

Minutes of the 26th meeting of the re-constituted Expert Appraisal Committee (EAC) on Environmental Impact Assessment (EIA) of Thermal Power Projects held on 27th March, 2019

The 26th meeting of the re-constituted EAC (Thermal Power) was held on 27th March, 2019 in the Ministry of Environment, Forest & Climate Change at Narmada Meeting Hall, Jal Wing, Ground Floor, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi under the Chairmanship of Dr. Navin Chandra. The following members were present:

1. Dr. Navin Chandra - Chairman
2. Shri Suramya D. Vora - Member
3. Dr. N.P. Shukla - Member
4. Shri G.P. Kundargi - Member
5. Dr. J.K. Pandey - Member
6. Shri N.S. Mondal - Member (Rep. of CEA)
7. Dr. Sharatchchandra Lele - Member
8. Dr. S. Kerketta - Member Secretary

A Special Invitee, Dr. P.V. Murugan, Scientific Officer-D was requested to present during this meeting to discuss the issue on Item Nos. 26.1-26.4 and the Director, Institute of Plasma Research, Gandhinagar has nominated him for the same. Dr. R.K. Giri, Member (Rep. of IMD), Dr. S.K. Paliwal, Member (Rep. of CPCB), Dr. (Mrs). Manjari Srivastava, Member and Dr. S.K. Gupta (Representative of ISM/IIT Dhanbad) and Shri Mohan Karnat, Member could not be present due to pre-occupation.

Item No.26.0: CONFIRMATION OF THE MINUTES OF THE 25th EAC MEETING.

The minutes of the 25th EAC (Thermal Power) meeting held on 22.02.2019 were confirmed in presence of members present during the meeting with the following modification:

- (25.6) 2x660 MW Super critical coal based Thermal Power Project at Village Dadri Khurd, Tehsil Mirzapur Sadar, District Mirzapur, Uttar Pradesh by M/s Welspun Energy UP Pvt. Ltd. - reg. amendment in EC. (F.No. J-13012/12/2011-IA.II(T) & Proposal No. IA/UP/THE/10331/2010)**

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- (25.6.3) (XX) The Uttar Pradesh Jal Nigam vide their letter dated 1.10.2018 has assured to provide this treated Sewage Water of **257.8 MLD from Bhagwanpur, Dinapur, Goithaha, Ramana and Mirzapur STP**. The water requirement for the proposed project is 100 MLD. The water assured by UP Jal Nigam **would be sufficient to meet the** water requirements during operation phase.
- (25.6.4) Committee noted that groundwater in some of the blocks in the study area is in Semi-critical and Critical zones. Further, Total Dissolved Solids, Hardness, Magnesium and Cadmium (Heavy Metal) are exceeding the BIS standards in some areas. **Even though source sustainability study mentions availability of water, committee is of the opinion that treated Sewage shall be used as the assured quantity of about 258 MLD has been made available by Jal Nigam. Further, the water requirement for power project is only 100 MLD.**

Accordingly, treated Sewage Water would be sufficient to meet the requirement of power project. Further, Committee noted that District Collector, Mirazpur has certified that the public hearing has been concluded in undisputable manner. Further, District Mining Officer has also certified that there is no mining activity proposed in the project area. Project Proponent has given assurance that they will install and supply RO treated water to Banaras Hindu University. However, the capacity of RO treatment system and time bound action plan to implement this activity is yet to be made available.

(25.6.5) Committee after detailed deliberations, recommended for amendment in Environmental Clearance dated 21.8.2014 subject to the following additional conditions:

- I. As the assurance from UP Jal Nigam for supplying treated Sewage Water of 257.8 MLD to the proposed project has been given vide letter dated 1.10.2018, **only treated Sewage water shall be used during operations**. Necessary pipelines in this regard shall be laid. Final layout of the pipelines starting from STPs to the power project shall be submitted.
- II. **No fresh water from Ganga River shall be drawn for the proposed project (Both construction and operation phase).**
- III. The capacity of RO treatment plant to be installed at BHU and timebound action plan for implementation shall be submitted within three months.
- IV. Before drawing the groundwater during construction phase (500 KLD), permission from Central Ground Water Board shall be obtained.

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(25.6.3)(XX) The Uttar Pradesh Jal Nigam Vide their letter dated 01.10.2018 has assured to provide this treated Sewage Water of **18 MLD from Pakka-Pokhara, Bisundepur and Vindhychal STP**. The water requirement for the proposed project is 100 MLD. The water requirement for the proposed project is 100 MLD. The water assured by UP Jal Nigam can replace part of fresh water requirements by 18 MLD during operation phase.

(25.6.4) The Committee noted that groundwater in some of the blocks in the study area is in semi critical and Critical Zones. Further, Total Dissolved Solids, Hardness, Magnesium and Cadmium (Heavy Metal) are exceeding the BIS standards in some areas. **M/s WEUPPL shall optimize the operational water requirement from the River Ganga by replacing the equal quantity of fresh water by available treated sewage from STPs in South of the River Ganga.** Further, Committee noted that District Collector, Mirzapur has certified that the public hearing has been concluded in undisputable manner. Further, District Mining Officer has also certified that there is no mining activity proposed in the project area. Project Proponent has given assurance that they will install and supply RO treated water to Banaras Hindu University. However, the capacity of RO treatment system and time bound action plan to implement t this activity is yet to be made available.

(25.6.5) Committee after detailed deliberations, recommended for amendment in Environmental Clearance dated 21.08.2014 subject to the following additional conditions:

- I. As the assurance from UP Jal Nigam for supplying treated Sewage Water of **18 MLD** to the proposed project has been given vide letter dated 01.10.2018. Necessary pipelines in this regard shall be laid. Final layout of the pipelines starting from STPs to the power project shall be submitted.
- II. **M/s WEUPPL shall optimize the operational water requirement from the River Ganga by replacing the equal quantity of fresh water by available treated sewage from STPs in South of the River Ganga.**
- III. The capacity of RO treatment plant to be installed at BHU and time bound action plan for implementation shall be submitted within three months.
- IV. Before drawing the groundwater during construction phase (500 KLD), permission from Central Ground Water Board shall be obtained.

Item No. 26.0: CONSIDERATION OF PROJECTS

(26.1) 55 MW Municipal Solid Waste Power Project (Using Cold Plasma Technology to convert Green Power, Purified Water and Fuel at East Delhi Municipal Corporation Opp. Gagan Theatre, Wazirabad Road, Mandoli Extension, Village Mandoli, Delhi by M/s A.G. Dauters Waste Processing Private Limited.- reg. reconsideration of ToR.

(F.No. J-13012/13/2018-IA.I (T) & Proposal no. IA/DL/THE/84113/2018)

- (26.1.1) Project Proponent has submitted online application on 31.10.2018 for grant of ToR for establishing 55 MW Waste to Energy Power Project from 200 Tons per Day Municipal Solid Waste. The proposal is based on Cold Plasma Gasification Technology which will convert MSW into 55 MW of Green Power, 925 KLD Purified Water and 925 KLD fuel.
- (26.1.2) The proposal has been considered by the EAC (Thermal Power) in its meetings held on 30.11.2018 and 22.2.2019. EAC in its meeting held on 22.2.2019 made following observations and sought the information for re-consideration:
 - i. There is no clarity on the type of plasma used in the proposed cold plasma gasification technique.
 - ii. The energy consumed in dissociation of water into hydrogen and oxygen, conversion of waste into syngas and all other processes involved in subsystems were not presented in detailed.
 - iii. The mass and energy balance of the proposed waste disposal plant is not clearly available for evaluation. It only mentions the conversion of waste and wastewater into energy and purified water. But, it does not mention any process of how it is converted.
 - iv. The details provided such as input waste characteristics, process reactions, process by-products and plant output (55 MW power, water and fuel) are appearing superficial.
 - v. A complete process and technical detail along with the working principle of each process involved, mass and energy balance are required for further evaluation.
 - vi. Demonstration of the technology/waste disposal plant in the lower/pilot scale is appreciable before the establishment of the proposed 200 TPD capacity.
- (26.1.3) Project Proponent has submitted the information 14.3.2019. Accordingly, the proposal has been considered in the present meeting. Project Proponent along with their EIA

consultant M/s. Perfact Envirosolutions Pvt. Ltd. made the presentation inter-alia furnished the following information:

