**MINUTES OF THE 24th MEETING OF THE RE-CONSTITUTED EXPERT APPRAISAL COMMITTEE (EAC) ON ENVIRONMENTAL IMPACT ASSESSMENT (EIA) OF THERMAL POWER PROJECTS HELD DURING 23rd JANUARY, 2019.**

The 24th meeting of the re-constituted EAC (Thermal Power) was held on 23rd January, 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:

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| 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. | Dr. (Mrs. Manjari Srivasta) | - | Member |
| 7. | Dr. S.K. Gupta | - | Member (Rep. of ISM/IIT Dhanbad) |
| 8. | Dr. R.K. Giri | - | Member (Rep. of IMD) |
| 9. | Shri N.S. Mondal | - | Member (Rep. of CEA) |
| 10. | Dr.S.K. Paliwal | - | Member (Rep. of CPCB) |
| 11. | Dr. S. Kerketta | - | Member Secretary |

Shri N. Mohan Karnat and Dr. S. Lele could not be present.

**Item No.24.0: CONFIRMATION OF THE MINUTES OF THE 23rdEAC MEETING.**

The minutes of the 23rd EAC (Thermal Power) meeting held on 30.11.2018 were confirmed in presence of members present during the meeting.

**Item No. 24.0: CONSIDERATION OF PROJECTS**

**(24.1) Expansion of cogeneration power plant from 6 MW to 18 MW at Sy. Nos. 250, 259, 260, 262, 471, 263 and 473, Village & Taluk Gokak, District Belagavi, Karnataka by M/s. Roquette Riddhi Siddhi Pvt. Ltd.-reg. reconsideration of EC.**

**(F.No. J-13012/06/2016-IA.I (T) & Online No.IA/KA/THE/53776/2016)**

(24.1.1) Project Proponent submitted online proposal on 21.5.2018 for reconsideration of EC. The proposal for grant of EC has earlier been considered in the 18th Meeting of the EAC (Thermal Power) held on 27.6.2018 and EAC has sought the following information:

i. Legible copy of MoU for imported coal vide dated 19.4.2016 is to be submitted.
ii. Authenticated map by Chief Wildlife Warden showing distance between Ghata Prabha Bird Sanctuary & its Eco-sensitive Zone vis-à-vis Project along with specific comments shall be submitted.
iii. Permission for water withdrawal from GhataPrabha River shall be submitted.
iv. 104 readings for baseline data of Ambient Air Quality of the existing unit during last one year as per ToR No.xlix. Soft copy of Project file of the air quality modelling is to be submitted for verification by IMD Expert.

v. Cumulative impact of all sources of emissions including handling and transportation of existing and proposed projects shall be assessed as per ToR No.li.

vi. Cumulative impacts in terms of generation of wastewater, solid waste and hazardous waste and treatment & disposal mechanism shall be assessed for both existing and proposed units.

vii. Certified Compliance report by RO, SPCB on Consent (CTO) conditions shall be submitted.

viii. Details of minimum distance to be maintained from HFL of Markandeya River and GhataPrabha River.

(24.1.2) Project Proponent vide their online submission dated 6.12.2018 has submitted the following information:

i. The MoU between M/s Roquette Riddhi Siddhi Private Ltd. and M/s Regency Corporation has been signed on 19.4.2016 for supplying 3,00,000 TPA Indonesian Coal with GCV of 4200±100 kCal/kg; Moisture: 36%; Ash content: 6-8%; Sulphur: <0.6%.

ii. Authenticated map by Chief Wildlife Warden vide letter dated 10.7.2018 showing the Project Boundary and Gataprabha Wildlife Sanctuary has been provided. As per the map, the project facilities are located at 403 m from the boundary of Gataprabha Bird Sanctuary and 120 m from the Eco-sensitive Zone of Gataprabha Bird Sanctuary.

iii. The proposal for drawl of 1.6 cusecs (4530 $m^3$/day) of water from the Gataprabha River for the power plant by Water Resources Department is under consideration.

iv. Ambient Air Quality data ($PM_{10}$, $SO_2$ and $NO_X$) collected at the plant site and main gate have been furnished and the values are within the National Standard for Air Quality. The data used in air quality modelling for impact prediction has been provided in the CD in the form of soft copy.

v. There are 20 number of stacks (Sprayer drier: 3; Flash Dryer: 1; 250 kVA, 750 kVA and 2000 kVA DG sets; existing boilers of 33 & 30 TPH; Starch Powder Drier; Gluten Dryer; Sulphur Burner Plant; Germ Dryers: 2; Biogas based engine) with height in the range of 30-53 m which are in operation for the various process of Starch plant and 6 MW Power Plant.

vi. The cumulative impact assessment for the air quality has been predicted by incorporating these emissions. The net ground level concentrations are within the ambient air quality standards. The details are as under:

| Air quality parameter | Incremental concentrations due existing plant | Incremental concentrations due to proposed power project | Total incremental ground level concentrations | Baseline | Net resultant concentrations | AAQ standard |
|---|---|---|---|---|---|---|
| PM (µg/$m^3$) | 15.37 | 0.36 | 15.73 | 69.8 | 85.53 | 100/60 |
| $SO_2$ (µg/$m^3$) | 0.19 | 0.4 | 0.59 | 16.8 | 17.39 | 80 |
| $NO_X$ (µg/$m^3$) | 3.81 | 2.2 | 6.01 | 20.5 | 26.51 | 80 |
| CO (µg/$m^3$) | 2.31 | 1.2 | 3.51 | 835 | 838.55 | 2000 |

vii. The wastewater generation for the existing plant and proposed project is 1350 $m^3$/day and 237.8 $m^3$/day, respectively. The wastewater is treated through ETP having Upflow Anaerobic Sludge Blanket Reactor (UASB)/Anaerobic Digestors to reduce BOD. Further, the clarified water is sent to RO treatment facility. Out of total wastewater of 1588 $m^3$/day, the Rejects having quantity of 238 $m^3$/day will be used for ash conditioning and dust suppression in Coal Handling Plant. Treated water is used in the plant. Thus, Zero Liquid Discharge concept is followed.

viii. State Pollution Control Board has inspected the site on 7.8.2018 for renewal of Consent to Operate. The same inspection report has been submitted on compliance of CTO.

ix. The distance from the power plant to the Markandeya River and Ghataprabha River will be maintained at 91 m and 420 m, respectively. Till date no flood water has entered existing plant. With the pollution control measures, the plant will not have any impact on these rivers.

(24.1.3) Committee noted that incremental ground level concentrations of Particulate Matter from the existing and proposed power plant is 15.73 $\mu g/m^3$ and the net concentrations is 85.53 $\mu g/m^3$ which are beyond ambient air quality standards for $PM_{2.5}$ but within $PM_{10}$ emissions. All other emissions are within the ambient air quality standards. As the proposed power plant is based on CFBC technology and Sulfur-absorbing limestone will be used to mix with the fuel particles in the fluidization phase, which will absorb almost 95% of the Sulphur. Committee further noted that permission for water withdrawal is yet be secured from the Water Resources Department. The impacts of power plant emissions on the wildlife in the Ghataprabha Wildlife Sanctuary are to be made available. Further, details regarding water withdrawal of 1.6 cusec (4530 $m^3$/day) has any bearing on wildlife and whether the intake point has been suitably located are to be made available. Further, Project Proponent needs to prepare Wildlife Management Plan to protect the wildlife species. The Chief Wildlife Warden has not provided any specific comments with respect to the project except distance of power plant from the Wildlife Sanctuary. As per the SPCB's inspection report, the wastewater lagoons are not lined and Project authorities have been asked to submit time bound action plan for lining the ponds. Further, it was mentioned that 80 KLD sewage/domestic wastewater is being treated in Septic Tank. Committee of the opinion that Sewage Treatment Plant is required to be set up to treat such large quantity of sewage considering the plant is located in the vicinity of Wildlife Sanctuary and water bodies.

(24.1.4) Committee after detailed deliberations, **deferred the project for want of following information** for further consideration:

i. Permission to draw water from the Ghataprabha River for the power plant.
ii. Impact on Ghataprabha Bird Sanctuary due to water withdrawal from the river, location of intake pipeline and emissions from the power plant. Specific comments from Chief Wildlife Warden are to be obtained.
iii. Time bound action plan to set up STP and action plan for lining of Wastewater lagoons as per the SPCB inspection report.

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**(24.2) 2x600 MW and 3x660 MW Coal based TPP at Villages Kottai, Ariyagosthi, Villianallur & Silambimangalam, Taluk Chidambaram, Distt. Cuddalore, Tamil Nadu by M/s IL&FS Tamil Nadu Power Company Ltd.- reg. amendment in Environmental Clearance for change in coal source.**
**(F.No. J-13012/34/2008-IA.II(T) & Online no: IA/TN/THE/11883/2008)**

(24.2.1)Project Proponent submitted online proposal on 10.10.2018 for seeking amendment in Environmental Clearance (EC) for change in coal source from 100% imported coal to blend of imported coal and Lignite in the ratio of 3:1 along with the transportation of Lignite by road.

(24.2.2) The proposal for grant of EC has earlier been considered in the 22nd Meeting of the EAC (Thermal Power) held on25.10.2018 and EAC has sought the following information:

i. A copy of the directions issued by the Tamil Nadu Pollution Control Board regarding air pollution along with the point-wise compliance to the directions issued and further action taken by the TNPCB.
ii. A copy of the report of the inspection carried out by the District Administration and point-wise compliance to any directions issued therein.
iii. Progress report of the construction of the 3x660 MW Units till date and the scheduled timelines for completion within the validity period.
iv. Carry out AAQ monitoring at the closest school in Pudhukuppam village and share the results of the same.

