

MINUTES OF THE 2nd & 3rd MEETINGS OF THE RE-CONSTITUTED EXPERT APPRAISAL COMMITTEE (EAC) HELD 7th & 24th AUGUST, 2020 ON ENVIRONMENTAL IMPACT ASSESSMENT (EIA) OF THERMAL POWER PROJECTS

The 2nd & 3rd Meetings of the re-constituted EAC (Thermal Power) was held on 7th August, 2020 & 24th August, 2020, respectively through Video-conference organised by NIC in the Ministry of Environment, Forest & Climate Change, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi under the Chairmanship of Shri Gururaj P. Kundargi and Dr. N.P. Shukla, respectively. The following members were present through video-conference:

Sl.No.	Name		Role
1.	Shri Gururaj P. Kundargi	-	Chairman
2.	Shri Suramya Vora	-	Member
3.	Dr. N.P Shukla	-	Member
4.	Shri K.B. Biswas	-	Member
5.	Shri Prasant Kumar Mohapatra	-	Member
6.	Dr. Umesh Jagannathrao Kahalekar	-	Member
7.	Dr. Nandini. N	-	Member
8.	Dr. Unmesh Patnaik	-	Member
9.	Dr. Santosh Kumar	-	Member
10.	Dr. Nazimuddin/Dr. S.K. Paliwal	-	Member (Representative of CPCB)
11.	Shri N.S. Mondal	-	Member (Representative of CEA)
12.	Professor S.S. Rai	-	Member (Representative of IIT/ISM Dhanbad)
13.	Dr. R.K. Giri		Member (Representative of IMD)
14.	Dr. S. Kerketta	-	Member Secretary

Item No.3.0: CONFIRMATION OF THE MINUTES OF THE 1st EAC MEETING.

The Minutes of the 1st EAC (Thermal Power) meeting held on 28.07.2020 were confirmed in presence of members present in the meeting.

Item No. 3.0: CONSIDERATION OF PROJECTS

(3.1) Proposed 8 MW Captive Power project within the existing premises of Clinker Grinding Unit near Village Khukhrana, P.O. Assan Kalan, Tehsil & District Panipat, Haryana by M/s. Shree Cement Ltd. Unit - Panipat (A Unit of Shree Cement Ltd.)-reg. ToR.

(F. No. J-13012/10/2020-IA.I(T) & No. IA/HR/THE/167131/2020)

- (3.1.1) Project Proponent submitted online application on 7.08.2020 for grant of ToR for proposing 8 MW Captive Power Project within the premises existing clinker Grinding Unit.
- (3.1.2) Project Proponent along with QCI-NABET consultants M/s J.M. Environet Pvt. Ltd., Gurugram, Haryana Jaipur made the presentation inter-alia submitted the following information:

- i. M/s. Shree Cement, Unit - Panipat (A Unit of Shree Cement Ltd.) has an existing Clinker Grinding Unit of 1.5 Million TPA near Village Khukhrana, P.O. Assan Kalan, Tehsil & District Panipat, Haryana). As the Environmental Clearance is not required for Clinker grinding unit, it is being operated based on Consent to Operate (CTO) obtained from Haryana State Pollution Control Board which is valid up to September, 2021.
- ii. The clinker grinding unit is facing non-consistent and short supply (21 to 22 hrs. availability in a day) of Grid Power. Thus, to meet the consistent supply of power to Existing Grinding Unit which will help in smooth running of the grinding unit and to improve the efficiency of plant and Air Pollution Control Equipment; in turn, reduces the specific power consumption, it is proposed to install Captive Power Project of 8 MW.
- iii. The proposed project is Category 'B' under Project Activity '1(d). However, the project is situated at 4.7 km from Panipat Critically Polluted Area (Panipat Municipal Limit & its Industrial Cluster), therefore, the General Condition is applicable to the project. Accordingly, thus, the project is to be considered at Central level as Category 'A' Project.
- iv. There is no National Park, Wildlife Sanctuary, Biosphere Reserve, Reserved/ Protected Forest within 10 km radius of the project.
- v. Panipat City is located at 6.5 km from the project. Asan Panipat State Highway- 14 is adjacent to the project on South. Further, Panipat Thermal Power State is also located adjacent to the project on West side. The ash pond of Panipat TPS is located on South side. There is a small village/habitation along with a water body is located adjacent to the project.
- vi. Total plant area of 14.03 ha (34.67 acre) out of which an area of 1.05 ha (2.6 acre) will be used for installation of proposed captive power project.
- vii. 4.65 ha (11.5 acre) (33% of the total plant area, 14.03 ha) has already been developed under greenbelt & plantation.
- viii. It is proposed to use both imported and domestic coal based on availability. In case of Domestic coal, the quantity of 195 Tons/day is required. In case of imported coal, the quantity of 104 TPD is required. Further, the project is based on Atmospheric Fluidized Bed Combustion (AFBC) Boiler which will use limestone of 33-62 TPD (minimum for imported coal and maximum dose for domestic coal) for removal of pollutants.
- ix. Coal will be brought form Singrauli Coalfields ltd at a distance of 530 km by road. Further, imported coal (USA/Swiss/Saudi Arabia/South Africa) will also be brought by road from the nearest port. Limestone will be obtained from Captive Limestone Mine in Rajasthan by road.
- x. Covered Coal yard with a capacity of 500 Tonnes is set up with dust control measures.
- xi. Total ash generation of 124 TPD (Flyash : 68 TPD & Bottom ash: 56 TPD) is expected to generate from the project which will be used in cement manufacturing by mixing clinker and flyash during grinding. RCC silo with dual

compartment for Bed ash and flyash will be installed with a capacity of 150 Tonnes. Thus, there is no requirement of ash pond for storage.

- xii. Water requirement for the project is 480 KLD out of which 240 KLD is used for clinker grinding unit, 200 KLD for residential colony and remaining 40 KLD is proposed to be used in power project. The water required for the project will be sourced from Ground Water. Application for withdrawal of 480 KLD groundwater has been submitted to CGWA dated 31.03.2017 and application is under process and has been forwarded from CGWB, Chandigarh to CGWA, New Delhi.
- xiii. Installation AFBC Boiler, ESP, Silos for fly ash and bed ash storage, Covered shed for storage of coal, Installation of bag filters at transfer points, Covered conveyor belts and proper maintenance of pollution control equipment are the air pollution control measures to maintain the air pollution within standards (PM:30 mg/Nm³; SO₂: 100 mg/Nm³, NO_x:100 mg/Nm³)
- xiv. No wastewater will be discharged from proposed CPP. However, RO reject water (13 KLD) will be generated and used for mill spray. Domestic effluent (0.8 KLD) generated from office utilities will be treated in existing STP of capacity 150 KLD and treated water will be used for greenbelt development & plantation. Air Cooled Condensers will be used to conserve the water.
- xv. Estimated project cost is Rs.46.14 Crores. Capital and recurring cost of EMP is Rs.2.5 Crores and Rs.2.5 Lakhs/annum, respectively. Total employment generation from the project is 428 persons (402 persons for grinding unit and 26 persons for power plant). There are no court cases pending against the project.