- i. In our technology, it is not “medium”, but rather transient gaseous states/phases which are converted to plasma during/within the plasma-formulation process. Term “plasma” is the form of the fuel. The medium is aqueous plasma. There are many forms of the word “plasma”, but in our case, it’s an aqueous medium of dissolved solids that have been converted to hydrogen and oxygen in a stabilized form, which remains liquid and non-volatile at room temperature. Typical liquid hydrogen fuel needs to be chilled to remain as a liquid. In simple terms it can be described as : Water with enriched quantity of stabilized hydrogen, with built in oxidizer (similar to rocket fuel).
- ii. To start the turbine, small quantity (1-2 litres) of reserve liquid synthetic fuel (LT Ultra FUEL™) is used.
- iii. The fuel combusts only under high-enthalpy (pressure/temp) conditions. Fuel is injected as a pressurized, atomized spray into the turbine region that is down-flow of the compression stage. Fuel injection in the turbine is similar to conventional Electronic Fuel Injection (EFI) for piston engines.
- iv. A transient small electric current from a 12 V battery is used to stimulate the power generator, in which it continues to build its own rotational (angular) momentum, such that it functions as the “starter” for the turbine. Starting takes about 1 minute, depending on the power output (size) of the power unit.
- v. Langenburg waste to energy technology consists of five core process. Viz. a) Effluent/Wastewater Conversion b) Water Purification, c) Gas Extraction, d) Plasma/Fuel Synthesis, and e) Combustion Turbine/Electricity Production.
- vi. The pre-screened input stream is separated into a solid and a liquid fraction. Solids are treated in several stages (if necessary), like grinding, liquefaction and further extraction of water and/or fluids. This pre-treated water is routed to the waste water purification, separated particulate extracts that are dissolved in an aqueous solution, are routed to the plasma fuel synthesis.
- vii. The water is routed through a number of temperature, pressure and catalytic processes, which balance pH, infuse oxygen from the gas extraction unit. This leads to a refined water output – purified water. A part of this refined water is routed to the gas extraction unit and to the turbine.
- viii. A small amount of purified water is routed from the Langenburg Technologies water treatment unit to the Langenburg Technologies gas extraction unit (3). Using an ultra-efficient, proprietary Langenburg Technologies gas extraction/conversion method (replacing conventional electrolysis), hydrogen and oxygen is derived.
- ix. Extracted components of constituent slurries, sludge and solids from the Langenburg Technologies effluent treatment and the Langenburg Technologies water treatment unit are gasified and converted into Langenburg Technologies fuels and (optional) plasma rock in the plasma fuel synthesis unit. Unwanted components or elements are either chemically reduced or destroyed.
- x. Energy balance stage wise cannot be provided as it is Langenburg Proprietary and covered under the IPR.

(26.1.4) Committee prima facie noted that the process of conversion of waste into energy is still not clear. The energy required to increase temperature in the plasma reactor to nearly 10,000 °C is not known. Further, project proponent only mentioned the theory of science behind the technology. However, detailed stage wise conversion of waste

to energy is not available. Project Proponent cited that it is proprietary of Langenburg which cannot be shared. Further, it was informed that there was no patent filed in regard to this technology. In absence of clear details, it is difficult to comprehend the process and associated environmental and safety impacts. Additionally, there are no running plants either commercial or pilot scale available in the Country.

(26.1.5) Committee recommended that the proposal may be referred to Institute of Plasma Research, Gandhinagar, and the Institute be requested by the Ministry to provide a critical appraisal of the technical feasibility of and likely emissions from the proposed technology. Thereafter, the recommendations may be placed before the Committee for arriving at an informed decision. An expert from Central Electro Chemical Research Institute may also be co-opted in the EAC meeting for detailed examination to ensure clarity on the proposal. **Accordingly, the proposal has been deferred till such time the above issues are resolved.**

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(26.2) 250 MW Municipal Solid Waste Power Project (using Ultra Cold Plasma Technology to convert into Green Power, Purified Water and Zero Carbon Fuel) at Village Ramnagar Mazra Ahatmali, Tehsil & District Moradabad, Uttar Pradesh by M/s A.G. Dauters Waste Processing Private Limited. - reg. ToR. (F.No. J-13012/03/2019-IA.I(T) & Proposal No. IA/UP/THE/98859/2019),

(26.3) 50 MW Municipal Solid Waste Power Project (using Ultra Cold Plasma Technology to convert Solid Waste into Green Power, Purified Water and Zero Carbon Fuel) at Shahjahanpur, Tehsil Kakra Kankar Kund, District Shahjahanpur, Uttar Pradesh by M/s A.G. Dauters Waste Processing Private Limited. - reg. ToR. (F.No. J-13012/04/2019-IA.I(T) & Proposal No. IA/UP/THE/98566/2019) and

(26.4) 400 MW Municipal Solid Waste Power Project (using Cold Plasma Technology to convert Solid Waste into Green Power, Purified Water and Zero Carbon Fuel) Tehsil & District Ram Chak Bairiya, Patna, Bihar M/s A.G. Dauters Waste Processing Private Limited. - reg. ToR. (F.No. J-13012/06/2019-IA.I(T) & Proposal No. IA/BR/THE/99725/2019)

(26.2.1), (26.3.1) & (26.4.1) M/s A.G. Dauters Waste Processing Private Ltd. have submitted three proposals (dated 11.3.2019, 8.3.2019 and 18.3.2019, respectively) of Waste to Energy projects at various locations based on Cold Plasma Gasification technology.

(26.2.2), (26.3.2) & (26.4.2) Committee noted that a similar project of 55 MW Municipal Solid Waste Power Project on cold plasma gasification, near Ghazipur Landfill Site, Delhi has been deliberated by the EAC. As the technology is new and with the limited information available about the process/technology, the previous proposal is yet to reach a conclusion. The said proposal is also discussed in the present meeting. Further, the PP was also not having an accredited consultant and as per the OM dated 04.08.2009, the Member Secretary informed in the meeting that it is a prerequisite even during ToR stage. **Therefore, as all the projects are based on same technology and until the decision on 55 MW WtE Project is decided, Committee opined that all other proposals shall be deferred.**

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(26.5) 4000 MW Deoghar Ultra Mega Power Project to be set up in Pipra village, Mohanpur Anchal, District Deoghar, Jharkhand by M/s Deoghar Mega Power Limited. - reg. ToR. (F.No. J-13012/05/2019-IA.I(T) & Proposal no. IA/JH/THE/98383/2019)

(26.5.1) Project Proponent who is the subsidiary of Power Finance Corporation Ltd. submitted online application on 8.3.2019 for grant of Terms of Reference.

(26.5.2) Committee in the first instance noticed that QCI-NABET consultants for conducting EIA report have not been engaged by the project proponent. Ministry's Office Memorandum dated 04.08.2009 stipulates that project proponents should indicate the name consultants/firm they propose to hire for preparing EIA/EMP reports along with their complete details including their accreditation, if any, by an organisation such as Quality Council of India/National Accreditation Board for Education and Training (NABET). Further, the project area has forest land of 50 ha for which forest diversion application is yet to be submitted under Section 2 of FC Act, 1980. As per the Ministry's guidelines, a copy of application submitted for forest clearance shall be furnished at the ToR stage. Committee was also informed that Ministry had issued Environmental Clearance for 4000 MW Tilaiya Ultra Mega Power Project in District Hazaribagh, Jharkhand on 7.4.2008 to M/s Jharkhand Integrated Power Ltd. who is also another subsidiary of Power Financing Corporation Ltd. An application for seeking extension of validity of EC (beyond 10 years) for further period of five years was submitted. The location of the proposed project is at approx.175 km from the Tilaiya UMPP. A justification interms of demand and supply to establish two project of 4000 MW shall also be required. **Accordingly, the project is deferred till the information regarding justification, credible application submitted for forest clearance and details of consultant/s engaged is submitted.**

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(26.6) 1x800 MW Sipat Advance Ultra Super Critical Technology Demonstration Project, (Stage-III) at Village Sipat, Tehsil Masturi, Bilaspur District. Madhya Pradesh by M/s NTPC Limited - reg. reconsideration of ToR. (F.No. J-13012/02/2019-IA.I (T) & Online no. IA/CG/THE/89473/2018)

(26.6.1) Project Proponent submitted online proposal on 29.01.2019 for grant of ToR for establishing 1x800 MW (Stage-III) Ultra Supercritical Technology project in the existing premises of Sipat Power Plant (Stage-I: 3x660 MW & Stage-II: 2x500 MW).