(24.2.3) Project Proponent vide their online submission dated 28.11.2018 furnished the information as sought by EAC. However, the project proponent did not attend the meeting. Accordingly, **the Committee deferred the proposal.**

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**(24.3) 4000 MW Ultra Mega Power Project (UMPP) near Village Kanwara, Taluk Katoriya, District Banka, Bihar by M/s Bihar Mega Power Limited – reg. amendment in ToR.**
**(F.No. J-13012/4/2016-IA.I(T) & Online No. IA/BR/THE/53046/2016)**

(24.3.1) Project Proponent submitted online application on 07.12.2018 for amendment in ToR for waiving of two conditions prescribed in the ToR. The ToR has been issued to the 4000 MW Ultra Mega Power Project in the District of Banka, Bihar vide Ministry's letter dated 7.6.2016. The condition Nos. 3(v) & 3(x) of TOR dated 7.6.2016 for which waiver has been sought are as below:

*"Condition No.3(v): Since the UMPP shall be near to Banka Town, a washery shall be set up at the captive coal mines so that washed coal with ash content <34% is transported."*

*"Condition No.3(x): Possibility of using the existing railway circuit should be explored instead of the new line being proposed from the mine which involves a distance of approx.100 km."*

(24.3.2) Project Proponent has not prepared any presentation and verbally communicated that the coal linkage (Pirpainti Barahat Coal Block, Jharkhand) earlier allocated to the Banka UMPP has now been delinked and has been allotted to M/s Bharat Coking Coal Ltd. vide MoC dated19.2.2018.Project

Proponent mentioned that the ToR condition nos.v& x now become redundant as the coal block is now delinked. Accordingly, Project Proponent sought waiver of these conditions.

(24.3.3) Committee noted that in regard to the condition no.3(v) that the Pirpainti Barahat Coal Block is situated at a distance of approx.80 km. The Banka Town is located at approximately 11 km from the proposed project. As per the Ministry's Notification No.GSR.02(E) dated 2.1.2014 mandates the use of washed coal with ash content less than 34% for power plants located beyond 500 km from pit head. Since the coal block is situated within 500 km, there is no restriction of ash content in the coal as per the said Notification. However, the then EAC (Thermal Power) in its meeting held during 5th-6th May, 2016 while recommending for ToR has stipulated for setting up of washery which may be due to the Banka Town is nearby and considering the 18-20 MTPA coal is fed to the power plant which will have impacts on nearby Banka Town. Further, the ToR has been issued after the publication of Notification dated 2.1.2014.Committee noted that the environmental impacts considering both scenarios with ash content less than 34% and more than 34% along with transportation may be incorporated in the EIA/EMP report.

(24.3.4) Further, regarding condition No.x, committee has not found any justification in Project Proponent's submissions. Committee noted that it is always better to use the existing rail network and draw the railway line from the nearest takeoff point to the power plant to avoid land acquisition and laying new infrastructure.

(24.3.5) Committee after detailed deliberations, found no justification to waive of these conditions at present. Project Proponent may submit the detailed justification, if any in the final EIA/EMP report. **The present proposal has been returned in original form**.

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**(24.4) 2x800 MW Sri Damodaram Sanjeevaiah Thermal Power Project at Nelaturu Village, Muthukuru Mandal, SPSR Nellore District, Andhra Pradesh by M/s Andhra Pradesh Power Development Corporation Ltd.- reg. amendment in EC.**
**(F.No. J-13011/20/2007-IA.II(T) & Online No. IA/AP/THE/26414/2007)**

(24.4.1) Project Proponent has submitted online application on 23.11.2018 for amendment in EC for raising the ash dyke height of 100 ha ash pond.

(24.4.2) The Environmental Clearance for establishing 2x800 MW (Stage-I) Supercritical Power Plant has been issued vide Ministry's letter dated 17.7.2007. As per the original layout, the ash pond was supposed to setup within the plant boundary. Later, it was found that the ash pond location was close to a water pond and a creek which joins the Buckingham Canal. Project proponent requested for shifting of ash pond to avoid ash contamination of existing fresh water body. Accordingly, an amendment in EC for shifting of ash pond from the plant premises to outside the plant boundary has been accorded on 3.5.2012. The Environmental Clearance for 1x800 MW (Stage-II) Supercritical Power Plant within the premises of Stage-I Power Project has been issued vide Ministry's letter

dated 2.7.2015. There is no additional land and ash pond required for the Stage-II. The ash pond of 100 acres for Stage-I will be used for Stage-II aswell.

(24.4.3)The project proponent made the presentation and submitted the following information:

i. Commissioning of Unit-1:800 MW and Unit-2: 800 MW has been done on 5.2.2015 and 24.8.2015, respectively. Unit-3: 800 MW is under construction.

ii. The Coal requirement for the plant (2x800 MW) is 13,500 Tons per Day (4.5 Million Metric Tons per Annum). Domestic coal and imported coal are used in the ratio of 70:30. Domestic coal is sourced from Talcher Coalfields (M/s Mahanadi Coalfields Ltd.). Domestic coal is washed at a private washery in Odisha and then transported to the plant site to get the desired calorific value and Ash Content. Imported Coal is brought from Indonesia.

iii. The ash generation from the Stage-I Power Plant (2x800 MW) is 4445 TPD (~14.6 Lakh Tons/Annum).

iv. The area of ash pond is 100 acres excluding the area occupied by the bund. The ash dyke with bund height of 5 m has been filled to its brim (upto 4.85 m). The total ash quantity of ~19.96 Lakh Tonnes has been pumped into the ash pond which has served only for 3.25 years due to low ash utilisation. It is proposed to increase the bund height for another 10 m in two spells at 5 m in each spell. Ultimate height of the bund would be 15 m.

v. The ash pond was constructed in 100 acres out 299.40 acres proposed considering that the percentage of ash utilisation will increase. The ash could not be consumed fully. The ash utilisation is as follows:

| Year | Generation (in Lakh MT) | Utilisation | % Utilisation | PLF (%) |
|---|---|---|---|---|
| 2015-16 | - | - | 33.13 | 45.08 |
| 2016-17 | 14.53 | 5.57 | 38.39 | 61.42 |
| 2017-18 | 8.23 | 5.97 | 72.59 | 34.45 |
| 2018-19 (October, 2018) | 7.40 | 4.31 | 58.18 | 49.5 |

vi. For raising the bund height, Professors from IIT Delhi and IIT Madras have conducted detailed study and suggested that the existing pond requires soil improvement before raising of the pond and accordingly, the pumping of ash into the ash pond requires to be stopped for some time. To run the plant without interruption, a temporary diversion bund has been constructed adjacent to the existing ash pond. The total area of existing ash pond and temporary diversion bund is 299.40 acres.

vii. The temporary bund will be abandoned soon after strengthening and raising the dyke height of existing ash pond.

viii. Further, presently sea water is used for making ash slurry for disposal into the ash pond. However, desalination plant with capacity of 60 MLD is under construction and expected to be functional by March, 2019 so that only treated (desaline) water will be used in ash slurry making.

ix. The greenbelt covering an area of 40 acres of plantation has been developed on three sides of existing ash pond and 20,000 nos. of saplings were brought to be planted in remaining 35 acres around diversion bund.

x. It is expected that raising of dyke height of the existing ash pond will take six months time. Subsequently, the temporary diversion bund will be abandoned.

xi. Further, the company is putting its best efforts to utilise flyash. M/s Inpower Cement Corporation was allotted 2 acres land within plant premises for brick manufacturing. 3000 TPD of flyash has been allocated this unit and it is expected to commence operations by June, 2019. M/s Penna Cements has set up cement grinding unit of 1.5 Million TPA Cement manufacturing. 1500 TPD has been allocated to this unit.

xii. M/s NCL Altek & Seccolor Ltd., a brick manufacturing unit has been allocated 350 TPD. At present, orders were issued to lift flyash of 2500 TPD upto 31.3.2019.

xiii. Road projects have been identified such as NH project near Tirupati. The company will provide 15 Lakh Tonnes of Flyash and 20 Lakh Tonnes of Bottom ash to M/s Montecarlo Ltd for the highway project.

(24.4.4) Committee noted the following points during the meeting:

i. There are several public representations received from surrounding villages viz. Pynampuram and Varakipudi.

ii. The issues in the representation are construction of additional ash pond in the area designated for greenbelt without prior permission from the Ministry, the damage of surrounding crops due to saline ingression and airborne ash, not developing greenbelt in the area of 420 acres, etc.

iii. A report of scientist of Acharya N.G. Ranga Agricultural University, Nellore has been enclosed along with the representation which mentions that on visual observation of the condition of the crop, it was observed that the crop was completely affected with salt injury which is reflected in drying of the leaves and ill filled grain in the panicles. The soil test report of the farmer's field also in support of the salt injury observed in the field.

iv. Further, it mentioned that the scientist's team (from Agro, Plant Bleeding and Entomology disciplines) visited the fields nearby APGENCO power plant on 30.5.2017 and observed the deposit of ash on the entire plants, which may interfere with the photosynthesis process and ultimately may affect the yield. The fields were also infected with stem rot and grain discoloration. The team opined that a detailed study is needed by Plant Physiologist and Soil Scientists to know the amount of flyash depositing and nature of damage caused by flyash generated from the thermal power projects on rice fields.

v. The representation also referred to the inspection reports of Andhra Pradesh Pollution Control Board (APPCB) dated 16.12.2017, 5.6.2018, 4.8.2018& 28.7.2018. The reports mentioned that project authorities haves started constructed of ash pond-2 in 149 acres which was claimed as temporary diversion bund and a temporary measure to facilitate strengthening of existing ash pond. It was mentioned that it is a permanent ash pond and not a temporary diversion bund. It was mentioned that a directions may be issued to

submit the bank guarantee and to stop the construction till permission from MoEF&CC is obtained.

