

MINUTES OF THE 23rd MEETING OF THE RE-CONSTITUTED EXPERT APPRAISAL COMMITTEE (EAC) ON ENVIRONMENTAL IMPACT ASSESSMENT (EIA) OF THERMAL POWER PROJECTS

The 23rd Meeting of the re-constituted EAC (Thermal Power) was held on 30th November, 2018 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 Chandara. The following members were present:

1. Dr. Navin Chandra - Chairman
2. Dr. N.P. Shukla - Member
3. Shri G.P. Kundargi - Member
4. Shri N.S. Mondal - Member (Representative of CEA)
5. Dr. S.K. Gupta - Member (Representative of ISM/IIT Dhanbad)
6. Dr. S.K. Paliwal - Member (Representative of CPCB)
7. Dr. S. Kerketta - Member Secretary

Shri N. Mohan Karnat, Dr. Jai Krishna Pandey, Dr. S. Lele, Shri Suramya D. Vora, Dr. (Mrs.) Manjari Srivastava and Dr. R.K. Giri (Representative of IMD) could not be present.

Item No.23.0: CONFIRMATION OF THE MINUTES OF THE 22ndEAC MEETING.

The Minutes of the 22nd EAC (Thermal Power) meeting held on 25.10.2018 were confirmed in presence of members present in the meeting.

Item No. 23.0: CONSIDERATION OF PROJECTS

(23.1) 1x660 MW Supercritical Ennore Thermal Power Station expansion Project, Ernavur Village, District Ennore, Tamil Nadu by M/s Tamil Nadu Generation and Distribution Corporation Ltd (TANGEDCO)- reg. ToR

(F.No. J-13012/15/2018-IA.I (T) & Online no. IA/TN/THE/84128/2018).

(23.1.1) Project Proponent submitted online proposal on 03.11.2018 for grant of ToR. The Project Proponent has made the presentation during meeting and inter-alia submitted the following information:

- i. The following are the power projects which are existing or proposed at the Project Site.

Name of the Project	Capacity	Commissioning	Remarks
Ennore Power Station	450 MW (3x110 MW + 2x60 MW)	1970-75	De-commissioned on 31.3.2017
Ennore Expansion Project	1x660 MW	EC accorded on 3.6.2009 and extended for a period of five years, i.e. till 2.6.2019 on 18.9.2014. CRZ clearance for coal conveyer, intake	However, the project could not be constructed within the validity period. Accordingly, the present proposal

		and outfall waterlines accorded on 23.12.2008 and validity extended up to 22.12.2018 on 31.3.2014.	is submitted for obtaining ToR.
Ennore Replacement Project	1x660 MW	Proposed. EAC in its meeting held on 26.10.2017 recommended to conduct certain studies such as cumulative impacts, one season baseline data collection, etc. PP is yet to complete the study	-

- ii. Project Proponent obtained Environmental Clearance for Ennore Expansion Project (1x660 MW) on 3.6.2009 which was valid for five years. The said EC has been extended for further period of five years, i.e. till 2.6.2019 on 18.9.2014. Subsequently, Project Proponent approached Ministry for extending the said Environmental Clearance for further period of four years as the project has not achieved considerable progress within the validity period. As there is no provision in the EIA Notification to extend the validity beyond 10 years, the Ministry vide letter dated 20.9.2018 informed the Project Proponent to initiate the EC process de-novo as per the provisions of the EIA Notification.
- iii. Accordingly, the present proposal for obtaining ToR has been submitted in the Ministry.
- iv. The proposed 1x660 MW Project will be constructed in 90 acres of land which includes 6 acres for corridor of pipelines and conveyor systems outside the plant boundary. The area for the ash dyke is already available for the existing plant, will be used for disposing the wet bottom ash regularly and 50% dry fly ash in case of emergency. There is no need of land acquisition for this project. There is no rehabilitation or resettlement issued involved this project.
- v. The distances of Ennore back waters, Korattaliyar river and Bay of Bengal from the project boundary are 70 m, 575 m and 815 m respectively. The laying of sea water intake and outfall pipelines and coal conveyors through CRZ area is required for the power project. However, the CRZ clearance (which was earlier obtained on 23.12.2008) will get expired on 22.12.2018. A separate application for obtaining CRZ recommendations under CRZ Notification, 2011 will be submitted to TNCZMA.
- vi. The project is based on the various combinations of Imported and Domestic Coal (100% Imported Coal, 70% Imported Coal & 30% domestic coal and 50% Imported Coal & 50% domestic coal) which will be brought to Ennore Port by Ship and further it is transported to the Project Site by Pipe Conveyor. The calorific value of Imported coal and Domestic Coal is estimated to be 5805 kcal/kg and 3800 kcal/kg, respectively. The maximum quantity of coal requirement is 2.70 MTPA at 85% PLF.

- vii. The coal will be received through ship at Ennore Port Transported thro' belt conveyors will be passed through crushers and crushed coal will be sent through& pipe conveyor to Project Site. Capacity of the coal handling plant will be 2x1000 tph for two shifts operation based on blended coal of 50:50 ratio (worst condition). Crushed coal, stacking, reclaiming & feeding systems have been envisaged. The stockpiles of the two types of coal will have capacity for seven (7) days when domestic & imported coal mixed at 50:50 ratio.
- viii. The project will require about 7,113 m³/hr of sea water which will be sourced from Bay of Bengal. The intake point from Bay of Bengal is at a distance of 3 Km from project site. The said water quantity is sufficient for condenser cooling water as well as plant water requirements.
- ix. The steam generator will be semi outdoor, once through, radiant reheat, dry bottom and balanced draft unit of super-critical parameters designed for firing pulverized coal as prime fuel. Steam generator will be sized for 2100 tph at 256 Kg/cm² (a), super heater outlet steam pressure, 568 °C steam SH temperature and 593 °C reheat temperature. Steam turbine of 660 MW unit will be three / four cylinder, 3000 RPM, multistage, tandem compound, single reheat condensing reaction unit with uncontrolled extractions for regenerative cycle. The Generator will be directly coupled, horizontal shaft cylindrical rotor continuously rated at rated power factor of 0.85 lagging, 3 phase 50 Hz.
- x. The Boiler will be designed to take the Imported Coal and Domestic Coal in the ratio of 70:30.
- xi. The total ash generation is 516 TPD (Bottom Ash: 103.2 TPD, Fly ash: 412.8 TPD) as considering calorific value of 6000 kcal/kg and Ash content of 8%. Fly ash generated is proposed to be handled in dry form. Bottom and coarse ash will be extracted and disposed off in wet condition through scraper feeder and clinker grinders to the existing ash pond.
- xii. To minimize emission of Suspended Particulate Matter (SPM) from boiler flue gases, Electrostatic Precipitators (ESPs) of high efficiency of the order of 99.98% and of adequate size will be provided at exit end of each boiler to bring down SPM emission level less than 50 mg/Nm³. Waste water from the plant will be properly treated before re-use and/or disposal. One (1) no. of Single Flue RCC stack of 275 meter high will be provided.
- xiii. Estimated Project Cost is Rs.5,421.38 Crores. The project is scheduled to commission (COD) within 42 months from the zero date.

23.1.2 Committee noted that the environmental clearance for the proposed project was earlier issued by the Ministry on 3.6.2009 which is valid for 10 years, i.e. till 2.6.2019. However, Project Proponent submitted that they cannot complete the construction within the validity period. Accordingly, they have been advised to apply for fresh ToR. As informed by the Project Proponent with regard to physical progress as on today is only about 17% at site by the EPC contractor and 18% payment (Rs.703 crores) of payment has been made to them so far. As informed, Corporate Insolvency Resolution Process (CIRP) was initiated against the EPC contractor M/s Lanco Infra Tech Ltd., by IDBI Bank at NCLT, Hyderabad and work was stopped on 07.08.2017. M/s TANGEDCO terminated the EPC contract on 09.04.2018. Now, TANGEDCO has called for open tenders under EPC contract to take up the balance project works in "as is where is condition" to commission the captioned Project. Committee further noted that the CRZ clearance which was accorded earlier will also get expired in December, 2018. PP needs to obtain

fresh CRZ recommendations from TNCZMA under the CRZ Notification, 2011. Further Committee noted that Ennore replacement project proposed at the same location was considered by the EAC in October, 2017 for grant of EC and deferred for reconsideration after conducting certain studies and measures as recommended in the site visit report of the sub-committee. Project Proponent is yet to approach the Ministry in this regard. Committee noted that Project Proponent has not submitted the Project Feasibility Report as part of the ToR application.

23.1.3 Committee after detailed deliberations recommended for grant of following ToR in addition to the Standard ToR subject to submission of Project Feasibility Report/Detailed Project Report:

- i. Recommendations of the TNCZMA for seawater intake & outfall pipelines and coal conveyor proposed in the CRZ area shall be obtained as per the CRZ Notification, 2011 and its amendments.
- ii. The power project and its boundary shall not be located in the CRZ area. A fresh CRZ demarcation inline with the Coastal Zone Management Plans of Tamil Nadu State as per the CRZ Notification, 2011 or any amendments thereof, shall be carried out by the authorised agency. The mapping shall clearly show Project Facilities, LTL, HTL, 100 m, 200m and 500 setback lines, classification of CRZ areas (CRZ-I, II, III & IV), mangroves, eco-sensitive areas, etc. The mapping shall also include Ennore replacement project, the present project and the existing 450 MW power plant along with proposed marine facilities.
- iii. Recommendations of the sub-committee in its site visit held during 13th-14th October, 2017 shall be complied with.
- iv. The cumulative impact assessment for the Ennore replacement project (1x660 MW) and the present proposal shall be carried out in addition to the industries located within 10 km radius.
- v. Public Hearing for the proposed project shall be conducted in close proximity to the project site.
- vi. Baseline data collected for Ennore replacement Project (1x660 MW) may utilised for the proposed project, provided the data should not be older than 3 years at the time of submission of application for grant of EC to the Ministry.
- vii. Marine EIA and EMP shall also be prepared for the facilities proposed in the CRZ area.