(1.1.3) Committee noted that proposed Captive Power Project is based on AFBC boiler which will reduce the pollution. However, committee noted that a residential habitation or a village is located adjacent to the project boundary on eastern side. Whether it is the residential colony of the company itself or a village is not clear. The clinker grinding unit is employing 402 persons, and thus, there is a chance of residential colony belongs to the company. However, Committee noted that public hearing is to be conducted where in the issues raised by the adjacent village/habitation are to be categorically be addressed. There is a water pond adjacent to the project and proponent shall not pollute the water body. Further, at least 50 m width greenbelt is to be developed to maintain a buffer between village and the plant boundary. Further, the proposed water requirement is to be sourced from groundwater for which an application is still pending with CGWA. The Committee has a retired Chairman of Central Ground Water Authority. Accordingly, it was informed that the area under which project is located is part of critical area or over exploited area. Accordingly, CGWA may not give permission as there is a direction from NGT that no permission for groundwater extraction for industrial purpose.

(3.1.4) **Committee after detailed deliberations, recommended for grant of following specific ToRs in addition to the Standard ToRs:**

- i. The permission for proposed ground water withdrawal is pending with CGWA. Further, Panipat area is categorised as Critical/Overly exploited area. As informed, Hon'ble NGT directed CGWA not to permit groundwater withdrawal for industrial purpose from over exploited and critical areas. Presently, application is pending with CGWA. In case, CGWA denies permission, alternate source of water required for the project is to be explored.
- ii. A village/residential habitation is located adjacent to the project on Eastern side. Concerns from the said village are to be categorically recorded in the Public Hearing proceedings.
- iii. At least 50 m width of greenbelt is to be proposed between the village on East and the plant boundary.
- iv. The protection measures for water pond on Eastern side are to be proposed.

(3.2) Revision of Terms of Reference (TOR) conditions for Thermal Power Plants:

Committee deliberated on ToR conditions and arrived at the following recommendations:

Sl. No.	Condition	Proposed changes
1.	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.	Deleted.
2.	Vision document specifying prospective long term plan of the project shall be formulated and submitted.	Deleted.
3.	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.	To be repeated.
4.	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.	To be repeated.
5.	Executive summary of the project indicating relevant details along with recent photographs of the proposed site (s) shall be provided. Response to the	To be deleted.

	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	
6.	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.	Can be repeated.
7.	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.	<p>Optimisation of land requirement for plant area, ash pond, green belt, infrastructure, roads, coal transportation system, laying of pipeline, ROW, transmission lines shall be done inline with CEA guidelines. Layout map with coordinates shall be provided for project facilities including ash pond and intake water system.</p> <p>In case site requires any filling, quantity of required fill material; its source, transportation etc. shall be submitted.</p> <p>The layout shall be superimposed on Topo sheet (1:25,000 scaler or bigger) and Satellite map for assessing the land use of the project area.</p>
8.	Layout plan indicating break-up of plant area, ash pond, green belt, infrastructure, roads etc. shall be provided.	Merged at condition 7.
9.	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.	Merged at Condition 8.
10.	Present land use (including land class/kisam) as per the revenue records and State Govt. records of the proposed	Present land use (including land class/kisam) as per the revenue records of State Govt. 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.	project facilities (Plant, ash pond, coal transportation system, water pipelines, ROW, transmission lines).
11.	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.	If the project involves forest land, details regarding area of forest land and copy of Forest Diversion application shall be submitted.
12.	The land acquisition and R&R scheme with a time bound Action Plan should be formulated and addressed in the EIA report.	The land acquisition and R&R scheme with a time bound Action Plan should be formulated. In case of land acquisition of grazing land, community land, water resources is proposed, it shall be ensured that an equal area of grazing land be acquired and developed and detailed plan submitted.
13.	Satellite imagery and authenticated topo sheet indicating drainage, cropping pattern, water bodies (wetland, river system, stream, nallahs, ponds etc.), location of nearest habitations (villages), grazing and community land creeks, mangroves, rivers, reservoirs etc. in the study area shall be provided.	Satellite imagery and authenticated topo sheet indicating drainage, cropping pattern, water bodies (wetland, river system, stream, nallahs, ponds etc.), location of nearest habitations (villages), grazing and community land creeks, mangroves, rivers, reservoirs etc. in the study area (10 km radius) shall be provided. Land use pattern of the study area shall be provided.
14.	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.	Can be repeated.

15.	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.	To be deleted. Covered at condition 8.
16.	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.	Can be deleted.
17.	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.	To be repeated.
18.	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.	Addition: In case of expansion projects, details of Flyash utilisation for the last 5 years against the targets provided in the Flyash notification shall be provided.
19.	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	The details of water requirement such as quantity, source & its distance, intake location, mode of transportation, alignment of pipeline/canal shall be submitted. Details of water balance calculated shall be submitted which shall take into account reuse and re-circulation of effluents. The water requirement shall be optimized (by adopting measures

	account reuse and re-circulation of effluents.	such as dry fly ash collection and dry bottom ash disposal system/ high concentrated slurry disposal, ash water recirculation systems, increasing COC, air cooled condenser and zero liquid discharge) and in any case not more than that stipulated by MoEF&CC from time to time.
20.	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.	To be repeated.
21.	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.	It shall also be ensured that a minimum of 500 m distance of plant boundary including ash pond, if any 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.
22.	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.	To be repeated.
23.	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	To be repeated.