vi. The report of APPCB also mentioned that if the extension of ash pond is constructed, it is not possible to develop greenbelt of 50 width along the ash pond area. Further, a village/habitation is located at 150 m from the ash pond under construction.

vii. Further, APPCB vide their letter dated 24.9.2018 directed to obtain permission from MoEF&CC before proceeding further in respect of the ashpond.

viii. Report of IIT Madras vide dated 2.4.2018 has been cited regarding geotechnical studies for construction of diversion bund. It mentioned that there are few dwellings located near the bund location. In the long run, these dwellings may face some issues related to health hazards. It is suggested to find an alternate location for these dwelling in due course of time.

ix. Ministry's Regional Office has also inspected the site on 5.10.2018 based on complaints received from nearby villages. The report mentioned that project authorities are constructing the second ash pond without obtaining EC and sea water is used instead of de-saline water in the ash pond. It reported that construction work of ash pond was in progress despite directions from Member Secretary, APPCB.

x. A case in NGT, New Delhi vide OA No.18 of 2018 (SZ) on 15.10.2018 has been disposed mentioning the following:

*".....APPCB is fully aware about impugned action and they are taking steps in respect of it. When the State PCB, is already seized with the matter, there is no reason to interfere at this stage.*
*The State PCB, if any violation is found, shall proceed in accordance to law."*

xi. Further, an appeal No.49 of 2013 has been filed in the the NGT, Chennai challenging the Ministry's amendment dated 3.5.2012 regarding relocation of ash pond. The NGT has dismissed the appeal vide Order dated 17.12.2013.

xii. Further, Civil Appeal has been filed in Hon'ble Supreme Court vide CA NO.4699/2014 which is pending.

(24.4.5) Committee noted that, from the site visits of APPCB, Ministry's Regional Office and NGT court case, Project Authorities are aware of construction of ash pond despite having no permission from the Ministry. The area under which ash pond is constructed was to be developed as greenbelt. PP is claiming that this is not permanent ash pond and it is temporary bund. However, from the photos provided in the RO report, it reveals that it is a permanent ash pond with concrete dyke with HDPE liner. Further, committee noted that if temporary diversion is required, only about 20-30 acres of land is needed whereas in the present case nearly 150 acres has been used. The pollution caused by ash pond due to salinity ingress and airborne ash to the nearby fields and villages is also possible. Further, the area was supposed to be part of greenbelt. It can be seen from the google satellite image that the greenbelt is not developed as per the commitment of 420 acres. Further, it was noted that ash is being imported by M/s Sembcorp Energy Ltd. (which is adjacent to the present plant) to Bangladesh

and other countries from Krishnapatnam Port. Similar practice is to be adopted by the project authorities to achieve 100% utilisation.

(24.4.6) **Committee after detailed deliberations, opined that a separate action may be taken by the Ministry for constructing second ash pond in an area of 149 acres without prior approval from the Ministry. However, the EAC deliberated on the issue of temporary permission of ash pond in an area of 149 acres. As there is no provision of granting temporary ash pond, Committee has recommended for carving out 30 acres of ash pond by creating a diversion bund in 149 acres area as an exigency and may use for dumping of flyash till the height of existing ash pond is increased from 5 m to 10 m, after obtaining NOC Andhra Pradesh Pollution Control Board** subject to following additional conditions:

i. The temporary diversion bund with an area of 30 acres is to be carved out from second ash pond which was already constructed.
ii. The remaining area (119 acres) as part of second ash pond shall be restored and thick greenbelt shall be developed. Subsequently, temporary diversion bund of 30 acres shall be abandoned as committed by the Project Proponent.
iii. Increasing the dyke height of existing ash pond from 5m to 10 m is permitted.
iv. The greenbelt of 420 acres as part of the EIA/EMP is to be developed. In case, sufficient land is not available, it may be purchased at suitable location for developing greenbelt. Funds in this regard shall be allocated and the time bound action plan shall be submitted within 3 months.
v. The unutilised ash in the domestic market shall be exported as the Krishnapatnam Port is located at 5 km from the power plant.
vi. A study on effect of flyash on surrounding agriculture fields shall be conducted by Acharya N.G. Ranga Agricultural University. Findings of the study along with report shall be submitted to the Ministry and its Regional Office within 6 months.
vii. The desalination plant with capacity of 60 MLD under construction shall be operationalised within six months. Mixing of saline water with flyash for disposal into the ashpond shall not permitted once desalination plant is commissioned to prevent saline water intrusion into the groundwater.
viii. Any directions issued by the State Pollution Control Board w.r.t submission of bank guarantee, etc shall be complied.
ix. The permission is subject to the outcome of Civil Appeal No.4699/2014 which is pending before Hon'ble Supreme Court.

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**(24.5) 1x600 MW Coal Based Thermal Power Plant at villages Barela & Gorakpur, in Ghansore Tehsil, in Seoni Distt., in Madhya Pradesh M/s Jhabua Power Ltd.- reg. temporary permission for road transportation of coal.**

**File No.J-13012/105/2008-IA-II(T) & Online No. IA/MP/THE/10294/2008**

(24.5.1) Project Proponent submitted online application on 29.12.2018 for extension of temporary permission of coal transportation by road from Binaiki siding till plant premises (1.86 km) for one more year.

(24.5.2) The Environmental Clearance for establishing 1x600 MW has been issued by this Ministry's letter of even no. dated 17.02.2010. Further, amendments in EC regarding tribal land & population, cooling towers were accorded vide Ministry's letters of even no. dated 22.12.2010 and 25.1.2012. Subsequently, the validity of EC has been extended for a period of two years, i.e. till 16.2.2017 and temporary permission for transportation of coal by road for a limited period of two years, i.e. till 14.2.2018from Gosalpur (GSPR) and Garha sidings (GGGS) to power plant has been issued vide Ministry's letter dated 15.2.2016. Further, the temporary permission has been extended for one more year (till 14.2.2019) vide Ministry's letter dated 30.8.2018.

(24.5.3) Project Proponent has made presented the traffic impact assessment report and inter alia submitted the following information:

i. As per the EC letter, coal requirement is 3.2 MTPA. The requirement of the coal shall be met through SECL & MCL mines (2.75 MTPA) and rest (0.45 MTPA) from open market
ii. It was proposed to transport coal from coal pit-head to plant site by way of railway. Since the railway line was not operational concurrent to the power plant operation till 2015, in order to meet the coal requirement, an amendment in EC was obtained vide letter dated 15.02.2016 for temporary transportation of coal by road for a limited period of two years i.e. till 15.02.2018, from Gosalpur (GSPR) and Garha sidings (GGGS) to power plant.
iii. The railway track from Jabalpur (enroute Gosalpur-Garha) to Binaiki railway station, was completed in December, 2017 but from Binaiki till plant premises (3 km with curves) was under construction, which was expected to be completed by Feb 2019.
iv. Hence, EC amendment was obtained vide MoEF&CC letter dated 30.08.2018 permitting coal transportation by road for further 1 year i.e till 14.02.2019 from Binaiki railway siding to plant premise (1.86 km only).
v. Meanwhile, the construction of railway track from Binaiki railway station to plant premise has got delayed because M/s Jhabua Power has been listed as a stress asset by the standing committee of Energy.
vi. The company is in the process of restructuring initiated by the lenders. After the completion of restructuring process, capex planning and implementation shall be permitted by lenders for further execution of railway work and is expected to be completed by February, 2020.
vii. Jhabua Power is having long term PPAs (power purchase agreements) with Madhya Pradesh (210 MW), Kerala (215 MW) and PTC India Ltd., New Delhi (100 MW). Therefore, sustained coal supply is required to be maintained to ensure reliable power supply to these two states.

viii. At any point of time, maximum (peak) 3.2 MTPA of coal i.e 8767 T/Day of coal will be transported from pit head to Binaiki Railway siding and from there to the plant by road.

ix. The daily logbook of coal lifting from Binaiki siding for October, 2018 shows maximum 6158.84 tonne of coal has been lifted in a single day till 22 Nov 2018. Hence, in reality the impact of coal transportation will always be lower than the peak.

x. There will be 702 trucks (to and fro) moving on the road from Binaiki Railway siding to Plant premises with truck capacity of 25 tonnes.

| Route for Transportation of Coal by road | Length | Length of stretch w.r.t. Type of road | | | |
|---|---|---|---|---|---|
| | | Single Lane (<5.5 m) | Intermediate lane (≥5.5 m) | Two Lane (≥7 m) | Multi Lane (≥10 m) |
| Binaiki Railway Station to TPP | 1.86 km | 454 m (24.45%) | 1070 m (57.62%) | 333 m (17.93%) | - |

xi. As compared to the survey in 2017, 62.81% of the road width has been widened from single lane to intermediate. The percentage of two lane road has increased by 5.2%. Baseline traffic and incremental traffic has been compared to design volume of the road.

| Existing Traffic (PCU/day) | Additional traffic due to proposed road transportation | Total traffic (PCU/day) | Design Service Volume of the Road (PCU/day) | Maximum capacity in PCU/day | Percentage utilisation |
|---|---|---|---|---|---|
| 688 | 2106 | 2794 | 2000 | 4000 | 140% as per design volume and 70% as per Maximum Capacities |

xii. The air quality and noise levels have been monitored at Binaiki and Barela Villages and details are as below:

| Location | $PM_{10}$ ($\mu g/m^3$) | $PM_{2.5}$ ($\mu g/m^3$) | $SO_2$ ($\mu g/m^3$) | $NO_2$ ($\mu g/m^3$) |
|---|---|---|---|---|
| Binaiki Village | 68.4 | 35.1 | 7.05 | 16.7 |
| Barela Village | 70.6 | 39.5 | 8.10 | 20.8 |

xiii. Noise levels at Binaiki and Barela Villages are as follows:

| Location | Monitored Noise Levels dB(A) | Permissible Limits dB(A) |
|---|---|---|

| | Day | Night | Day | Night |
|---|---|---|---|---|
| Binaiki Village | 53.40 | 40.10 | 55 | 45 |
| Barela Village | 51.60 | 42.30 | | |

xiv. Maximum incremental concentrations have been predicted by using CALINE Model (Line source dispersion modelling) considering 223 trucks per day. Emissions from 479 trucks per day have already been reflected in the ambient air quality. The maximum Ground Level Concentrations are as below:

| Parameters | Baseline data ($\mu g/m^3$) | Maximum Incremental Values ($\mu g/m^3$) | Resultant ($\mu g/m^3$) | National Ambient Standard ($\mu g/m^3$) |
|---|---|---|---|---|
| $PM_{10}$ | 70.6 | 3.91 | 74.51 | 100 |
| $PM_{2.5}$ | 39.5 | 0.95 | 30.45 | 60 |
| $SO_2$ | 8.1 | 0.41 | 8.51 | 80 |
| $NO_X$ | 20.8 | 2.78 | 23.58 | 80 |

xv. There is no habitation along the route within 100 m of the road.

