

MINUTES OF THE 19TH MEETING OF THE RE-CONSTITUTED EXPERT APPRAISAL COMMITTEE (EAC) ON ENVIRONMENTAL IMPACT ASSESSMENT (EIA) OF THERMAL POWER PROJECTS

The 19th Meeting of the re-constituted EAC (Thermal Power) was held on 25th July, 2018 in the Ministry of Environment, Forest & Climate Change at Teestha 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. Shri Gururaj P. Kundargi - Member
4. Dr. N.P. Shukla - Member
5. Shri N. Mohan Karnat - Member
6. Dr. J.K. Pandey - Member
7. Dr. S.K. Paliwal - Member (Representative of CPCB)
8. Dr. R.K. Giri - Member (Representative of IMD)
9. Prof. S.K. Gupta - Member (Representative of ISM/IIT Dhanbad)
10. Dr. S. Kerketta - Member Secretary

Dr. Sharachchandra Lele, Dr. Manjari Srivastava and Shri N.S. Mondal (Representative of CEA) could not be present.

Item No.19.0: CONFIRMATION OF THE MINUTES OF THE 18th EAC MEETING.

The Minutes of the 18th EAC (Thermal Power) meeting held on 27.06.2018 were confirmed in presence of members.

Item No. 19.0: CONSIDERATION OF PROJECTS

**19.1 Expansion of power plant from 16 MW to 40 MW (Waste to Energy) at NDMC Compost Plant Site Near Okhla STP, Okhla, New Delhi by M/s Timarpur Okhla Waste Management Company Pvt. Ltd.- reg. ToR.
(File No: J-13012/09/2018-IA.II (T)& Online No.: IA/DL/THE/75481/2011)**

(19.1.1) Project Proponent (PP) submitted online application vide dated 19.6.2018 for grant of ToR for expansion of Municipal solidwaste based power plant from 16 MW to 40 MW.

(19.1.2) Project Proponent along with the EIA consultants M/s Yes Enviro Solutions Ltd. made the presentation inter alia submitted the following information:

- i. Environmental Clearance has been issued for Integrated Municipal Solid waste Processing Complex at Okhla and Timarpur which includes 15 MW Power Plant has been issued vide Ministry's letter dated 21.3.2007 infavour of M/s Timarpur Okhla Management Company Pvt. Ltd. The capacity of the power plant has been increased from 15 MW to 16 MW vide Ministry's letter dated 9.5.2007.
- ii. The project is located at 2.36 km from Okhla Bird Sanctuary and 4.77 km from Asola Bhati Wildlife Sanctuary.
- iii. The proposed expansion MSW based power plant from 16 MW to 40 MW power plant will be set up in an area of 15 acres which is available within the premises of existing power plant area. No additional area is required. The

proposed expansion project is sized for an additional capacity of processing of 1,000 TPD MSW with two boilers of 500(+/-20%) TPD capacity and one unit of turbo generator. The solid waste used for existing power plant is about 1,950 TPD and for the proposed project is 1000 TPD.