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(23.2) 55 MW Greenfield (Dual Fuel Power Project) Andaman & Nicobar Gas Power Project at Hope Town at Ferrargunj Tehsil in South Andaman District, Andaman and Nicobar by M/s NTPC Vidyut Vyapar Nigam Limited. - reg. ToR (F. No. J-13012/14/2018-IA.I (T) & Online no. IA/AN/THE/84074/2018)

(23.2.1) Project Proponent has submitted online application on 01.11.2018 for ToR. Project Proponent made the presentation and inter-alia submitted the following information:

- i. M/s NTPC Vidyut Vyapar Nigam Ltd. Proposes to set up 55 MW Dual Fired Gas/Diesel based Power Project in South Andaman District of Andaman and Nicobar Islands.

- ii. A total of three Sites were identified and examined for setting up a 50 MW LNG based Power Project sites in Ferrargunj Tehsil of South Andaman district (A&N Island);
 - a. Site 1: At Hope Town Site
 - b. Site 2: Within premise of Surya Chakra Power Ltd (an IPP) diesel generating plant.
 - c. Site 3: At Shore Point Junction (within vacant land in west direction of Bamboo flat jetty)
- iii. After comparison of various environmental & technical aspects, the site near Hope Town (Site No.1) is selected as most preferred site to install dual fuel (LNG & HSD) based Power
- iv. About 2 acres of undulated barren land having irregular topography with elevation of 2 M above MSL exists along the Sea Shore which will be sufficient for setting up of the proposed power project. The proposed area falls within 100 m from the shore line of the Sea (Bay of Bengal)
- v. The project site is located in Hope Town at Ferrargunj Tehsil in South Andaman District of Andaman & Nicobar Islands. Nearest National Highway NH-223 is at a distance of 8 km in North direction. Nearest major city is Port Blair located at a distance of 7.9 km South to the project site.
- vi. There are several ecologically sensitive areas within 10 Km of the project site. Viz. Mangroves in Bamboo flat: 1.3 km; Mt. Harriet National park: 3.4 km; Snake Island Sanctuary-I: 7.0 km; Sanke Island Sanctuary-II: 7.1 km; Loha Barrack crocodile sanctuary: 11.2 km; Mt. Harriet Hills:0.7 Km North.
- vii. Two defence installations namely Navy's Floating Dry Dock and Air force Station Prothrapur exist within 10 km radius of the proposed site. The project area falls in Seismic Zone-V
- viii. The proposed land is Government land and is under physical possession of A&N Administration. No forest land is involved. Topography of the site is rocky and undulated terrain. The land is away from the navigational channel & other marine traffic.
- ix. LNG required for 50 MW Dual Fuel Power Project is proposed to be met from proposed LNG Terminal & Floating Storage Regasification Unit (FSRU) at Hope Town. Diesel requirement for the power project is to be met from M/s Indian Oil Corporation Ltd (IOCL)'s existing Oil Depot, which is at about 50 Km from the Site.
- x. NTPC has requested A&N Admin to explore pipeline transfer of liquid fuel (HSD) to power project for uninterrupted supply of fuel. Presently liquid fuel transfer up to site is considered through road tankers.
- xi. In Gas operation, the engine works according to the lean-burn Otto cycle. In this process the gas and air is mixed before the inlet valves, during the air intake period. After the compression phase, the gas-air mixture is ignited by a small amount of pilot fuel. The pilot fuel is pressurized, and fed into the cylinders by a small common rail system. The combustion is fast, and after the working phase, the exhaust gas valves.
- xii. In HSD fuel operation, the engine works according to the Diesel process. In this process, liquid fuel is injected in the cylinder at high pressure by camshaft-operated pumps. The fuel is ignited instantly due to the high temperature resulting from the compression. Combustion takes place under constant pressure with fuel injected into the cylinder during the combustion.

- xiii. About 8 KL/day of fresh water is required to meet the requirement of Cooling Water System & Service Water System of the plant.
- xiv. It is proposed to set up desalination plant of 25 KL/day to meet the water requirement of the project.
- xv. A&N Islands shall be the 100% beneficiary of the power generated from the proposed power project. Proposed project will benefit and strengthen the power-supply gap and improve the energy requirement of A&N Island and consequently stimulate the development of the region. The project will replace the existing power generating which uses diesel as fuel with clean fuel technology and thus contribute in reduction of environmental pollution.
- xvi. Application for obtaining CRZ recommendations from ANZMA is yet to be submitted. Consultants for carrying out EIA studies are also to be appointed.
- xvii. The Commercial Operation Date (COD) of the project is envisaged in 18 months from the Main Plant Award. The estimated project current cost of the project is Rs. 387.80 Crore.

(23.2.2) Committee further noted that the details of other two alternate sites along with the detailed map indicating topographical & geographical features and sensitive areas may be made available to arrive at the best possible site for the proposed project. Further, Project Proponent may furnish the quantities of LNG and Diesel fuels required for the proposed project. Details regarding storage of LNG or Diesel may also be furnished. Committee noted that the selected location (Site near Hope Town) out three locations identified by the Project Proponent is falling within 100 m from the HTL/shoreline of the Bay of Bengal which forms CRZ area. If the project is located there, it attracts the Island Protection Zone Notification, 2011. As per the said Notification, the CRZ boundary is up to 500 m from the HTL.

- i. Para 5(vi): Red category of industries are prohibited (as prohibited under the Environment (Protection) Act, 1986 (29 of 1986) or the Air (Prevention and Control of Pollution) Act, 1981 or the Water (Prevention and Control of Pollution) Act, 1974, as the case may be) within ten kilometres from ecologically sensitive areas;
- ii. Para 5(vii): setting up of new industries and expansion of existing industries is prohibited except facilities for generating power by non-conventional energy sources and setting up of desalination plants in the areas not classified as ecologically sensitive area under this notification based on an impact assessment study including social impacts.
- iii. Para III(D)(3)-ICRZ-III: Area up to 200 m from HTL on the landward side in case of seafront is earmarked as No Development Zone. Facilities for generating power by non-conventional energy sources, facilities for desalination plants and associated facilities are permitted in the No Development Zone.

Committee noted that from the Island Protection Zone, 2011, it appears that the proposed project at Hope Town may not fit in the permissible activities given in the Notification as it is falling within 100 m from the HTLD/Seafront. As there is no expert available in the CRZ area, Committee suggested that the CRZ Division of the Ministry may be consulted to obtain opinion whether the proposed LNG/Diesel based Power Project of 55 MW is permissible activity at the selected location (Near Hope Town).

(23.2.2) Committee after deliberations, deferred the project till the opinion of CRZ division is made available to the Committee and the information as sought above is provided by the Project Proponent.

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(23.3) 55 MW Waste to Energy Power Plant based on 200 TPD Municipal Solid Waste using Cold Plasma Technology at East Delhi Municipal Corporation Opp. Gagan Theatre, Wazirabad Road, Mandoli Extension, Village Mandoli, Delhi by M/s A.G. Dauters Waste Processing Private Limited.- reg. ToR.
(F. No. J-13012/13/2018-IA.I (T) & Online no. IA/DL/THE/84113/2018).

(23.3.1) Project Proponent submitted online application on 31.10.2018 for ToR. Project Proponent made the presentation inter-alia submitted the following information:

- i. Project Proponent has proposed to set up the plant of Solid Waste to Energy Facility at Ghazipur Landfill Site for East Delhi Municipal Corporation and the plant will have a capacity of approx. 200 Tons per Day based on Cold Plasma Gasification Technology to convert into 55 MW of Green Power, 30 KLD Purified Water and 30 KLD fuel.
- ii. The land requirement for setting up of the waste to energy power plant is 1.214 Ha. The project location is within the Ghazipur Landfill Site. Okhla Bird Sanctuary is at 6.41 km. Okhla Industrial Area is located at 10.46 km from the proposed location. The project area falls in seismic zone IV. Restricted Forest is located a distance of 5.04 km. Several water bodies such as Yamuna River, Hindan River, Sanjay Lake and several drains are within 10 km radius of the proposed location. Ghazipur Dairy Farm is at a distance of 240 m from the project. Residential areas are located at 100 m from the proposed location.
- iii. East Delhi with a population of over 35 lacs has been generating approx. 2800 TPD of solid waste and is being dumped in the Ghazipur landfill site from last 3 decades resulting in a mountain of 65 m in height and spread over 50 acres.
- iv. The land has been allotted by East Delhi Municipal Corporation to AG Dauters Waste Processing Pvt. Ltd for development of pilot project of Solid waste to Energy Plant (Legacy waste). There is Concession Agreement between East Delhi Municipal Corporation (EDMC) and A.G Dauters Waste Processing Private Limited (India and SAARC Partners and on behalf of Langenburg Technologies LLC, USA).
- v. The proposed project is based on the technology 'Plasma Arc Gasification' due to high temperatures, thermal plasma can melt and destroy any chemical bond and thus all the waste is ionized. The vitrified residue is inert and can be used in road construction. The main issues for this new technology are energy consumption and capital and operating costs. It will use Cold Plasma Gasification process for conversion of waste into energy and the plasma is the ideal alternative out of all the conventional process of solid waste treatment due to the following advantages:
 - a. No harmful emissions of toxic waste.
 - b. Processing of organic waste into combustible syngas for electric power and thermal energy and production of value-added products (metals).
 - c. Only a small amount of oxidant is necessary to generate syngas, therefore, the gas volume produced is much smaller than with conventional combustion processes and so is easier and less expensive to manage.