(24.5.3) Committee noted that the dispersion modelling has been carried out only for 223 trucks. Emissions remaining 479 trucks have been taken as baseline. However, committee has not found any justification in adding the emissions of 479 trucks into the baseline. The emission from these trucks may or may not be attributed in the baseline depending on the distance of the village where air quality is monitored form the emission source and prevailing meteorological conditions. The worst case scenario is required to be modelled by considering all 702 trucks plying on the road to assess extent of pollution from the truck emissions and fugitive dust. Further, it was mentioned that there are no villages within 100 m on either side of the road. The total weight of 25 ton truck would be about 35-40 tons which includes tare weight of the truck. Single lane road with width less than 5.5 m has a length of about 0.5 km. Whether the road has bearing strength to take 40 ton load is to be seen.

(24.5.4) **Committee after detailed deliberations, considering the temporary nature of transportation, recommended for extending the permission dated 30.8.2018 for one year (till 14.2.2020) to transport 8767 T/Day of coal by road from Binaiki Railway siding to the plant premises for length of 1.9 km** subject to following additional conditions:

i. Out of 1.9 km, single Lane road shall be widened at the cost of Project Authorities Road. A quarterly progress report till completion of works shall be to the Ministry and its Regional Office.

ii. Quarterly progress report of completion of balance activities for Railway line for a length of 3 km is to be submitted to the Ministry and its Regional Office.

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**(24.6) 2x660 MW (Stage-II) of 2x600 MW + 2x660 MW Malwa Thermal Power Project at Purni, District Khandwa, Madhya Pradesh by M/s M.P. Power Generating Co. Ltd.-reg. amendment in EC for change in coal source. (F.No.J-13011/50/2007-IA.II(T)(pt.) & Online no.IA/MP/THE/75471/2014)**

(24.6.1) Project Proponent has submitted online application on 03.11.2018 for amendment in EC for change in quantities of coal source from NCL, WCL and SECL mines and change in name of the project.

(24.6.2) The Environmental Clearance for 2x600 (Stage-I) MW Thermal Power Plant has been issued vide Ministry's letter dated 01.10.2008 which is valid for five years. The validity of the EC dated 1.10.2008 has been extended for further period of five years, i.e. till 30.9.2018 vide Ministry's letter dated 5.2.2014. Further, EC has been issued for 2x660 MW (Stage-II) Thermal Power Plant vide Ministry's letter dated 27.08.2014. The coal requirement for 2x660 MW (Stage-II) as per EC dated 27.8.2014 is 5.3 MTPA at 85% PLF. As per the EC dated 27.8.2014, the quantity of 5.3 MTPA coal is to be obtained from Gondhbahera-Ujheni Coal block. Subsequently, Ministry has amended the EC dated 27.8.2014 for change in coal source from Gondhbehera-Ujheni Coal Block to NCL, WCL and SECL mines vide Ministry's letter dated 19.9.2018.

(24.6.3)Project Proponent made the presentation and submitted the following information:

i. There is minor change in the quantities of coal which was permitted earlier. CIL vide letter dated 6.8.2018 has revised the coal quantities to be supplied from ECL/NCL/SECL mines. The quantities of coal permitted vide Ministry's letter dated 19.9.2018 and the proposed changes are as under:

| Details | WCL | NCL | SECL | Total |
|---|---|---|---|---|
| Quantities as per EC amendment dated 19.9.2018 | 1.543 MTPA | 1.543 MTPA | 1.793 MPTA | 4.879 MTPA |
| Proposed changes | 1.043 MTPA | 1.793 MTPA | 2.083 MTPA | 4.919 MTPA |

ii. As the linkage is available only for the 4.919 MTPA, the remaining quantity of coal is to be procured through e-auction.

iii. The Unit-3 (1x660 MW) has achieved on 18.11.2018. For Unit-4(1x660 MW), boiler light-up and Synchronisation have been done on 24.10.2018 and 27.12.2018. COD of the Unit-4 (1x660 MW) is expected to achieve in February, 2019.

(24.6.4) Committee noted that the quantities from various mines of NCL, WCL and SECL were mentioned in the EC amendment as it was provided by the Project Proponent. There will not be any environmental problem in changing these quantities as long as transportation is done by rail and Ministry's Notification vide No.G.S.R 02(E) dated 2.1.2014 regarding limiting the ash content to 34%. The conditions in this regard have already been stipulated in the amendment letter dated 19.9.2018.

(24.6.5) **Committee after detailed deliberations recommended to delete the condition 5(i) of the EC amendment dated 19.9.2018 regarding specifying the quantities of coal from NCL, WCL & SECL mines and recommended to**

**change the name of the project from Malwa to Shree Singaji Thermal Power Project.**

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**(24.7) Expansion by addition of 1x500 MW (Stage-V) Coal based Vindhyachal Super Thermal Power Plant near Village Waidhan, Taluk Waidhan, District Singrauli, Madhya Pradesh by M/s NTPC Ltd.- reg. amendment in EC for change in coal source.**
**(F.No. J-13012/8/2009-IA.II (T) & Online no. IA/MP/THE/10600/2009)**

(24.7.1)Project Proponent submitted online application on 7.12.2018 for amendment in EC for change in coal source from Pakri Barwadih to NCL Mines.

(24.7.2) The environmental clearance for 1x500 MW (Stage-V) Coal based Vindhyachal Super Thermal Power Plant at Village Waidhan, Waidhan Taluk, Singrauli Dist., Madhya Pradesh vide Ministry's letter dated 2.5.2012. As per the EC, the coal requirement is 2.5 MTPA and to be sourced from Pakri Barwadih Mine in Jharkhand. Now, Project Proponent wants to switch the coal source to mines of M/s Northern Coalfields Ltd.

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

i. M/s Northern Coalfields Ltd. vide letter dated 24.11.2018 has issued Letter of Assurance for supplying 1.851 MTPA Coal from their mines.
ii. It is expected that the coal will be supplied from mines located within radius of 15-20 km.
iii. The coal will be transported by rail from the mines and there will not be any road transportation.

(24.7.4) Committee noted that the MGR railway system is already in place at the plant. As coal is transported by rail, committee expressed that there is no objection.

(24.7.5) **Committee after detailed deliberations, recommended for amendment in EC for change in coal source from Pakri Barwadih to NCL mines.**

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**(24.8) 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. amendment in EC for change in source of water.**
**(F.No. J-13012/01/2016-IA.I (T) &Online No. IA/JH/THE/54853/2016)**

(24.8.1)Project Proponent submitted online application on 11.12.2018 for amendment in EC for change in source of water. The Environmental Clearance for 2x800 MW Imported coal based Thermal Power Project in District Godda, Jharkhand has been issued vide Ministry's letter dated 31.8.2017.

(24.8.2) As per the Environmental Clearance, the water requirement for the proposed project is 36 MCM per annum (96,000 $m^3$/day) and shall be met from Chir River which is located at a distance of 15 km from the proposed project. MoU has been signed between Water Resource Department and the company on

23.11.2016 for water withdrawal of 2 MCM during November, 2018- November, 2019, 18 MCM during November, 2019-November, 2020 and 36 MCM during November, 2020-November, 2021. To meet water requirement during non-monsoon period, a storage reservoir of 24 MCM capacity has been provided. Various sources of water have been explored including Sunder Dam Reservoir at Deonapur, which is at a distance of 30 km from the proposed site, but there is no sufficient water storage and also water from this reservoir is used for irrigation purpose. By conducting water availability study of surrounding areas, it has been emerged that water requirement for the proposed project can be met from Chir River.