	along with depth of water drawl and discharge into open sea.	
24.	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.	To be repeated.
25.	Detailed plan for rainwater harvesting and its proposed utilization in the plant shall be furnished.	To be repeated.
26.	Feasibility of near zero discharge concept shall be critically examined and its details submitted.	To be deleted. Merged at condtion.19.
27.	Optimization of Cycles of Concentration (COC) along with other water conservation measures in the project shall be specified.	To be deleted. Merged at condtion.19.
28.	Plan for recirculation of ash pond water and its implementation shall be submitted.	To be deleted. Merged at condtion.19.
29.	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.	Water quality monitoring in the study area shall be conducted. Plan for conducting monitoring of water quality including Heavy metals regularly during construction and operations by identifying the locations (between the plant and drainage in the direction of flow of surface / ground water) shall be submitted. The plan shall include long-term monitoring of ground water table using Piezometer around the plant and ash pond, if any from the study area.
30.	Socio-economic study of the study area comprising of 10 km from the plant site	To be repeated.

	shall be carried out through a reputed institute / agency which shall consist of detail assessment of the impact on livelihood of the local communities.	
31.	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.	Public Consultation for the project shall be carried out by concerned SPCB by obtaining written responses and conducting Hearing at the project site or a place proximity to the project. In case the project covers more than one district, the public hearing is to be conducted in all districts the project is located. In case, the project is close to inter-state boundary and the study area (10 km radius) covers neighbouring state, the public hearing shall be conducted by involving officials of SPCB other state as well. The wide circulation of notice, EIA reports & summaries shall be arranged in all the villages in the study area.
32.	If the area has tribal population it shall be ensured that the rights of tribal are well protected. The project proponent shall accordingly identify tribal issues under various provisions of the law of the land.	To be deleted. Covered at condition No.33.
33.	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.	Action plan based on need based socio-economic study and public hearing commitments, shall be provided. The plan includes the financial outlay and timelines for implementation w.r.t. employment to youth, employment to the project & operations, vocational training, education, livelihood, health, traditional skills, vulnerable sections, infrastructure. If the study area has tribal population it shall be ensured that the rights of tribal are well protected. The project proponent shall accordingly identify tribal issues under various provisions of the law of the land.

		The community development activities done in the past should be clearly spelt out in case of expansion projects.
34.	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.	To be deleted.
35.	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.	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.
36.	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.	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. Occupational health and safety measures for the workers including identification of work related health hazards shall be formulated.
37.	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	To be deleted. Covered at Condition No.36.

	doctors who are trained in occupational health. Health monitoring of the workers shall be conducted at periodic intervals and health records maintained. Awareness programme for workers due to likely adverse impact on their health due to working in non-conducive environment shall be carried out and precautionary measures like use of personal equipment, 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.	
38.	One complete season site specific meteorological and AAQ data (except monsoon season) as per latest MoEF Notification shall be collected and the dates of monitoring shall be recorded. The parameters to be covered for AAQ shall include PM ₁₀ , PM _{2.5} , SO ₂ , NO _x , CO and Hg. The location of the monitoring stations should be so decided so as to take into consideration of the upwind direction, pre-dominant downwind direction, other dominant directions, habitation and sensitive receptors. There should be at least one monitoring station each in the upwind and in the pre-dominant downwind direction at a location where maximum ground level concentration is likely to occur.	One complete season site specific meteorological and AAQ data (except monsoon season) as per latest MoEF Notification shall be collected and the dates of monitoring shall be recorded. The parameters to be covered for AAQ shall include PM ₁₀ , PM _{2.5} , SO ₂ , NO _x , CO, Hg and other parameters listed in NAAQS 2009. The frequency of the air and noise quality shall be twice a week for a period of three months. All other samples such as water quality (surface and ground), soil quality shall be grab samples (once during the study period). 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.
39.	In case of expansion project, air quality monitoring data of 104 observations a year for relevant parameters at air	In case of expansion project, air quality monitoring data of 104 observations a year or the air

	quality monitoring stations as identified/stipulated shall be submitted to assess for compliance of AAQ Standards (annual average as well as 24 hrs).	quality monitoring of past one 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).
40.	A list of industries existing and proposed in the study area shall be furnished.	To be repeated.
41.	A list of industries existing and proposed in the study area shall be furnished.	To be deleted.
42.	Cumulative impacts of all sources of emissions including handling and transportation of existing and proposed projects on the environment of the area shall be assessed in detail. Details of the Model used and the input data used for modelling shall also be provided. The air quality contours should be plotted on a location map showing the location of project site, habitation nearby, sensitive receptors, if any. The wind rose and isopleths should also be shown on the location map. The cumulative study should also include impacts on water, soil and socio-economics.	Cumulative impacts of all sources of emissions including point source emissions (stacks) of operating plant , handling and transportation of existing and proposed projects on the environment of the area shall be assessed in detail. Details of the Model used and the input data used for modelling shall also be provided. The air quality contours should be plotted on a location map showing the location of project site, habitation nearby, sensitive receptors, if any. The wind rose and isopleths should also be shown on the location map. The cumulative study should also include impacts on water, soil and socio-economics.
43.	Radio activity and heavy metal contents of coal to be sourced shall be examined and submitted along with laboratory reports.	
44.	Fuel analysis shall be provided. Details of auxiliary fuel, if any, including its quantity, quality, storage etc should also be furnished.	Fuel analysis including Moisture, Calorific Value, ash & Sulphur content, radio-activity & heavy metals shall be provided. Details of auxiliary fuel, if any, including its quantity, quality, storage etc should also to be furnished.

45.	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.	Details of fuel such as quantity, source & its distance, modes of transportation (from the source to the project site), route map, fuel supply agreement/linkage shall be submitted. Impact on air quality due to transportation of fuel from the source (including port handling in case of imported coal) to the proposed plant and flyash shall be suitably assessed. 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.
46.	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.	To be deleted. Covered at condition no.46
47.	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.	To be deleted. Covered at condition No.46.
48.	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.	To be repeated.
49.	EMP to mitigate the adverse impacts due to the project along with item - wise	EMP to mitigate the adverse impacts due to the project shall include item-wise cost (capital and recurring) of its

	cost of its implementation in a time bound manner shall be specified.	implementation with timelines for environmental pollution control measures, greenbelt development, action plan to fulfil public hearing commitments and environmental management cell shall be furnished.
50.	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.	<p>Risk assessment study including fire and explosions due to storage, use of fuel and ash pond breach 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 risk mitigation measures should be provided.</p> <p>The Disaster Management Plan (DMP) which includes Onsite and offsite emergency plan shall be prepared. The plan shall also include District Administration and State Disaster Management Authorities. The DMP shall also take Fires/Tsunami/Cyclones/Storm Surges/Earthquakes/Floods etc, into account.</p> <p>A plan on conducting periodic mock drills to check the efficiency of the plan shall be submitted.</p>
51.	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.	To be deleted. Covered at condition No.50.