(26.6.2) The proposal has been earlier considered in the EAC meeting held on 22.2.2019 and the proposal was deferred for the want of details regarding QCI-NABET consultants engaged for conducting EIA/EMP studies inline with the Ministry's Office Memorandum dated 04.08.2009. Project Proponent has now engaged M/s Vimta Labs Ltd. for carrying out EIA studies. Accordingly, the proposal has been considered in the present meeting.

(26.6.3) Project Proponent along with EIA consultants M/s Vimta Labs Ltd. have made the presentation and submitted the following information:

- i. The proposed 800 MW (Stage-III) Advanced Ultra Super Critical Technology Project is a project proposed under Clean Coal Technology as part of National Action Plan on Climate Change to be set up in the premises of Sipat Power Plant. It is a collaboration project between NTPC, BHEL and IGCAR under the aegis of the PSA to GoI.

- ii. The target efficiency of the plant is 46% as against 38% in subcritical plants. The temperature and pressure are in the range of steam for the Advanced Ultra Super Critical Project is 710-720°C and 310 bar respectively.
- iii. The Environmental Clearance for Sipat Stage-I (3x660 MW) and Stage-II (2x500 MW) has been accorded on 30.4.2002 and 8.6.2004, respectively. Both stages are under operation.
- iv. Total land requirement for the proposed project is 170 acres. There is no forest land involved in the project. Sipat village is adjacent to the proposed site. Bitkuli reserved forest and Dalha protected forest are within 10 km radius. Bilaspur city is 12 km from the proposed project site.
- v. There are no wildlife sanctuaries, national parks and other protected areas under Wildlife (Protection) Act, 1972 within 10 km radius of the project.
- vi. Lilagarh river is about 3 km East and Kharung River (5 km, West), Arpa (12 km SW) from the project site.
- vii. Coal requirement is 3.34 Million Tons/annum at 90% Plant Load Factor. Coal from coal blocks with GCV of 3700 Kcal/Kg has been considered. Mode of coal transportation from the coal mines to the power plant is by rail (MGR/IR). The same shall be used for Stage-III also.
- viii. The water requirement is estimated to be about 24 cusecs (2450 m³/hr, 58,752 m³/day), which is proposed to be drawn from the Right Bank Canal (RBC) originating from Hasdeo Barrage pondage. No additional water commitment is required for the expansion project. The water requirement for the proposed project will be met from the available committed quantity of 120 MCM from WRD, Govt. of Chhattisgarh for Sipat STPS.
- ix. It is estimated that about 1.3 MTPA (4000 Tons/day) of ash shall be generated annually. Gypsum 15 TPH generated from FGD plant shall also be utilized. The existing ash ponds of Stage-I and II will be used for the proposed expansion also.
- x. The manpower during operation phase of the project is estimated to be about 150. However, during construction phase, the total no. of workers likely to be employed will be much higher about 1000.

(26.6.4) Committee noted that the proposed advanced ultra super critical project is the first of its kind in the country and aims to achieve the efficiency of 46% as against 40.8% for super critical projects. Committee also noted that this is a demonstration project for achieving higher operating parameters to achieve greater efficiency. Committee also noted that the unutilised ash generated from the project will be disposed in the existing ash ponds. The coal transportation will be done by rail as the infrastructure is already in place. However, committee noted that the cumulative environmental impacts of existing stages shall also be incorporated in the EIA/EMP report.

(26.6.5) Committee after detailed deliberations recommended for grant of ToR with the following additional conditions along with the standard ToR:

- i. Ambient air quality sampling location shall also be kept in the downwind direction.
- ii. Cumulative impact assessment by taking into the existing operating plants in the same premises shall also be considered.
- iii. The risk assessment shall also be carried out for the worst case scenarios such as boiler failure and mitigation measures shall be incorporated in the EMP.

- iv. The implementation of FGD/SCR/SCNR systems for control of SO₂ and NO_x emissions as per Ministry' Notification dated 7.12.2015 and its compliance achievement shall be submitted for existing stages (Stage-I & II).
- v. The prediction of air quality impacts shall be carried out considering the existing plants with and without SO₂/NO_x control systems.
- vi. The details of ash pond such as area & volume of all ponds, quantity of ash disposed, available volume and fly ash utilisation in the last five years for various purposes shall be incorporated in the EIA report.
- vii. Water availability and sufficiency studies for drawing nearly 60,000 m³/day shall be carried out by including the impact of such withdrawal on competing users and downstream users, including e-flows.

(26.7) Proposed Expansion of 726.6 MW (Unit-3&4: 2 x 363.3 MW) Gas Based Power Project at Village Palatana, Tehsil Kakraban, Gomti District, Tripura by M/s ONGC Tripura Power Company Limited- reg. EC. (F.No. J-13012/02/2017-IA.II(T) & Proposal No. IA/TR/THE/97559/2006)

- (26.7.1) Project Proponent submitted online application on 01.03.2019 for consideration of grant of Environmental Clearance. As the project proponent did not attend the meeting, **the proposal has been deferred till a communication is received from Project Proponent stating their readiness for appraisal.**

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(26.8) 2x10 MW Coal Based Captive Thermal Power Plant at Village Tatisilwai, Ranchi District, Jharkhand by M/s Usha Martin Ltd.- reg. amendment in EC for transportation of Coal by road. (F.No. J-13012/122/08-IA. II(T) & Proposal No. IA/JH/THE/10337/2011).

- (26.8.1) Project Proponent submitted online application on 16.01.2019 for amendment in EC for transportation of Coal by road.
- (26.8.2) Project Proponent has made the presentation and *inter-alia*, submitted the following information:
 - i. The Environmental Clearance (EC) under EIA Notification, 2006 for establishing 2x10 MW Coal Based Captive Thermal Power Plant at Village Tatisilwai, District Ranchi in Jharkhand has been accorded in favour of M/s. Usha Martin Ltd. vide Ministry's letter dated 07.04.2011, The Specific Condition No. (i) of the EC dated 07.04.2011 stipulates as below:

"Road transportation of coal shall be permitted for a limited period of 36 months only. The project proponent shall shift to railway transportation thereafter. The project proponent shall be vicariously responsible for liabilities incurred for road transportation such as accidental damages to public, coal fines emission from transporting trucks etc. The project proponent shall immediately start its action plant for rail transportation with consultation with the Railways and shall submit half yearly action taken report to the Ministry on the matter."
 - ii. The Unit-1 (1x10 MW) and Unit-2 (1x10 MW) of the Captive Power Plant of M/s Usha Martin Ltd. have been commissioned on 30.03.2012 and 31.12.2012, respectively.

- iii. The quantity of coal required for both units is very small i.e. 500 TPD with an average number of trucks for transportation of coal of 20 with the capacity of 25 Tons/ truck.
- iv. The quantity of coal transported till date are as below:

Sl. No	Year	Quantity (MTPA)	Monthly average (MT)
1.	FY 2014-15	1,12,995	9,416
2.	FY 2015-16	1,14,883	9,574
3.	FY 2016-17	1,17,258	9,771
4.	FY 2017-18	1,25,134	10,427
5.	FY 2018-19	1,28,488	11,681

(26.8.3) Committee noted that the EAC meeting held during 19th-20th May, 2015, recommended for sourcing of coal through e-auction and extension of permission for temporary road transportation of coal for three years i.e. till 31.03.2018. However, Committee was informed that there is no formal approval issued by the Ministry permitting the road transportation. It has evident that the road transportation of coal has been carried out since commissioning of the units (i.e. March, 2012) and the permission for road transportation was allowed only for 36 months, i.e. till 31.03.2015. Committee noted that this amounts to non-compliance of EC conditions without explicit permission from the Ministry, though the quantity is less. Committee has been informed that State Government has been asked to initiate credible action under the provisions of Environment (Protection) Act, 1986 vide Ministry's letter dated 16.10.2018. It was informed that the reminders were also sent to Jharkhand State Pollution Control Board vide letters dated 17.1.2019 and 8.2.2019. However, credible action taken by the Jharkhand Pollution Control Board is yet to be intimated to the Ministry. Committee further noted that project proponent is insisting that connecting railway line from Tatisilwai Railway station which is hardly a kilometre from the plant site and the railway line is passing at 500 m away from the plant site, is not possible.