- d. High energy density and temperatures, and the correspondingly fast reaction times, offer the potential for a large throughput with a small furnace.
 - e. No residues: Inert or residue from the plant
 - f. Entire waste will be converted into 55 MW green power, 30 KLD purified water and 30 KLD fuel.
 - g. The processing of legacy waste lying at the present landfill site shall be used for converting into power, drinking water and fuel.
 - h. The advantage consists on reducing both the atmospheric emissions and the volume of solid residues to be land filled. Since the solid residues come from a high temperature at normal conditions, they're inert materials that can be used as part of the bulk material in concrete production.
- vi. Fresh water requirement for the proposed project is 5 KLD. As municipal waste of 200 TPD enters the system with 2000 KLD of wastewater from nearby drain and 4 KLD in house waste water generated from the domestic purposes, its physical and chemical characteristics are identified, recorded and tracked in real time, allowing the master control unit to modify/monitor subsequent processing, including feedback loops to continually meet the output requirements. The waste stream is re-screened and separated into solids and liquids. The solids are processed through multiple stages including grinding and liquefaction and further extraction of water/fluids. All particulate constituents are reduced, gasified and/or converted into LT fuels within the LT Plasma Unit.
 - vii. In the LT water purification process, liquid constituents are clarified through heat, pressure and proprietary processes leading to pure sterilized water. The remaining solids (down to microscopic level) are rerouted through the plasma unit. The resulting water is recalculated through a range of temperatures, pressure and catalyst processes that introduce and infuse oxygen from the LT Gas Extraction Unit, Balance pH and refine output water. Heat and electric power for this process comes from the LT turbine generator.
 - viii. A fraction of the water is sent to the LT gas extraction system where a proprietary low-input-energy form of electrolysis is used to develop hydrogen and oxygen. These gases are stabilized using proprietary processes and catalysts – made available on demand to the LT water treatment unit, the LT Cold Plasma gasification process and the LT Turbine.
 - ix. The turbine powers up in 60 seconds or less. It includes multiple modifications from standard turbines allowing the use of LT fuels (from gas extraction and plasma fuel synthesis). It is also modified to recapture and recirculate much normally wasted energy (turbulence and heat) allowing cooler operation, reduced heat distortion and vibration resulting in minimal wear of components for safe long-term performance. The LT generator is uniquely designed (materially mechanically and electrically) to neutralize the negative loads and resistance that standard generators encounter. Thus, it has a higher power density than any other systems and in tandem with the proprietary LT transformer it produces typical 3-phase alternating current (AC) at 50Hz and 60Hz and is fully compatible with international performance & power standards.
 - x. LT plasma is fully integrated into the treatment of all wastes and the production of proprietary, high energy, clean hydrogen-based fuels.
 - xi. External power is not required for the project. The power load of 5 MW will be used from the plant itself to meet the auxiliary power consumption.

xii. The employment generation is 37 persons. The expected project cost is Rs. 450 Crores.

(23.3.2) Committee noted that the details submitted by the Project Proponent regarding technology, process and the outputs generated from the project (power, hydrogen fuel and purified water) is not sufficient to understand how such large amount of power is generated from merely 200 Tons of Municipal Solid Waste. Further, as per the project proponent, it was mentioned that there is no solid waste or emissions generated from the technology. However, the material balance has not been furnished. Project Proponent stated there are several plants which are already working in USA. However, committee noted that these power plants are not accessible as they are with the USA Defence Installations.

(23.3.3) Committee after deliberations, **deferred the project for submission of detailed project report along with the technology including the material balance.**

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(23.4) Proposed 21 MW Municipal Solid Waste based Power Plant at Villages Kolua Khurd, Adampur Chhavani, Phanda Block, Huzur Tehsil, Bhopal District by M/s Bhopal Municipal Solid Waste Private Limited. - reg. reconsideration for Environmental Clearance.

(F.No. J-13012/16/2017-IA. II (T) & Online No. IA/TN/THE/60765/2016)

(23.4.1) Project Proponent has submitted online application on 10.8.2018 for Environmental Clearance. The proposal was earlier recommended by the EAC in its meeting held on 30.8.2018 for grant of Environmental Clearance. Ministry while processing the proposal noticed that the proposal is for generation of 23 MW with 1000 Tons per Day unsegregated Municipal Solid Waste and whereas Ministry recently accorded Environmental Clearance for 25 MW Power generation with 2000 Tons per Day at Tehkhand, Delhi. Ministry has noted that the characteristics and calorific value of municipal solid waste may not have significant variation in the waste generated in Delhi and Bhopal. Further, the technology proposed in both cases is the same viz. mass incineration without any composting. The waste to energy power plants running in the Country are utilising approximately 100 tons /day to generate 1 MWhr (for 24 hours) as the calorific value of the MSW varies from 1000-1500 kCal/Kg. Accordingly, the Ministry has decided to refer the proposal to EAC for getting more clarity. Accordingly, the proposal has been placed before EAC in the present meeting.

(23.4.2) Project Proponent vide their letters dated 5.11.2018, 23.10.2018 and during the presentation submitted certain information which has wide variations in all the documents in terms of numbers and the capacities. Based on the information submitted by the Project Proponent and discussions held with Project Proponent, the Committee has summarised the project information as follows:

- i. The project is expected to commission by 2020. The Bhopal city is expected to producing about 1000 Tons per Day Municipal Solid waste in 2020. Further, the waste generation from Local bodies of Mandideep, Obaidullahganj, Berasia, Sehore, Ichhawar, Kothri and Ashtawould be around 100 TPD. Further, there is a legacy waste which will be collected now till the commissioning of the project and the said waste will be stored at one place. Accordingly, around 200 TPD of

legacy waste will be fed to the power plant. The total of 1400 TPD MSW is expected to be feed for power plant. The several cases of waste quantity and its power generation is provided as below:

Scenario	Waste Quantity (TPD)	Reduction of inert content (10%)	Moisture reduction from 45% to 30% (15%)	Total waste available for boiler feed	Design Calorific value (kcal/Kg)	Total Power Generation per hour (kWh)	Conversion Efficiency (%)	Actual Power Generation (MW)
Scenario-1	1000	100	150	750	1660	60.32 MW	24%	14.5 MW
Scenario-2	1400	140	210	1050	1660	84.44 MW	24%	21 MW

- ii. Two Boilers with capacity of 750 TPD and 300 TPD will be established set up which will generate 75 TPH and 30 TPH. The detailed table is as below:

Boiler No.	Waste intake capacity of the boiler	Steam production	Power Production
Boiler-1	750 TPD	75 TPH	15 MW
Boiler-2	300 TPD	30 TPH	6 MW
Total Power Generation			21 MW

- iii. The design of Waste to Energy Power Plant will be based on 21 MW. However, if the availability of the waste is low, the plant will run at lower capacity and generate lesser power. However, the main plant (Boiler, Turbine & Generator) and all other auxiliary facilities such as water treatment plant, wastewater treatment, air cooled condenser system, air pollution control and Waste disposal facilities will be designed as per the maximum capacity of 21 MW. The generation shall be single which will be coupled to the common steam turbine. Turbine performance parameters and generating rating shall be confirmed at the later stage. Low Pressure heater will be setup to increase the turbine cycle efficiency.
- iv. Dry Flue Gas Treatment (FGT) technology will enable to reduce boiler exit flue gas temperature to 160°C as compared to semi dry type FGT which does not permit to exit below 190°C. This will help to generate more steam and power.
- v. The efficiency of the plant is maintained at higher efficiency at 24%.
- vi. The project will adopt Zero discharge concept. The leachate will be treated and reused within the plant.
- vii. During the construction period, 50 KLD of groundwater will be utilised and during operation period, 500 KLD of fresh water from Goda Pachad Dam will be used.

(23.4.3) **Committee after detailed deliberations recommended for grant of Environmental Clearance for 21 MW Power Generation with the unprocessed waste quantity of 1400 Tons per Day** subject to the following additional conditions:

- i. Any change in configuration of the project design, a fresh reference shall be made for amending the EC and stipulating adequate conditions.
- ii. Zero liquid discharge shall be adopted. Leachate shall be treated and reused. No treated leachate shall be discharged in any circumstances.
- iii. Periodic monitoring of emission parameters (at least once in quarter) described in the Schedule-II of MSW Rules, 2016 shall be carried out and emission records shall be maintained.
- iv. Records pertaining daily water drawl, consumption and reuse shall be maintained.
- v. Characteristics of Leachate and the treated leachate shall be monitored once in quarter and records shall be maintained.
- vi. The records pertaining to generation quantity of flyash and bottom ash and its disposal/reuse shall be maintained.
- vii. The calorific value of the incoming waste and its proximate analysis of the representative sample shall be monitored daily and the data shall be maintained to assess the efficiency of the power plant.

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(23.5) Expansion from 2x600 MW to 2000 MW (2x600 + 1x800 MW) of Coal based Singareni Thermal Power Plant at Pegadapalli Village, Jaipur Mandal, Mancherial District in Telangana by M/s Singareni Collieries Company Ltd.-reg. extension of validity of ToR.

(F.No. J-13015/08/2015-IA.I (T) & Online no. IA/TG/THE/27094/2015).

(23.5.1) Project Proponent submitted online application on 03.11.2018 for extension of validity of ToR for six months. The ToR for establishing 1x600 MW in the premises of existing Power Plant (2x600 MW) has been issued vide Ministry's letter dated 27.5.2015. Further, an amendment in ToR for changing the configuration of the project from 1x600 MW to 1x800 MW has been issued vide Ministry's letter dated 26.9.2017. The said ToR is valid for three years, i.e. till 26.5.2018. Project Proponent has requested an extension of one year. However, Ministry has extended ToR only for six months (i.e. till 26.11.2018) vide Ministry's letter dated 14.5.2018 since the Baseline has been collected during October-December, 2017 and Public Hearing was already conducted on 7.3.2018. Ministry found that there is no reason to extend the validity of ToR further as the Project Proponent has already submitted the EIA report. Project Proponent has requested for extension of further six months citing the reason that Regional Office has not submitted the certified compliance report. However, the certified compliance report by the Regional Office of the Ministry has been submitted on 20.9.2018 which was much before the expiry of validity of ToR, i.e. before 26.11.2018. Though several EDS (Essential Details Sought) were raised seeking the justification to extend the ToR, Project Proponent could not give credible reason for extension and kept insisting to extend the ToR for further period of six months. Accordingly, the proposal has been considered in the present EAC meeting.

(23.5.2) Committee noted that Project Proponent has submitted the both applications for extension of validity of ToR and grant of Environmental Clearance on 3.11.2018. Committee noted that both the applications cannot be considered at the same time for same project. Ministry has already clarified through guidelines that if the EIA/EMP report there is already submitted within the validity period of ToR, there is no need to extend the validity of ToR further. Committee opined that the EIA consultant M/s Ramky Enviro Services Pvt. Ltd. as well as Project Proponent should have through knowledge and update of Ministry's notifications and guidelines to avoid such kind of ambiguity.

(23.5.3) **After deliberations, Project Proponent has agreed to withdraw the application. Accordingly, the committee returned the proposal in the present form.**

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(23.6) Expansion from 2x600 MW to 2000 MW (2x600 + 1x800 MW) of Coal based Singareni Thermal Power Plant at Pegadapalli Village, Jaipur Mandal, Mancherial District in Telangana by M/s Singareni Collieries Company Ltd.-reg. Environmental Clearance.