52.	Detailed scheme for raising green belt of native species of appropriate width (50 to 100 m) and consisting of at least 3 tiers around plant boundary with tree density of 2000 to 2500 trees per ha with a good survival rate of around 80% shall be submitted. Photographic evidence must be created and submitted periodically including NRSA reports in case of expansion projects. A shrub layer beneath tree layer would serve as an effective sieve for dust and sink for CO ₂ and other gaseous pollutants and hence a stratified green belt should be developed.	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 shall be submitted. The area of greenbelt should cover 33% of the total project area. The species selection shall also be based on controlling pollutants such as PM, SO ₂ , CO, NO _x , etc. The scheme of greenbelt shall also include avenue plantation along the roads, pipelines, rail lines, around the water reservoir and ash pond. The details of Carbon offsetting (in terms of tonnes of CO ₂ equivalent) by creating such greenbelt shall also be estimated. In case of expansion projects, the extent of greenbelt developed, photographic evidence including NRSA reports shall be submitted.
53.	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.	To be deleted. Covered at condition No.52.
54.	<u>Corporate Environment Policy:</u> a. Does the company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be detailed in the EIA report. b. Does the Environment Policy prescribe for standard operating process /	Corporate Environment Policy shall be formulated by incorporating environmental mitigation measures, standard operating procedures, environmental management system, environmental auditing, energy and water conservation measures, compliance to environmental laws, stakeholder sustainability reporting, financial allocation and

	<p>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.</p> <p>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.</p> <p>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.</p> <p>All the above details should be adequately brought out in the EIA report and in the presentation to the Committee.</p>	<p>administrative hierarchy/mechanism to monitor & review the environmental compliance.</p>
55.	<p>Details of litigation pending or otherwise with respect to project in any Court, Tribunal etc. shall invariably be furnished.</p>	<p>To be repeated.</p>

(3.3) Revision of Environmental Clearance (EC) conditions for Thermal Power Plants:

Committee deliberated on Standard EC conditions and arrived at the following recommendations:

Sl. No.	Condition	Proposed changes
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.	Merged with condition 11.
2.	-	
3.	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.	For Waste to Energy Plants, flue gas emission standards specified in Part C of Schedule II of Solid Wastes Rules, 2016 dated 08.04.2016 shall be complied.
4.	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.	Deleted.
5.	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.	Merged with condition 46.
6.	Thermal Power Plants other than the power plants located on coast and using sea water for cooling purposes, shall achieve specific water consumption of 2.5 m ³ /MWh and Zero effluent discharge.	Merged with condition 25.
7.	The recommendation from Standing Committee of NBWL under the Wildlife (Protection) Act, 1972 should be obtained, if applicable.	The recommendation from Standing Committee of NBWL under the Wildlife (Protection) Act, 1972 should be obtained, as applicable inline with Ministry's OM dated 8.8.2019.

8.	No Objection Certificate from Ministry of Civil Aviation be obtained for installation of requisite chimney height and its siting criteria for height clearance.	Can be deleted.
9.	Groundwater shall not be drawn during construction of the project. In case, groundwater is drawn during construction, necessary permission be obtained from CGWA.	Same as repeated.
B. Ash content/ mode of transportation of coal:		
10	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.	Deleted.
C. Air quality monitoring and Management:		
11.	Flue Gas Desulphurisation System shall be installed based on Lime/Ammonia dosing to capture Sulphur in the flue gases to meet the SO ₂ emissions standard of 100 mg/Nm ³ .	In line with Ministry's Notification S.O. 3305(E) dated 7.12.2015, G.S.R.593(E) dated 28.6.2018, High efficiency Electrostatic Precipitators (ESPs), Flue Gas Desulphurisation System and NOx control measures are to be installed to meet flue gas emissions from the stack: Particulate Matter (PM): 30 mg/Nm ³ ; SO ₂ : 100 mg/Nm ³ ; NOx: 100 mg/Nm ³ .
12.	Selective Catalytic Reduction (SCR) system or the Selective Non-Catalytic Reduction (SNCR) system or Low NOX Burners with Over Fire Air (OFA) system shall be installed to achieve NO _x emission standard of 100 mg/Nm ³ .	Merged with condition 11

13.	High efficiency Electrostatic Precipitators (ESPs) shall be installed in each unit to ensure that particulate matter (PM) emission to meet the stipulated standards of 30 mg/Nm ³ .	Merged with condition 11
14.	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.	Same can be repeated.
15.	Continuous Ambient Air Quality monitoring system shall be set up to monitor common/criteria pollutants from the flue gases such as PM ₁₀ , PM _{2.5} , SO ₂ , NO _x within the plant area at least at one location. The monitoring of other locations (at least three locations outside the plant area for criteria pollutants as per NAAQS, 2009 covering upwind and downwind directions at an angle of 120° each) shall be carried out manually.	Same can be repeated.
16.	Adequate dust extraction/suppression system shall be installed in coal handling, ash handling areas and material transfer points to control fugitive emissions.	Adequate air pollution control measures such as dust extraction/suppression system shall be installed at in coal handling, ash handling areas, excavation sites, roads, crushers, loading & unloading areas and material transfer points to control fugitive emissions.
17.	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.	Merged with Condition 16.
D. Noise pollution and its control measures:		
18.	The Ambient Noise levels shall meet the standards prescribed as per the Noise Pollution (Regulation and Control) Rules, 2000.	The Ambient Noise levels at the boundary/main gate of power plant and nearby villages shall be monitored once six months and shall comply with the standards prescribed as per the