- iv. Processed MSW will be used for steam generation by incineration in boilers. Reverse Reciprocating with forward feed inclined grate has performed most successfully in WtE projects under different fuel conditions all over the world.
- v. Flue gases are maintained at temperature of more than 950°C for more than 2 seconds as per MSW 2016 Rules in order to destroy dioxins and furans and keep Total Organic Content (TOC) in ash below 5% limit. Steam generated in the boiler is sent to Turbo-Generator set where power generation takes place. Electricity generated is stepped up before being sent to the nearest grid sub-station for power evacuation.
- vi. Exhaust steam from turbine is being cooled inside air cooled condenser and condensate is sent to deaerator and pumped again into boiler using Boiler Feed Pumps. The boiler is equipped with Selective Non-Catalytic Reactor (SNCR) system in which urea solution is being pumped inside furnace in order to limit NO_x emissions below prescribed limit. Flue gases from exhaust of economizer section are sent to semi-wet reactor where lime slurry and activated carbon is dozed in order to limit acidic gases such as SO_x, HCl, HF etc., dioxins& furans and heavy metals below prescribed limit. Flue gases are then passed through bag filter where particulate matter along with heavy metals are being trapped and clean flue gas as per emissions limit prescribed by DPCC are sent to chimney with help of ID fans. Fly ash generated is converted into fly ash bricks.
- vii. The process water requirement for the proposed expansion project is 875 KLD. The wastewater of 530 KLD will be generated which includes 15 KLD from cooling tower blow down 11 KLD from boiler blow down.
- viii. Estimated total generation of leachate will be about 350 KLD on an average for proposed + existing facility which shall be treated in 350 KLD of Leachate Treatment Plant. Primary treatment unit will be provided to reduce the suspended solids and part BOD, COD, etc by suitable process. Process will include biological treatment, pH correction, coagulation, settling, filtration. Sludge recirculation system with sludge treatment shall be provided. Sludge recovered is proposed to be mixed with boiler fuel. Secondary treatment will aim at reducing BOD and COD levels. Anaerobic and Aerobic processes with nitrification/ de nitrification as required to sustain the biological process need to be provided followed by settling and filtration. Sludge will be mixed with boiler fuel. After treatment in Leachate Treatment plant, the treated water shall be further treated in R.O. Recovered water from R.O. shall be reused in gardening. Secondary Treatment process designed to convert the R.O. reject to slurry. Multi effect evaporation system is proposed for this stage. It is expected that slurry will have concentrated organic matter which can be injected in to boiler furnace for heat recovery. Recovered condensed water shall be utilized for ash quenching and other process requirements.
- ix. A thick greenbelt was developed all around the existing facility and the total area allocated for greenbelt development is 12,000 m², out of 60,702.86 m².
- x. The domestic waste water generated from the proposed project will be sent to septic tank followed by soak pit. The process water will be treated and reused for various other uses.

- xi. The total fly ash generated from the boiler will be 40 TPD to 50 TPD, Dry fly ash collected from the bag filter hoppers and the economizer hoppers and the ash collected from the furnace bottom, Evaporator / super heater bottom hoppers can be used for brick manufacturing. The MSW ash contains non-combustibles such as metals, glass, concrete, brick, etc.
- xii. Domestic solid waste of 80 kg/day generated from the admin building and workshops will be utilized in existing plant after proper segregation.
- xiii. Approximately 12 ltr/month of used oil shall be generated from the DG Sets. It Shall be disposed in leak proof containers & disposed only to authorized re-processors/ authorized common collection centres.
- xiv. Civil Appeal No: 13120 of 2017 in Hon'ble Supreme Court is pending.
- xv. The estimated cost of the project is Rs.543.0 Crores.

(19.1.3) Committee visited the existing Timarpur Municipal Solidwaste Power Plant on the same day after lunch. Committee noted that Sukhdev Vihar habitation is located hardly at 100 m from the proposed power plant. Air cooled condenser system has been installed. Lime dosing is done for capturing Sulphur, HCl and other toxic gases. Committee noted that there is a solid waste which appears to be ash is lying along the access road to the power plant. The emissions of the existing power plant are as follows:

Sr.	Parameters	Chimney 1	Chimney 2
1	SO ₂ (mg/Nm ³)	140.34	124.71
2	NO _x (mg/Nm ³)	252.75	148.29
3	CO (ppm)	36.52	10.85
4	O ₂ (%)	8.39	16.15
5	HCL (mg/Nm ³)	0	0
6	PM (mg/Nm ³)	13.53	29.88

(19.1.4) **Committee after detailed deliberations, recommended for grant of following ToRs** in addition to the standard ToR:

- i. The ToR is subject to the compliance of directions passed by Hon'ble Supreme Court in the Civil Appeal No.13120 of 2017 which is pending. Compliance report in this regard shall be submitted.
- ii. As Okhla Bird Sanctuary, Asola Bird Sanctuary and Jahapanah reserve forest surround the proposed project, specific recommendations of Chief Wildlife Warden shall be submitted. Authenticated map showing all protected areas/ESZ/ESA vis-à-vis Proposed landfill is to be submitted along with .kml file.
- iii. Characterization of leachate by conducting TCLP studies shall be conducted. Treatment and disposal of leachate shall be submitted.
- iv. Details regarding generation and disposal method of ash shall be submitted.
- v. Details of Flue gas treatment and ash utilisation/disposal methods shall be included in the EIA report.
- vi. As the greenbelt of the power plant is only 20% of the total plant area, separate land shall be identified for compensating 33% of the total project area as greenbelt. An action plan in this regard shall be submitted. While developing greenbelt, Miyawaki plantation method shall also be adopted for the greenbelt in the plant area.
- vii. The revised .kml file along with corner coordinates is to be submitted at the time of submission of EIA report.