(F.No. J-13015/08/2015-IA.I (T) & Online no. IA/TG/THE/27094/2015).

(23.6.1) Project Proponent has submitted online application on 03.11.2018 for grant of Environmental Clearance. The ToR for establishing 1x600 MW in the premises of existing Power Plant (2x600 MW) has been issued vide Ministry's letter dated 27.5.2015. Further, an amendment in ToR for changing the configuration of the project from 1x600 MW to 1x800 MW has been issued vide Ministry's letter dated 26.9.2017. The said ToR is valid for three years, i.e. till 26.5.2018. Further, the validity of ToR has been extended for six months, i.e. till 26.11.2018 vide Ministry's letter dated 14.5.2018.

(23.6.2) Project Proponent along with Consultants M/s Ramky Enviro Services Pvt. Ltd. (QCI-NABET accreditation is valid till 20.5.2019) have made the presentation inter-alia submitted the following information:

- i. Singareni Collieries Company Limited (SCCL) is proposing to set up a 1x800 MW Super critical coal based thermal power plant project adjacent to the existing 2x600 MW units, which is already under operation. The project is located near Pegadapalli Village, Jaipur Mandal, Mancherial District, Telangana State.
- ii. The land requirement for the existing project is 300.972 ha for 2x600 MW and 127.31 ha for the proposed project (1x800 MW).
- iii. Coal requirement for the existing plant is 4.8 MTPA (642 TPH @ 80% PLF) and the coal requirement for the proposed project is 4.05 MTPA (514 TPH @90% PLF). Naini coal block was allocated for both existing and proposed power projects. Coal production from the Naini coal block is expected in 2020-21. Meanwhile MoC has granted bridge linkage for use of coal from SCCL mines.
- iv. Gross Calorific Value of the Coal is expected to be 3500 kCal/Kg with Sulphur and Ash contents are 0.5% and 45% respectively.
- v. The envisaged mode of coal transportation from coal mines to the power plant is by Indian railway system in bottom open/BOXN wagons. The rakes with bottom open will be unloaded into existing track hopper of tage-I and rakes with BOXN

- wagon will be unloaded by proposed Wagon Tippler for stage-II. New railway tracks are proposed for the wagon tipping and BOX-N rakes.
- vi. The coal handling plant will be 1400 MTPH rated capacity (keeping in view the interconnection with existing stage) with parallel double stream (one working and one standby) belt conveyors along with facilities for receiving and stacking/reclaiming the coal to/from crushed coal stockyards.
 - vii. Light diesel oil will be used for furnace light up and boiler start up while HFO will be used for flame stabilization. The total requirement of LDO and HFO is 12,088 KL/annum.
 - viii. Water requirement for the existing plant is 88800KLD (3700 m³/hr) and for the proposed project is 48000KLD (2000 m³/hr).1.05 TMC per annum (3233 m³/hr) during lean period from River Godavari and 2.0 TMC (6466 m³/hr) from River Pranahitha as main source sanctioned by State Government.As per GEC methodology and WALTA ACT2004, State Groundwater Department permitted vide lr.no: 157/T/2008 Dt: 07-08-2008 to draw 18MGD of water through infiltration galleries from Godavari River, near Shettipalli village, for existing 2x600 MW which is located 8.6km south of the project.
 - ix. Water Source and intake point of Proposed 1x800 MW will be located in River Pranahitha which is at a distance of about 43.5 Km (near Devulawada Village, Mancherial District) from project site.
 - x. The baseline terrestrial environmental survey was carried out during Post monsoon (Oct to Dec 2017) by covering the study area of 10 km radius from project boundary. Predominant Wind Direction during the study period is NE.
 - xi. Baseline air quality data has been collected from 10 locations. The 98 percentile values are PM₁₀: 56.8-83.5µg/m³(Standard: 100µg/m³), PM_{2.5}: 32.9-45.0 µg/m³(Standard: 60µg/m³), SO₂: 12.9-18.0 µg/m³(Standard: 60µg/m³); NO_x: 18.7-25.4µg/m³(Standard: 60 µg/m³), O₃:13.9-22.0µg/m³(Standard: 100µg/m³); CO: 460-776µg/m³(Standard: 2000µg/m³). Mercury levels are below detectable limits (0.001 µg/m³). All the air quality data is within the Ambient Air Quality Standards.
 - xii. The maximum ground level concentrations for the worst case scenario are PM: 3524 µg/m³(Without ESP) and 1.7 µg/m³ (with ESP), SO₂: 33µg/m³(Without FGD for both plants) and 3.4 µg/m³(with FGD) & NO_x: 8-21.6µg/m³.
 - xiii. Average day time and night time noise levels at different zones in the study area were found to be varying from 50.9 to 56.2 dB(A) and 40.7 to 43.8 dB(A) respectively and the values were found to be within the limits prescribed by CPCB for residential areas.
 - xiv. Based on the physico-chemical parameters and comparison with IS 10500-2012 drinking water standards, all ground water samples were found to be fit for drinking, however some of the parameters in a few water samples were exceeding the acceptable limits but were within permissible limits.
 - xv. Surface water samples have pH in the range of 6.9 to 7.1. BOD range of 5-14 mg/l. COD was observed to bein the range of 20-50 mg/l. DO was in the range of 5.5-6.2 mg/l.
 - xvi. The pH of the soil ranged from 7.0 to 7.5 indicating that the soils are normal to saline in nature. The proposed power plant area is mostly covered by thick black and reddish soils, underlined by sand stones, shales and clay.
 - xvii. There are no rare or endangered or threatened (RET) plants in the core project area except the introduced exotic ornamentals like Zamia furfuracea from Mexico.

- xviii. The vegetation of the buffer zone reveals the presence of three blocks of reserved forest namely; Kundaram RF 2.4 Km (East); Indaram RF 2.7 Km (West); Mittapalli RF 5.6 Km (North), Bellampalli RF 9.8 Km (N), Chinnur RF 10.8 Km (E), Ramagundam RF 11.3 Km (WSW) Pottial RF 13.9 Km (NE) and Naniyal RF 15Km (NNE) of the project site. They come under the southern tropical dry deciduous and Southern dry scrub forests of Champion and Seth. They are highly degraded due to illegal felling and grazing.
- xix. There are no biosphere reserves, national parks, wildlife sanctuaries, wetlands or other protected areas such as the Important Bird Areas (IBAs) within a distance of 10 Km from the core area. But there are reserve forests, Godavari River, mango gardens; agroforests of Eucalyptus plantations, Singareni coal mines and residential areas within 10 Km.
- xx. As such there are no chances of occurrence of any rare or endangered or endemic or threatened (REET) species within the core or buffer area.
- xxi. There are no Sanctuaries, National Parks, Tiger Reserves or Biosphere Reserves or Elephant Corridors or other protected areas within 15 Km of radius from core area.
- xxii. Among the mammals, Blackbuck (*Antelope cervicapra*) comes under the RET (Schedule I) category. It was noticed to come out in to the open for drinking water in Godavari River during summer.
- xxiii. The flow in river during non-monsoon season is very low and as there are many pools of water on the river bed, several common aquatic plants were found. As per the fish database, there are no RET species.
- xxiv. Red Sander (*Pterocarpus santalinus*) is the most valuable timber tree. It is endemic to Seshachalam Biosphere Reserve in Andhra Pradesh. About 200 saplings are grown in the plantations of Singareni Collieries.
- xxv. Closed circuit cooling water system would be adopted for unit auxiliaries of steam generator and turbine generator. The CW System will be designed considering a design CoC of about 5. To enable operation of CW System at this CoC of 5 will require provision of CW chemical treatment programme by using acid and Scale and /or corrosion inhibitors apart from chlorination.
- xxvi. The water treatment system comprises of water pre-treatment plant, water demineralizing plant, chlorination plant, condensate polishing plant, CW treatment plant.
- xxvii. The DM plant will be sized to meet the make-up water requirement of the steam cycle, make up to closed circuit auxiliary system and stator water cooling system. Considering the quality of water, it is proposed to adopt a service cycle of 12 hrs for DM Plant. The DM plant will consist of one (1) streams of 90 m³ /hr capacity and stream will comprise of activated carbon filter, cation exchangers, degasser system (comprising of degasser tower, degassed water tank, degassed water pumps and degasser blowers etc.), anion exchangers and mixed bed exchanger in the existing DM plant area.
- xxviii. The RO plant is proposed to produce 500 cum/hr permeate. Cooling Tower Blow Down (CTBD) water will be used as feed water to RO plant.
- xxix. Efficient operation of various treatment schemes will be ensured, so that the quality of treated effluent from CMB conforms to relevant standards, prescribed by regulatory agencies. The treated effluents will be released appropriately to the existing drainage system. The feasibility for zero discharge will be explored.
- xxx. The high efficiency Electrostatic Precipitator (ESP) will be installed to limit the particulate matters in flue gas to a maximum of 30 mg/Nm³ (at 12% CO₂ on dry

gas basis). Single flue steel lined reinforced concrete chimney will be provided for the proposed project. The flue gas emission point with FGD will be 100/275m above the plant grade level.