(24.8.3) Project Proponent has made the presentation and submitted the following information:

i. Water requirement for Godda Power Plant is 4000 $m^3$/hr (36 MCM/annum). Earlier, it was proposed to draw 36 MCM water from Chir River during four months (from 15$^{th}$June- 15$^{th}$October). To operate the plant during non-monsoon period, water was to be stored for eight months (From 15$^{th}$October- 15$^{th}$June).

ii. Detailed flow measurement was carried out in the Chir River during the monsoon period of 2016-17. Based on flow measurement, it was observed that the most of the flow is occurring during months of August and September. This makes large capacity pumping system to be designed for lifting of annual water requirement of 36MCM in four months period.

iii. Continuous Pumping /drawl of water is only possible when such higher volume water is stored /obstructed in Chir River. As the river Chir River is shallow, the construction of barrage / anicut is not feasible to facilitate for collection and pumping of such a large volume of water as it may lead to submergence in surrounding areas.

iv. Considering continuous reliable operation of plant for 25 years, Water Resource Department (WRD) Govt. of Jharkhand has allotted 36 MCM water per year from River Ganga with the drawl permission from June to December (7 months) during every year.

v. Intake location in River Ganga (Sahibganj, Jharkhand) is approx. 93 km from Godda TPP. It is perennial and has abundance of water. Study was conducted for Source sustainability and type of Intake by various consultants (M/s DHI, IIT Roorkee& AWTEM).

vi. The co-ordinates of intake point is 25$^0$14'36.52"N, 87$^0$41'18.02"E near Sati Chowki Khutari in Borio Block, Sahibganj District, Jharkhand.

vii. The water flow during lean season (March to May) in River Ganga at the proposed drawl point at 90% dependability is 1,895 to 2014 MCM/month that meets the requirement of downstream users and maintains the ecology of the river. There is no proposal for drawl of water during lean season. The annual flow at the drawl point in the river is 1,74,904.36 MCM/Year at 75% dependability and 1,29,709.38 MCM/Year at 90% dependability. The proposed water drawl is only about 0.020% of the annual flow at 75% dependability and about 0.030% at 90% dependability.

viii. Pumping system shall be designed for drawl of water for seven months. (as per approved month wise drawl to meet 36 MCM annum of plant water requirement).

| Sr. no. | Description | Reservoir - 1 Intermediate | Reservoir -2 In-plant | Reservoir - 3 In-plant | Reservoir - 4 plant |
|---|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| | | (RCC) | reservoir (RCC) | reservoir below Railway line (RCC) | reservoir (near Ash pond) (RCC) |
| 1 | Land area, acres | 45 | 44 | 22 | 90 |
| 2 | Storage of water in MCM | 3.4 | 3.3 | 1.6 | 6.8 |
| Total MCM | | 15.1 + 0.07 (desilting basin) = 15.17 | | | |

ix. The water requirement during lean season (Jan-May) is 15 MCM which proposed to be pumped during 7 months (June-December) and stored in reservoirs to meet the water requirement of power plant. The storage of reservoirs has been reduced from 24 MCM to 15 MCM which inturn reduce the land requirement.

x. Source sustainability study for drawl of 36 MCM water from River has also been carried out by AWTEM (Academy of Water Technology & Environ Management in association with CGCRI (Central Glass & Ceramic Research Institute and IISWBM (Indian Institute of Social Welfare & Business Management. The impact assessed due to such drawl is insignificant.

| Sr.No. | Description | River Chir | River Ganga |
|---|---|---|---|
| 1 | Annual Water availability at 90 % dependability | 510 MCM | 1,29,709.38 MCM |
| 2 | WRD permitted water drawl period | 4 months | 7 months |
| 3 | Water availability in river at 90% dependability during drawl period, as per study conducted | 510 MCM | 1,18,951.55 MCM |
| 4 | Storage months to hold balance Plant water | 8 months | 5 months |
| 5 | Storage volume required | 24 MCM | 15 MCM |
| 6 | Reliability on river water for 25 years plant operation | Seasonal River, past data of river is available for 2 years | Perennial river, past many years data available |
| 7 | Reservoir land requirement, approx. | 441 acres | 201 acres |

xi. The land requirement has also been revised for the project and details are provided as below:

| Description | As per EC (in acres) | Area as on dated (in acres) |
|---|---|---|

| | | |
|---|---|---|
| **Main Plant Facilities** | | |
| Main Plant Facility | 243 | 211 |
| Greenbelt | 80 | 70 |
| **Sub Total** | **323** | **281** |
| **Other facilities** | | |
| Raw Water Reservoir (RWR) | 441 | 156 |
| Ash dyke | 200 | 65 |
| Colony/Township including Greenbelt | 45 | 8 |
| Greenbelt (RWE & Ash Pond) | 172 | 59 |
| Greenbelt on embankment (RWE & Ash pond) | Included in RWR and Ash pond above | 11 |
| Greenbelt area excluding embankment | 0 | 48 |
| **Sub total** | **686** | **277** |
| Laydown area | 74 | - |
| **Grand total area of the project** | **1255** | **558** |

xii. Further, land for intake system, booster cum intermediate reservoir is 60 acres. Railway corridor is proposed in 116 acres. Length of RoU for water pipeline is identified as 93 km out of which 6.9 km passes through forest land and requires diversion of forest land of 13.3293 ha.

xiii. National Mission for Clean Ganga (NMCG), Ministry of Water Resources, River Development & Ganga Rejuvenation vide their letters dated 8.8.2018 and 16.11.2018 accorded permission to draw 36 MCM of water from River Ganga during the months of June to December subject to compliance of certain conditions.

(24.8.4) Committee noted that the Water Sustainability Report has not been uploaded along with online application. The total land required for main project facilities has been reduced from 1255 acres to 558 acres which is a good initiative as the footprint on land degradation is reduced. The area of 156 acres has been allocated to raw water reservoir out of 558 acres of total area. It was mentioned that four reservoirs have been proposed with total area of 201 acres for storage of 15 MCM water. It is not clear that the water reservoir of 156 acres is part of 201 acres of four reservoirs or it is planned separately. In addition, 114 acres of land is required for laying railway line. Further, for laying of 98 km pipeline from will require 464.056 acres for acquiring Right of Use out of which 36.821 acres is forest land. The details regarding submission of Forest Diversion Proposal or grant of Stage-I Forest Clearance are not available. Further, the form-1 mentions that there is no involvement of forest land which needs Further, 60 acres of land is required for setting up of intake system, booster station cum intermediate reservoir. The overall land footprint due to the project is 1397 acres(Main Plant facilities: 558 acres; Railway line: 114 acres; Intake and boosting station: 60 acres; Reservoir area: 201 acres; and Pipeline RoU: 464.056 acres).Details of number of trees to be cut along pipeline route in the

forest and non-forest land are to be made available. Committee noted that the greenbelt of 70 acres for main plant and another 70 acres for raw water reservoir and ash pond will be around 25% of the 558 acres. If all the facilities are included such as railway line, water pipeline, reservoirs, intake system, the requirement to have 33% greenbelt is high.

(24.8.5) Committee **after deliberations deferred the project** for submission of following information for reconsideration:

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.

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**(24.9) 4000 MW Imported Coal based UMPP at Villages Cheyyur Block-B, Chitharkadu, Gangadevankupam, Panaiyur, Vedal and Vilangadu, Taluk Cheyyur, Kancheepuram District, Tamil Nadu by M/s Coastal Tamil Nadu Power Ltd.- amendment in EC for change in source of coal.**

**(F.No. J-13012/155/2008-IA.II(T) & Online No. IA/TN/THE/10418/2008)**

(24.9.1) Project Proponent submitted online application on 12.12.2018 for change in source of coal from imported coal to domestic coal.

(24.9.2) The Environmental Clearance for setting up of 4000 MW Imported Coal based Ultra Mega Power Project in Kancheepuram District of Tamil Nadu was issued vide Ministry's letter dated 30.9.2013. As per the EC, the project is based on imported coal. The coal requirement would be about 12-14 MTPA at 90% PLF. Ash and Sulphur contents in the coal will be limited to 12% and 0.7% respectively.

(24.9.3) The environmental clearance condition no.4(iii) specifies as follows:

*"In case of fuel supply is to be changed at a later stage (now proposed on imported coal the project proponent shall intimate the Ministry well in advance along with necessary requisite documents for its concurrence for allowing change. In such a case the necessity for re-conducting public hearing may be decided by the Ministry in consultation with the Expert Appraisal Committee (Thermal Power)."*

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

i. Cheyyur Tamil Nadu Power Ltd. (CTNPL) a operating SPV was incorporated as a wholly owned subsidiary by Power Finance Corporation (PFC) on 9.1.2007 to undertake developmental activities for the proposed UMPP like acquisition, obtaining statutory clearances and approvals, etc and to undertake bidding process to select the successful bidder.
ii. Cheyyur Infra Ltd. is an infrastructure SPV for acquiring and holding the Project Land for the project.

iii. The CTNPL shall be transferred to the Successful Bidders and the Cheyyur Infra Ltd. shall be transferred to the procurers at the end of the bidding process.

iv. It is now proposed to change source of coal from imported coal to domestic coal and there is an additional land acquisition of 767 acres proposed for the ash dyke. The land acquisition process has been initiated by the company.

v. The source of water is sea (Bay of Bengal) at a distance of about 5 km from the proposed site. A separate desalination plant has been proposed for treating the sea water for using for power plant. The sea water will be transported through pipelines.

vi. The coal requirement is 18-20 MTPA and the coal block is yet to be allocated by the MoC.

vii. The coal will be transported to plant premises from the jetty through closed conveyor system.CRZ and EC for Captive Port was also obtained on 30.11.2012.

viii. NGT in the OA No.554/2018 vide Order dated 19.9.2018, has directed the following:

*"However we make it clear that the main contention raised in the appeal is with regard to the bifurcation of the Environmental Clearance to two components i.e. the plant itself and dedicated coal jetty & conveyor system. In the event, there is a decision to convert the nature of the coal used to domestic coal, the Ministry of Environment, Forest and Climate Change shall take these aspects into consideration while going into the question of granting fresh Environmental Clearance if not already considered."*

ix. Further, NGT in the OA No.554/2018 vide Order dated 19.9.2018 while dismissing the case directed the following:

"We find substance in the submission and, therefore, while dismissing the Appeals and the Original Application as being infructuous, we direct the MoEF&CC to consider as to whether all stages is in the EIA Notification would be necessary to be followed while acting upon the letter dated 12th October, 2018."