		Noise Pollution (Regulation and Control) Rules, 2000.
19.	Persons exposed to high noise generating equipment shall use Personal Protective Equipment (PPE) like earplugs/ear muffs, etc.	Can be deleted/repeated. It is a safety requirement.
20.	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.	Merged with condition No.21
E. Human Health Environment:		
21.	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.	Can be deleted. It is also requirement under Factories Act.
22.	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.	Same can be repeated.
23.	Baseline health status within study area shall be assessed and report be prepared. Mitigation measures should be taken to address the endemic diseases.	Deleted.
24.	Sewage Treatment Plant shall be provided for domestic wastewater.	Merged at Condition 34.
F. Water quality monitoring and Management:		
25.	Induced/Natural draft closed cycle wet cooling system including cooling towers shall be set up with minimum Cycles of Concentration (COC) of 5.0 or above for power plants using fresh water to achieve specific water consumption of 2.5 m ³ /MWh (Or) Induced/Natural draft open cycle	Inline with Ministry's Notification S.O. 3305(E) dated 7.12.2015, G.S.R.593(E) dated 28.6.2018, for power plants based on fresh water draws, Closed cycle wet cooling system with cooling towers shall be set

	cooling system shall be set up with minimum Cycles of Concentration (COC) of 1.5 or above for power plants using sea water.	up to achieve specific water consumption of 2.5 m ³ /MWh along with minimum Cycles of Concentration (COC) of 5.0. In case of power plants using sea water, open cycle/closed cycle wet cooling system shall be installed.
26.	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.	In case of the water withdrawal from river, records pertaining daily water withdrawal and river flows (obtained from Irrigation Department/Water Resources Department) shall be maintained.
27.	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.	Merged with condition 26.
28.	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.	Rainwater harvesting in and around the plant area be taken up to reduce drawl of fresh water. The collected water shall preferably be reused.
29.	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.	Merged at condition 44.
30.	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/	Same can be repeated.

	rejects will be disposed in accordance with the Hazardous Waste Management Rules.	
31.	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.	Same can be repeated.
32.	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.	In case, Sewage Treatment Plant is located within the radius of 50 km from proposed project, the treated sewage shall be used to reduce the fresh water consumption.
33.	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;	Same can be repeated.
34.	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; Faecal Coliforms (Most Probable Number):<1000 per 100 ml.	Same can be repeated.
G. Risk Mitigation and Disaster Management:		
35.	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.	Safety management plan and environmental safeguards shall be provided in the plant area to control spontaneous fires in coal yard, especially during dry and humid season and minimise the risk exposure to the workers in the plant. Integrated Emergency Response System shall be developed for all

		kind of possible disaster situations.
36.	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%.	Storage facilities for auxiliary liquid fuel such as LDO and HFO shall be made in accordance with the directives of Petroleum & Explosives Safety Organisation (PESO). Sulphur Content in the liquid fuel should not exceed 0.5%.
37.	Ergonomic working conditions with First Aid and sanitation arrangements shall be made for the drivers and other contract workers during construction phase.	Merged at condition 35.
38.	Safety management plan based on Risk Assessment shall be prepared to limit the risk exposure to the workers within the plant boundary.	Merged at condition 35.
39.	Regular mock drills for on-site emergency management plan and Integrated Emergency Response System shall be developed for all kind of possible disaster situations.	Merged at condition 35.
H. Green belt and Biodiversity conservation:		
40.	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.	
41.	<i>In-situ/ex-situ</i> Conservation Plan for the conservation of flora and fauna should be prepared and implemented.	Deleted.
42.	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.	Suitable screens shall be placed across the intake water channel to prevent entrainment of life forms including larvae, juvenile fish, etc..
I. Waste management:		
43.	Solid waste management should be planned in accordance with extant Solid Waste Management Rules, 2016.	Can be repeated.

44.	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.	Mercury and other heavy metals (As, Hg, Cr, Pb, etc.) shall be monitored (pre-monsoon) in groundwater from the peizometric wells installed around ash pond and tube wells/dug wells in the villages near ash pond.
45.	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.	Unutilized ash shall be disposed off in the emergency ash pond in the form of High Concentration Slurry. Ash water recycling system shall be set up to recover supernatant water. Adequate dam/dyke safety measures shall also be implemented to protect the ash dyke from getting breached.
46.	Fly ash shall be collected in dry form and ash generated shall be used in phased manner as per provisions of the Notification on Fly Ash Utilization issued by the Ministry and amendment thereto. By the end of 4 th year, 100% fly ash utilization should be ensured. Unutilized ash shall be disposed off in the ash pond in the form of High Concentration Slurry. Mercury and other heavy metals (As, Hg, Cr, Pb, etc.) will be monitored in the bottom ash as also in the effluents emanating from the existing ash pond. Flyash utilization details shall be submitted to concerned Regional Office along with the six-monthly compliance reports and utilization data shall be published on company's website.	In line with 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, Flyash shall be collected in dry form and ash shall be utilised in phased manner to achieve 100% utilisation target.
47.	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.	Already covered in Condition.45.
48.	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.	In case of waste-to-energy plants: a. Water hydrant at all the dumpsites of MSW area

	<p>Therefore, the following measures are required to be taken up:</p> <ul style="list-style-type: none"> 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. 	<p>to be provided so that the fire and smog could be controlled.</p> <ul style="list-style-type: none"> b. Sprayer like microbial consortia shall be provided for arresting the foul smell emanating from MSW area. c. Negative pressure/vacuum shall be created by drawing air from the MSW storage pit to the boiler/incinerator, to prevent escaping of odour from the sealed pit
J. Monitoring of compliance:		
49.	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.	Environmental Audit including energy & water conservation and carbon emissions shall be conducted once in two years and recommendations such as environmental control, conservation and offsetting measures arising out of the Report should be implemented.
50.	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.	Repeated condition, Deleted.
51.	Resettlement & Rehabilitation Plan as per the extant rules of Govt. of India and respective State Govt. shall be followed, if applicable.	
52.	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.	Deleted.
53.	Monitoring of Carbon Emissions from the existing power plant as well as for the proposed power project shall be carried out	Merged at Condition 49.

	annually from a reputed institute and report be submitted to the Ministry's Regional Office.	
54.	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.	Merged at Condition 49.
55.	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.	Environment Cell (EC) shall have persons from Environmental Science/Engineering/Chemical Engineering/Chemistry/Biology and shall be headed by a qualified person on the subject, who shall be reporting directly to the Head of the Plant.
56.	<p>The project proponent shall (Post-EC Monitoring):</p> <ol style="list-style-type: none"> send a copy of environmental clearance letter to the heads of Local Bodies, Panchayat, Municipal bodies and relevant offices of the Government; upload the clearance letter on the web site of the company as a part of information to the general public. 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. 	<p>The project proponent shall (Post-EC Monitoring):</p> <ol style="list-style-type: none"> send a copy of environmental clearance letter to the local bodies (Gram Panchayat/Municipal Bodies) and relevant offices of the Government; upload the clearance letter on the web site of the company. inform the public through newspaper advertisement (widely circulated papers in English and vernacular) within a month from the date of issue of the clearance, that the project has been accorded EC and copies of the clearance letter are available with the SPCB and may also be seen at Website of the Ministry of