- xxxi. Wet limestone FGD system will be installed to limit the SO_x emission up to 100mg/Nm³ (at 12% CO₂ on dry gas basis. It is proposed to install FGD system downstream of ID fans for 800 MW unit. FGD system is based on forced oxidation wet lime stone process with SO₂ removal efficiency will be ≈/ >95%.
- xxxii. The steam generator will be designed to limit the NO_x formation up to 100 mg/Nm³ by adopting the appropriate burners/combustion system along with Selective Catalytic Reduction (SCR) system. Mercury emission in air will be limited to 0.03 mg/Nm³. For control of fugitive dust emissions within and around the coal handling plant, dust extraction/suppression systems would be provided. Dust suppression system will also be provided in the coal stockyard. Similarly, ash handling plant would be equipped with dust extraction/suppression systems to prevent fugitive emissions.
- xxxiii. Approximately the ash generation from the proposed project is 5000 Tons/day (1.65 Million Tons per Annum) out of which 80% is the flyash and 20% is the bottom ash.
- xxxiv. Existing ash pond of 30 ha is available for the 2x600 MW. Further, new ash pond with an area of 59.44 ha is proposed for the new project (1x800 MW).
- xxxv. Pneumatic conveying system (either vacuum system or pressure system) will be employed for conveying of fly ash from the electrostatic precipitator hoppers in dry form. This dry ash will be taken to buffer hoppers. Total twelve (6W+6S) buffer hoppers will be provided. Dry ash from buffer hoppers will be transported either to High Concentrated Slurry Disposal (HCSD) ash silos or fly ash storage silos. There will be four HCSD Pumps, four silos with all accessories for disposal of fly ash to ash dyke. Two pumping system will take full load; one pumping system will be standby and one system maintenance standby.
- xxxvi. Risk assessment has been carried out for coal stack yard, LDO & HFO tanks and Chlorine & Hydrogen cylinders. The design and the location of these installation will be done in such a way that the risks are controlled. Further, emergency response plan is prepared along with all the facilities to control emergency situations.
- xxxvii. Public Hearing has been conducted on 2.3.2018 at the project site which was presided by the District Collector, Mancherial. Education, hospital, medical camps to the needy villagers, generation of employment to youth in consultation with R&D wing in utilising the flyash generated from power plant. Villagers are facing pollution problems due to existing plant, free power supply to be given for the surrounding four villages (Pegadapalli, Jaipur, Elakanti, Gangipally). One person from each family who lost their land shall be given employment. Super speciality hospital shall be established for surrounding villages. Salaries of contract persons should be fixed not less than Rs.20,000 per month until regularisation. SCCL assured the employment during earlier public hearing for 2x600 MW and could not fulfill the assurance given to the villagers. Training shall be given to affected villagers. Plantations shall be taken up. Unemployed youth after training be given jobs based on eligibility at par with TSGENCO. ITI, Polytechnic and Hospital should be set up for the surrounding villages. Salary of Rs.8000 to contract workers is a meagre amount and to be increased. Pegadapally village is suffering from pollution from the plant and requested for relocation. EPF, ESI and other facilities shall be extended to all workers in the plant. Foul

smeel is coming from the coal rejects and causing inconvenience to the surroundings. Survival rate of plants/greenbelt is very less due to negligence of SCCL. Ash suppression measures have to be taken up. Dust pollution from mines and power plant should be reduced. Drinking water facility may be provided. Unemployed youth can be engaged in the maintaining the plantation to keep the survival rate high. Breathing problems are due to air pollution .

xxxviii. Estimated Project Cost is Rs.5879.62 Crores. Estimated Manpower is 550 persons (100 for existing and 400 for proposed project).Total of 3000 persons work force is expected to be deployed during construction period.

(23.6.3) Committee noted that the coal quality submitted in the EIA report differs for the existing plant and proposed project though the coal is to be brought from the same mines of SCCL. The ash content for the existing power plant is 34% and proposed project is 45%. A justification is required how the ash content is varying in the same mines. Further, the details of laying of pipelines, land acquisition, details of involvement of forest land, if any, land use of the land for laying pipeline to Pranahita and Godavari Rivers are not available. The details of the mines and the coal quality are to be provided. Further, the greenbelt development has been observed from the satellite imagery of google earth. Though project proponent claimed that three tier greenbelt with 15 meters has been developed, there is no adequate greenbelt developed around the project boundary. The surface water quality of the Pranahita river (both upstream and downstream) is to be analysed as major quantity of the water is to be drawn from Pranahita river. Further, there is no water during lean season in the Godavari river. Permission was given to take water from infiltration galleries of Godavari river. Justification along with the data is to be submitted to see that adequate water is available for downstream users even after diverting the water for proposed power plant. One more ash pond has been proposed in addition to the existing ash pond. As Project Proponent is stating that all the flyash is being utilised in cement plants and underground stowing, setting up of one more ash pond is not justified. The ash utilisation in the formats submitted to CPCB is to be furnished. Baseline environmental data of 104 readings during operation phase is also to be analysed and incorporated in the EIA report. Further, there are several issues raised in the Public Hearing which were not fulfilled and to be filled such as employment, lesser salary to contract workers, providing EPF & ESI facilities, foul smell from ash pond, dust pollution from air pollution, welfare activities to surrounding villages, sparse greenbelt, training to youth and providing employment, etc. It was raised in Public Hearing that the data in the EIA report and Pre-feasibility report is not matching which requires reconciliation. Further, there is one schedule-I species within study area for which wildlife management plan is required to be prepared and vetted by the Wildlife Department. Villagers of Pegadapally mentioned in the public hearing that they are facing health problems due to pollution from the plant and requested for shifting of the village which needs to be addressed by the Project Proponent. There are several forests adjacent to the power plant. The impact on these flora and fauna is to be seen in light of the flue gas and fugitive emission from the plant. The break-up of CSR activities along with expenditure as per the previous EC conditions is to be provided. Certified compliance report of the Regional Office states several non-compliances which needs to be addressed and action plan along with timelines to be furnished. Several parameters of the ground water quality in the surrounding villages are exceeding the drinking water

standards. Project Proponent has to draw a treatment plan to make this ground water potable for the surrounding villagers. A copy of the time extension for installing FGD issued by CPCB is to be furnished.

(23.6.4) Committee after deliberations recommended for a site visit by the sub-committee for assessing the requirement of additional ash pond, avenues for utilisation of ash and filling in abandoned mines, greenbelt development, water availability from Godavari and Pranahita rivers, issues pertaining to wildlife management, decision to arrive at stack height of 100 m/275 m, CSR activities carried out till date, the need for shifting of Pegadapalli Village due to pollution caused by the project, etc. The sub-committee will comprise of following members:

- | | | | |
|------|---------------------------|---|----------|
| i. | Dr. Navin Chandra | - | Chairman |
| ii. | Shri S.D. Vora | - | Member |
| iii. | Shri Mohan Karnat | - | Member |
| iv. | Shri Gururaj Kundargi | - | Member |
| v. | Representative of MoEF&CC | - | Member |

(23.6.5) **Committee noted that Project Proponent shall submit the action plan for the observations made in the above paragraph. Accordingly, the project is deferred.**

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(23.7) 2x800 MW (Stage-I) Gadarwara Super Thermal Power Project near villages Gangai, Umaraiya, Mehrakheda, Chorbarheta, Dongergaon and Kudari, in Gadarwara Tehsil, Narsinghpur District, in Madhya Pradesh by M/s NTPC Ltd.- reg. amendment in EC for change in coal source.

(F.No. J-13012/125/2009-IA. II (T) & Online no. IA/MP/THE/17134/2013).

(23.7.1) Project Proponent submitted online application on 24.10.2018 for amendment in EC for change in coal source from Pakri Barwadih Coal Block to NCL, WCL and SECL mines of Coal India Limited. Project Proponent has made the presentation and provided the following information:

- i. Environmental Clearance for 2x800 MW Gadarwara Super Thermal Power Project has been accorded vide Ministry's letter dated 22.3.2013. While granting Environmental Clearance, the linkage of the coal was available for Talaipalli Coal block. However, due to change in allocation of coal blocks, permission to change coal source from Talaipalli to Pakri Barwadih was obtained vide Ministry's letter dated 1.9.2017.
- ii. Unit-1 (1x800 MW) is commissioned on 23.11.2018. However, COD is to be achieved owing to the availability of long term coal linkage. Unit-2 (1x800 MW) is in advanced stage of construction.
- iii. Presently, Longterm Standing Linkage Committee vide MoC letter dated 17.7.2017 has agreed to supply coal of 2.805 MTPA from NCL, 1.63 MTPA from SECL and 1.403 MTPA from WCL which are subsidiaries of CIL.
- iv. To achieve the COD of the Unit-1, Fuel Supply Agreement is to be signed between three companies of CIL and NTPC. CIL has requested to get an amendment in the

EC condition No.6 for change of coal source before signing the Fuel Supply Agreement.

(23.7.2) Committee noted that the coal source kept on changing from Talaipalli coal block to Pakri Barwadi coal block to NCL, SECL and WCL mines of CIL. Committee noted that it does not have any objection to change in coal source and CIL should not insist asking for amendment in EC for change in coal source instead amendment is to be sought after obtaining FSA for environmental impacts due to change in coal quality such as incremental Sulphur & Ash contents and impacts of transportation due to change in coal source as it will entail change in modes/routes of transportation. Committee suggested that Ministry may request CIL and other coal companies not to wait for amendment in EC for granting coal linkages. After granting coal linkage, Project Proponent has to approach Ministry for assessing the increased environmental impacts due to change in coal quality and transportation modes. Committee further noted that out of total requirement of 8 MTPA coal, now the linkage is available only for 5.838 MTPA. The details regarding source and quality of coal is not known. As the Unit-1 only will achieve COD in the near future, the linkage of 5.838 MTPA would suffice the requirement. However, when Unit-2 will achieve COD, then more coal is needed.

(23.7.3) Committee after detailed deliberations, **recommended for change in coal source from Pakri Barwadih to NCL, WCL and SECL mines of CIL.**

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(23.8) 2x800 MW (Stage-I) Gadarwara Super Thermal Power Project near villages Gangai, Umaraiya, Mehrakheda, Chorbarheta, Dongergaon and Kudari, in Gadarwara Tehsil, Narsinghpur District, in Madhya Pradesh by M/s NTPC Ltd. reg. extension of temporary permission for road transportation.
(F.No. J-13012/125/2009-IA. II (T) & Online no. IA/MP/THE/17134/2013).

(23.8.1) Project Proponent submitted online application on 24.10.2018 for extension of temporary permission for road transportation. Project Proponent has made the presentation and inter-alia submitted the following information:

- i. Environmental Clearance for 2x800 MW Gadarwara Super Thermal Power Project has been accorded vide Ministry's letter dated 22.3.2013. Ministry vide letter dated 1.9.2017 approved for change in coal source from Talaipalli to Pakri Barwadih and for transportation of coal by road for the quantity of 8 MTPA for a distance of 15 km, i.e. from Gadarwara railway station to the power plant site for temporary period till December, 2018.
- ii. The Unit-1 (1x800 MW) is commissioned on 23.11.2018 and COD is expected after signing FSA with CIL subsidiaries for 5.838 MTPA. Unit-2 is in advanced stages of construction and expected to commission within six months.
- iii. The construction of railway siding from Gadarwara Railway station to Plant is delayed due to delay in land acquisition and handing over to Konkan Railway Corporation Ltd. and agitation by villagers and inaccessibility of construction sites of railway siding during monsoon. Construction work is under progress and expected to be completed by December, 2019.
- iv. Traffic Impact Assessment Study was conducted in 2017 during the grant of permission by the Ministry on 1.9.2017. Road capacities have adequate margin

to accommodate additional traffic. Air quality modelling for impact assessment of incremental ground level concentrations of air pollutants has been carried out.