(26.8.4) **Committee after deliberations, deferred the proposal for want of following information:**

- i. The credible action taken by the Jharkhand Pollution Control Board against the proponent for having transported coal by road without Ministry's approval.
- ii. Justification for not connecting railway line from Tatisilwai Railway station or take off from the nearest railway line.
- iii. A technical feasibility study by M/s RITES Ltd. or any reputable organisation for drawing railway line from Tatisilwai or nearest take off point to the plant premises shall be conducted to see the possibility of railway line.

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(26.9) 2x800 MW Imported coal based Godda Thermal Power Project at Village Motia, Patwa, Gangta and Nayabad of Godda Block and Sondiha, Petbi, Gayghat, Ranganiya and Mali Poraiyahaat Block, Distt. Godda, Jharkhand by M/s Adani Power of (Jharkhand) Limited- reg. Reconsideration of amendment in EC. (File No: J-13012/01/2016-IA.I (T) & Online No. IA/JH/THE/54853/2016).

(26.9.1) Project Proponent (PP) submitted the proposal online on 11.12.2018 for amendment in EC. Project Proponent applied for amendment in EC for changing the source of water from Chir River to Ganga River. The proposal has been considered in the EAC meeting held on 23.1.2019 and the committee sought the following information:

- i. Revised Form-1 mentioning the details of forest land.
- ii. Forest Diversion Permission (Stage-I FC) for 36.821 acres of forest land to be part of pipeline.
- iii. Details and number of trees to be cut in the forest land and non-forest land enroute pipeline.
- iv. Details of land requirement for all facilities and the map showing the revised co-ordinates of these facilities which include ash pond area, water reservoirs and intake & pump stations.

(26.9.2) Project Proponent submitted the information on 1.3.2019. Accordingly, the proposal is considered in the present meeting. Project Proponent made the presentation *inter-alia*, submitted the following information:

- i. Revised Form-1 stating the forest land of 13.3293 ha has been furnished.
- ii. Details of forest land involved for laying pipeline from Ganga River to the plant are as below:

Sl. No.	Forest Division	Forest Land (ha)	Legal Status
1.	Sahebganj	6.016	Reserved Forest
2.	Godda	1.8178	Reserved Forest
3.	Godda	0.7527	Jungle Jhari Land
4.	Godda	4.7428	Section-4

- iii. The forest diversion proposal for diverting 13.3293 ha for laying water intake pipelines has been submitted online on 27.3.2018 and the proposal is pending at Division (DFO) level in the State Forest Department.
- iv. There are 4243 trees under RoU in the forest land out of which only 2,000 will be cut. Further, number of trees in non-forest land in the RoU is 2226. Accordingly, the total number of trees to be cut in the forest and non-forest land is 4226.
- v. Revised map showing all facilities with co-ordinates including ash pond area, water reservoirs and intake & pump stations.
- vi. Summary of revised land requirement for the power project is as below:

Sl. No.	Description	Proposed area as per amendment (in acres)

1.	Plant area, Township, Ash dyke, 3 Water Reservoir other plant facilities & Greenbelt	558
2.	Railway Corridor	116.04
3.	Intake Location, Intermediate Reservoir cum Booster Station	60
	Sub-Total	734.04
4.	RoU for Water Pipeline Corridor	460.33
Grand Total		1194.37

(26.9.3) **Committee after detailed deliberations recommended for change in water source from Chir River to Ganga River for drawing 36 MCM and creation of storage reservoirs for 15 MCM to cater during lean season** subject to the following conditions:

- i. Stage-I Forest Clearance for diversion of 13.3293 ha for laying pipeline shall be submitted. As per Ministry's guidelines, a formal amendment will be issued after furnishing the Stage-I Clearance
- ii. Inline with Ministry's OM dated 11.3.2010 in regard to Oil and Gas pipelines, in a similar manner, 10 trees to be planted for every tree cut in the non-forest area.
- iii. There will be storage reservoirs for storing 15 MCM water to cater during lean season.
- iv. Daily quantity (Average, minimum and maximum) of fresh water withdrawn from Ganga River near Sahebganj for the Power Plant shall be recorded and data base be preserved to ensure permissible drawl of fresh water from Ganga River. The source sustainability reports for withdrawal of water from Chir River and from the Ganga River shall be placed in the public domain by the proponent, either by uploading to the PARIVESH portal or its own website.
- v. As per the original EC, 33% greenbelt of plant area shall be developed. In case of any shortage of land, additional land shall be acquired to meet the condition.

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(26.10) 1x660 MW Supercritical Ennore Thermal Power Station expansion Project, Ernavur Village, District Ennore, Tamil Nadu by M/s Tamil Nadu Generation and Distribution Corporation Ltd (TANGEDCO)- reg. amendment in ToR. (F.No. J-13012/15/2018-IA.I (T) & Online No. IA/TN/THE/84128/2018)

(26.10.1) Project Proponent submitted online application on 15.3.2019 for amendments in conditions prescribed in the ToR dated 21.1.2019.

(26.10.2) The environmental clearance for 1x660 MW Ennore expansion Power Project has been accorded on 3.6.2009 which is valid for 10 years, i.e. till 2.6.2019. Project Construction is in progress. As informed, 17% of physical progress was made at site by the EPC contractor and 18% payment (Rs.703 crores) of payment has been made to them so far. Meanwhile, Project Proponent requested to extend the EC beyond 10 years. Ministry advised to initiate the process of obtaining EC denovo as there is no provision to extend the EC beyond 10 years. Subsequently, Project Proponent applied for ToR and accordingly, Ministry prescribed the ToR vide letter dated 21.1.2019. Further, another project of 1x660 MW in the same premises has been proposed for which EIA and Public Hearing have been conducted. EAC while appraising the

proposal on 26.10.2017 sought additional studies which are yet to be completed and submitted to the Ministry. The Ennore replacement project will replace the existing Ennore Power Station of 450 MW which was de-commissioned on 31.3.2017.

(26.10.3) Project Proponent made the presentation and *inter-alia*, submitted the following information:

- i. A comprehensive EIA/EMP has been conducted in 2016 for the ETPS replacement project (1x660 MW) in the same complex. The public hearing for ETPS replacement project was conducted recently on 30.5.2017 and public are aware of both projects and their progress. As suggested by EAC, one season baseline during July-September, 2018 has been carried out for ETPS replacement project.
- ii. Exemption of Public Hearing may be granted as it is ongoing project.
- iii. Exemption for providing three alternate sites since it is an expansion TPP within ETPS complex.
- iv. Exemption of providing air quality monitoring data of 104 observations a year as this is applicable for power plants which are under operation. In the present case, the existing power plant of 450 MW has been decommissioned on 31.3.2017.
- v. Construction of project may be permitted even after expiry of EC (i.e. after 2.6.2019) as an interim arrangement till a fresh EC is obtained.

(26.10.4) Committee noted that the construction is in progress (17% achieved till date) and Rs.703 crores have been spent so far. Project Proponent can use the baseline data collected during July-September, 2018 for preparation of EIA. Further, the 104 observations a year of baseline data may not be applicable as the existing power plant has been shut down since 31.3.2017. Further, examination of alternate sites may also be exempted as it is an expansion project for which physical progress had already been made. However, committee noted that exemption of public hearing cannot be done as the public hearing was conducted in 2017 is for other project in the same complex whereas the public hearing for the proposed project has been conducted in 2008. Further, permitting the construction after expiry of existing EC cannot be recommended as construction without valid EC amounts to violation under Environment (Protection) Act, 1986.

(26.10.5) Committee after detailed deliberations, recommended for the following amendments in ToR:

- i. Baseline data collected during July-September, 2018 can be used in preparation of EIA/EMP report and collecting 104 readings a year may also be exempted.
- ii. Further, examination of alternate sites may also be exempted as it is ongoing project and the environmental clearance had already been issued for the project.