- viii. Certified compliance report by the Regional Office of MoEF&CC on the conditions of the existing Environmental Clearance shall be submitted.
- ix. Monitoring of dioxins and furans and other heavy metals shall also be carried out in the stack emissions as per the Municipal Solid Waste Rules, 2016 for one season.
- x. TCLP analysis of heavy metals, texture, bulk density, Cation Exchange Capacity of Heavy metals in the flyash and bottom ash shall be conducted for existing plant.
- xi. As the Sukhdev Vihar habitation is located nearby, action plan on odour management shall be submitted.
- xii. The solid waste material dumped along the access road in the open areas shall be removed immediately.

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**(19.2) 2x660 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.
(File No. J-13012/10/2018-IA.I (T) & Online No. IA/CG/THE/75763/2018)**

(19.2.1) Project Proponent submitted online application on 10.7.2018 for grant of ToR for Uni-3 (1x660 MW). The Environmental Clearance for establishing 600 MW (Unit-3) Thermal Power Plant has already been issued vide Ministry's letter dated 31.12.2007 which was valid for five years, i.e. till 30.12.2012. The validity of EC has been extended for five years, i.e. till 31.12.2017 vide Ministry's letter dated 19.2.2014. It has been informed that Main plant operations and Balance of Plant activities have been progressed up to 95% and 75%, respectively for Unit-3. The balance of construction activities to commission the Unit-3 (1x660 MW) shall take 15-18 months. Project Proponent applied for extension of validity of EC for two years. As the outer limit of the validity of EC is 10 years, Ministry requested Project Proponent to obtain EC denovo vide Ministry's letter dated 06.12.2017. Accordingly, PP applied for grant of ToR for Unit-3. However, **Project Proponent did not attend the meeting.** Accordingly, the project is deferred.

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**19.3 1x800 MW Coal based Super Critical Thermal Power Project in place of existing 2x120 MW and 1x200 MU units at Ukai Thermal Power Plant at Village Vagda, Tehsil Fort Songadh, District Tapi, Gujarat by M/s Gujarat State Electricity Co. Ltd.- reg. reconsideration of ToR.
(File No. J-13012/4/2018-IA.I (T) & Online No. IA/GJ/THE/72913/2018)**

(19.3.1) The application for grant of ToR has been submitted vide online application dated 12.2.2018. The proposal for grant of ToR has earlier been considered by the EAC in its meeting held on 28.2.2018 and EAC recommended for the site visit by Sub-committee of the EAC ensure that the proposed site doesn't fall in the Wildlife Corridor, to ensure that there are no WLS within 10 km radius of the project, proper lay out of the proposed plant based on the maximum GLC, locations of monitoring stations of different environmental parameters based on CPCB guidelines, etc.

(19.3.2) The sub-committee comprising of following members have visited the project site during 6th-7th April, 2018. The report of the sub-committee has been discussed in the 16th meeting of EAC (Thermal) held on 19.04.2018 and the committee opined that PP is using three large ash ponds which occupied more area than the area of power plant. EAC felt that PP may close down at least one ash pond and use the other ash ponds only incase of emergency. Considering the space constraint in the existing power plant area, EAC suggested that PP should submit the action plan to locate the proposed power plant to the ash pond area adjacent to the power plant along with the reclamation plan for ashpond.

(19.3.3) Ministry vide letter dated 07.05.2018 sought the additional information as per EAC recommendations. Accordingly, Project Proponent submitted the details on 06.07.2018. Accordingly, the proposal has been considered in the present meeting. Project Proponent along with the EIA consultant M/s Mantec Consultants Private Ltd. and *inter alia* submitted the following information:

- i. GSECL has planned for consultancy work for ash water recirculation & establishing zero liquid discharge scheme in plant premises. The wastewater collected shall be treated and reused in the plant. Based on the budgetary offers received from various consultants, tender preparation is under progress.
- ii. Dumping of solid waste and hazardous waste dumping in the ash has been stopped immediately. Approx. 400 kg of dry solid waste, 800 kg of wet solid waste of Ukai colony and 25 kg solid waste of Ukai TPS is segregated, collected and disposed daily at identified landfill site near village Patharda.
- iii. Hazardous waste is disposed as per the HWM Rules. An agreement has been made with Songadh Nagarpalika for sending the municipal solid waste to landfill site.
- iv. Extra flyash from top of the bunds and along the roads has been cleared. Stabilisation of ash dyke bund with plantation is a regular process. DCF Surat has been requested to submit the offer for one year plantation including stabilisation and two year maintenance. Forest Department has started the preliminary cleaning work.
- v. ETP is in working condition and the effluents have been monitored for parameters TSS, pH, Temperature at the outlet point. The same data is transmitted to GPCB and CPCB.
- vi. Fire tenders are used at present for water sprinkling at haul roads. Tender is advertised for appointing agency for water sprinkling by tractor.
- vii. The irrigation department has been requested to develop the black topped road. However, no response has been received from them. Proposal for developing black topped road from power house to ash dyke area is under approval of Corporate office.
- viii. Entire ash pond area shall be provided with water sprinklers through network of pipelines.
- ix. The proposal for strengthening of Environment Management Cell is under approval by the Corporate Office.
- x. Site visit by DPR consultant has been completed for assessing the feasibility of setting up of power plant in on the ash pond close to power plant.
- xi. Online temperature measurement system is provided at CW inlet and outlet. Bio-assay test is carried out. In house temperature measurement for temperature dilution study in the Ukai left bank canal has been carried out.

- xii. Demolition of the decommissioned Units-1 and 2 shall be done in accordance with Demolition Waste Management Rules, 2016.
- xiii. Procurement of flow meters for cooling water measurement at intake point has been initiated.
- xiv. Provision of real time monitoring system for flow and quality at all ash dyke discharge points has been included in the ZLD system which will be implemented.
- xv. Ambient air quality monitoring near ash dyke has been included in the baseline study.
- xvi. Water balance diagram has been revised and submitted.
- xvii. Water quality monitoring at Ukai left bank canal and at water body where ashwater is discharged has been included in the baseline monitoring.
- xviii. Procurement of continuous AAQ systems at colony, plant area has been initiated.
- xix. As part of Housekeeping, oil painting of steel structures, scrap lifting and cleaning work has been initiated. A committee on plant beautification has been set up to oversee housekeeping activities.

(19.3.4) Committee noted that action plan for the findings of the sub-committee has been initiated. Committee noted that PP is required to install cooling towers for the Units-3 & 4 (1x200 MW & 1x210 MW) as per the Ministry's notification dated 07.12.2015. It has been informed by PP that they have requested Ministry for exemption. However, the Ministry may examine the possibility as the notification itself says that cooling tower is to be installed for existing power plants. Committee noted that the shifting of proposed power plant location on ash pond requires removal of ash and filling of earthen material for getting stability. However, Committee noted that geopolymers made of flyash act as strengthening material and hence there is no requirement of removal of ash and filling with other material. Further, Committee noted that strengthening of Environmental Management Cell is required immediately at Head Office as well as site office for implementation of environmental protection measures.

(19.3.5) **Committee after detailed deliberations, recommended for grant of ToR** with following additional conditions:

- i. Compliance to the Ministry's notification dated 07.12.2015 w.r.t. emission standards, specific water consumption and installation of cooling towers shall be submitted.
- ii. A request shall be made to DG, CSIR-AMPRI for developing geopolymers with flyash so that the existing ash can be converted into high strength material so that there will not be any need to excavate the ash. In case of excavation, the excavated ash shall be disposed by conditioning ash with lime or soil.
- iii. Action taken report based on observations made by the sub-committee in its site visit conducting during 6th -7th April, 2018.
- iv. Strengthening of Environmental Management Cell at Head Office and Site shall be strengthened by appointing regular persons in the field of Environmental Sciences/Engineering, Chemistry, Civil Engineering and Horticulture. The head of environment will directly report to plant head. A Corporate Environmental Policy shall be formulated.

- v. Thermal Dilution Study shall be conducted with physical and mathematical modelling for both scenarios i.e. with and without cooling towers. By conducting thermal contours shall be submitted based on the study.
- vi. Certified Compliance report by the Regional Office of the Ministry shall be submitted for existing Units-3,4,5 & 6. For the units which Environmental Clearance is not available, conditions on Consent to Operate shall be taken in addition to the extant emission and discharge standards.
- vii. Municipal Solid waste collection and segregation shall be done so that the composting of biodegradable waste can be done and recyclable waste can be sent to reuse instead of sending entire waste to landfill.

