MINUTES OF THE 1st MEETING OF THE RE-CONSTITUTED EXPERT APPRAISAL COMMITTEE (EAC) ON ENVIRONMENTAL IMPACT ASSESSMENT (EIA) OF THERMAL POWER PROJECTS HELD ON 28TH JULY, 2020.

The 1st Meeting of the re-constituted EAC (Thermal Power) was held on 28th July, 2020 through Video-conference organised by NIC in the Ministry of Environment, Forest & Climate Change, Indira Paryavaran Bhawan, Jorbagh Road, New Delhi under the Chairmanship of Shri Gururaj P. Kundargi. The following members were present through video-conference:

1.	Shri Gururaj P. Kundargi	-	Chairman
2.	Shri Suramya Vora	-	Member
3.	Dr. N.P. Shukla	-	Member
4.	Dr. 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. S.K. Paliwal	-	Member (Rep. of CPCB)
11.	Shri N.S. Mondal	-	Member (Rep. of CEA)
12.	Professor Sheo Shankar Rai	-	Member (Rep. of IIT/ISM Dhanbad)
13.	Dr. R.K. Giri	-	Member (Rep. of IMD)
14.	Dr. S. Kerketta	-	Member Secretary

Item No.1.0: WELCOME NOTE AND CONFIRMATION OF THE MINUTES OF THE 41st EAC MEETING.

(a) The Chairman Shri Gururaj Kundargi welcomed all the members of the Committee as this is the first meeting after re-constitution. Chairman urged all the members to contribute towards project appraisal from their respective expertise. Further, he mentioned that the Committee will work as a team and decisions will be taken collectively on the proposals. He also praised the committee that 100% attendance is seen in this meeting and requested all the members to participate in all meetings. He also thanked the Member Secretary and his team for organising meetings and providing other logistic support.

(b) The Minutes of the 41st EAC (Thermal Power) meeting held on 23.06.2020 were confirmed in presence of members present in the meeting. Further, the Committee noted that Meeting of EAC on 23.6.2020 was held under the chairmanship of Dr. Navin Chandra. The draft minutes of meeting were circulated to members for seeking comments on 30.6.2020. After incorporating the comments, the final draft minutes were sent to the Dr. Navin Chandra by e-mail for seeking approval. However, the Chairman could not be contacted by e-mail and telephone. As the tenure of the previous EAC was also completed by 30.6.2020, the EAC was re-constituted on 09.7.2020. The present Chairman Shri Gururaj P. Kundargi of the re-constituted committee was also member of the

previous EAC. Since, Dr. Navin Chandra could not be contacted and more than one month has been elapsed in finalising the minutes, it was decided in the Ministry that the Minutes may be sent to the present Chairman as he was also present during the meeting held on 23.6.2020. Accordingly, the minutes were sent to Shri Gururaj P. Kundargi for seeking approval for finalisation. As the minutes were already agreed by all the members present during the meeting held on 23.6.2020, Shri Kundargi approved the final minutes for uploading on PARIVESH on 27.7.2020.

Item No. 1.0: CONSIDERATION OF PROJECTS

(1.1) Proposed Expansion of Waste to Energy (WTE) plant from 15 MW to 25 MW for Integrated Municipal Solid Waste Processing Facility (IMSWM) at Village Bandhwari, Tehsil & District Gurugram, Haryana by M/s Gurugram Municipal Corporation-reg. ToR.
(F. No. J-13012/08/2020-IA.I(T) & IA/HR/THE/162510/2020)

(1.1.1) Project Proponent submitted online application on 17.07.2020 for grant of ToR for expanding the Waste to Energy Power Project from 15 MW to 25 MW. The Environmental Clearance for 15 MW Waste to Energy Project was issued by the Ministry vide letter No.10-74/2016-IA.III dated 1.11.2019.

(1.1.2) Project Proponent along with QCI-NABET consultants M/s. Fulgro Environmental & Engineering Services Pvt. Ltd., Jaipur made the submission and submitted the following information:

i. The project of installed capacity of 15 MW Waste to Energy could not be established due to delays in project planning and COVID-19.
ii. Municipal Corporation of Gurugram is proposing to augment capacity of Waste to Energy from 15 MW to 25 MW.
iii. The project site is located at Bandhwari Village, Gurugram. The Bandhwari village is at 1.7 km in W direction from project site. The proposed waste to energy project is located adjacent to the municipal waste dump.
iv. Further, Faridabad-Gurgaon Road (MDR-137) at a distance of 300 m on north direction. The nearest road from the project site is NH-236 at a distance of 13.39 km in NW direction. Gurugram city is located at approx. 6.44 km in NW direction from the project site. Indira Gandhi International airport is the nearest airport at an aerial distance of 18.10 km in NNW direction from the project site.
v. Inter State boundary of Haryana and Delhi lies at a distance of 0.98 km in north direction from project site.
vi. Asola Wildlife Sanctuary boundary exists at 300 m in NE direction from the project site and is beyond Eco Sensitive Zone (ESZ) of Asola WLS which is 150 m as per MoEFCC notification vide S.0.1911 (E) dated 31.5.2019.
vii. The project area is 30.5 acres. The land is already in the possession of Municipal Corporation of Gurugram. Thus, no land acquisition and Rehabilitation is involved.