(24.9.4) Committee noted that the project is still in the process of acquiring the land and the requirement was originally 416.45 ha (1058 acres). However, the land requirement has been increased to 2007 acres which is nearly the double the requirement as approved in the Environmental Clearance. Further, Committee noted physical construction activities have not started yet and more than five years have been passed now. Further, the coal quality parameters have changed now to domestic coal. The environmental impacts from the domestic coal for a large size power project will also change significantly. It has been informed that the project configuration, layout and other technical parameters will also be revised. Accordingly, committee is of the opinion that a fresh EIA and Public Hearing may be required. In the last five years, the baseline status in the area may have changed and new industries may have come up. Presently, the EC is valid till September, 2020 (Seven years). It may not possible to complete the construction within the validity period, even if it is extended for further period of three years.

(24.9.5) Committee after detailed deliberations, **returned their application and requested Project Proponent to carry out the process of obtaining Environmental Clearance *denovo***.

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**(24.10) 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)**

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

(24.10.2) 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."*

(24.10.3) Project Proponent along with M/s Min Mec Consultancy Pvt. Ltd. has made the presentation and *inter alia* submitted the following information:

i. 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.

ii. The coal transportation is envisaged by rail from Pakri Barwadih Captive Coal Block by rail with an approx. Distance of 1500 km. However, there are two components of railway works which have been delayed. The first one is conversion of meter gauge to broad gauge from Khandwa Railway station to Nimerkhedi Railway station for a length of about 42 km which is to be done by Railways and expected to be completed by March, 2019. Second one is construction of 37 km long dedicated railway line from Nimerkhedi Railway station to the plant premises. This line is being built up by NTPC through M/s RITES; which has also been delayed and expected to be ready by December 2019.

iii. It is proposed to transport 2000 TPD with 100 trucks (20 Ton capacity; Total trips: 200) from six different railway sidings. The details area as below:

| Route No. | Description of the route | Distance from the plant |
|---|---|---|
| Route No.1 | Bediya Railway siding to Plant via Beria and Roriya | 22.6 km |
| Route No.2 | Dhakalgaon railway siding to plant via Sanawad, Beriya and Katora | 46 km |
| Route No.3 | MPPKGCL Singhaji plant siding to plant via Mundi, Mohana, Sanawad, Beriya and Katora | 97.4 km |

| | | |
|---|---|---|
| Route No.4 | Beed Railway siding to plant via Mundi, Mohana, Sanawad, Beriya and Katora | 98.1 km |
| Route No.5 | Nepa Ltd.'s railway siding to plant via Sanawad, Beriya and Katora | 145.2 km |
| Route No.6 | Khandwa Goods Yard to plant via Sanawad, Beriya and Katora | 97.2 km |

(24.10.4) Committee noted that the coal requirement for two units is 6.51 MTPA and the coal required for single unit is nearly 9800 Tons/Day whereas Project Proponent has proposed only for 2000 TPD. The reasons for using lesser quantity is not known. Further, the reasons for delay laying railway line from Nimarkhedi to plant premises for length of 42 km have not been furnished. The detailed progress and milestones achieved till date and the balance work to be completed is to be provided. Committee further noted that a detailed report of main plant construction activities and readiness of the plant along with milestones is to be made available. Further, six routes have been proposed to transport 2000 TPD with a road distance range of 22.6 km 145.2 km. The details of why they have chosen six railway sidings/routes for transporting 100 trucks is not clear. Committee noted that it is not feasible to evaluate the environmental impacts on these six routes at a time. Project Proponent shall firm up the routes from which coal is to be transported. Further, the route map submitted in the Traffic Impact Assessment Report and presented during meeting is not legible and to be submitted in hard copy (A0 size). The details of road whether it is Concrete, WBM, Bitumen, Kutchha road and the load bearing strength of the road are not made available. The incremental ground level concentrations from dispersion modelling due to proposed traffic shows that 0.614 $\mu g/m^3$ and 0.172 $\mu g/m^3$ for PM10 and PM2.5 respectively which are not pragmatic. The dispersion modelling is to be run before committee with input data viz. the emissions from the trucks, fugitive emissions and weather conditions.

(24.10.5) **Committee after detailed deliberations, deferred the proposal** for want of 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 toposheet 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.

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**24.11 ANY OTHER ITEM WITH THE PERMISSION OF THE CHAIR**

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

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**ANNEXURE- A1**

**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/kism) as per the revenue records and State Govt. records of the proposed site shall be furnished. Information on land to be acquired including coal transportation system, laying of pipeline, ROW, transmission lines etc. shall be specifically submitted. Status of land acquisition and litigation, if any, should be provided.

xi) If the project involves forest land, details of application, including date of application, area applied for, and application registration number, for diversion under FCA and its status should be provided along with copies of relevant documents.

xii) The land acquisition and R&R scheme with a time bound Action Plan should be formulated and addressed in the EIA report.

xiii) Satellite imagery and authenticated topo sheet indicating drainage, cropping pattern, water bodies (wetland, river system, stream, nallahs, ponds etc.), location of nearest habitations (villages), creeks, mangroves, rivers, reservoirs etc. in the study area shall be provided.

xiv) Location of any National Park, Sanctuary, Elephant/Tiger Reserve (existing as well as proposed), migratory routes / wildlife corridor, if any, within 10 km of

the project site shall be specified and marked on the map duly authenticated by the Chief Wildlife Warden of the State or an officer authorized by him.

xv) Topography of the study area supported by toposheet on 1:50,000 scale of Survey of India, along with a large scale map preferably of 1:25,000 scale and the specific information whether the site requires any filling shall be provided. In that case, details of filling, quantity of required fill material; its source, transportation etc. shall be submitted.

xvi) A detailed study on land use pattern in the study area shall be carried out including identification of common property resources (such as grazing and community land, water resources etc.) available and Action Plan for its protection and management shall be formulated. If acquisition of grazing land is involved, it shall be ensured that an equal area of grazing land be acquired and developed and detailed plan submitted.

xvii) A mineralogical map of the proposed site (including soil type) and information (if available) that the site is not located on potentially mineable mineral deposit shall be submitted.

xviii) Details of fly ash utilization plan as per the latest fly ash Utilization Notification of GOI along with firm agreements / MoU with contracting parties including other usages etc. shall be submitted. The plan shall also include disposal method / mechanism of bottom ash.

xix) The water requirement shall be optimized (by adopting measures such as dry fly ash and dry bottom ash disposal system, air cooled condenser, concept of zero discharge) and in any case not more than that stipulated by CEA from time to time, to be submitted along with details of source of water and water balance diagram. Details of water balance calculated shall take into account reuse and re-circulation of effluents.

xx) Water body/Nallah (if any) passing across the site should not be disturbed as far as possible. In case any Nallah / drain is proposed to be diverted, it shall be ensured that the diversion does not disturb the natural drainage pattern of the area. Details of proposed diversion shall be furnished duly approved by the concerned Department of the State.

xxi) It shall also be ensured that a minimum of 500 m distance of plant boundary is kept from the HFL of river system / streams etc. and the boundary of site should also be located 500 m away from railway track and National Highways.

xxii) Hydro-geological study of the area shall be carried out through an institute/ organization of repute to assess the impact on ground and surface water regimes. Specific mitigation measures shall be spelt out and time bound Action Plan for its implementation shall be submitted.

xxiii) Detailed Studies on the impacts of the ecology including fisheries of the River/Estuary/Sea due to the proposed withdrawal of water / discharge of treated wastewater into the River/Sea etc shall be carried out and submitted along with the EIA Report. In case of requirement of marine impact assessment study, the location of intake and outfall shall be clearly specified along with depth of water drawl and discharge into open sea.

xxiv) Source of water and its sustainability even in lean season shall be provided along with details of ecological impacts arising out of withdrawal of water and taking into account inter-state shares (if any). Information on other competing sources downstream of the proposed project and commitment regarding availability of requisite quantity of water from the Competent Authority shall be provided along with letter / document stating firm allocation of water.

xxv) Detailed plan for rainwater harvesting and its proposed utilization in the plant shall be furnished.

xxvi) Feasibility of near zero discharge concept shall be critically examined and its details submitted.

xxvii) Optimization of Cycles of Concentration (COC) along with other water conservation measures in the project shall be specified.

xxviii) Plan for recirculation of ash pond water and its implementation shall be submitted.

xxix) Detailed plan for conducting monitoring of water quality regularly with proper maintenance of records shall be formulated. Detail of methodology and identification of monitoring points (between the plant and drainage in the direction of flow of surface / ground water) shall be submitted. It shall be ensured that parameter to be monitored also include heavy metals. A provision for long-term monitoring of ground water table using Piezometer shall be incorporated in EIA, particularly from the study area.

xxx) Socio-economic study of the study area comprising of 10 km from the plant site shall be carried out through a reputed institute / agency which shall consist of detail assessment of the impact on livelihood of the local communities.

xxxi) Action Plan for identification of local employable youth for training in skills, relevant to the project, for eventual employment in the project itself shall be formulated and numbers specified during construction & operation phases of the Project.

xxxii) If the area has tribal population it shall be ensured that the rights of tribals are well protected. The project proponent shall accordingly identify tribal issues under various provisions of the law of the land.

xxxiii) A detailed CSR plan along with activities wise break up of financial commitment shall be prepared. CSR component shall be identified considering need based assessment study and Public Hearing issues. Sustainable income generating measures which can help in upliftment of affected section of society, which is consistent with the traditional skills of the people shall be identified. Separate budget for community development activities and income generating programmes shall be specified.