- v. It is requested to extend the permission to transport the coal by road for one more year, i.e. December, 2019.

(23.8.2) Committee noted that the coal linkage is available only for 5.838 MTPA from CIL subsidiaries and the requirement is required only for the Unit-1 as Unit-2 is under construction. Project Proponent has stated that traffic impact assessment study was conducted in 2017. However, no new study was conducted. As in the case of M/s SCCL, traffic study of two years old was not accepted and sought for fresh study. Committee noted that there should be uniform and balanced approach to be followed for assessing the present impacts of increased traffic on the road, habitation and air quality. Further, detailed progress report of railway siding showing administrative approvals, design approvals by railways, civil, mechanical, electrical works achieved till date is not available. Project Proponent only mentioned that it will be made ready by December, 2019.

(23.8.3) **Committee after detailed deliberations, recommend for transportation of coal by road for the quantity of 5.838 MTPA for six months from the date of expiry, as the Unit-1 is commissioned and expecting FSA for achieving COD immediately.** Project Proponent meanwhile submit the detailed progress report of railway siding along with the balance works and timelines for completion and fresh traffic impact assessment study for further extension, if required.

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(23.9) 2x800 MW (Stage-I) Darlipali Supercritical Coal Based Thermal Power Plant at village Darlipali, in Lephripara Taluk, in Sundergarh District in Odisha by M/s NTPC Ltd-. reg. amendment in EC for road transportation.

(F.No. J-13012/65/2008-IA-II(T) & Online no. IA/OR/THE/21145/2011).

(23.9.1) Project Proponent submitted online application on 30.10.2018 for amendment in EC for change in coal source and temporary permission for transportation of coal by road. Project Proponent made the presentation inter-alia submitted the following information:

- i. Environmental Clearance for 2x800 MW Supercritical Thermal Power Plant was accorded on 17.12.2014.
- ii. The coal requirement for both units is 8 MTPA. Earlier it was envisaged to bring coal from Dulanga mines. Now Dulanga mine has already started production. However, the production 3.0 MTPA will reach by March, 2019.
- iii. Presently, Unit-1 is expected to be commissioned by February, 2019 and Unit-2 is expected to be commissioned by October, 2019.
- iv. Bridge linkage has been accorded for 3.298 MTPA from MCL and 0.491 MTPA from SECL. In addition, 2 lakh tonnes of coal from MCL has been permitted by CEA for commissioning for Unit-1.
- v. The quantity of coal generated from Dulanga mine is not sufficient to run even Unit-1. Accordingly, it is proposed to obtain Coal from MCL and SECL mines in addition to Dulanga mine.

- vi. Dedicated MGR system between Darlipali and Dulanga is delayed due to delay in land acquisition and is expected to be completed by June, 2019. However, the construction of complete MGR system catering to bridge linkage coal is expected to be commissioned by March, 2020.
- vii. Accordingly, it is proposed to transport coal by road from MCL, SECL and Dulanga mine to Power Plant site with maximum quantity of 19,000 TPD using 20 or 25 Ton capacity trucks for 23 months, i.e. December, 2018 till October, 2020.

Route No	Coal source for Dariapalli STPP	Route length	Single Lane (<5.5 m)	Intermediate Lane (5.5-7 m)	Two lane (7-10 m)	Multi-lane (≥10m)	Coal transportation	Number of Trucks
1	Kulda Basundhara area mines of MCL	24.3 km	-	9.3 km	12.3 km	2.7 km	4000-11000 TPD	400-1100
2	Dulanga CMP	31.6 km	5.9 km	9.3 km	7.7 km	8.7 km	3000-6000 TPD	300-600
3	Ib Valley area mines of MCL	74.4 km	-	22.2 km	23.4 km	28.8 km	1000-1500 TPD	100-150
4	Lakhanpur area mines of MCL	69.2 km	-	24.5 km	14.6 km	30.1 km	1000-1500 TPD	100-150
5	Kotarlia railway siding	148.2 km	8.5 km	27.2 km	21.4 km	91.1 km	1000 TPD	100
Total quantity and number of trucks							19000 TPD	1900

(23.9.2) Committee noted that Route-2 (Dulanga) and Route-5 (Kotarliya) have insufficient width having road width less than single lane for 5.9 km and 8.5 km respectively. Project Proponent has agreed not to transport coal from Kotarliya railway siding for reasons that width of the road is less than 5.5 m. Further, the route from Dulanga mines is under widening. The traffic (existing+ proposed) volumes in Route No.1 at several places is exceeding the design volumes. Accordingly, the quantity of 11,000 TPD as proposed may be reduced to 8000 TPD. The detailed progress report of the railway siding is not available.

(23.9.3) **Committee, after detailed deliberations recommended for a) change in coal source from Dulanga mine to SECL and MCL mines including Dulanga mine and b) transportation of 17,000 Tons per Day coal by road (Route 1: Basundhara/Kulda-8000 TPD; Route-2: Dulanga-6000 TPD; Route-3: Lajkura/Samleswari- 1500 TPD; Route-4: MCL Mines-1500 TPD) till October, 2020 subject to following additional conditions:**

- i. The coal linkage is available only for 3.8 MTPA. Copy of the linkage for remaining quantity shall be submitted to Ministry as and when it is granted.
- ii. Route No.2 from Dulanga mines to the Power plant site shall not be used at present as it is under widening. The transportation shall be commenced only after widening the road to cater to the proposed transportation. A certificate regarding the completeness and adequacy of the road shall be submitted provided by the PWD or the custodian of the road.
- iii. Air quality monitoring shall be carried out at 19 census points indicated in the report along all routes once in quarter.
- iv. Plantation shall be carried out along the road in consultation with State Social Forestry Department.
- v. Regular water sprinkling shall be done on the unpaved roads during transportation.
- vi. The detailed progress report of the power plant & railway siding which are under construction and status of installation of FGD shall be submitted to the Ministry as well as Regional Office once in six months.

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(23.10) 460 MW Talcher Thermal Power Project, District Angul, Odisha by M/s NTPC Ltd.- reg. Permission for disposing 1.2 MTPA ash into mine void of South Balanda OCP of M/s MCL in Talcher Coalfields, District Angul.
(F.No. J-11015/276/2011-IA.II(M) & Online no. IA/OR/THE/60598/2016)

(23.10.1) Project Proponent submitted online application on 31.10.18 for seeking permission for disposing 1.2 MTPA ash into mine void of Quarry No.4 and 7 of Jagannath Opencast Mine of M/s MCL in Talcher Coalfields, District Angul. Project Proponent has made presentation and interalia submitted the following information:

- i. Permission for disposal of flyash (1.2 Million Tons per Annum) generated from 460 MW Talcher Thermal Power Plant into mine voids of South Balanda Opencast Mine for a period of five years has been accorded vide Ministry's letter dated 19.4.2017.
- ii. South Balanda mine voids are nearing exhaustion and will be filled up by 2020. The 460 MW (Stage-I & II) Talcher Thermal Power Plant is expected to run till 2023. Further, Environmental Clearance for Stage-III (2x660 MW) has been accorded recently by Ministry vide letter dated 12.9.2018.
- iii. It is proposed to dispose ash from Stage-I, II and III in the Quarry No.4 and 7 of the Jagannath Mine after filling up of South Balanda mine. Jagannath mine is located at 14 km from the project. After, the mine is filled up, it will reclaimed and vegetated along with native species.

(23.10.2) Committee noted that Project Proponent has submitted few reports such as geo-hydrological study and characterisation of leachate studies. However, committee suggests to stipulate more terms of reference for preparing comprehensive reports including the current scenario of ash utilisation and its feasibility. Further, permission was issued to M/s Bhushan Steel Ltd. for disposing the ash into the same mine for a period of five years. The availability volumes, feasibility of disposing the ash from both projects are also to be assessed in addition to leachate studies.

(23.10.3) Committee after detailed deliberations, recommended to carry out following studies for comprehensive appraisal:

- i. The satellite image, topographical features including contours, spot levels, drainage network etc.
- ii. Assessment of geotechnical properties of OB dump material and fly ash with different mixing ratios and to arrive at optimum blending ratio for OB/Flyash to attend the maximum dry density and least permeability.
- iii. Stability study at the optimized ratio of OB and Flyash to the open cast mine of the proposed operating site.
- iv. Base line data generation (AAQ, Water, Soil, plant and aquatic life) in and around abandoned mines including Bio magnifications study for the in and around abandoned mines/low lying area
- v. Leaching study and radio tracer studies of fly ash and OB dump are to be conducted, which is going to be dumped in abandoned mines/low lying area
- vi. Detail design, drawing for site preparation and stowing methodology for backfilling of ash in abandoned mines.
- vii. Site specific piezometer design in and around abandoned mines area.
- viii. Details of quantity, source and quantity of water used for pumping flyash.
- ix. Feasibility study exploring the utilisation avenues such as construction of road embankments, brick manufacturing, cement manufacturing, etc within 100 km radius of the power plant.

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**(23.11) 2x660 MW Super-critical Technology Coal Based Thermal Power Plant near, Kohadhar, Bhagdeva & Mai Kalam Villages, Meja Taluk, Allahabad Dist. in Uttar Pradesh by M/s Meja Urja Nigam private Ltd.- reg. extension of validity of EC.
(F.No. J-13012/03/2008-IA.II (T) & Online no. IA/UP/THE/52631/2011).**

(23.11.1) Project Proponent submitted online application on 06.11.2018 for extension of validity of EC for another period of one year. Project Proponent made the presentation interalia submitted the following information:

- i. Environmental Clearance for 2x660 MW Meja Thermal Power Project has been accorded vide Ministry's letter dated 10.1.2011 which was valid for five years, i.e. till 9.1.2016. Ministry's vide notification dated 25.4.2015 and 14.9.2016 has extended the validity of EC to seven years. In the present case, the said EC was valid on the date of publication of the Notification dated 25.4.2015, the validity automatically get extended to seven years. Accordingly, the seven years validity expires on 9.1.2018.
- ii. Ministry has further extended the EC dated 10.1.2011 for the further period of 1 year, i.e. till 9.1.2019 vide Ministry's letter dated 8.1.2018. Accordingly, total of 8 years were given to the project for commissioning and starting the operations of the power plant.
- iii. Project Propoent now states that Unit-1 (1x660 MW) was commissioned on 31.3.2018. Full load trial operations of Unit-1 was successfully completed on 16.10.2018. For Unit-2 (1x660 MW), the project is in advanced stage of completion and will be commissioned in August, 2019. EC may be extended for one more year, i.e. upto 8.1.2019.