The co-ordinates of the project are as below:

Point	Latitude	Longitude
A	28°24'14.89"N	77°10'16.86"E
B	28°24'13.13"N	77°10'27.39"E
C	28°24'01.35"N	77°10'18.83"E
D	28°24'02.72"N	77°10'11.54"E

viii. Total municipal solid waste to be processed in the project is 2100 TPD. After segregation, the Refused Derived Fuel (RDF) of 1500 MT would be made available for incineration. The break-up of various types of waste is given as below:

Sl. No.	Type of waste	Quantity (MT)
1.	Composting	210
2.	Inert	130
3.	Recyclable	50
4.	Moisture loss	210
5.	RDF	1500
6.	Total	2100

ix. The project consists of pre-treatment and waste collection facility, 2 mechanical grate incinerators (2x750 TPD), composting unit, Leachate collection and treatment system, Turbo generator.

x. The estimate of population and municipal waste generation is as below:

	Population for 2015	Waste generation (TPD)	Population Projected in 2035	Waste generation (TPD)
Gurugram	9.97 Lakhs	449 TPD	18 Lakhs	810 TPD
Faridabad	15.9 Lakhs	716 TPD	28.7 Lakhs	1290 TPD
Total	25.9 Lakhs	1165 TPD	46.75 Lakhs	2100 TPD

xi. The break-up of land for the project site is given as below:

Facility	Area in Acres	% of total land
WtE Plant	6.56	21.57%
MSW processing area	3.35	11.03%
Roads/amenities	2.7	9%
Sanitary landfill	6.0	20%
Greenbelt	10.0	33%
Drain/sump	1.6	5.4%
Total	**30.5**	**100%**

xii. MSW will be unloaded inside the pit where in 5-7 days retention shall be given to remove excess leachate/moisture. After leachate removal, primary segregation shall be undertaken to recover the RDF fraction (>50 mm) for further storage. The compostable fraction of waste (<50 mm) will be shifted to windrow platform for

composting. The inert removed through pre-processing system shall be directed to landfill.

xiii. Windrow composting method shall be adopted for composting the compostable fraction of waste which is generated from pre-processing system. Leachate generated from MSW pit and windrow platform will be conveyed for treatment at Leachate Treatment Plant.

xiv. Water requirement during construction Phase is 8-10 KLD which will be sourced from Municipal Corporation of Gurgaon. Domestic water requirement during Operation phase is 0.5 m^3/h (i.e. 12 KLD) which will be sourced from Municipal Corporation Gurgaon by water tankers. The water requirement for plant purpose during operation phase is 45.9 m^3/h (i.e. 1101.6 KLD) which will be sourced from STP approved by GMDA for plant.

xv. 2 boilers/grate incinerators will have two chimneys with height of 60 m.

xvi. The following air pollution control systems shall be installed:

Parameter	Pollution Control
NOx	No air pollution control equipment is proposed. Boiler combustion temperature to be limited to 850^0C so that NOx is limited.
Other Gaseous pollutants	Dry adsorption system using hydrate lime and activated carbon
Toxic substances Dioxins and Mercury	Activated Carbon Scrubber
Particulate Matter	Bag filter
Emission dispersion and monitoring	60 m height stack along with online stack monitoring systems

xvii. The leachate treatment plant with capacity of 500 KLD will be installed to treat the leachate.

xviii. Inert material and other residues generated from plant such as ash will be sent to Sanitary land fill proposed within the project area.

xix. The flyash of 113 tons/day and bottom ash of 418 Tons/day are expected to generate from the plant area. Further, sludge of 1.2 tons/day is expected to generate from the activated carbon from the dry sorbent system. In addition, 15 Tons/day sludge is also expected to generate from the Leachate treatment plant. The ash will be utilised for construction purposes and unutilised ash will be disposed in sanitary landfill. The sludge from Leachate Treatment Plant will be used in Boilers as it has calorific value.

xx. The estimated project cost is Rs. 617.01 Crores. The estimated employment during construction is 600 and during operation is 2100 persons.

xxi. A case in NGT Central Bench vide OA No.514/2018 is under adjudication. However, the Orders/Directions from the Hon'ble NGT are not relevant the proposed project. However, MCG has submitted revised action plan in compliance to order.

(1.1.3) Committee noted that the 15 MW Waste to Energy Project for which Environmental Clearance was issued in November, 2019 could not be set up by Proponent. Thus, present proposal of enhancing the capacity from 15 MW to 25 MW should not be considered as an expansion project. Instead, it should be treated as fresh project. Further, Committee noted that Asola Bhatti Wildlife Sanctuary is located at 300 m from the project site. Project Proponent should ensure the project site is not falling in the ESZ of Asola Bhatti Wildlife Sanctuary. The waste requirement for the proposed project is 2100 TPD which will be expected by 2035. Further, no NOx control measures are proposed in the Pre-feasibility Report. Considering, Asola Bhatti Wildlife Sanctuary present in the proximity of the project site, SCR/SCNR/De-NOx systems are to be installed to control NOx emissions within the stipulated norms. Further, water requirement of 1101.6 KLD is proposed during operation phase and to be sourced from MCG. Proponent should utilise the treated water from Leachate treatment system and the balance water may be sourced from MCG which will reduce fresh water consumption.

(1.1.4) Committee after detailed deliberations, recommended for following ToRs for WtE of 25 MW installed capacity in addition to the Standard ToRs:

i. Proximate and ultimate analysis, Calorific value of municipal waste proposed to be brought from Gurugram and Faridabad shall be carried out for design purpose of boilers. Mass balance of waste in the process shall be submitted.
ii. Air pollution control measures including NOx control measures, Leachate treatment methods shall be proposed.
iii. The air pollution control measures and leachate treatment systems shall conform the emission and wastewater standards provided in Solid Waste Management Rules, 2016.
iv. Heavy metal content analysis in the fly ash and bottom ash shall be carried out at laboratory scale for similar plant to estimate the hazardous content of the ash generated from the waste to energy plant.
v. The bio-diversity study of Asola Bhatti Wildlife Sanctuary shall be carried out and likely impacts due to proposed project activities shall be predicted. Suitable mitigation measures along with bio-diversity conservation plan shall be prepared in consultation with Monitoring Committee of ESZ-Asola Bhatti Wildlife Sanctuary. An authenticated map showing Wildlife Sanctuary and its ESZ *vis a vis* project boundary shall be vetted by Chief Wildlife Warden for both national territory of Delhi and Haryana region.

vi. As the inter-state boundary of Haryana and Delhi lies at a distance of 0.98 km from project site, the affected people from Delhi residing within 10 km radius of the project shall also be invited to participate in the Public Hearing. Accordingly, the representative of Delhi Pollution Control Committee shall also be invited to the Public Hearing to ensure such participation.

vii. Proponent should utilise the treated water from Leachate treatment system instead discharging into the public sewerage and the balance water may be sourced from MCG which will reduce fresh water consumption.