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**(19.4) Modernization & Expansion in Power Plant from 125.3 MW to 141 MW at Tehsil - Ladpura, District - Kota, Rajasthan by M/s DCM Shriram Ltd. reg. reconsideration of EC.
(File No.J-13012/07/2017-IA.I(T) & Online No. IA/RJ/THE/64601/2017)**

(19.4.1) The proposal for grant of Environmental Clearance has been considered in the EAC meeting held on 27.06.2018 and EAC sought the following additional information:

- i. Certified Compliance report by the Regional Office, SPCB on the conditions stipulated in the Consent to Operate.
- ii. Justification to meet the Ash content and Sulphur content in the imported coal up to 12% and 0.8%, respectively as per Ministry's OM vide dated 05.02.2013.
- iii. Sulphur balance diagram.
- iv. Impact on the habitation (on North and North-West) adjacent to the proposed project location and its mitigative measures.
- v. Air quality prediction shall be carried out considering the annual average data of climatic conditions to assess whether there is any impact on habitation adjacent to the proposed project.

(19.4.2) Project Proponent submitted the additional information vide their online submission dated 13.07.2018. Project Proponent along with their Environmental Consultant M/s Kadam Environmental Consultants made the presentation and *inter-alia* submitted the follow information:

- i. RO Site inspection report along with point-wise compliance report on conditions of consent to establish/operate has been submitted.
- ii. Application for coal linkage as per policy of Govt of India (Ministry of Coal) for G11 grade from SECL will be submitted. However, since availability of domestic coal to meet the full requirement, cannot be affirmed, in the event of non-availability / low availability of coal through linkage action process, imported coal will be procured.
- iii. Various combinations of fuel for blend of Indian & Imported coal have been worked out.

Parameter/Source	Indian G11	Imported
GCV	3,968 kCal/kg	7,541 kCal/kg

Ash	37.63%	8.17%
Sulphur	0.6%	3.04%

- iv. As per the Sulphur Balance Table, various combinations have been worked out to limit the Sulphur emissions to 100 mg/Nm³. The following salient combinations are provided below:

	Blend-9	Blend-10	Blend-11	Blend-12
India Coal	60%	55%	50%	45%
Imported Coal	40%	45%	50%	55%
GCV kcal/kg	5,397	5,576	5,755	5,933
Ash (%)	25.85	24.37	22.90	21
Sulphur (%)	1.58	1.66	1.70	1.75
Limestone consumption Annual (MT)	27,224	28,300	29,304	30,242
SO _x (mg/Nm ³)	92	94	94	94

- v. Sulphur in this blend of coal at the time of feed will be maintained maximum at 1.70% for meeting the norm of 100 mg/Nm³.
- vi. There is a road dividing the habitation and the boundary wall of the plant and there is distance of 0.8 to 1.4 km from the proposed project site on N and NW direction upto the Estate Boundary. As per prominent wind direction in the area, wind flows from NW to SE, which is opposite direction of the habitation from the project site. As such the flue gas particles will disperse in the opposite direction to a distance of 1.36 km (Chimney height – 136 m). The resultant pollution load is provided as below:

S.No.	Habitation	Parameter	GLCs due to		Total predictive GLC after expansion
			50.3 MW	66 MW	
1	Prem Nagar (1.0 km/N)	PM ₁₀	1.99 (-)	0.07 (+)	-1.92
		SO ₂	2.99 (-)	0.71 (+)	-2.28
		NO _x	11.93 (-)	0.71 (+)	-11.22
2	Sanjay Gandhi Nagar (1.4 km/NW)	PM ₁₀	0.54 (-)	0.08 (+)	-0.46
		SO ₂	0.81(-)	0.48 (+)	-0.33
		NO _x	3.25 (-)	0.48 (+)	-2.77

(19.4.3) Committee made the following observations:

- i. Proposed project is for modernization and expansion of Power Plants from 125.3 MW (five units Such as 10 MW, 10.30 MW, 30 MW, 35 MW and 40 MW) to 141 MW. All these units have been achieved COD between 1969 to 2005. As provisions of EIA Notification was not applicable during that time, environmental clearances were not taken. Now, three units viz., 10 MW, 10.30 MW and 30 MW will be decommissioned and one unit of 66 MW will be installed. The project cost is Rs. 224 crores.

