x660 MW at Obra, Tehsil Robertsganj, District Sonebhadra, Uttar Pradesh by M/s Uttar Pradesh Rajya Vidyut Utpadan Nigam Ltd.- reg. EC amendment for additional ash dyke. F.No.J-13012/144/2007-IA.II (T) & Proposal No.IA/UP/THE/134383/2019.
37.4	3x800 MW Coal based Super-Critical Thermal Power Project (Greenfield) at Village Annupurna Khamar, Taluk Kamakhyanagar, Dhenkenal District, Odisha by M/s. Odisha Thermal Power Corporation Ltd.- reg. amendment in EC. F.No. J-13012/43/2012-IA. II (T) & Online no. IA/OR/THE/135333/2020.
37.5	2x60 MW Imported Coal based Captive Thermal Power Plant at Village Kariajhar/Majhagawan, Rampur Naikin Taluk, Sidhi Dist., Madhya Pradesh by M/s Ultratech Cements Ltd.- reg. amendment in Environmental Clearance for change in source of coal and its transportation. F.No. J-13012/94/2009-IA.II(T) & Proposal No. IA/MP/THE/118128/2019.
37.6	ANY OTHER ITEM WITH THE PERMISSION OF THE CHAIR.

Note: If project documents are not submitted to Committee Members on time along with brief summary/basic information as per pro-forma, it will be the Committee's discretion to consider the project. Project proponents shall bring shape file (.kml file) containing project boundaries & facilities and shall be saved on computer in the meeting hall. Project Proponents are required to bring hard copy (A0/A1 size) and soft copy (pdf) of a map showing project facilities superimposed on Survey of India Toposheet. Proponents shall submit the attendance form duly filled to the Member Secretary before starting the presentation.