(1.2) 900 MW (750 MW + 150 MW) RLNG based Combined Cycle Power Plant at Village Kalanji, Taluk Ponneri, District Thiruvallur, Tamil Nadu by M/s. Chennai Power Generation Limited (CPGL)-reg. ToR.
(F.No.J-13012/ 09/2020-IA.I (T)& No. IA/TN/THE/162023/2020)

(1.2.1) The Project Proponent submitted online application dated 15.07.2020 for grant of ToR.

(1.2.2) Project Proponent along with M/s Ramky Enviro Services Pvt. Ltd. made the presentation and inter-alia submitted the following information:

i. The Company had initially obtained Environmental Clearance from MoEF&CC vide letter No. J-13011/11/961A.11 (T) dated 19.03.1997 for setting up of thermal power project using naphtha as fuel.

ii. TIDCO dropped the proposal to establish the LNG Terminal. Then the Company had approached MoEF&CC to give amendment for change of fuel from Naphtha to Imported coal.

iii. MoEF&CC asked to submit the fresh application as the proposal is based on coal and the land requirement will also increase due to use of coal. Subsequently, the ToR was issued for the project in letter No. J-13011/11/96 IA. II (T) dated 03.06.2009.

iv. Due to overlapping of land of approx. 70 acres between company's project site and the North Chennai Power Company Project site, the project could not proceed further due to litigations pending in the Madras High Court.

v. As the ToR validity expired, another ToR was obtained for setting up of 2x660 MW Super critical imported coal based power plant vide letter number J-13012/16/2015-1A-I (T) dated 10.06.2016. The validity of the said ToR was also expired on 9.6.2019.

vi. Subsequently, the company decided to change the fuel from coal based 2x660 MW Supercritical plant to 1050 MW gas based combined cycle plant due to availability of RLNG from IOCL terminal coming up at Ennore which is about 6 Km from selected plant site. Further MoU between IOCL & CPGL also signed Gas transportation of RLNG supply at the plant site. Accordingly, fresh ToR was obtained on 19.07.2018.

vii. Presently, the company wants to revise the proposal by changing the configuration to 900 MW (750+ 150 MW) and there is a slight shift & change in

land area as proposed in the earlier ToR. Accordingly, it is proposed to obtain the new ToR and withdraw the previous ToR dated 19.07.2018.

viii. At present, the company does not have any dispute with North Chennai Power Company regarding land and the company does not have any land sharing with them. The Madras High Court in W.P. Nos. 25745 and 25080 of 2010 vide Order dated 29.11.2012 also settled the dispute and disposed the matter.

ix. The proposed power project will be set up in 31.16 ha. The break-up of land is given as below:

Particulars	Main Plant area in ha	Desalination plant area in ha	Total - area in ha	Remarks
Main Plant & auxiliaries	12.45	5.30	17.75	33% of the area will be used for greenbelt development, minimum of 50 m wide along the boundary.
Roads	2.19	0.93	3.12	
Greenbelt	7.22	3.07	10.29	
Total	21.86	9.30	**31.16**	

x. No R&R is involved in the proposed project. CPGL had already purchased 28 acres of land at Kalanji village and 23 acres of lands at Kattupalli village. The major part of the land in the proposed site is in the possession by CPGL (approx.51 acres). There are pockets of Boodhan land within the proposed site. CPGL requested to Secretary, Revenue department and the commissioner to acquire/purchase the Boodhan lands for the project.

xi. The Buckingham canal (30 m away on west) is located adjacent to the proposed project site and Bay of Bengal is 1 km East from project site. The RLNG terminal of IOCL is located at 6 km from the project site. It is proposed to set up Desalination plant which is located close by to Bay of Bengal i.e. at 200 m from the Coast.

xii. There are no declared biospheres, wildlife sanctuaries, or tiger sanctuary or migrating corridor or Coastal zone in the core zone and 10 km buffer zone. Pulicat Sanctuary is located at 12 km, North of the project.

xiii. 750 MW unit comprising one block of 550 MW capacity + 1 HRSG + 1 STG of 200 MW. Further, 150 MW unit comprising one block with 3 GTG of 90 MW capacity + 3 HRSG + 1 STG of 60 MW. Both the units will be operated on RLNG only. Closed recirculation cooling water with cooling tower shall be adopted for STG condensers.

xiv. The fuel requirement for the proposed project is given as below:

Details	Units	Power plant capacity			Remarks
		750 MW	150 MW	Total	
Fuel – RLNG	MMSCMD	3.07	0.6	3.67	Mode of transportation is through pipeline from IOCL RLNG terminal at a distance of 6 km
Gross calorific value	kcal/SCM	9174	9174	9174	
Plant heat rate	kcal/kwh	1598	1598	1598	
Fuel requirement at 60% PLF	MMSCMD	2.0	0.45	2.45	

xv. The proposed power plant units are gas based power plant there will not be any ash disposal. Liquid waste will be mainly from the effluents generated from the combined cycle power plant would be from Cooling tower blow down, DM plant Regeneration plant, Heat recovery steam generator drum blow down, Sanitary waste, Water from Oil water Separator.