	<ul style="list-style-type: none"> 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. 	<p>Environment, Forest and Climate Change (MoEF&CC) at http://parviesh.nic.in.</p> <ul style="list-style-type: none"> 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. Display the emissions (ambient and stack) results at a convenient location for disclosure to the public and put on the website of the company; f. submit EC compliance report including results of monitored data by (soft copy) to the Regional Office of MoEF&CC, Monitoring Cell of MoEF&CC, New Delhi, the respective Zonal Office of CPCB and the SPCB; g. Upload the environmental statement for each financial year in Form-V on company's website; h. inform the Regional Office and Head office of the Ministry, the date of financial closure and final approval of the project and the date of commencement of the land development work.
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K. Corporate Environmental Responsibility (CER) activities:		
57.	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.	Can be repeated.
L. Marine facilities:		
58.	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.	Can be deleted. SCZMA separately monitors the conditions prescribed by them.
59.	Marine intake and outfall pipelines shall be located as per the recommendations State Coastal Zone Management Authority (SCZMA).	Can be deleted. Already covered in the SCZMA recommendations.
M. Sea Water Intake:		
60.	Seawater intake system shall be so designed and constructed to ensure sufficient sweater in terms of quantity and quality.	Can be deleted.
61.	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.	Can be repeated.
62.	In all tide conditions (particularly at spring low tides) the riser head must be flooded with the required submergence of seawater above its top.	Deleted.
N. Effluent Release:		
63.	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.	At the effluent release point, maximum temperature of the discharge water shall not be more than 5°C so that sufficient dilution of effluent can be attained within 500 m.
64.	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.	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.

65.	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.	Merged at condition 63.
66.	The location of the diffuser shall be marked with a solar lighted buoy to avoid accidents.	The location of the riser and diffuser shall be marked with a solar lighted buoy to avoid accidents from boats.
67.	The site selected based on mathematical modelling shall ensure absence of recirculation of the effluent plume in the seawater intake area under all tidal conditions.	Can be deleted. Already covered in SCZMA recommendations.
68.	The effluent shall be released through a properly designed multiport diffuser above the seabed to facilitate its efficient initial mixing with the receiving seawater.	The effluent shall be released through a properly designed multiport diffuser above the seabed to facilitate its efficient mixing with seawater. The efficacy of diffuser shall be ascertained once in 2 years and corrective actions such as such as cleaning of the diffuser from marine growth, removal of silt deposits.
69.	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.	Merged at Condition 69.
70.	Continuous online monitoring system for Temperature and Salinity shall be installed to monitor the quality of effluent.	Temperature and Salinity monitoring for the effluent shall be carried out periodically once a month.
O. Common to intake and effluent		
71.	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.	In case of intake/outfall pipelines, the pipeline shall be buried at least 1 m below the seabed to ensure its stability under rough sea conditions particularly during cyclone/ tsunami. In the surf and intertidal zones, the pipeline

		<p>shall be buried below the maximum scour level.</p> <p>If the substratum is rocky, the pipeline may be anchored to the rock to ensure structural stability which can be ascertained through geo-technical investigations.</p>
72.	In case of open channel, the channel shall be constructed as per the recommendations of State Coastal Zone Management Authority (SCZMA).	Deleted.
73.	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.	Merged at condition 71.
74.	Exposed pipeline section and riser shall be protected by armour stone from waves, boats anchoring, fishing activities etc.	Deleted.
75.	The location of the riser & diffuser shall be marked with a solar lighted buoy to avoid accidents from boats.	Merged at condition 66.
76.	<p>Marine / Sea water quality shall be monitored at effluent release location at the center. Parameters to be monitored shall be as follows:</p> <p>a. <i>Physico-chemical:</i> Temperature, Salinity, pH and Dissolved Oxygen.</p> <p>b. <i>Biological:</i> Primary Productivity, Phytoplankton (Chlorophyll a, Phaeophytin, Population, Species), Zooplankton (Biomass, Population, Species) and Benthos (Biomass, Population, Species).</p>	In addition, frequency of once in six months is to be added.
77.	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.	Can be deleted. EAC can stipulate mangrove afforestation plan specific to the project.

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.
- xlvii) A Disaster Management Plan (DMP) along with risk assessment study including fire and explosion issues due to storage and use of fuel should be carried out. It should take into account the maximum inventory of storage at site at any point of time. The risk contours should be plotted on the plant layout map clearly showing which of the proposed activities would be affected in case of an accident taking place. Based on the same, proposed safeguard measures should be provided. Measures to guard against fire hazards should also be invariably provided. Mock drills shall be suitably carried out from time to time to check the efficiency of the plans drawn.
- l) The DMP so formulated shall include measures against likely Fires/Tsunami/Cyclones/Storm Surges/Earthquakes etc, as applicable. It shall be ensured that DMP consists of both On-site and Off-site plans, complete with details of containing likely disaster and shall specifically mention personnel identified for the task. Smaller version of the plan for different possible disasters shall be prepared both in English and local languages and circulated widely.
- li) Detailed scheme for raising green belt of native species of appropriate width (50 to 100 m) and consisting of at least 3 tiers around plant boundary with tree density of 2000 to 2500 trees per ha with a good survival rate of around 80% shall be submitted. Photographic evidence must be created and submitted periodically including NRSA reports in case of expansion projects. A shrub layer beneath tree layer would serve as an effective sieve for dust and sink for CO₂ and other gaseous pollutants and hence a stratified green belt should be developed.
- lii) Over and above the green belt, as carbon sink, plan for additional plantation shall be drawn by identifying blocks of degraded forests, in close consultation with the District Forests Department. In pursuance to this the project proponent shall formulate time bound Action Plans along with financial allocation and shall submit status of implementation to the Ministry every six months.
- liii) Corporate Environment Policy
 - e. 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.
 - f. 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.
 - g. 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.
 - h. 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 NO_x Burners with Over Fire Air (OFA) system shall be installed to achieve NO_x emission standard of 100 mg/Nm³.
3. High efficiency Electrostatic Precipitators (ESPs) shall be installed in each unit to ensure that particulate matter (PM) emission to meet the stipulated standards of 30 mg/Nm³.
4. Stacks of prescribed height ____m shall be provided with continuous online monitoring instruments for SO_x, NO_x and Particulate Matter as per extant rules.
5. Exit velocity of flue gases shall not be less than 20-25 m/s. Mercury emissions from stack shall also be monitored periodically.