xxxiv) While formulating CSR schemes it shall be ensured that an in-built monitoring mechanism for the schemes identified are in place and mechanism for conducting annual social audit from the nearest government institute of repute in the region shall be prepared. The project proponent shall also provide Action Plan for the status of implementation of the scheme from time to time and dovetail the same with any Govt. scheme(s). CSR details done in the past should be clearly spelt out in case of expansion projects.

xxxv) R&R plan, as applicable, shall be formulated wherein mechanism for protecting the rights and livelihood of the people in the region who are likely to be impacted, is taken into consideration. R&R plan shall be formulated after a detailed census of population based on socio economic surveys who were dependant on land falling in the project, as well as, population who were dependant on land not owned by them.

xxxvi) Assessment of occupational health and endemic diseases of environmental origin in the study area shall be carried out and Action Plan to mitigate the same shall be prepared.

xxxvii) Occupational health and safety measures for the workers including identification of work related health hazards shall be formulated. The company shall engage full time qualified doctors who are trained in occupational health. Health monitoring of the workers shall be conducted at periodic intervals and health records maintained. Awareness programme for workers due to likely adverse impact on their health due to working in non-conducive environment shall be carried out and precautionary measures like use of personal equipments etc. shall be provided. Review of impact of various health measures undertaken at intervals of two to three years shall be conducted with an excellent follow up plan of action wherever required.

xxxviii) One complete season site specific meteorological and AAQ data (except monsoon season) as per latest MoEF Notification shall be collected and the dates of monitoring shall be recorded. The parameters to be covered for AAQ shall include $PM_{10}$, $PM_{2.5}$, $SO_2$, $NO_x$, CO and Hg. The location of the monitoring stations should be so decided so as to take into consideration of the upwind direction, pre-dominant downwind direction, other dominant directions, habitation and sensitive receptors. There should be at least one monitoring station each in the upwind and in the pre-dominant downwind direction at a location where maximum ground level concentration is likely to occur.

xxxix) In case of expansion project, air quality monitoring data of 104 observations a year for relevant parameters at air quality monitoring stations as identified/stipulated shall be submitted to assess for compliance of AAQ Standards (annual average as well as 24 hrs).

xl) A list of industries existing and proposed in the study area shall be furnished.

xli) Cumulative impacts of all sources of emissions including handling and transportation of existing and proposed projects on the environment of the area shall be assessed in detail. Details of the Model used and the input data used for modeling shall also be provided. The air quality contours should be plotted on a location map showing the location of project site, habitation nearby, sensitive receptors, if any. The windrose and isopleths should also be shown on the location map. The cumulative study should also include impacts on water, soil and socio-economics.

xlii) Radio activity and heavy metal contents of coal to be sourced shall be examined and submitted along with laboratory reports.

xliii) Fuel analysis shall be provided. Details of auxiliary fuel, if any, including its quantity, quality, storage etc should also be furnished.

xliv) Quantity of fuel required, its source and characteristics and documentary evidence to substantiate confirmed fuel linkage shall be furnished. The Ministry's Notification dated 02.01.2014 regarding ash content in coal shall be complied. For the expansion projects, the compliance of the existing units to the said Notification shall also be submitted

xlv) Details of transportation of fuel from the source (including port handling) to the proposed plant and its impact on ambient AAQ shall be suitably assessed and submitted. If transportation entails a long distance it shall be ensured that rail transportation to the site shall be first assessed. Wagon loading at source shall preferably be through silo/conveyor belt.

xlvi) For proposals based on imported coal, inland transportation and port handling and rail movement shall be examined and details furnished. The approval of the Port and Rail Authorities shall be submitted.

xlvii) Details regarding infrastructure facilities such as sanitation, fuel, restrooms, medical facilities, safety during construction phase etc. to be provided to the labour force during construction as well as to the casual workers including truck drivers during operation phase should be adequately catered for and details furnished.

xlviii) EMP to mitigate the adverse impacts due to the project along with item - wise cost of its implementation in a time bound manner shall be specified.

xlix) A Disaster Management Plan (DMP) along with risk assessment study including fire and explosion issues due to storage and use of fuel should be carried out. It should take into account the maximum inventory of storage at site at any point of time. The risk contours should be plotted on the plant layout map clearly showing which of the proposed activities would be affected in case of an accident taking place. Based on the same, proposed safeguard measures should be provided. Measures to guard against fire hazards should also be invariably provided. Mock drills shall be suitably carried out from time to time to check the efficiency of the plans drawn.

l) The DMP so formulated shall include measures against likely Fires/Tsunami/Cyclones/Storm Surges/Earthquakes etc, as applicable. It shall be ensured that DMP consists of both On-site and Off-site plans, complete with details of containing likely disaster and shall specifically mention personnel identified for the task. Smaller version of the plan for different possible disasters shall be prepared both in English and local languages and circulated widely.

li) Detailed scheme for raising green belt of native species of appropriate width (50 to 100 m) and consisting of at least 3 tiers around plant boundary with tree density of 2000 to 2500 trees per ha with a good survival rate of around 80% shall be submitted. Photographic evidence must be created and submitted periodically including NRSA reports in case of expansion projects. A shrub layer beneath tree layer would serve as an effective sieve for dust and sink for $CO_2$ 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) <u>Corporate Environment Policy</u>

a. Does the company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be detailed in the EIA report.
b. Does the Environment Policy prescribe for standard operating process / procedures to bring into focus any infringement / deviation / violation of the environmental or forest norms / conditions? If so, it may be detailed in the EIA.
c. What is the hierarchical system or Administrative order of the company to deal with the environmental issues and for ensuring compliance with the environmental clearance conditions. Details of this system may be given.
d. Does the company has compliance management system in place wherein compliance status along with compliances / violations of environmental

norms are reported to the CMD and the Board of Directors of the company and / or shareholders or stakeholders at large? This reporting mechanism should be detailed in the EIA report.

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

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

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**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 $m^3$/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 $SO_2$ emissions standard of 100 mg/$Nm^3$.
2. Selective Catalytic Reduction (SCR) system or the Selective Non-Catalytic Reduction (SNCR) system or Low NOX Burners with Over Fire Air (OFA) system shall be installed to achieve $NO_X$ emission standard of 100 mg/$Nm^3$.

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/$Nm^3$.
4. Stacks of prescribed height ____m shall be provided with continuous online monitoring instruments for $SO_X$, NOx 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 $PM_{10}$, $PM_{2.5}$, $SO_2$, $NO_X$ 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 $m^3$/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 of ……..KLD 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 of …….KLD 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 of …….KLD 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 4$^{th}$ year, 100% fly ash utilization should be ensured. Unutilized ash shall be disposed off in the ash pond in the form of High Concentration Slurry. Mercury and other heavy metals (As, Hg, Cr, Pb, etc.)

will be monitored in the bottom ash as also in the effluents emanating from the existing ash pond. Flyash utilization details shall be submitted to concerned Regional Office along with the six-monthly compliance reports and utilization data shall be published on company's website.

5. Unutilized ash shall be disposed off in the ash pond in the form of High Concentration Slurry/Medium Concentration Slurry/Lean Concentration Slurry method. Ash water recycling system shall be set up to recover supernatant water.
6. In case of waste-to-energy plant, major problems related with environment are fire smog in MSW dump site, foul smell and impacts to the surrounding populations. Therefore, the following measures are required to be taken up:

   i) Water hydrant at all the dumpsites of MSW area to be provided so that the fire and smog could be controlled.
   ii) Sprayer like microbial consortia may be provided for arresting the foul smell emanating from MSW area.

**J. Monitoring of compliance:**

1. Environmental Audit of the project be taken up by the third party for preparation of Environmental Statement as per Form-V & Conditions stipulated in the EC and report be submitted to the Ministry.
2. Resettlement & Rehabilitation Plan as per the extant rules of Govt. of India and respective State Govt. shall be followed, if applicable.
3. Energy Conservation Plan to be implemented as envisaged in the EIA / EMP report. Renewable Energy Purchase Obligation as set by MoP/State Government shall be met either by establishing renewable energy power plant (such as solar, wind, etc.) or by purchasing Renewable Energy Certificates.
4. Monitoring of Carbon Emissions from the existing power plant aswell as for the proposed power project shall be carried out annually from a reputed institute and report be submitted to the Ministry's Regional Office.
5. Energy and Water Audit shall be conducted at least once in two years and recommendations arising out of the Report should be followed. A report in this regard shall be submitted to Ministry's Regional Office.
6. Environment Cell (EC) shall be constituted by taking members from different divisions, headed by a qualified person on the subject, who shall be reporting directly to the Head of the Project.
7. The project proponent shall (Post-EC Monitoring):

   a. send a copy of environmental clearance letter to the heads of Local Bodies, Panchayat, Municipal bodies and relevant offices of the Government;

   b. upload the clearance letter on the web site of the company as a part of information to the general public.

   c. inform the public through advertisement within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language that

the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the SPCB and may also be seen at Website of the Ministry of Environment, Forest and Climate Change (MoEF&CC) at http://parviesh.nic.in.

d. upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same periodically;

e. monitor the criteria pollutants level namely; PM ($PM_{10}$ & $PM_{2.5}$ incase of ambient AAQ), $SO_2$, NOx (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company;

f. submit six monthly reports on the status of the compliance of the stipulated environmental conditions including results of monitored data (both in hard copies as well as by e-mail) to the Regional Office of MoEF&CC, the respective Zonal Office of CPCB and the SPCB;

g. submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company;

h. inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project and the date of commencement of the land development work.

**K. Corporate Environmental Responsibility (CER) activities:**

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

**L. Marine facilities:**

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

**M. Sea Water Intake:**

1. Seawater intake system shall be so designed and constructed to ensure sufficient sweater in terms of quantity and quality.