xvi. Water requirement for the project is 6165 m^3/h (1,47,960 m^3/day) which will be sourced from Bay of Bengal through construction of onshore sea water intake pump house and pipeline for a distance of 1.5 km.

xvii. The cooling tower blow down and RO rejects will be discharged back into the sea based on Simulation Model in study and in compliance with regulatory norms in order to keep temperature differential between blow down and receiving seawater with in permissible limits and will be disposed deep into the sea through diffuse ports to achieve optimum mixing to attain requisite temperature and salinity

xviii. Power generated from the proposed Plant units of 750 MW will be evacuated through 765 kV or 400 kV outdoor switchyards.

xix. The 765 kV transmission line is proposed to laid to connect to the proposed pooling station at Ennore which is 15 km from site; or 400 kV Double circuits to the Manali 400/230 kV sub-station which is 20 km from site which is owned by the TNEB. Power generated from 150MW Plant will be evacuated through 230kV outdoor switch yard to the 230/110 kV station at Athipattu owned by TNEB Grid having the distance of 8 Km from the project site.

xx. Estimated cost of the project is Rs. 3700 Crores. The estimated employment generation is 2000 persons during construction phase and 1000 persons during operation phase.

(1.2.3) Committee noted the ToR was issued to the proponent on 19.7.2018 for the same project. However, Proponent has changed the project configuration and shifted the land boundaries towards North of the earlier proposed site. Proponent has informed that there is no dispute of land with North Chennai Power Company. Further, the project is adjacent to the Buckingham Canal which is also a tidal influenced water body. The proposed location has some saltpans and aqua culture ponds. Committee further noted that since the ToR for the said site had

already been issued in the past, the present proposal can be considered provided main power plant area is not falling in the CRZ area. Further, the committee noted that either existing ToR is to be withdrawn for issuing new ToR or existing ToR is to be modified. Proponent agreed to withdraw the pervious ToR.

(1.2.4) **Committee after detailed deliberations, recommended for grant of following ToRs in addition to the standard ToRs** while at the same time recommended for withdrawal of the ToRs dated 19.7.2018.

i. Recommendations of TNSCZMA shall be obtained for permissible activities such as intake and outfall pipelines, desalination plant and connected facilities. TNSCZMA shall categorically verify whether main plant area is falling within the CRZ area or not in accordance with the approved Coastal Zone Management Plans. Further, presence of mangroves in the proposed project area including pipeline corridor shall be ascertained. CRZ maps in 1:5,000 scale shall be submitted.

ii. A certificate from the concerned District Collector should be obtained clearly confirming that the proposed site does not overlap with the site of M/s North Chennai Power Generation Ltd. and that the proposed site (total land required for the project) is free of all encumbrances.

iii. As many salt pans and aquaculture ponds are falling within the proposed project area, the alternate livelihood plan for the villagers who are doing salt farming or aquaculture shall be prepared along with budgetary provisions. Further the rights of 5 acres of Bhudhan land is to be ascertained and compensated, if any.

iv. A project layout map showing power plant facilities along with 50 m wide greenbelt and Desalination Plant shall be submitted.

v. EIA report shall cover marine aspects such as impact on marine ecology. The impact of the intake / outfall structure on marine life during construction and operation phases shall be studied. Studies pertaining to Bathymetry Sediment transportation, Thermal Dispersion and Salinity dispersion shall be conducted. Design of intake and outfall points shall be based on the studies.

vi. Mangroves shall not be disturbed along the Buckingham canal, if any. Mangrove mapping within 10 km radius shall be mapped. There are several trees/greenery within the project area. Whether this greenery is mangroves or otherwise is to be ascertained and tree enumeration shall be done. Compensatory mangrove afforestation shall also be proposed in the EIA report.

(1.3) 3x800 MW NLC Talabira Thermal Power Project at Village Khumberi, Taraikela and Thelkoli, Tehsil and District Jharsuguda, Odisha by M/s NLC India Ltd -reg. Environment Clearance.
(F.No. J-13012/14/2017-IA.I (T) & Proposal No. IA/OR/THE/67938/2017)

(1.3.1) Project Proponent submitted online application on 19.2.2020 for grant of Environmental Clearance for establishing 3x800 MW Thermal Power Project in Jharsuguda District, Odisha.

(1.3.2) The proposal was earlier considered by the EAC in its meeting held on 10.4.2020 and the committee made several observations in the EIA such as socio-impact assessment study, water sustainability study, public hearing action plan, land use, cumulative impacts of existing industries, compliance to recommendations of sub-committee, proximity to Bhedan river & its HFL, greenbelt proposed of 17%, adjacent forests, project location in critically polluted area, ash pond proximity to Bhedan river & its risks, natural Nallah passing through proposed ash pond, break-up of EMP, NOC from DFO Jharsuguda for impacts on forest and wildlife, coal linkage, intake water point & transport pipelines, submerging of ash pond and plant area with maximum flood level, etc. The committee deferred the proposal for revising the EIA report.

(1.3.3) Project Proponent vide letter dated 19.6.2020 submitted the revised EIA report. Proponent along with Environment Consultants M/s ABC Techno Labs India Pvt. Ltd. have made the presentation inter-alia furnished the following information:

i. HCSD concept of ash disposal is being adopted the slurry disposal. In HCSD system, slurry gets hardened after disposal, and hence no pollution of river due to any possible breach is envisaged. Also as per norms the min distance of 500m is left between the river body & ash dyke. The Nalla passing through the proposed Ash Dyke shall be remodelled and diverted as per NIH Roorkee report.

ii. The SIA study has been conducted by DCOR Consulting Private Limited applying cross-sectional study design and the overall design and framework of the study was guided by the RFCTLARR act and was developed and executed under the technical guidance of the SIA unit.

iii. The study site for SIA included the village Tumbekela, Tareikela, Hirma, Kumbhari and Luhurenkachhar of Jharsuguda Tahasil in Jharsuguda district where 753.13 acres of private land will be acquired for the proposed project.

iv. The SIA study enumerated a total of 512 families from the list given for survey of which 291 will be displaced as their residential areas is going to be acquired and 221 families will be affected as their land is going to be acquired for setting up of the proposed industry in the five villages. The expected displaced people were residing in village Tareikela, Kumbhari and Gariadihi Kisan Pada (a hamlet of Hirma village) and the expected affected people were from village Tumbekela, Tareikela, Kumbhari and Hirma.