- ii. Ghariyal Sanctuary on River Chambal is located at around 6.2 km away from the plant towards NW direction.
- iii. Total effluent generated from the existing power plant (125.3 MW) is 4,800 KLD from different processes such as cooling tower blow down, cooling process, washing & process condensate, DM plant process and ash handling. Wastewater generation for the modernised power plant of 141 MW is 3,766 KLD and as per the Form-2 submitted, 100% ZLD is proposed. Presently, entire 4,800 KLD is discharged into the drain which ultimately meets the Chambal River. Since, the modernization of thermal power plant is proposed, Zero liquid discharge system to be installed so that treated water can be used for plant operations. Further, Kota is relatively dry and water scarce area. Accordingly, ZLD is proposed by PP.
- iv. Considering combined Sulphur content of 1.7% (Domestic: Imported-50:50), approximately 13.68 tonnes of Sulphur/day is generated. After capturing the 97.65% of Sulphur with lime dosing, 0.32 tonnes/day of Sulphur is emitted in the atmosphere. Based on the Sulphur diagram submitted during the meeting, this value has been considered as the final information.
- v. Bottom ash storage in the EIA is mentioned as stored in the ash pond. However, during the meeting, it has been stated that bottom ash of 31,502 MTPA shall be directly given to the local Brick Manufactures and there will not be any ash pond. Annual generation of fly ash will be 1,78,509 million tonnes. It is proposed to store in closed silos and shall be used either in Shriram Cement Works (in same complex) or sold to other Cement Factories and local Brick Manufacturers.
- 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.
- vii. As the proposed project is to set up one unit of 66 MW of TPP, details of water & other raw material consumptions, wastewater generation & characteristics, emissions, hazardous waste generation and management from the entire complex has not been provided as it has manufacturing of Fertilizers, PVC Resins, PVC compounds, ChlorAlkali, Cement, Calcium Carbide, SBP, Fenesta, UPVC Windows, Extrusion Plant.
- viii. Committee noted that the proposal is to phase out three old units and to set up a new unit having better pollution control measures without increasing any environmental footprint.
- ix. Further, Rajasthan State PCB in its compliance report submitted that all the conditions stipulated in the CTO are being complied with by PP.

(19.4.4) Committee after deliberations, recommended **for grant of Environmental Clearance to the proposal** with following additional conditions:

- i. Compliance to the Ministry's Notification issued vide dated 07.12.2015 w.r.t. emission standards, specific water consumption, zero liquid discharge and installation of cooling towers shall be submitted.

- 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.
- iii. Gypsum generated from CFBC technology/lime dosing for shall be utilised in the cement manufacturing.
- iv. As committed in the Form-2, 100% ZLD is to be ensured for the Power Plants.
- v. Treated water to be used in the plant from all such STP located within 50 km away from this Power Plant.
- vi. Maximum 50% imported coal is allowed having Ash and Sulphur content in the blended coal as 22.90% and 1.70%, respectively.

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(19.5) Proposed expansion of 2x660 MW (Stage-III) Super Thermal Power Project at Village Shaktinagar, Tehsil Dudhi, District Sonbhadra, Uttar Pradesh by M/s NTPC Ltd.-reg. amendment in ToR. (File No:J-13012/09/2016-IA.II(T) & Online No: IA/UP/THE/59577/2016)

(19.5.1) The Project Proponent (PP) submitted online application on 5.7.2018 for amendment in ToR for change in configuration from 2x660 MW to 2x800 MW.

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

- i. The following changes will take place for increasing the configuration to 2x 800 MW:

Subject	2x660 MW	2x800 MW
Land requirement	562 acres	No change
Coal requirement	6.5 MTPA	8.4 MTPA
Source of coal	SLC(LT) recommended the grant of coal linkage from CIL	Amendment in Coal linkage will be obtained with increased coal requirement
Water requirement	3,300 m ³ /hr	1,620 m ³ /hr
Cooling system	Closed Cycle with Cooling Towers	Air Cooled Condensers
Technology	Super Critical	Super Critical

(19.5.3) Committee noted that air cooled condenser may reduce station output by 3.83% compared to Water Cooled Condenser system i.e. from 1,600 MW to 1,541 MW. Accordingly, the coal requirement will also increase in case of Air cooled condenser system. Committee noted that there are many complaints which were received from surrounding villages w.r.t ash disposal. It was alleged that the ash is disposed in the Rihand Reservoir.

(19.5.4) **Committee after deliberations, deferred the project for a site visit** by the sub-committee comprising of following members for reviewing of the status of pf compliance specific to ash utilisation and ash disposal and issues mentioned in the complaints:

- 1. Dr. N.P. Shukla - Chairman
- 2. Prof. S.K. Gupta - Member
- 3. Shri G.P. Kundargi - Member

(19.5.5) An officer from the Regional Office, Lucknow, MoEF&CC will also be included during the site visit of the Sub-committee.