The committee again emphasises that no construction activities shall be carried out beyond the date of expiry of the existing EC till a fresh EC is obtained based on the amended ToR.

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(26.11) 2x520 MW Coal based Thermal Power Plant at Village Palavalasa, Taluk Pedagantyada, District Vishakhapatnam, Andhra Pradesh by M/s Hinduja National Power Corporation Ltd.-reg. amendment in EC for transportation of Coal by road. (F.No. J-13012/92/2008-IA.II (T) & Online No. IA/AP/THE/10774/2008)

(26.11.1) The Project Proponent submitted online application on 14.03.2019 for amendment in EC for transportation of Coal by road.

(26.11.2) Project Proponent along with EIA consultants M/s BS Envirotech Pvt. Ltd. have made the presentation and *inter-alia*, furnished the following information:

- i. The Environmental Clearance for the 2x520 MW has been accorded vide Ministry's letter dated 3.9.1996 and 10.9.1996. An amendment for incorporating CRZ recommendations of APSCZMA has been issued on 10.6.2010.
- ii. Temporary permission for transportation of coal by road for a period of two years (i.e. till 2.4.2019) from NTPC Simhadri Sick Line (8.5 km) for domestic coal, Bayyavaram Railway siding (45 km) and Kantakapalli Railway siding (63 km) for imported coal has been issued vide Ministry's letter dated 3.4.2017.
- iii. The Unit-1 (1x520 MW) and Unit-2 (1x520 MW) have been commissioned in January, 2015 and July, 2016 respectively.
- iv. Presently, the coal is obtained from Talcher Coalfields of M/s Mahanadi Coalfields Ltd.
- v. The railway siding is delayed due to delay in land acquisition from various government agencies. The plant is hardly in operation since February, 2018.
- vi. Rial rakes are proposed to be unloaded at NTPC Simhadri Sick Line, for which major works have been completed and it is being planned to cater maximum road transportation from NTPC sick line siding as it is located at a distance of 5 km from the power plant.
- vii. The company has obtained permission from East Coast Railway to unload at NTPC Simhadri railway siding.
- viii. The company has already acquired the land required from Devada village (proposed take off point from the existing NTPC line till the plant premises) till the plant boundary by Nov, 2014. All the Civil and Associated works in the stretch is completed by July, 2017 except the track work, which is pending due to approval from NTPC on co-user agreement.
- ix. Permission to transport coal by road from these three railway sidings and Gangavaram port for further period of three years.

(26.11.3) Committee noted that the transportation of coal by road has been carried out since commissioning of units till permission is granted (from January, 2016 till 3.4.2017). It has been informed that the Ministry vide letter dated 7.8.2018 has directed Andhra Pradesh State Pollution Control Board to initiate the credible action under E(P) Act, 1986 for transporting coal by road without Ministry's permission and for transporting coal with ash content more than 34% inline MoEF & CC Notification dated 2.1.2014. The status of credible action is not known till date.

(26.11.4) Further, Project Proponent while taking permission for two years in 2017, submitted the following information:

- a. construction of 5 km railway siding to take off from NTPC Siding (at 19th km) to HNPCL's plant is in advanced stage of construction. All the land has been acquired and about 30% work had already completed. The completion of railway siding will take another 2 years.
- b. Till the completion of 5 km railway siding, HNPCL requests for permission to transport coal on road from NTPC Simhadri sick line (8.5 km) for domestic coal, Bayyavaram Railway siding (45 km) for imported coal and Kantakapalli Railway siding (63 km) for imported coal.

(26.11.5) Committee noted that the connecting line of 19.46 km from Jaggayapalem-Devada cross over line had already been constructed by NTPC Simhadri Power Plant and M/s NTPC is using the railway line to bring the coal to their plant. However, committee noted that it is not sufficient to simply lay 5 km independent rail line and to connect the NTPC Simhadri sick line to transport coal by rail. There is a need to add additional railway line in the same corridor for which land acquisition and construction of railway line for a length of 20 km is required. This is because, as informed the railway line set up by M/s NTPC will not be able cater to the coal requirement of M/s HNPCL (Project Proponent). Further, the committee has not seen significant progress in the last two years. Project Proponent has not explored whether the common use of railway line by NTPC and the HNPCL is possible. Further, committee sought whether there is any MoU has been signed between two companies. In absence of any agreement with NTPC, how project proponent is going ahead to connect NTPC rail line is not known. If this information were known to project proponent few years back, a plan could have been made to connect the railway line for total length. Further, the traffic impact assessment study conducted by project proponent mentions only road sufficiency. However, the environmental impacts w.r.t impact on air quality, flora & fauna and villages/habitation are not available.

(26.11.6) **Committee after deliberations, deferred the project for want of the following information:**

- i. Status of credible action to be initiated by State Pollution Control Board for transporting coal by road without Ministry's permission and transporting coal with more than 34% ash content beyond 500 km.
- ii. Concrete plan for connecting railway line to the plant premises along with the progress made till date on all aspects.
- iii. Details of MoU with NTPC allowing to share the railway line for common portion. NTPC may also be requested give in writing that whether the existing railway line can be shared or not.
- iv. A comprehensive Traffic Impact Assessment study which includes type, width, make and custodian of the road, road sufficiency, load bearing strength, road condition, baseline air quality along the roads, impact on air quality, noise, forests, village/habitation, whether narrow crossings are involved or the roads are crossing through dense populations, etc. to be covered.

(26.12) Expansion of 1000 MW (4x250 MW) by addition of 4x600 MW (2400 MW) Coal Based Thermal Power Plant at Village Tamnar, Taluk Gharghoda, Raigarh District, Chhattisgarh by M/s Jindal Steel & Power Ltd.- reg. extension of existing permissions to use ash pond. (F.No.J-13012/117/2008-IA.II(T) & Proposal No. IA/CG/THE/10323/2010)

(26.12.1) The Project Proponent submitted online application on 07.03.2019 for extension of existing permission to use ash pond.

(26.12.2) Project Proponent made the presentation interalia submitted the following information:

- i. The Environmental Clearance for Units #1 & 2 (2x600 MW) was accorded on 18.03.2011 based on domestic coal linkage and Units#3 & 4 (2x600 MW) based on imported coal (till domestic coal linkage is available) was accorded on 04.11.2011.
- ii. Ministry vide letter dated 26.4.2017 permitted to use the existing ash dyke of 4x250 MW as the ash dyke for 4x600 MW could not be established in time. Further, change in location of ash pond was also permitted vide Ministry's letter dated 26.4.2017.
- iii. The land required for the construction of new ash dyke has been awarded under the New Land Acquisition Act, 2013.
- iv. The amount of Rs72.43 Crores has been deposited with CSIDC, Raipur towards compensation for land, trees and immovable properties to be paid to the land owners through Land Acquisition Officer.
- v. However due to enforcement of Model Code of Conduct in the Chhattisgarh State, allotment and physical possession of the land got delayed. The same is expected in next 2-3 months.
- vi. After land acquisition, the construction of first lagoon of new ash dyke is expected to be ready by October, 2020.

(26.12.3) Committee noted that the details of availability of volume of the existing ash pond and the generation of total ash quantity are not made available. The coal requirement of 4x250 MW and 4x600 MW is 5 MTPA and 9.6 MTPA. Accordingly, the ash quantity is estimated to be 5.264 MTPA. The daily ash generation is in the order of 15,000 TPD if plant runs at maximum PLF. However, it was informed that plant is running at 50% PLF. Accordingly, the ash generation is about 7500 TPD. It has been informed that land acquisition will be completed within 2-3 months.