(23.11.2) Committee noted that the EC was earlier valid for five years. By virtue of Ministry's amendment, EC got automatically extended from five to seven years. Further, Ministry has extended the EC for one more year on 8.1.2018 based on the justification given by the Project Proponent. Now, total of 8 years are getting completed. Unit-1 has been commissioned within the validity period. Project Proponent now requires extension for Unit-2. It was informed that, Unit-2 will be commissioned by August, 2019. However, detailed progress report in terms of physical progress and expenditure incurred till date, balance work, cause of delay in commissioning the project within the validity period, timelines for completing the balance, is not submitted. NTPC being the regular project proponent should submit all these reports in advance to the Committee for taking the considered view regarding the project. Further, Committee recommends that Ministry may formulate guidelines regarding requisite documents/reports to be submitted in case of EC extension cases and temporary permissions for transportation of coal by road so that Project Proponents will prepare progress report and impact assessment report in advance which will facilitate the better appraisal by the Committee.

(23.11.3) **In view of the submissions made by the Project Proponent in meeting, the Committee after detailed deliberations recommends to extend the validity of EC for further period of six months, i.e. till 09.07.2019.**

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(23.12) 2x150 MW (Phase-I) and 2x150 MW (Phase-II) Middlings & Coal Fine Based Thermal Power Plant at Village Dongamahua, in Raigarh Distt., in Chhattisgarh by M/s. Jindal Steel & Power Ltd. - reg. amendment in EC for temporary permission for road transportation.

(F.No. J-13012/127/2008-IA. II(T) & Online no. IA/CG/THE/10354/2008).

(23.12.1) Project Proponent submitted online application on 16.11.2018 for amendment in EC for temporary permission for road transportation of coal. Project proponent made the presentation and interalia submitted the following information:

- i. Environmental Clearances for 4x150 MW (Phase-I & II) were issued based on middling and coal fines vide Ministry's letters dated 31.7.2008 and 9.11.2010 respectively.
- ii. Permission for change in coal source from middling & fines to raw coal of 4.18 MTPA has been accorded vide Ministry's letter dated 26.2.2018. Transportation of raw coal by road was permitted for temporary period of one year.
- iii. Project Proponent proposes to extend the temporary permission for transporting coal by road.
- iv. Coal linkage of 2.23 MTPA is available and remaining 1.95 MTPA coal will be sourced through spot auctions/e-auctions.
- v. The power plant is located in the lease area of Gare Pelma IV/1 mine and in the vicinity of Gare Pelma IV/2 and IV/3 mines. It is not feasible to construct any dedicated facility to transport coal to the project. Further, there is no railway line available for coal evacuation from the mines of SECL and MCL. Only option available is to bring the coal by road.

- vi. Traffic Impact Assessment in was carried out in 2017. There are two routes from which coal is brought, i.e. Route No.1: 55.93 km from SECL mines and Route No.2: 36.8 km from MCL mines. Details are as follows:

Route No.	Distance	Type and width of the road	Quantity of coal	Number of trucks with 21 ton capacity
Route No.1	55.93 km	5.7 -16.5 m	3343 Tons/day	318 trucks to and from
Route No.2	36.8 km	5.6-10 m	5370 Tons/day	512 trucks to and fro

- vii. Roads are provided with good shoulders on either sides, thus, can be expected to support 15% additional volume than the designed service volume as per IRC 64:1990.
- viii. The percentage utilisation of these roads including additional traffic proposed as per the designed traffic volume is estimated to be in the range of 47.47-67.5% for Route No.1 and 38.7-65.1% for Route No.2. Accordingly, the proposed additional traffic is within the design volume of the roads.
- ix. There are total of 23 villages falling within 100 m of either side of the road with population range of 330-5914.
- x. Ambient air quality of the Route-1 is found to be in the range of PM₁₀: 67.9-72.3 µg/m³, PM_{2.5}: 36.1-42.1 µg/m³, SO₂:13.6-19.7 µg/m³ and NO₂: 19.4-22.7 µg/m³.
- xi. Ambient air quality of the Route-2 is found to be in the range of PM₁₀:63.5-72.4 µg/m³, PM_{2.5}:38.7-43.7 µg/m³, SO₂:12.6-16.2 µg/m³ and NO₂: 16.9-20.2 µg/m³.
- xii. All the values are on the lower side at all the locations. The concentrations of SO₂ and NO₂ are considerably low compared to the 80 µg/m³ NAAQS permissible limit for residential, rural and other areas. The concentrations of PM₁₀ are within limits of 100 µg/m³ as per the National Ambient Air Quality Standards.
- xiii. The baseline noise levels both during day time and night time, were within the permissible limit of the National Ambient Air Quality Standards with respect to ambient noise, both during day time and night time at all locations.
- xiv. The incremental emissions due to proposed traffic are estimated as PM₁₀: 0.029 µg/m³; PM_{2.5}: 0.016; SO₂: 1.875µg/m³ & NO_x: 13.375 µg/m³.The resultant air quality would remain well within the prescribed limit.
- (23.12.2) Committee noted that the traffic impact assessment study including baseline data ambient air & noise quality and traffic volumes was conducted in 2017. The impact on traffic based on the present scenario is not available. Further, the incremental emissions are in the range of 0.16-0.029 µg/m³ which are very less emissions from 512 trucks. Further, the proposed traffic impact does not include the fugitive dust and airborne dust suspended on the road due to movement of the road. Committee further noted that in the recent proposal of M/s SCCL, the traffic impact assessment study of two years old was not accepted and sought a fresh study. Committee noted that there should be uniform and balanced

approach to be followed for assessing the present impacts of increased traffic on the road, habitation and air quality.

(23.12.3) **Committee after considering the request of Project Proponent, the temporary permission is recommended for extension of 2 years.** Meanwhile, Project Proponent has to carry out the fresh traffic impact assessment study along with the feasibility study report for building railway siding from the nearest railway station which committee will deliberate for assessment of the pollution load and sufficiency of roads.

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Terms of Reference (TOR):

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

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

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

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

- xxxviii) One complete season site specific meteorological and AAQ data (except monsoon season) as per latest MoEF Notification shall be collected and the dates of monitoring shall be recorded. The parameters to be covered for AAQ shall include PM₁₀, PM_{2.5}, SO₂, NO_x, CO and Hg. The location of the monitoring stations should be so decided so as to take into consideration of the upwind direction, pre-dominant downwind direction, other dominant directions, habitation and sensitive receptors. There should be at least one monitoring station each in the upwind and in the pre-dominant downwind direction at a location where maximum ground level concentration is likely to occur.
- xxxix) In case of expansion project, air quality monitoring data of 104 observations a year for relevant parameters at air quality monitoring stations as identified/stipulated shall be submitted to assess for compliance of AAQ Standards (annual average as well as 24 hrs).
- xl) A list of industries existing and proposed in the study area shall be furnished.
- xli) Cumulative impacts of all sources of emissions including handling and transportation of existing and proposed projects on the environment of the area shall be assessed in detail. Details of the Model used and the input data used for modeling shall also be provided. The air quality contours should be plotted on a location map showing the location of project site, habitation nearby, sensitive receptors, if any. The windrose and isopleths should also be shown on the location map. The cumulative study should also include impacts on water, soil and socio-economics.
- xlii) Radio activity and heavy metal contents of coal to be sourced shall be examined and submitted along with laboratory reports.
- xliii) Fuel analysis shall be provided. Details of auxiliary fuel, if any, including its quantity, quality, storage etc should also be furnished.
- xliv) Quantity of fuel required, its source and characteristics and documentary evidence to substantiate confirmed fuel linkage shall be furnished. The Ministry's Notification dated 02.01.2014 regarding ash content in coal shall be complied. For the expansion projects, the compliance of the existing units to the said Notification shall also be submitted
- xlvi) Details of transportation of fuel from the source (including port handling) to the proposed plant and its impact on ambient AAQ shall be suitably assessed and submitted. If transportation entails a long distance it shall be ensured that rail transportation to the site shall be first assessed. Wagon loading at source shall preferably be through silo/conveyor belt.
- xlvi) For proposals based on imported coal, inland transportation and port handling and rail movement shall be examined and details furnished. The approval of the Port and Rail Authorities shall be submitted.
- xlvi) Details regarding infrastructure facilities such as sanitation, fuel, restrooms, medical facilities, safety during construction phase etc. to be provided to the labour force during construction as well as to the casual workers including

truck drivers during operation phase should be adequately catered for and details furnished.

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

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

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

Standard EC Conditions for Thermal Power Sector:

A. Statutory compliance:

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

B. Ash content/ mode of transportation of coal:

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

C. Air quality monitoring and Management:

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

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

D. Noise pollution and its control measures:

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

E. Human Health Environment:

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

F. Water quality monitoring and Management:

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

G. Risk Mitigation and Disaster Management:

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

H. Green belt and Biodiversity conservation:

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

I. Waste management:

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

Regional Office along with the six-monthly compliance reports and utilization data shall be published on company's website.

5. Unutilized ash shall be disposed off in the ash pond in the form of High Concentration Slurry/Medium Concentration Slurry/Lean Concentration Slurry method. Ash water recycling system shall be set up to recover supernatant water.
6. In case of waste-to-energy plant, major problems related with environment are fire smog in MSW dump site, foul smell and impacts to the surrounding populations. Therefore, the following measures are required to be taken up:
 - i) Water hydrant at all the dumpsites of MSW area to be provided so that the fire and smog could be controlled.
 - ii) Sprayer like microbial consortia may be provided for arresting the foul smell emanating from MSW area.