Name of village	No. of families	No. of displaced families	Percentage	No. of affected families	Percentage
Hirma	124	39	31.5%	85	68.5%
Kumbhari	163	123	75.5%	40	24.5%
Tereikela	136	129	94.9%	7	5.1%

Tumbekela	89	0	0%	89	100%
Total	512	291	62%	221	38%

v. Most of the people in project area wanted to vacate their homes provided that they would get suitable monetary compensation for their land, houses and immovable assets. According to them the cost of land is highest in the area. So they should be compensated accordingly.

vi. Owners of land near the Bheden river in Kumbhari and Tareikela villages wanted to part with their land as they will face problem in cultivation. The proposed project maps show exclusion of those patch of land. They requested that the company should acquire that patch of land for tree plantation or any other purpose.

vii. SIA study revealed heavy loss of land and income due to the acquisition of land under the project. The adverse effects of the project may be overcome by restoration of livelihood, providing employment opportunities, skill building and vocational training like ITI, Diploma, Computer, Driving, Tailoring etc. for engagement of the displaced and affected family members in the project or various project ancillary units for income and also by promoting income generation skill among the women mass through SHGs like Tailoring, Khali Stitching, Mushroom cultivation etc. with a market linkage support and by taking up community awareness generation on health & nutrition and plantation drive.

viii. DoWR wide letter dated 05.09.2019 has accorded water commitment of 90 cusec from Hirakund reservoir out of industrial quota without curtailing allocation for irrigation.

ix. The land use of the proposed project area is as below:

Land Use	Area
Agriculture	1007.115 acres
Homestead	33.855 acres
Wasteland	102.65 acres
Grazing/Gochar	11.76 acres
Water bodies	35.9 acres
Communal (Roads, etc)	30.33 acres
Total	1221.61 acres

x. Cumulative impact considering the surrounding industries viz. power plant, Bhushan steel plant and mining activity on baseline ambient air quality, after

the implementation of the proposed project has been arrived by superimposing the present baseline maximum air quality levels of each pollutant.

xi. Sub-committee recommended that the PP should construct a bound of Minimum width of 20 m having elevation of at least 202 m AMSL, along the riverbanks. The PP may construct the bund in consultation with Irrigation Department of Water Resource Department and state Forest Department for their guidance and necessary permission. Accordingly, bund strengthening is proposed as per the NIH Roorkee, which will be carried out in accordance with advise of WRD of Odisha.

xii. Sub-committee recommended to construct approach road along the boundary wall of power plant so that villages can have easy access to their agricultural fields. Accordingly, access road surrounding the project area has been planned for villagers.

xiii. Sub-committee recommended that the course of Nallah exists in the proposed Ash pond areas should not be diverted and necessary protection measures such as proper lining at both banks, etc. are to be provided. Ash pond area requires to be re-aligned so that the village shall remain outside of the boundary of the proposed ash pond area and fresh lay out map, in this regard, to be submitted.

xiv. As per the sub-committee recommendations, the ash pond area has been re-aligned so that village remains outside the boundary. However, nallah diversion has been proposed and NIH conducted a study on this and suggested to re-route along the southern side.

xv. Sub-committee recommended that no construction within 500m width from the HFL shall be proposed as per Hon'ble supreme court directions. The area requiring for construction of over bridges should be included in the proposed project. And accordingly, necessary permission to be taken from the competent authorities.

xvi. During the visit of Sub Committee of EAC, it was observed that earth from the river bank have been removed illegally which causes submergence and accordingly it was suggested to go for bund strengthening. The NIH report is based on historical data of 100 years return period. In the report, 20 meter wide bund strengthening around the Bhedan river on either side shall be carried out. The plant formation level to be kept at min 202 meter.

xvii. Sub-committee recommended that construction of Raw water Reservoir may be shifted toward the existing water pond due to paucity of land and keeping agricultural land unaffected. As per the recommendations, the raw water reservoir has been shifted north wards and area reduced from 126 acres to 88 acres

xviii. Sub-committee recommended that before any construction is taken up in either of the areas, the transmission lines are to be shifted. Accordingly, OPTCL has been approached to carry out the diversion of transmission lines.

xix. Sub-committee recommended that a Greenbelt between the village and the proposed ash pond shall be developed. Fresh water available in the existing water bodies in the proposed project should be reused for construction work to minimize requirement of fresh water. No ground water shall be drawn for construction work. As recommended, Green belt between village and ash pond will be developed. No ground water withdrawal is envisaged.

xx. As recommended by the sub-committee, wind barrier shall be constructed to arrest fugitive dust in coal Handling Plant area.

xxi. The overall land requirement for the project is proposed as 1447 acres, out of which the plant area is 602 acres and reservoir is 88 Acres thus making the plant area as 690 acres. As per CEA norms, one third of plant area needs to be earmarked for green belt, which works out to 230 acres for NTTPP, where as 252 acres of green belt is envisaged. As suggested, Green belt shall be provided around the periphery of Ash Dyke.

xxii. The plant boundary wall and the ash dyke shall be at a distance of 500m from the Bhedan river. As suggested during the visit of Sub Committee of EAC and also suggested in the NIH report, 20 meter wide bund strengthening around the Bhedan river on either side shall be carried out.

xxiii. The most of the Patrapali forest area is part of Talabira II & III Captive mining Blocks of NLCIL. The forest clearances (Stage I & Stage II) for diversion of forest land in the mining area have already been obtained.

xxiv. Coal from the coal mine shall be transported by belt conveyor up to the transfer point in mine area (about 01 km) and thereafter through pipe conveyor (crossing the Bhedan river) up to the power plant (about 900 m).

xxv. The location of water intake and the tentative pipeline route from the intake pump house up to the power plant has been submitted in the EIA report. Water Resource Department (DoWR) shall make the site visit shortly and finalise the intake point and final route layout.

xxvi. Cost Breakup of FGD and other pollution control measures of EMP plan has been revised and submitted in the EIA report.