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(19.6) 4x660 MW Imported Coal based Thermal Power Plant at notified Dahej industrial area near village Suva, in Vagra Taluk, in Bharch 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)

(19.6.1) 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. 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 interms 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 incase of project which have achieved substantial physical progress so that the extension will enable them to complete balance works.

(19.6.2) **The project proponent did not attend the meeting**, however, written communication was sent to the Ministry in this regards. Further, PP while applying online, the name of the company should be mentioned instead of person's name. Accordingly, the project is deferred.

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(19.7) Expansion by addition of 1x80 MW and 1x160 MW Coal Based Thermal Power Plant at village Peria Obulapuram and Papankuppam, in Gummidipoondi Taluk, in Thiruvallur District in Tamil Nadu by M/s OPG Power Generation Pvt. Ltd.reg. amendment in EC. (F.No.J-13012/111/2009-IA.I(T) & Proposal No. IA/TN/THE/10308/2011)

(19.7.1) The Project Proponent (PP) submitted online application on 11.07.2018 for amendment in the EC dated 31.03.2008 for increasing the configuration of the power plant from 2x77 MW to 2x81 MW.

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

- i. During the course of operations, the 2x77MW units were able to achieve the production of 2x81 MW by reducing the leakages from HP steam to LP steam due to following reasons:
 - a. The addition brush seals in the turbine, and resultant steam path modification reduced the specific steam consumption. Thus aiding in generation of additional 4 MW per unit.

- b. Further operating under valve wide condition in addition to above modification also aided in achieving enhanced generation.

(19.7.3) Committee noted that the proposal is eco-friendly proposal as it is increasing the efficiency of the power generating units without increasing any environmental footprint. However, committee noted that a safety issues are to be ensured during the implementation.

(19.7.4) Committee after deliberations, deferred the proposal to project proponent may submit a safety compliance certificate from the manufacturer (BHEL) that the proposed additions in the rotor and HP//LP steam side do not lead to unsafe situations.

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(19.8) 2x600 MW of 4x600 MW Malwa Thermal Power Project at Purni, District Khandwa, M.P. by M/s M.P. Power Generating Co. Ltd.-reg. amendment in EC.

(F.No.J-13011/50/2007-IA.I(T) & Proposal No. IA/MP/THE/75471/2014)

(19.8.1) The Project Proponent (PP) submitted online application on 13.7.2018 for amendment in the EC dated 01.10.2008 for change in coal source from Gondhahera-Ujhani Coal Block, Singrauli to NCL, SECL and WCL coalfields.

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

- i. Environmental Clearance for 2x600 MW Thermal Power Plant has been issued vide Ministry's letter dated 01.10.2008. Further, EC has been issued for 2x660 MW Thermal Power Plant has been issued vide Ministry's letter dated 27.08.2014.
- ii. The coal requirement for 2x660 MW as per EC is 5.3 MTPA at 85% PLF.
- iii. Initially, Gondhahera-Ujhani Coal block was allocated for the 2x660 MW units. However, CMPDI declared that the block is economically unviable. Accordingly, Ministry of Coal vide letter dated 25.09.2017 cancelled the said coal block.
- iv. Coal India Ltd. vide letter dated 21.03.2018 allocated the coal of total 4.879 MTPA (viz. 1.54 MTPA from NCL~750 km, 1.79 MTPA from SECL~ 750 km and 1.543 MTPA from WCL, ~350 km)
- v. The coal ash content of the coal is in the range of 34-42%.
- vi. The remaining differential quantity of 0.467 MTPA will be obtained through e-auction.

(19.8.3) Committee noted that the coal source where the distance is more than 500 km (viz. NCL and SECL), beneficiated coal with ash content less than 34% is to be transported. In the case of WCL where the distance from the source to the power plant is less than 500 km, there is no restriction of ash content as per the Ministry's Notification GSR 02(E) dated 02.01.2014. Further, committee noted that the source for remaining quantity of 0.467 MTPA is not known. Committee also noted that the coal transportation shall be done by road only.

(19.8.4) Committee after detailed deliberations, recommended for amendment in EC for change in coal source from Gondhahera-Ujhani Coal Block to coal from NCL, WCL and SECL subject to following additional conditions:

- i. As submitted, 1.54 MTPA from NCL, 1.79 MTPA from SECL and 1.543 MTPA from WCL is permitted. The remaining quantity shall be procured from e-auction.
- ii. The total quantity of Coal shall be transported by rail only. Coal shall not be transported by road.
- iii. Revised emission standards as per the Ministry's notification dated 07.12.2015 and subsequent amendments notified from time to time shall be complied with. In case, plant is ready for commissioning and not meeting revised emission norms, operations shall be stopped unless otherwise an extension is given to the said power plant through a specific direction or an amendment to the Notification.
- 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.