J. Monitoring of compliance:

1. Environmental Audit of the project be taken up by the third party for preparation of Environmental Statement as per Form-V & Conditions stipulated in the EC and report be submitted to the Ministry.
2. Resettlement & Rehabilitation Plan as per the extant rules of Govt. of India and respective State Govt. shall be followed, if applicable.
3. Energy Conservation Plan to be implemented as envisaged in the EIA / EMP report. Renewable Energy Purchase Obligation as set by MoP/State Government shall be met either by establishing renewable energy power plant (such as solar, wind, etc.) or by purchasing Renewable Energy Certificates.
4. Monitoring of Carbon Emissions from the existing power plant aswell as for the proposed power project shall be carried out annually from a reputed institute and report be submitted to the Ministry's Regional Office.
5. Energy and Water Audit shall be conducted at least once in two years and recommendations arising out of the Report should be followed. A report in this regard shall be submitted to Ministry's Regional Office.
6. Environment Cell (EC) shall be constituted by taking members from different divisions, headed by a qualified person on the subject, who shall be reporting directly to the Head of the Project.
7. The project proponent shall (Post-EC Monitoring):
 - a. send a copy of environmental clearance letter to the heads of Local Bodies, Panchayat, Municipal bodies and relevant offices of the Government;
 - b. upload the clearance letter on the web site of the company as a part of information to the general public.
 - c. inform the public through advertisement within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the SPCB and may also be seen

at Website of the Ministry of Environment, Forest and Climate Change (MoEF&CC) at <http://parviesh.nic.in>.

- d. upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same periodically;
- e. monitor the criteria pollutants level namely; PM (PM₁₀ & PM_{2.5} in case of ambient AAQ), SO₂, NO_x (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company;
- f. submit six monthly reports on the status of the compliance of the stipulated environmental conditions including results of monitored data (both in hard copies as well as by e-mail) to the Regional Office of MoEF&CC, the respective Zonal Office of CPCB and the SPCB;
- g. submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company;
- h. inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project and the date of commencement of the land development work.

K. Corporate Environmental Responsibility (CER) activities:

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

L. Marine facilities:

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

M. Sea Water Intake:

1. Seawater intake system shall be so designed and constructed to ensure sufficient seawater in terms of quantity and quality.
2. The withdrawal of seawater shall be preferably through a pipeline with a riser equipped with a velocity cap arrangement and bar screen to arrest the impingement of large marine organisms.

3. In all tide conditions (particularly at spring low tides) the riser head must be flooded with the required submergence of seawater above its top.

N. Effluent Release:

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

O. Common to intake and effluent:

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

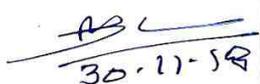
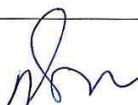
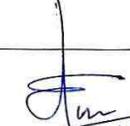
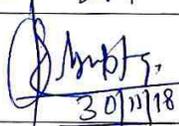
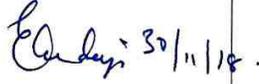
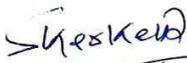
- a. *Physico-chemical*: Temperature, Salinity, pH and Dissolved Oxygen.
 - b. *Biological*: Primary Productivity, Phytoplankton (Chlorophyll a, Phaeophytin, Population, Species), Zooplankton (Biomass, Population, Species) and Benthos (Biomass, Population, Species).
7. In case of Coastal Power Plants, the Mangrove plantation shall be taken up in an area ofha, along the coast/ on the banks of Estuary.

LIST OF MEMBERS (Attendance Sheet)

23rd EXPERT APPRAISAL COMMITTEE MEETING (Thermal)

DATE & TIME : 30th November, 2018, 10:00 AM

VENUE : Narmada Meeting Hall, Jal Wing, Indira Paryavaran Bhawan, New Delhi

Sr.No.	Name of Member	Signature
1.	Dr. Navin Chandra Chairman	
2.	Shri Suramya D. Vora, IFS (Retd.) Member	ABS
3.	Dr. Narmada Prasad Shukla Member	 30-11-18
4.	Sh. N. Mohan Karnat, IFS Member	ABS
5.	Dr. Sharachchandra Lele Member	ABS
6.	Sh. N.S. Mondal Member	
7.	Dr. R.K. Giri Member	ABS
8.	Dr. S.K. Paliwal Member	 30/11/2018
9.	Prof. S.K. Gupta (ISM Dhanbad) Member	 30/11/18
10.	Dr. Jai Krishna Pandey Member	ABS
11.	Dr. Manjari Srivastava Member	ABS.
12.	Dr. Gururaj P Kundargi Member	 30/11/18.
13.	Dr. S. Kerketta Member Secretary, MoEFCC	 30/11/18

Approval of the Chairman

Subject: Re: Draft MoM of 23rd EAC meeting of Thermal Power Plant -
reg

From: navin chandra <navinchandrarrl@yahoo.com> on Wed, 19 Dec 2018 11:41:35

To: "Dr. S. Kerketta" <suna1466@rediffmail.com>

19/12/2018

Dear Dr. Kerketta,

I have gone through the Minutes of the 23rd EAC meeting. These are in order and ready for uploading on the Web site of MoEF&CC.

Regards,
(NAVIN CHANDRA)

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

AGENDA OF 23rd MEETING OF THE RE-CONSTITUTED EXPERT APPRAISAL COMMITTEE ON THERMAL POWER PROJECTS

DATE : 30th November, 2018

TIME : 10.30 A.M. ONWARDS

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

ITEM	
Item No. 23.0	CONFIRMATION OF MINUTES OF 22nd EAC (THERMAL) MEETING
Item No.	CONSIDERATION OF PROJECTS
23.1	1x660 MW Supercritical Ennore Thermal Power Station expansion Project, Ernavur Village, District Ennore, Tamil Nadu by M/s Tamil Nadu Generation and Distribution Corporation Ltd (TANGEDCO)- reg. ToR F.No. J-13012/15/2018-IA.I (T) & Online no. IA/TN/THE/84128/2018.
23.2	50 MW Greenfield (Dual Fuel Power Project) Andaman & Nicobar Gas Power Project at Hope Town at Ferrargunj Tehsil in South Andaman District, Andaman and Nicobar by M/s NTPC Vidyut Vyapar Nigam Limited.- reg. ToR F.No. J-13012/14/2018-IA.I (T) & Online no. IA/AN/THE/84074/2018.
23.3	55 MW ha Proposed Solid Waste to Energy Facility (Using Cold Plasma Technology to convert Green Power, Purified Water and Fuel at East Delhi Municipal Corporation Opp. Gagan Theatre, Wazirabad Road, Mandoli Extension, Village Mandoli, Delhi by M/s A.G. Dauters Waste Processing Private Limited.- reg. ToR F.No. J-13012/13/2018-IA.I (T) & Online no. IA/DL/THE/84113/2018.
23.4	Proposed 23 MW Municipal Solid Waste based Power Plant at Villages Kolua Khurd, Adampur Chhavani, Phanda Block, Huzur Tehsil, Bhopal District by M/s Bhopal Municipal Solid Waste Private Limited. - reg. reconsideration for Environmental Clearance. F.No.J-13012/16/2017-IA.II (T) & Online No. IA/TN/THE/60765/2016
23.5	Expansion from 2x600 MW to 2000 MW (2x600 + 1x800 MW) of Coal based Singareni Thermal Power Plant at Pegadapalli Village, Jaipur Mandal, Mancherial District in Telangana by M/s Singareni Collieries Company Ltd.-reg. EC. F.No. J-13015/08/2015-IA.I (T) & Online no. IA/TG/THE/27094/2015.
23.6	Expansion from 2x600 MW to 2000 MW (2x600 + 1x800 MW) of Coal based Singareni Thermal Power Plant at Pegadapalli Village, Jaipur Mandal, Mancherial District in Telangana by M/s Singareni Collieries Company Ltd.-reg. validity of extension of ToR. F.No. J-13015/08/2015-IA.I (T) & Online no. IA/TG/THE/27094/2015.
23.7	2x800 MW (Stage-I) Gadarwara Super Thermal Power Project near villages Gangai, Umaraiya, Mehrakheda, Chorbarheta, Dongergaon and Kudari, in Gadarwara Tehsil, Narsinghpur District, in Madhya Pradesh by M/s NTPC Ltd.- reg. amendment in EC for change in coal source. F.No. J-13012/125/2009-IA.II (T) & Online no. IA/MP/THE/17134/2013.
23.8	2x800 MW (Stage-I) Gadarwara Super Thermal Power Project near villages Gangai, Umaraiya, Mehrakheda, Chorbarheta, Dongergaon and Kudari, in

	Gadarwara Tehsil, Narsinghpur District, in Madhya Pradesh by M/s NTPC Ltd. reg. extension of temporary permission for road transportation. F.No. J-13012/125/2009-IA.II (T) & Online no. IA/MP/THE/17134/2013.
23.9	2x800 MW (Stage-I) Darlipali Supercritical Coal Based Thermal Power Plant at village Darlipali, in Lephripara Taluk, in Sundergarh District in Odisha by M/s NTPC Ltd.- reg. amendment in EC for road transportation. F.No. J-13012/65/2008-IA-II(T) & Online no. IA/OR/THE/21145/2011.
23.10	460 MW Talcher Thermal Power Project, District Angul, Odisha by M/s NTPC Ltd.- reg. Permission for disposing 1.2 MTPA ash into mine void of South Balanda OCP of M/s MCL in Talcher Coalfields, District Angul. F.No. J-11015/276/2011-IA.II(M) & Online no. IA/OR/THE/60598/2016.
23.11	2x660 MW Super-Critical Technology Coal Based Thermal Power Plant near, Kohadhar, Bhagdeva & Mai Kalam Villages, Meja Taluk, Allahabad Dist. in Uttar Pradesh by M/s Meja Urja Nigam private Ltd.- reg. extension of validity of EC. F.No. J-13012/03/2008-IA.II (T) & Online no. IA/UP/THE/52631/2011.
23.12	2x150 MW (Phase-I) and 2x150 MW (Phase-II) Middlings & Coal Fine Based Thermal Power Plant at Village Dongamahua, in Raigarh Distt., in Chhattisgarh by M/s. Jindal Steel & Power Ltd. - reg. amendment in EC for temporary permission for road transportation. F.No. J-13012/127/2008-IA.II(T) & Online no. IA/CG/THE/10354/2008.
23.13	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.