Sl.No.	Description	Capital Cost (Rs. in Crores)	Recurring cost (Rs. in Crores)
1	Greenbelt/Horticulture	5	0.05
2	Rain Water Harvesting	2	0.02
3	Municipal Waste Management (STP)	2	0.03
4	Ash Disposal	150	1.5
5	Environmental Monitoring	6	0.1

6	Water Management including ETP including RO for ZLD	20	0.2
7	Air Pollution Control -ESP	120	1.2
8	Air Pollution Control –SCR	264	2.64
9	Air Pollution Control –FGD	800	0.08
10	Air Pollution Control -Chimney	66	0.7
11	Dust suppression system	2	0.02
12	PT Plant	35	0.4
13	DM Plant	25	0.03
14	Environmental Awareness & Training	3	0.03
Total		1500 (9.3% of project cost)	7

xxvii. The Water Balance Diagram (WBD) included in the EIA report take into account the consumption of water for wet limestone based FGD as per MoEF norms.

xxviii. Make up water requirement for this project would be about 7200 m^3/h with ash water recirculation system and about 9150 m^3/h with once through ash water system. This project is planned on zero discharge of water concept. The water is proposed to be drawn from Hirakund reservoir at a point near the intake location of M/s Bhushan Steel and Power Ltd, at a distance of about 20 km. Makeup water from the source will be pumped to an in-plant raw water reservoir having storage capacity of about 10 days to take care of emergencies. Presently, Induced Draft Cooling Towers (IDCT) has been proposed for the project.

xxix. Limestone storage and handling system and Gypsum storage and handling system area is earmarked in the plant layout. Marketing of Gypsum will be employed for Management of gypsum, and excess if any, will be backfilled in mine voids.

xxx. Ministry of Coal vide letter dated 12.1.2018 confirmed that Talabira II and III mines are allocated for proposed power project as well as another power project located in Tuticorin, Tamil Nadu.

xxxi. The ambient data monitoring carried out at the project site takes care of the present pollution loading in the project area. The proposed project is envisaged to adopt supercritical parameters and installation of FGD, SCR, High Efficiency ESP, Green Belt, Dust Supression/Extraction systems to prevent air pollution, Zero Liquid Discharge (ZLD) is proposed to prevent water pollution. Accordingly, even though the project is located in Anugul-Talcher Critically polluted area, the

proposed pollution control measures will ensure the impact from the project is minimum.

xxxii. Regarding NOC from DFO Jharsuguda, concerned Ranger visited the site and submitted the report to DFO. The NOC will be obtained within three months.

xxxiii. As part of the Public Hearing commitments, a total of Rs. 40.18 Crores has been allocated to fulfill the commitments made during public hearing for uplifting the socio-economic status of surrounding and affected villages.

S.No.	Activities	1st year	2nd year	3rd year	4th year	5th year	Total Cost Rs. in Lakhs
1	Infrastructure Development (Roads, class rooms, tanks, solar, electrical facilities)	700	600	500	500	400	2700
2	Education/skill development	-	-	200	-	100	300
3	Drinking water supply		200			70	270
4	Sanitation	50	50	50	50	50	250
5	Health	100	100	100	100	100	500
Total		850	950	850	650	720	**Rs.40.20 Crores**

(1.3.4) Committee noted that several recommendations made by the sub-committee have not been addressed. Further, some of the issues raised by the EAC in its meeting on 10.4.2020 have not been adequately replied by the Project Proponent. The following are the issues deliberated by the committee:

i. The main issue among these is the location of ash pond in the HFL area adjacent (200 m) to Bhedan River which may cause breach of ash pond in case of high floods. Further, the proposed ash pond has human settlements on Northern and southern side. Proponent agreed to re-align the boundaries so that villages in North may not be disturbed. However, Southern settlements require rehabilitation. Further, a natural drain (nallah) is passing through proposed ash pond. Sub-committee recommended for not disturbing Nallah. However, proponent proposed to divert the nallah on southern boundary of the Ash pond. As per the Hydrogeological report prepared by NIH, the maximum inundation after 50 year and 100 years return flood shows that more than 70% of the proposed ash pond area gets inundated. Committee suggested that the ash

pond may be shifted to a suitable location closer to Talabira coal mines so that the same ash can be disposed into the mine void with overburden material as part of internal dumping / backfilling scheme. This would also ensure maximum utilization of ash. Else, proponent may redraw the ash pond boundaries after eliminating the villages, natural drain, distance of 500 m HFL of Bhedan river. Option of dry ash disposal preferably near Talabira mines may also be explored as the hydraulic pressure in the ash pond proposed adjacent to Bhedan River will pose a threat for breaching, if slurry disposal is considered.

ii. The incremental concentrations from the stack emissions were predicted as 0.8 $\mu g/m^3$, 2.73 $\mu g/m^3$ and 2.73 $\mu g/m^3$ for PM, SO_2 and NOx concentrations, respectively.