6. Continuous Ambient Air Quality monitoring system shall be set up to monitor common/criteria pollutants from the flue gases such as PM₁₀, PM_{2.5}, SO₂, NO_x within the plant area at least at one location. The monitoring of other locations (at least three locations outside the plant area covering upwind and downwind directions at an angle of 120° each) shall be carried out manually.
7. Adequate dust extraction/suppression system shall be installed in coal handling, ash handling areas and material transfer points to control fugitive emissions.
8. Appropriate Air Pollution Control measures (DEs/DSs) be provided at all the dust generating sources including sufficient water sprinkling arrangements at various locations viz., roads, excavation sites, crusher plants, transfer points, loading and unloading areas, etc.

D. Noise pollution and its control measures:

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

E. Human Health Environment:

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

F. Water quality monitoring and Management:

1. Induced/Natural draft closed cycle wet cooling system including cooling towers shall be set up with minimum Cycles of Concentration (COC) of 5.0 or above for power plants using fresh water to achieve specific water consumption of 2.5 m³/MWhr. (Or) Induced/Natural draft open cycle cooling system shall be set up with minimum Cycles of Concentration (COC) of 1.5 or above for power plants using sea water.
2. In case of the water withdrawal from river, a minimum flow 15% of the average flow of 120 consecutive leanest days should be maintained for environmental flow whichever is higher, to be released during the lean season after water withdrawal for proposed power plant.
3. Records pertaining to measurements of daily water withdrawal and river flows (obtained from Irrigation Department/Water Resources Department) immediately upstream and downstream of withdrawal site shall be maintained.

4. Rainwater harvesting in and around the plant area be taken up to reduce drawl of fresh water. If possible, recharge of groundwater to be undertaken to improve the ground water table in the area.
5. Regular (at least once in six months) monitoring of groundwater quality in and around the ash pond area including presence of heavy metals (Hg, Cr, As, Pb, etc.) shall be carried out as per CPCB guidelines. Surface water quality monitoring shall be undertaken for major surface water bodies as per the EMP. The data so obtained should be compared with the baseline data so as to ensure that the groundwater and surface water quality is not adversely impacted due to the project & its activities.
6. The treated effluents emanating from the different processes such as DM plant, boiler blow down, ash pond/dyke, sewage, etc. conforming to the prescribed standards shall be re-circulated and reused. Sludge/ rejects will be disposed in accordance with the Hazardous Waste Management Rules.
7. Hot water dispensed from the condenser should be adequately cooled to ensure the temperature of the released surface water is not more than 5 degrees Celsius above the temperature of the intake water.
8. Based on the commitment made by the Project Proponent, Sewage Treatment Plants within the radius of 50 km from proposed project, the treated sewage ofKLD from STP (name) shall be used as an alternative to the fresh water source to minimize the fresh water drawl from surface water bodies.
9. Wastewater generation ofKLD from various sources (viz. cooling tower blowdown, boiler blow down, wastewater from ash handling, etc) shall be treated to meet the standards of pH: 6.5-8.5; Total Suspended Solids: 100 mg/l; Oil & Grease: 20 mg/l; Copper: 1 mg/l; Iron:1 mg/l; Free Chlorine: 0.5; Zinc: 1.0 mg/l; Total Chromium: 0.2 mg/l; Phosphate: 5.0 mg/l;
10. Sewage generation ofKLD will be treated by setting up Sewage Treatment plant to maintain the treated sewage characteristics of pH: 6.5-9.0; Bio-Chemical Oxygen Demand (BOD): 30 mg/l; Total Suspended Solids: 100 mg/l; Fecal Coliforms (Most Probable Number):<1000 per 100 ml.

G. Risk Mitigation and Disaster Management:

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

H. Green belt and Biodiversity conservation:

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

I. Waste management:

1. Solid waste management should be planned in accordance with extant Solid Waste Management Rules, 2016.
2. Toxicity Characteristic Leachate Procedure (TCLP) test shall be conducted for any substance, potential of leaching heavy metals into the surrounding areas as well as into the groundwater.
3. Ash pond shall be lined with impervious liner as per the soil conditions. Adequate dam/dyke safety measures shall also be implemented to protect the ash dyke from getting breached.
4. Fly ash shall be collected in dry form and ash generated shall be used in phased manner as per provisions of the Notification on Fly Ash Utilization issued by the Ministry and amendment thereto. By the end of 4th year, 100% fly ash utilization should be ensured. Unutilized ash shall be disposed off in the ash pond in the form of High Concentration Slurry. Mercury and other heavy metals (As, Hg, Cr, Pb, etc.) will be monitored in the bottom ash as also in the effluents emanating from the existing ash pond. Flyash utilization details shall be submitted to concerned Regional Office along with the six-monthly compliance reports and utilization data shall be published on company's website.
5. Unutilized ash shall be disposed off in the ash pond in the form of High Concentration Slurry/Medium Concentration Slurry/Lean Concentration Slurry method. Ash water recycling system shall be set up to recover supernatant water.
6. In case of waste-to-energy plant, major problems related with environment are fire smog in MSW dump site, foul smell and impacts to the surrounding populations. Therefore, the following measures are required to be taken up:
 - iii) Water hydrant at all the dumpsites of MSW area to be provided so that the fire and smog could be controlled.
 - iv) Sprayer like microbial consortia may be provided for arresting the foul smell emanating from MSW area.

J. Monitoring of compliance:

1. Environmental Audit of the project be taken up by the third party for preparation of Environmental Statement as per Form-V & Conditions stipulated in the EC and report be submitted to the Ministry.
2. Resettlement & Rehabilitation Plan as per the extant rules of Govt. of India and respective State Govt. shall be followed, if applicable.
3. Energy Conservation Plan to be implemented as envisaged in the EIA / EMP report. Renewable Energy Purchase Obligation as set by MoP/State Government shall be met either by establishing renewable energy power plant (such as solar, wind, etc.) or by purchasing Renewable Energy Certificates.

4. Monitoring of Carbon Emissions from the existing power plant as well as for the proposed power project shall be carried out annually from a reputed institute and report be submitted to the Ministry's Regional Office.
5. Energy and Water Audit shall be conducted at least once in two years and recommendations arising out of the Report should be followed. A report in this regard shall be submitted to Ministry's Regional Office.
6. Environment Cell (EC) shall be constituted by taking members from different divisions, headed by a qualified person on the subject, who shall be reporting directly to the Head of the Project.
7. The project proponent shall (Post-EC Monitoring):
 - i. send a copy of environmental clearance letter to the heads of Local Bodies, Panchayat, Municipal bodies and relevant offices of the Government;
 - j. upload the clearance letter on the web site of the company as a part of information to the general public.
 - k. 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>.
 - l. upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same periodically;
 - m. 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;
 - n. 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;
 - o. 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;
 - p. 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 sweater in terms of quantity and quality.
2. The withdrawal of seawater shall be preferably through a pipeline with a riser equipped with a velocity cap arrangement and bar screen to arrest the impingement of large marine organisms.
3. In all tide conditions (particularly at spring low tides) the riser head must be flooded with the required submergence of seawater above its top.