(26.12.4) **Committee after detailed deliberations, recommended for use of existing ash pond for further period of one year (i.e. from 26.04.2019 to 25.04.2020) subject to the following additional conditions:**

- i. The details of quantities of ash generation, utilisation to various purposes such as brick manufacturing, constructions, soil condition & cement manufacturing and disposal shall be provided for six months (April-September & October-March) in the six monthly compliance report.
- ii. As per the Ministry's fly ash amendment Notification vide SO.254 (E) dated 25.01.2016, the company shall upload the details of stock of each type of ash generated/available from all the units (4x250 MW and 4x600 MW) on their website and shall update the stock position regularly.
- iii. As per the Ministry's fly ash amendment Notification vide SO.254 (E) dated 25.01.2016, the fly ash shall be supplied to various utilising units. The cost of transportation of ash for road construction projects or for manufacturing of ash based products or use as soil conditioner in agriculture activity within a radius of hundred km from Thermal Power Station shall be borne by the company and the cost of transportation beyond the radius of hundred km and up to three hundred km shall be shared equally between the user and the company.
- iv. For achieving compliance of fly ash notification, a map and details of ash utilising units within 100 km radius and 100-300 km along with quantity of ash required for each unit shall be prepared and submitted to the Ministry within 3 months.
- v. A public notice in major daily newspapers shall be published in both vernacular and English that the fly ash/bottom ash will be supplied free of cost for ash utilising units located within 100 km radius and the cost of transportation will be shared equally

between user and company for ash utilising units located in the radius of 100-300 km, in compliance to the fly ash amendment notification dated 25.01.2016. A copy of newspaper advertisement shall be submitted to Regional Office.

- vi. While commissioning the proposed project, the compliance of applicable revised emission norms vide Notification dated 07.12.2015, shall be achieved along with specific water consumption as per the notification issued vide dated 28.06.2018. The FGD System, NO_x control measures such as SCR/SCNR/De-NO_x burners shall be installed to achieve the revised emission norms.

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(26.13) 2x660 MW Coal Based Captive Power Plant at Village Nipania in Sunderpahari Taluk, in Godda District in Jharkhand by M/s Jindal Steel & Power Ltd -reg. amendment in EC. (F. No. J-13012/154/2010-IA.II(T) & Online No. IA/JH/THE/10417/2010)

(26.13.1) Project Proponent has submitted online application on 18.3.2019 seeking for extension of validity of Environmental Clearance dated 30.3.2012.

(26.13.2) The EC dated 30.3.2012 for establishing 2x660 WM Captive Power Project in Godda District of Jharkhand is valid for five years, i.e. till 29.3.2017. The EIA amendment Notification dated 14.9.2016, increased the validity of EC from five to seven years. As the EC was valid on the date of publication of EIA Notification and by virtue of this notification dated 14.9.2016, the validity of the said EC automatically get extended up to seven years, i.e. till 29.3.2019.

(26.13.3) Project Proponent provided the following information:

- i. The company has acquired 394.42 acres, out of total land requirement of 1209.99 acres.
- ii. The captive coal mine at Jitpur, near Jamshedpur, Jharkhand has been cancelled by the Supreme Court in September, 2014.
- iii. The company plans to participate in auction of new coal blocks to be carried out by Ministry of Coal. Thus, due to non-availability of the firm coal source for the project, the company has not taken up any major construction and related activities of the project. Once the firm coal linkage is available, the implementation of the project will be commenced.

(26.13.4) Committee noted that except for land acquisition of 394.42 acres, there has not been any progress during last seven years. Further, as informed, coal block has been cancelled in September, 2014. However, in the last 4-5 years after cancellation of coal block, project proponent has not secured any coal linkage which has been stated as the main reason for not going ahead with implementation of the project activities. The Committee has also ensured that there is no development of land or construction activities. Further, the project is linked as captive power plant to an integrated steel plant elsewhere. However, it was informed that the construction activities of connected steel plant have also not been initiated till dated. Considering the progress of the project activities and uncertainty in obtaining coal linkage, Committee noted that it would not be possible to complete the construction of the project and commission the captive power plant within 3 years, if extended. **Accordingly, Committee did not recommend the extension of validity of Environmental**

Clearance beyond seven years. Project Proponent may have to initiate the EC process *denovo*.

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(26.14) Any other item with the permission of the Chair

(26.14 A) 2x660 MW Khargone Super Critical Thermal Power Project at Villages Selda and Dalchi, District Khargone, Madhya Pradesh by M/s NTPC Ltd.- reg. temporary permission for transportation of coal by road. (F. No. J-13012/54/2010-IA-II (T) & Online No. IA/MP/THE/22937/2014)

(26.14.1) Project Proponent submitted online application on 11.1.2019 for seeking temporary permission for transportation of 2000 TPD coal by road till December, 2019.

(24.14.2) The environmental clearance for 2x660 MW Khargone Thermal Power Project in District Khargone of Madhya Pradesh has been issued vide Ministry's letter dated 31.3.2015. Coal requirement for two units is 6.51 MTPA and to be sourced from Pakri Barwadih Captive Coal Block. The Condition No. 4A (i) of the Environmental Clearance specifies as follows:

"Coal transportation shall be by Rail only. An additional EIA shall be carried out and an EMP shall be prepared for laying down the rail line and alternate mode of transportation, in case rail line gets delayed. The EIA/EMP shall be submitted to the Ministry within one year of issuing EC."

(24.14.3) Unit-1 (660 MW) is expected to be commissioned by 31.3.2019 and Unit-2 is expected to be commissioned by 30.9.2019. The proposal has been considered by the EAC in its meeting held on 23.1.2019 and EAC sought the following information:

- i. Detailed progress report of the construction activities of the power project along with milestones and expenditure incurred till date out of total project cost.
- ii. Reasons for delay in setting up railway line and siding from Nimarkhedi to Power Plant. Detailed progress report of the activities completed and balance activities along with timelines.
- iii. Any certification from Railways regarding expected date of completion for converting meter gauge to broad gauge from Khandwa to Nimarkhedi Railway station.
- iv. The routes from which coal is transported is firmed up out of 6 routes proposed. Reasons for proposing to transport only 2000 TPD whereas the coal requirement for Unit-1 is about 9800 TPD.
- v. Legible map showing proposed routes on topo sheet and google satellite image to be produced in hard copy (A0/A1).
- vi. Details of roads viz. Make of road whether it is concrete, WBM, Bitumen, Kutchha road, etc.; Type of road whether it is NH, SH, PWD or Rural Road. Capacity and load bearing strength of the road to take up 20 ton truck in addition to the tare weigh of 10-15 tons.
- vii. Justification for exceeding the total traffic (baseline and proposed traffic) beyond Design volumes of the roads at certain places. Any alternate routes available. If not, mitigation measures thereof.
- viii. Justification for incremental concentrations and details of input data such as weather conditions/meteorology, road type and condition, emissions from the trucks, fugitive emission & road dust, etc. Dispersion modelling is to be run before the committee.

(26.14.4) Project Proponent submitted the additional information online on 13.2.2019 i.e. immediately after uploading the Minutes in the website. However, the Ministry after processing the file has issued formal letter dated 21.2.2019 for submitting the reply to the additional information sought by EAC. The said letter was uploaded on the Ministry's website and the proposal was shown as pending at Project Proponent. As the proposal was shown pending at the Project Proponent level, it could not be placed in the Agenda. Subsequently, this was brought to the notice of the Ministry by the Project Proponent. Project Proponent had again submitted the same reply on 20.3.2019. Based on the request and justification provided by the project proponent, for considering out of turn basis in the meeting approval has been taken from the Competent Authority in line with the Ministry Circular dated 30.6.2009 and accordingly, the proposal was placed in the present meeting. Project Proponent along with consultants M/s Min Mec Consultancy Pvt. Ltd. has made the presentation and *inter alia*, submitted the following information:

- i. As per the current progress of NTPC Khargone Unit#1, it is planned to start synchronization, trial run, commissioning on coal in the month of March/April, 2019. The 72 hrs trial run on full load as per CERC guideline is also planned subsequently. As per CEA guideline the commissioning coal requirement of one unit of 660 MW is 2 lakh MT including trial run and 72 hrs full load operation. This 2 lakh tonne coal shall be brought from NTPC's Captive coal mine Pakri-Barwadih to M/s Nepa Ltd. siding by Indian railway and from NEPA siding to plant site by road. Thus, only commissioning coal requirement of one unit of 660 MW which is 2 lakh tonne as explained above, shall be brought by road from M/s Nepa Ltd. Siding.
- ii. Construction works of 2x660 MW Khargone STPP of NTPC Ltd. has been awarded to M/s L&T on 31.03.2015 as an EPC package. The works are in full swing with Unit#1 Boiler light up completed in Dec 18. Unit#1 TG put on barring gear on 03.02.2019 and preparedness for steam blowing for Unit#1 is in full swing. Synchronization of Unit#1 is planned by March, 2019. CHP works are also in progress and various structures like Wagon Tippler, Crusher House, TPs, Stacker Re-claimers are erected and in advanced stages of completion (80% completed) ready for start of commissioning.
- iii. Supply of coal is envisaged from NTPC's captive mine Pakri Barwadih (Hazaribag, Jharkhand) through railway line. The take off point is located at Nimarkhedi station (Khandwa district), 37 km from Khargone STPP plant. Railway line from Khandwa to Nimarkhedi is presently meter gauge & being converted into broad gauge by Indian Railway through customer funding model for which NTPC has deposited Rs. 487 Crores in March, 2015. Total length of broad gauge conversion is about 42 Km from Khandwa to Nimarkhedi. Likely completion date of gauge conversion is March, 2019.
- iv. Total expenditure incurred is Rs.6,947 Crores as on date out of total project cost Rs. 9,871 Crores.
- v. The land acquisition for railway corridor took time and the contract work for outside railway siding works of 37 km from Nimarkhedi to Khargone STPP was awarded to M/s RITES on 02.09.2016, after a lag of 1.5 years.
- vi. M/s RITES has further divided this work into 11 packages for which awards were placed during March, 2017 to Sep., 2018. The package for S&T works has been awarded in the month of Sep., 2018.

- vii. The initial tendering of Package 7 i.e. Major Bridges was done by M/s. RITES in March, 2017 and was annulled in August, 2017 as the price quoted by lowest bidder was very high w.r.t. cost estimate. Package was again tendered and could be awarded in Feb., 2018.

The completion schedule for various activities of Railway siding package:

Railway siding Package Progress Report			
Description	Scope	Executed	Completion schedule
Earth Work	9 million m ³	7.7 million m ³	April, 2019
Concreting	0.19 million m ³	0.152 million m ³	-
No of Bridges (Slab & Girder)	130 Nos.	105 Nos	-
Track Laying (including loop lines)	48 km	16.71 km	May, 2019
Fitness of track	-	-	May, 2019
S&T	-	-	July, 2019
OHE	-	-	Dec., 2019

- viii. Expected date of completion of conversion of meter gauge to broad gauge from Khandwa to Nimarkhedi Railway station is March, 2019. This is mentioned at Point No. 9, page 3 of MoM of 17th Coordination meeting held between Indian railways and NTPC.
- ix. Out of the six routes only one route is being firmed up, which is Route-5 (as given in traffic study report) from M/s Nepa Ltd. Railway siding to Plant site via Nepa Phata, Sanawad and Bediya having total length 145.2 km. CMD, NEPA Ltd. has given a consent letter to NTPC for use of their railway siding for unloading of NTPC coal.
- x. Once the railway siding is commissioned, the coal requirement of 9,800 TPD post COD, will be met through NTPC's own railway siding only.
- xi. The detailed descriptions of selected road i.e. Route-5 (From Nepa Ltd. Siding to Plant) having total length 145.2 km as desired are Tabulated below:

Section of road	Approx. Distance	Type of road	Ownership/ Custodian
NTPC Khargone to Bediya	20 km	PWD	PWD Khargone
Bediya to Sanawad	19 km	District Road	MPRDC Indore
Sanawad to NEPA Phata	92 km	SH-27	MPRDC Indore
NEPA Phata to M/s NEPA	14 km	PWD	PWD Burhanpur
Total Length	145 km		

- ix. The nature of the road is mentioned as under:

Make of road	Black top (Bitumen)	Concrete	WBM/Kutchha
Length in km	142.1 km	3.2 km	-

- x. Road widths are adequate for the existing and proposed traffic at all the traffic census point except at two location i.e. CP-10 (Near Indian Oil Pump, Sanawad) & 16 (Near River Bridge at Sanawad) in urban area and at three locations i.e. CP- 18 (Deshgaon village), 20 (Near Jain Dhaba, Chhaigaon Makhan village) & 23 (Asir village) in rural area.
- xi. It has been found that existing traffic remains high during day time only during 9:00 AM to 5:00 PM. Keeping this in mind, it is suggested that movement of coal carrying trucks to be restricted to only 16 hours during 5:00 PM to 9:00 AM. Further, a team of traffic marshals will be deployed in and around Sanawad.
- xii. Traffic impact assessment has been done again considering the line source model (CALINE) and considering worst case scenarios of traffic volume i.e. 200 Tippers movement daily (i.e. 13 tippers per hour during 16 hours/day). The maximum Ground Level Concentrations predicted at receptor distance of 10 m from centre of the road are as under:

Pollutant	Concentrations ($\mu\text{g}/\text{m}^3$)	Receptor No.	Section
PM ₁₀	1.028	86	S07
PM _{2.5}	0.288	86	S07
SO ₂	3.16	86, 120	S07, S09
NO _x	22.13	86	S07

(26.14.5) Committee noted that the project proponent has firmed up one route out of six routes earlier proposed. The route from NEPA Railway siding to plant premises involves the distance of 145.2 km. Further, the total quantity of coal to be transported is 2,00,000 Tons for the purpose of trail run and achieving commissioning of plant. Thus, project proponent has put restriction of maximum coal transportation of 2000 Tons/day involving 200 Trucks (20 tons truck) to and fro along the road. Further, the total length of road is either black top or concrete. Road widths are not sufficient at five locations/stretches. Accordingly, project proponent has agreed to transport coal during non-peak hours (5 PM to 9 AM). Accordingly, the traffic impact can be minimised. Further, the railway siding including broad gauge conversion by Indian Railways will be completed by December, 2019. Accordingly, Committee agreed to transport the coal by road temporarily.

(26.14.6) **Committee after detailed deliberations, recommended for transportation of coal by road for the quantity of 2,000 Tons/day of having total quantity restricted to 2,00,000 Tonnes (2 Lakh tonnes) for a temporary period of one year subject to following additional conditions:**

- i. While commissioning the proposed project, the compliance of revised emission norms vide Notification dated 07.12.2015 for the parameters PM: 30 mg/Nm³; SO₂: 100 mg/Nm³; NO_x : 100 mg/Nm³ and Hg: 0.03 mg/Nm³ shall be achieved along with specific water consumption as per the notification vide dated 28.06.2018. The FGD System, NO_x control measures such as SCR/SCNR/De-NO_x burners shall be installed to achieve the revised emission norms.
- ii. The status of installation of FGD and De-NO_x/SCR/SCNR control systems to comply with new emission norms for both units shall be submitted.

- iii. The detailed progress report of construction of proposed project shall be submitted to the Ministry and its Regional Office along with six monthly compliance report till the both units are commissioned.
- iv. As per the Revised Tariff Policy notified of Ministry of Power issued vide dated 28.01.2016, project proponent shall explore the use of treated sewage water from the Sewage Treatment Plant of Municipality/ local bodies/ similar organization located within 50 km radius of the proposed power project to minimize the water drawl from surface water bodies. The details of Sewage Treatment Plants located within 50 km radius along with the capacities shall be submitted.
- v. Daily quantity of (Average, minimum and maximum) fresh water withdrawn from Narmada River at Omkareshwar Dam for the plant purpose shall be submitted along with six monthly compliance report.

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

Standard 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 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, nallah, 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 topo sheet 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 modelling 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 wind-rose 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.

- xlvi) 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.
- xlvii) 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.