iii. The clarity on water availability and requirement is needed. Make up water requirement for this project would be about 7200 m^3/h with ash water recirculation system and about 9150 m^3/h with once through ash water system. The actual water requirement including ash water recirculation system, FGD shall be clarified. Further water source sustainability study was sought. However, proponent only replied that Water Resource Department has allocated 90 cusecs water for the proposed project. Water availability after taking the in-stream users, irrigation, other industrial uses, ecological needs in to consideration, shall be arrived for the proposed project.

iv. The justification for showing 17% greenbelt (252 acres) of the total project area (1447 acres) as more than 33% is not convincing. Project Proponent is considering the plant area as 690 acres (excluding water reservoir) out of which 33% is shown as 227 acres and the proposed greenbelt of 252 acres is shown as more than 33%. However, this logic is not convincing to the committee. The 33% greenbelt of the total project area is to be taken into consideration including all facilities used for the project. Further, inlight of Ministry's OM dated 31.10.2019, the mechanism to deal with projects in Critically Polluted areas stipulated 40% greenbelt instead of 33%. As the project is in Ib valley critically polluted area, the extent of greenbelt needs to be increased in line with the OM.

v. NOC from DFO Jharsuguda regarding impact on surrounding forests and wildlife is to be submitted.

vi. Mercury concentrations in the coal, emissions and control measures to be provided.

vii. SIA for Jharsuguda District was carried out. But for Sambalpur district is yet to be conducted. The plan for Skill development should be in line with the SIA carried out.

(1.3.5) Further, **Committee members opined the requirement of the following:**

The location of ash dyke to be shifted away from Bhedan river, ash utilization program to be indicated with proper tie up. An embankment to be made along the river, which is to be designed through a reputed agency/institute. Greenbelt to be developed between river and ash dyke. Ash dyke design to be done through a reputed agency. High concentration flyash disposal to be made. NLCIL will identify a mine void for discharging high concentration slurry Bottom ash to be used as a construction material a substitute of sand. Fly ash shall be utilized for different purposes as per the Fly Ash Notification. **After detailed deliberations deferred the proposal for seeking clarification on issues as per para 1.3.4 above.**

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(1.4) 1x800 MW Coal Based Supercritical Thermal Power Plant and Decommissioning of 2x120 MW Units at Ukai Thermal Power Plant at Vill. Vagda, Tehsil–Fort Songadh, District-Tapi, Gujarat by M/s Gujarat State Electricity Corporation Limited (GSECL)- reg. Environment Clearance. (F.No.J-13012/4/2018-IA.I(T) & Online No. IA/GJ/THE/144074/2018)

(1.4.1) Project Proponent has submitted online application on 19.2.2020 for grant of Environmental Clearance to establish 1x800 MW Thermal Power Project within the premises of existing units 2x200 MW, 1x210 MW and 1x500 MW.

(1.4.2) The proposal was earlier considered by the EAC in its meeting held on 10.4.2020 and the committee deferred the proposal for seeking information on following aspects:

i. The air quality predictions have been estimated only by considering the emissions from the proposed project. However, the emission load from the existing units has not been considered for assessing the cumulative impacts.
ii. The ultimate pollution load from each unit with full pollution controls (ESP & FGD, De-NO_X systems) and with partial control measures (only ESP) shall be estimated. Subsequently, the cumulative pollution load and its impact on environment is to be predicted.
iii. Environmental Management Plan (EMP) and its cost does not provide breakup of FGD and other pollution control. Water consumption in the FGD, in case of wet lime dosing, and management of gypsum including its land requirement shall be provided in the EIA report.
iv. The results of thermal dilution study shall be submitted to assess whether the there is any impact of temperature of cooling water discharge on agriculture fields dependent on canal irrigation.
v. 33% greenbelt area is to be mapped for the total project area including existing units.
vi. The action plan for public hearing issues such as air pollution from air borne ash of ash pond, transfer of land plots in their name for rehabilitated colony, employment to tribal, etc.
vii. The time lines along with budgetary allocations for installing FGD for existing plants. Water consumption in the FGD, in case ofwet lime dosing, and management of gypsum including its land requirement shall be provided in the EIA report.
viii. Extension given to implement pollution control measures to meet revised emission norms and water consumption norms by CPCB, if any.

ix. The possibility directly using cooling water discharge (once through cooling system) for the proposed project. This will avoid taking additional fresh water from Ukai canal and discharge of hot cooling water (once through system) from existing power plants. Action plan in this regard is to be submitted.
x. The Regional Office compliance report shows several partial compliance such as stack emissions exceeding the standard, effluent release into natural drain, no garland drain around the coal stock yard, no settling pond near ash pond, housekeeping, etc. An action plan to achieve compliance of these conditions is to be provided.
xi. Ash generation, Ash utilisation vis-a-vis 100% utilisation as per Ministry's fly ash notification during last five years.

(1.4.3) Project Proponent submitted the information as sought by the EAC on 10th July, 2020. Accordingly, the proposal has been placed before the EAC. Project Proponent along with Environment Consultants M/s Mantec Consultants Pvt. Ltd. have made the presentation inter-alia furnished the following information:

i. The emission load from the existing units have already been reflected in the base line ambient air quality monitoring carried out by Accredited EIA consultant during March to May 2018. During that period of monitoring, mostly all four units (unit 3, 4, 5 and 6 of Ukai TPS) were in running condition. This is the case of expansion by addition of 1x800 MW unit to existing 4 units of Ukai TPS.

ii. Existing load of emission from existing units was already considered in base line. However, emission load for existing units was calculated as per EAC requirement. The pollution load from existing units (Unit- 3& 4: 2x200 MW; Unit- 5: 210 MW, Unit-6: 500 MW) with present pollution control measures (with ESP, No FGD, No NO_X control measures) is PM: 9.66 Tons/day (112 g/sec), SO_2: 146.8 Tons/day (1699 g/sec), NO_X: 57.37 Tons/day (664 g/sec) which is getting released into atmosphere.