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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/kisam) 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 Forest (Conservation) Act, 1980 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-conductive 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}, SO_x, 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.

- xlvi) 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.
- xlviii) 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 not less than 2,500 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.

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/Nm³ 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.

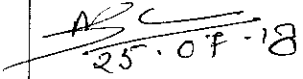
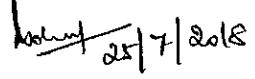
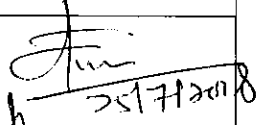
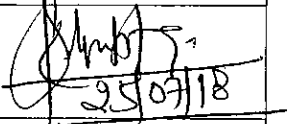
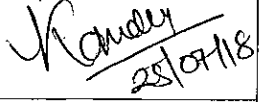
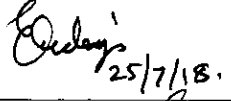
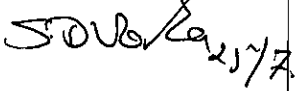
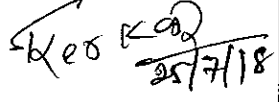
- (xiii) Fugitive emission of fly ash (dry or wet) shall be controlled such that no agricultural or non-agricultural land is affected. Damage to any land shall be mitigated and suitable compensation provided in consultation with the local Panchayat.
- (xiv) Green Belt consisting of three tiers of plantations 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 2,500 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.

LIST OF MEMBERS (Attendance Sheet)

19th EXPERT APPRAISAL COMMITTEE MEETING (Thermal)

DATE & TIME : 25th July 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	Navinchandra
2.	Dr. Narmada Prasad Shukla Member	 25.07.18
3.	Sh. N. Mohan Karnat, IFS Member	 25/7/2018
4.	Dr. Sharachchandra Lele Member	Abs.
5.	Sh. N.S. Mondal Member	Abs.
6.	Dr. R.K. Giri, Member	R.K. Giri 25/7/18
7.	Dr. S.K. Paliwal, Member	 25/7/2018
8.	Prof. S.K. Gupta (ISM Dhanbad) Member	 25/07/18
9.	Dr. Jai Krishna Pandey, Member	 25/07/18
10.	Dr. Manjari Srivastava, Member	Abs.
11.	Dr. Gururaj P Kundargi, Member	 25/7/18.
12.	Shri Suramya D. Vora, IFS (Retd.) Member	 25/7/18
13.	Dr. S. Kerketta Member Secretary, MoEFCC	 25/7/18
14.	Sh. N. Subrahmanyam Scientist - C, IA-1 MoEFCC (Representative of Member Secretary)	N. Subrahmanyam

Subject: **Re: Draft Minutes of 19th EAC meeting of Thermal Sector held on 25.07.2018 - reg**

Date: 08/05/18 08:15 PM

From: navin chandra <navinchandrarr1@yahoo.com>

To: Dr S Kerketta <s.kerketta66@gov.in>

05/08/2018

Dear Dr. Kerketta,

I have gone through the minutes sent by you. The minutes are in order and can be uploaded at the Web site of the Ministry of Environment, Forests and Climate Change.

Regards,
yours sincerely,

(NAVIN CHANDRA)

Dr. Navin Chandra,
Director General
M P Council of Science and Technology (MPCST),
Vigyan Bhawan, Nehru Nagar, Bhopal - 462003 (M.P.) India
Phone : 91-755- 2671800 (Office)
e-mail : dg@mpcost.nic.in
navinchandrarr1@yahoo.com, navinchandraampri@gmail.com

On Friday, 3 August, 2018, 6:31:03 PM IST, Dr S Kerketta <s.kerketta66@gov.in> wrote:

Sir,

Please find the attachment on the subject cited above. It is to informed that the same was sent to all the members for comments/suggestion who attended the meeting on 25.07.2018. After incorporating the same, the minutes are being sent with a request to kindly approve the same.

regards,

Dr. S. Kerketta
Director- IA (Thermal, River Valley & HEP)
MoEF&CC, New Delhi
Phone: 011-24695314 (O), 26113096 (R)