N. Effluent Release:

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

O. Common to intake and effluent:

2. 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.
3. In case of open channel, the channel shall be constructed as per the recommendations of State Coastal Zone Management Authority (SCZMA).

4. 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.
5. Exposed pipeline section and riser shall be protected by armour stone from waves, boats anchoring, fishing activities etc.
6. The location of the riser & diffuser shall be marked with a solar lighted buoy to avoid accidents from boats.
7. 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).
8. In case of Coastal Power Plants, the Mangrove plantation shall be taken up in an area ofha, along the coast/ on the banks of Estuary.

Attendance List

Name & Address	Role	Attendance	
		07.08.2020	24.08.2020
1. Shri Gururaj P. Kundargi	Chairman	Yes	No
2. Dr. N.P Shukla	Member	Yes	Yes
3. Shri Suramya Vora	Member	Yes	Yes
4. Dr Santosh Kumar	Member	Yes	Yes
5. Dr. Umesh Jagannathrao Kahalekar	Member	Yes	Yes
6. Shri K.B. Biswas	Member	Yes	Yes
7. Dr. Nandini. N	Member	Yes	Yes
8. Dr. Unmesh Patnaik	Member	Yes	Yes
9. Shri Prasant Kumar Mohapatra	Member	Yes	Yes
10. Dr. Nazimuddin/Dr. S.K. Paliwal	Member (Representative of CPCB)	No	No
11. Shri N. S. Mondal	Member (Representative of CEA)	Yes	Yes
12. Professor S S Rai	Member Representative of IIT/ISM Dhanbad	Yes	Yes
13. Prof R.K. Giri	Member Representative of IMD	Yes	No
14. Dr. S. Kerketta	Member Secretary	Yes	Yes

From: shuklanp55@gmail.com
To: "Dr S Kerketta" <s.kerketta66@gov.in>
Sent: Friday, September 25, 2020 1:48:37 PM
Subject: Re: Draft 2nd EAC (Thermal)- approval reg.

Dear Dr Kerketta ji

Minutes of the meeting held on 24 th August 2020 are approved as proposed.

Regards

Dr N P Shukla

Sent from my iPhone

On 25-Sep-2020, at 5:50 AM, Dr S Kerketta <s.kerketta66@gov.in> wrote:

Dear Sir,

PFA for kind approval. It is being sent after seeking comments from the EA Members.

regards,

(Dr. S. Kerketta)

Director- IA (Thermal, River Valley & HEP)

MoEF&CC, New Delhi

Phone: [011-24695314](tel:011-24695314) (O), 26113096 (R)

**AGENDA OF 2nd MEETING OF THE RE-CONSTITUTED EXPERT APPRAISAL
COMMITTEE ON THERMAL POWER PROJECTS**

DATE : 07th AUGUST, 2020 (THURSDAY)
TIME : 10.30 A.M.- 4.30 PM through Video Conference

ITEM	
Item No. 2.0 Time Slot: 10:30-10:45 AM	CONFIRMATION OF MINUTES OF 1st EAC (THERMAL) MEETING HELD ON 28.07.2020
Item No. 2.1 Time Slot: 10:45 AM-01:30 PM	Revision of Standard EC conditions for Thermal Power Projects.
	Lunch Break (01:30 -2:15 PM)
Item No. 2.2 Time Slot: 2:15-4:30 PM	Revision of Standard ToR conditions for Thermal Power Projects.
Item No. 2.3	ANY OTHER ITEM WITH THE PERMISSION OF THE CHAIR.

**Note: Power Plant operators and other stakeholders may provide inputs/suggestions to EAC by e-mail.

**AGENDA OF 3rd MEETING OF THE RE-CONSTITUTED EXPERT APPRAISAL
COMMITTEE ON THERMAL POWER PROJECTS**

DATE : 24th AUGUST, 2020

TIME : 11.00 A.M.- 4.00 PM through Video Conference

ITEM	
Item No. 3.0 Time Slot: 11-11:10 AM (10 min)	CONFIRMATION OF MINUTES OF 2nd EAC (THERMAL) MEETING
Item No.	CONSIDERATION OF PROJECTS
3.1 Time Slot: 11:10-11:40 AM	Proposed 8 MW Captive Power project within the existing premises of Clinker Grinding Unit near Village Khukhrana, P.O. Assan Kalan, Tehsil & District Panipat, Haryana by M/s. Shree Cement Ltd. Unit - Panipat (A Unit of Shree Cement Ltd.)-reg. ToR. (F.No. J-13012/10/2020-IA.I(T) & No. IA/HR/THE/167131/2020)
3.2 Time Slot: 11:40 AM-01:30 PM	Revision of Standard ToR conditions for Thermal Power Projects.
	Lunch Break
3.3 Time Slot: 02:15 PM -03: 30 PM	Finalization of Standard EC conditions for Thermal Power Projects.
3.4	ANY OTHER ITEM WITH THE PERMISSION OF THE CHAIR.

**Name of the project
Addressed detailed
e-mail/contact No.**

Undertaking

(To be provided by the PP)

This is to certify that the information provided in Form-.... in physical form and/or in .pdf format (as applicable to the project and remaining be removed) in PARIVESH, to the Ministry/EAC members and PPT presentation during the EAC meeting held on 14.05.2020 have no deviation in respect of the proposal of ToR/EC/EC validity extension/EC amendment for establishing “.....MW Thermal Power Project at village, Taluk, District....., State.....by M/s.

2. It is further certified that there are no data entry errors in the information uploaded in PARIVESH system including names/email-id/mobile numbers/address of the project proponent, authorized person, etc. It is also certified that the supporting documents uploaded on PARIVESH portal are correct and duly authenticated by the Authorized Signatory.

3. In case of any deviation in data found in any of the documents, the Authorized Signatory shall be held responsible and furthermore, the above said project shall be rejected for grant of amendment in EC.

Authorized Signature

date