2. The withdrawal of seawater shall be preferably through a pipeline with a riser equipped with a velocity cap arrangement and bar screen to arrest the impingement of large marine organisms.
3. In all tide conditions (particularly at spring low tides) the riser head must be flooded with the required submergence of seawater above its top.

**N. Effluent Release:**

1. At the effluent release point, maximum temperature of the discharge water shall not be more than 5°C and salinity shall not exceed 50 ppt with respect to that of the ambient seawater.
2. Use of antifouling agents like chlorine / hypochlorite, shall be carefully controlled. The chlorine concentration shall not exceed 0.2 ppm at the effluent release point.
3. The effluent when released at the selected location shall attain sufficient dilution so that near ambient water quality (particularly temperature and salinity) is attained within 500 m from the release location, at low tide.
4. The location of the diffuser shall be marked with a solar lighted buoy to avoid accidents.
5. The site selected based on mathematical modeling shall ensure absence of recirculation of the effluent plume in the seawater intake area under all tidal conditions.
6. The effluent shall be released through a properly designed multiport diffuser above the seabed to facilitate its efficient initial mixing with the receiving seawater.
7. Efficacy of the diffuser shall be ascertained at least once in 2 years through scientific studies and corrective actions such as cleaning of the diffuser from marine growth, removal of silt deposits, etc. shall be taken up, if warranted.
8. Continuous online monitoring system for Temperature and Salinity shall be installed to monitor the quality of effluent.

**O. Common to intake and effluent:**

1. The pipeline shall be buried below the seabed at a depth to ensure its stability under rough sea conditions particularly during cyclone / tsunami. The depth of burial will depend on the seafloor strata but normally the top of the pipeline shall be at least 1 m below the bed level. In the surf and intertidal zones, the pipeline shall be buried below the maximum scour level.
2. In case of open channel, the channel shall be constructed as per the recommendations of State Coastal Zone Management Authority (SCZMA).
3. If the substratum is rocky the pipeline may be anchored to the rock provided the geology of the area satisfactorily supports the structure which shall be ascertained through geo-technical investigations.
4. Exposed pipeline section and riser shall be protected by armour stone from waves, boats anchoring, fishing activities etc.

5. The location of the riser & diffuser shall be marked with a solar lighted buoy to avoid accidents from boats.
6. Marine / Sea water quality shall be monitored at effluent release location at the center. Parameters to be monitored shall be as follows:
    a. *Physico-chemical:* Temperature, Salinity, pH and Dissolved Oxygen.
    b. *Biological:* Primary Productivity, Phytoplankton (Chlorophyll a, Phaeophytin, Population, Species), Zooplankton (Biomass, Population, Species) and Benthos (Biomass, Population, Species).
7. In case of Coastal Power Plants, the Mangrove plantation shall be taken up in an area of ……ha, along the coast/ on the banks of ……. Estuary.

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**LIST OF MEMBERS (Attendance Sheet)**

## 24th EXPERT APPRAISAL COMMITTEE MEETING (Thermal)

**DATE & TIME :** 23rd January, 2019, 10:00 AM
**VENUE :** Teesta Meeting Hall, Vayu Wing, Indira Paryavaran Bhawan, New Delhi

| Sr.No. | Name of Member | Signature |
|---|---|---|
| 1. | Dr. Navin Chandra<br>Chairman | Navinchandra |
| 2. | Shri Suramya D. Vora, IFS (Retd.)<br>Member | SDVora |
| 3. | Dr. Narmada Prasad Shukla<br>Member | 23.01.19 |
| 4. | Sh. N. Mohan Karnat, IFS<br>Member | Abs |
| 5. | Dr. Sharachchandra Lele<br>Member | Abs |
| 6. | Sh. N.S. Mondal, CEA<br>Member | 23/01/19 |
| 7. | Dr. R.K. Giri, IMD<br>Member | 23/1/19 |
| 8. | Dr. S.K. Paliwal, CPCB<br>Member | 23/1/2019 |
| 9. | Prof. S.K. Gupta, (ISM Dhanbad)<br>Member | 23/01/19 |
| 10. | Dr. Jai Krishna Pandey<br>Member | 23.1.19 |
| 11. | Dr. Manjari Srivastava<br>Member | 23.1.19 |
| 12. | Dr. Gururaj P Kundargi<br>Member | |
| 13. | Dr. S. Kerketta<br>Member Secretary, MoEFCC | 23/1/2019 |

## Approval of Minutes of the 24th Meeting of the Re-constituted Expert Appraisal Committee (EAC) of Thermal Power Projects by the Chairman.



Subject: **Re: 24th meeting of EAC (Thermal Power Projects) held on 23.1.2019 reg.** Date: 02/08/19 06:08 PM
To: Dr S Kerketta <s.kerketta66@gov.in> From: navin chandra <navinchandrarrl@yahoo.com>

08/02/2019

Dear Dr.Kerketta/Dr. Subrahmanyam,

I have gone through the minutes. The minutes are in order and ready for uploading on the web site of MoEF&CC>

Regards,

(NAVIN CHANDRA)

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

On Friday, 8 February, 2019, 5:37:57 pm IST, Dr S Kerketta <s.kerketta66@gov.in> wrote:

Dear Sir,

The minutes of 24th meeting of EAC (Thermal Power Projects) held on 23.1.2019 have been finalised after incorporating the comments of members. These minutes are enclosed herewith for your kind perusal and approval please.

--
regards,

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

**AGENDA OF 24th MEETING OF THE RE-CONSTITUTED EXPERT APPRAISAL COMMITTEE ON THERMAL POWER PROJECTS ON 23.01.2019**

**DATE : 23rd January, 2019**

**TIME : 10.30 A.M. ONWARDS**

**VENUE : TEESTA MEETING HALL, GROUND FLOOR, VAYU WING, IPB, JORBAGH ROAD, NEW DELHI-110003.**

| ITEM | |
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| **Item No. 24.0** | **CONFIRMATION OF MINUTES OF 23rd EAC (THERMAL) MEETING** |
| **Item No.** | **CONSIDERATION OF PROJECTS** |
| 24.1 | Expansion of cogeneration power plant from 6 MW to 18 MW at Sy. Nos. 250, 259, 260, 262, 471, 263 and 473, Village & Taluk Gokak, District Belagavi, Karnataka by **M/s. Roquette Riddhi Siddhi Pvt. Ltd.-reg. reconsideration of EC**<br>F.No.J-13012/06/2016-IA.I (T) & Online No.IA/KA/THE/53776/2016 |
| 24.2 | 2x600 MW and 3x660 MW Coal based TPP at Villages Kottai, Ariyagosthi, Villianallur & Silambimangalam, Taluk Chidambaram, Distt. Cuddalore, Tamil Nadu by **M/s IL&FS Tamil Nadu Power Company Ltd.- reg. amendment in Environmental Clearance for change in coal source.**<br>(F.No. J-13012/34/2008-IA.II(T) & Online no: IA/TN/THE/11883/2008) |
| 24.3 | 4000 MW Ultra Mega Power Project (UMPP) near Village Kanwara, Taluk Katoriya, District Banka, Bihar by **M/s Bihar Mega Power Limited – reg. amendment in ToR**.<br>F.No. J-13012/4/2016-IA.I(T) & Online No. IA/BR/THE/53046/2016. |
| 24.4 | 2x800 MW Sri Damodaram Sanjeevaiah Thermal Power Project at Nelaturu Village, Muthukuru Mandal, SPSR Nellore District, Andhra Pradesh by **M/s Andhra Pradesh Power Development Corporation Ltd.- reg. amendment in EC.**<br>F.No. J-13011/20/2007-IA.II(T) & Online no. IA/AP/THE/26414/2007. |
| 24.5 | 1x600 MW Coal Based Thermal Power Plant at villages Barela & Gorakpur, in Ghansore Tehsil, in Seoni Distt., in Madhya Pradesh **M/s Jhabua Power Ltd.- reg. temporary permission for road transportation of coal.**<br>File No.J-13012/105/2008-IA-II(T) & Online No. IA/MP/THE/10294/2008 |
| 24.6 | 2x660 MW of 2x600 MW + 2x600 MW Malwa Thermal Power Project at Purni, District Khandwa, Madhya Pradesh by **M/s M.P. Power Generating Co. Ltd.-reg. amendment in EC for change in coal source.**<br>F.No. J-13011/50/2007-IA. II(T)(pt.) & Online no. IA/MP/THE/75471/2014. |
| 24.7 | Expansion by addition of 1x500 MW (Stage-V) Coal based Vindhyachal Super Thermal Power Plant near Village Waidhan, Taluk Waidhan, District Singrauli, Madhya Pradesh by **M/s NTPC Ltd.- reg. amendment in EC for change in coal source.**<br>F.No. J-13012/8/2009-IA.II (T) & Online no. IA/MP/THE/10600/2009. |
| 24.8 | 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. amendment** |

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| | **in EC for change in source of water.**<br>F.No. J-13012/01/2016-IA.I (T) & Online No. IA/JH/THE/54853/2016. |
| 24.9 | 4000 MW Imported Coal based UMPP at Villages Cheyyur Block-B, Chitharkadu, Gangadevankupam, Panaiyur, Vedal and Vilangadu, Taluk Cheyyur, Kancheepuram District, Tamil Nadu by **M/s Coastal Tamil Nadu Power Ltd.- amendment in EC for change in source of coal.**<br>F.No. J-13012/155/2008-IA.II(T) & Online No. IA/TN/THE/10418/2008. |
| 24.10 | 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.**<br>F.No. J-13012/54/2010-IA-II (T) & Online No. IA/MP/THE/22937/2014. |
| 24.11 | **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.