ANNEXURE- A2

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 NO_x 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 as well 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} in case 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 schedule 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 seawater 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:



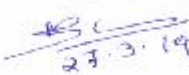




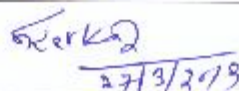
1. The pipeline shall be buried below the seabed at a depth to ensure its stability under rough sea conditions particularly during cyclone / tsunami. The depth of burial will depend on the seafloor strata but normally the top of the pipeline shall be at least 1 m below the bed level. In the surf and 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 of EAC members

LIST OF MEMBERS (Attendance Sheet)

26th EXPERT APPRAISAL COMMITTEE MEETING (Thermal)

DATE & TIME : 27th March 2019, 10:00 AM
 VENUE : Indus Hall, Jal Wing, Ground Floor, Indira Paryavaran Bhawan, New Delhi

Sr.No.	Name of Member	Signature
1.	Dr. Navin Chandra Chairman	 27/03/19
2.	Shri Suramya D. Vora, IFS (Retd.) Member	 27/3/19
3.	Dr. Narmada Prasad Shukla Member	 27.3.19
4.	Sh. N. Mohan Karnat, IFS Member	- Abs -
5.	Dr. Sharachchandra Lele Member	 27/3/19
6.	Sh. N.S. Mondal, CEA Member	 27/3/19
7.	Dr. R.K. Giri, IMD Member	- Abs -
8.	Dr. S.K. Paliwal, CPCB Member	- Abs -
9.	Prof. S.K. Gupta (ISM/ IIT Dhanbad) Member	- Abs -
10.	Dr. Jai Krishna Pandey Member	 27/3/19
11.	Dr. Manjari Srivastava Member	- Abs -
12.	Dr. Gururaj P Kundargi Member	
13.	Dr. S. Kerketta Member Secretary, MoEFCC	 27/3/2019

14. P. Vardivel Mangam
IPR

Prabhat 27/3/19

Approval of Minutes of the 26th Meeting of the Re-constituted Expert Appraisal Committee (EAC) of Thermal Power Projects by the Chairman.

4/11/2019

https://mail.gov.in/twc_static/layout/shell.html?lang=en&3.0.1.2.0_15121607

Subject: **Re: Draft 26th EAC meeting of Thermal Sector - reg.**
To: Dr S Kerketta <s.kerketta66@gov.in>

Date: 04/11/19 12:32 PM
From: navin chandra <navinchandrarnl@yahoo.com>

11/04/2019

Dear Dr. Kerketta Ji,

I have gone through the finalized draft of the Minutes of 26th EAC (Thermal) meeting and found them to be in order. The Minutes can now be uploaded on the website of the Ministry.

(NAVIN CHANDRA)

Dr. Navin Chandra,
Director General
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On Wednesday, 10 April, 2019, 3:23:27 pm IST, Dr S Kerketta <s.kerketta66@gov.in> wrote:

Sir,

PFA regarding the above subject matter. Sending the same after incorporating the comments of the other EAC Members (comments received from Mr. GP kundargi) It is requested 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)

https://mail.gov.in/twc_static/layout/shell.html?lang=en&3.0.1.2.0_15121607

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AGENDA OF 26th MEETING OF THE RE-CONSTITUTED EXPERT APPRAISAL COMMITTEE ON THERMAL POWER PROJECTS

DATE : 27 March, 2019

TIME : 10.30 A.M. ONWARDS

VENUE : INDUS MEETING HALL, GROUND FLOOR, JAL WING, IPB, JORBAGH ROAD, NEW DELHI-110003.

ITEM	
Item No. 26.0	CONFIRMATION OF MINUTES OF 25th EAC (THERMAL) MEETING
Item No.	CONSIDERATION OF PROJECTS
26.1	250 MW Municipal Solid Waste Power Project (using Ultra Cold Plasma Technology to convert into Green Power, Purified Water and Zero Carbon Fuel) at Village Ramnagar Mazra Ahatmali, Tehsil & District Moradabad, Uttar Pradesh by M/s A.G. Dauters Waste Processing Private Limited. - reg. ToR. F.No. J-13012/03/2019-IA.I(T) & Proposal no. IA/UP/THE/98859/2019.
26.2	50 MW Municipal Solid Waste Power Project (using Ultra Cold Plasma Technology to convert Solid Waste into Green Power, Purified Water and Zero Carbon Fuel) at Shahjahanpur, Tehsil Kakra Kankar Kund, District Shahjahanpur, Uttar Pradesh by M/s A.G. Dauters Waste Processing Private Limited. - reg. ToR. F.No. J-13012/04/2019-IA.I(T) & Proposal no. IA/UP/THE/98566/2019.
26.3	400 MW Municipal Solid Waste Power Project (using Cold Plasma Technology to convert Solid Waste into Green Power, Purified Water and Zero Carbon Fuel) Tehsil & District Ram Chak Bairiya, Patna, Bihar M/s A.G. Dauters Waste Processing Private Limited. - reg. ToR. F.No. J-13012/06/2019-IA.I(T) & Proposal no. IA/BR/THE/99725/2019.
26.4	55 MW Municipal Solid Waste Power Project (Using Cold Plasma Technology to convert Green Power, Purified Water and Fuel at East Delhi Municipal Corporation Opp. Gagan Theatre, Wazirabad Road, Mandoli Extension, Village Mandoli, Delhi by M/s A.G. Dauters Waste Processing Private Limited.- reg. reconsideration of ToR. F.No. J-13012/13/2018-IA.I (T) & Proposal no. IA/DL/THE/84113/2018.
26.5	4000 MW Deoghar Ultra Mega Power Project to be set up in Pipra village, Mohanpur Anchal, District Deoghar, Jharkhand by Deoghar Mega Power Limited. - reg. ToR. F.No. J-13012/05/2019-IA.I(T) & Proposal no. IA/JH/THE/98383/2019.
26.6	1x800 MW Sipat Advance Ultra Super Critical Technology Demonstration Project, (Stage-III) at Village Sipat, Tehsil Masturi, Bilaspur District. Madhya Pradesh by M/s NTPC Limited - reg. reconsideration of ToR. F.No. J-13012/02/2019-IA.I (T) & Online no. IA/CG/THE/89473/2018.
26.7	Proposed Expansion of 726.6 MW (Unit-3&4: 2 x 363.3 MW) Gas Based Power Project at Village Palatana, Tehsil Kakraban, Gomti District, Tripura by M/s ONGC TRIPURA POWER COMPANY LIMITED reg.- EC. F.No. J-13012/02/2017-IA.II(T) & Proposal No. IA/TR/THE/97559/2006.
26.8	2x10 MW Coal Based Captive Thermal Power Plant at Village Tatisilwai, Ranchi District, Jharkhand by M/s Usha Martin Ltd. reg. amendment in

	EC for transportation Coal by road. F.No. J-13012/122/08-IA. II(T) & Proposal No. IA/JH/THE/10337/2011.
26.9	2x800 MW Imported coal based Godda Thermal Power Project at Village 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. Reconsideration of EC. File No: J-13012/01/2016-IA.I (T) & Online No. IA/JH/THE/54853/2016.
26.10	1x660 MW Supercritical Ennore Thermal Power Station expansion Project, Ernavur Village, District Ennore, Tamil Nadu by M/s Tamil Nadu Generation and Distribution Corporation Ltd (TANGEDCO)- reg. amendment in ToR. F.No. J-13012/15/2018-IA.I (T) & Online no. IA/TN/THE/84128/2018.
26.11	2x520 MW Coal based Thermal Power Plant at Village Palavalasa, Taluk Pedagantyada, District Vishakhapatnam, Andhra Pradesh by M/s Hinduja National Power Corporation Ltd.reg. amendment in EC. F.No. J-13012/92/2008-IA.II (T) & Online no. IA/AP/THE/10774/2008.
26.12	Expansion of 1000 MW (4x250 MW) by addition of 4x600 MW (2400 MW) Coal Based Thermal Power Plant at Village Tamnar, Taluk Gharghoda, Raigarh District, Chhattisgarh by M/s Jindal Steel & Power Ltd.- reg. extension of existing permissions to use ash pond. F.No. J-13012/117/2008-IA II (T) & Proposal No. IA/CG/THE/10323/2010.
26.13	2x660 MW Coal Based Captive Power Plant at Village Nipania in Sunderpahari Taluk, in Godda District in Jharkhand by M/s Jindal Steel & Power Ltd -reg. amendment in EC. F.No. J-13012/154/2010 -IA II (T) & Online no. IA/JH/THE/10417/2010.
26.14	2x660 MW Khargone Super Critical Thermal Power Project at Villages Selda and Dalchi, District Khargone, Madhya Pradesh by M/s NTPC Ltd.- reg. temporary permission for transportation of coal by road. F.No. J-13012/54/2010-IA-II (T) & Online No. IA/MP/THE/22937/2014.
26.15	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.