Parameter	Existing Power Plants with present pollution controls (with ESP, without FGD & NOx controls)	Proposed Power Project with all pollution control measures (ESP, FGD & De-NOx control) considering the compliance of latest emission norms.	Total emission load
Plant/ capacity	Unit- 3& 4: 2x200 MW; Unit- 5: 210 MW, Unit-6: 500 MW (Total:1110 MW)	Proposed Unit-7: 800 MW	Total: 1910 MW
PM	9.66 Tons/day (112 g/sec)	2.35 Tons/day (27.2 g/sec)	12.01 Tons/day (139.2 g/sec)

SO_2	146.8 Tons/day (1699 g/sec)	7.93 Tons/day (91.8 g/sec)	154.73 Tons/day (1790.8 g/sec)
NOx	57.37 Tons/day (664 g/sec)	7.93 Tons/day 91.8 g/sec	154.73 Tons/day (1790.8 g/sec)

iii. The incremental concentrations have been predicted by using plume dispersion modelling for the above mentioned scenario. The incremental concentrations for are as below:

Pollutant	Maximum AAQ Concentrations Recorded During the Study ($\mu g/m^3$)	Maximum Incremental GLC ($\mu g/m^3$)	Cumulative GLC ($\mu g/m^3$)
SO_2	18	56.99	74.99
NOx	26	24.30	50.30
PM	88	4.93	92.93

iv. The incremental concentrations have also been predicted for other scenario where all existing units are also equipped with FGD, De-NOx control measures and meeting emission norms given in the Notification dated 07.12.2015. The predicted concentrations are as below:

Pollutant	Maximum AAQ Concentrations Recorded During the Study ($\mu g/m^3$)	Maximum Incremental GLC ($\mu g/m^3$)	Cumulative GLC ($\mu g/m^3$)
SO_2	18	39.31	57.31
NOx	26	38.48	64.40
PM	88	7.24	95.24

v. Since, the stack height is reduced, the maximum incremental GLC in case of NOx and PM are relatively higher than the predicted values.

vi. The Environment Management Plan (EMP) cost includes the FGD and other pollution control system. The break-up of EMP is provided as below:

S. No.	**Item**	**Cost, Crore Rs.**		
		Capital	**Recurring**	**Total**
1.	Electrostatic Precipitator	70.45	2.17	72.62

2.	FGD &De-NOx systems	322.00	35.00	357.00
3.	Chimney	45.09	0.50	45.59
4.	Cooling Tower incl. civil works	64.53	0.65	65.18
5.	Ash Handling	224.53	4.49	229.02
6.	Ash Dyke	47.67	0.95	48.62
7.	ETP for Zero Liquid Discharge	50.90	1.01	51.91
8.	Dust Extraction & Suppression System	5.00	0.30	5.30
9.	DM Plant Waste Treatment System	5.00	0.10	5.10
10.	Sewerage Collection, Treatment & Disposal	4.00	1.33	5.33
11.	Environmental Lab Equipment	1.50	0.15	1.65
12.	Green Belt, Afforestation & Landscaping	5.00	0.24	5.24
13.	Rainwater Harvesting System	1.20	0.51	1.71
TOTAL		**799.20**	**47.40**	**846.60**

vii. Water consumption in FGD for 800 MW unit shall be 171 m^3/h, in case of wet lime dosing and this shall be met with through treated effluent from ETP. Quantity of gypsum generation from the FGD unit will in the range of 40-45 T/h. The Gypsum shall be dried, and disposed through sale to users like cement industry, land correction, etc. Intermediate storage shall be done at Gypsum storage shed in the plant.

viii. Based on the thermal dispersion modeling studies it is observed and concluded that the discharged cooling water from the thermal plant gets normal ambient temperature within downstream flow of 1.55 km from the proposed outfall location. Hence, there is no change in canal waters beyond 1.55 km from outfall location. Since, no change observed in the water qualities after 1.55 km in the downstream, the canal water can be used for agricultural purpose.

ix. The total area of the project including existing units, proposed unit & ash dykes is 285.49 ha. The 33% greenbelt of 285.49 ha would be 94.21 ha. Total existing plantation area is 37.56 ha. Total proposed plantation area in proposed project area is 11.88 ha. Remaining 44.77 ha area for plantation has been proposed in Villages Dumda, Ukai, Nanikhervan. Consent was obtained from respective Gram Panchayats.

x. Regarding Air pollution from air borne ash raised in the public hearing, an agency was appointed for water sprinkling through tankers on haul road to arrest air borne dust. Work has started on 26.11.2018. Further, the plantation (13750 plants) on the periphery of ash pond is being done through Forest Dept. Agency was appointed to develop 1.6 km. Pukka Road on the canal bank for controlling fugitive dust during vehicle movement up to Ash dyke area. Utilisation of ash dyke- B, C & D is carried out in rotation & Water sprinkling is carried out during ash lifting operation accordingly so that the dry ash is not spread away. Part of

the treated water from proposed ZLD scheme will also be utilised for continuous sprinkling on the ash dyke.

xi. Regarding Transfer of land raised in the public hearing, the land has been allotted to GSECL Ukai TPS on the basis of the compensation deposited with the Government as per the prevalent rules and regulations at the time of land acquisition. Land acquisition was carried out as per legal rules, regulations and after mutual agreement and acceptance of nearby Villagers at the time of establishment of Ukai Thermal Power Plant.

xii. Regarding employment issue raised in the public hearing, the unit is providing employment to people based on their educational qualifications and as per the rules and regulations of Gujarat Government. Employment preference is being given to local population and will follow government rules and regulations. At present out of the total permanent employees at Ukai TPS, 43.54% are locally employed. 90.55% of contract labourers are also local persons. Same trend will be adhered to in the future employment.

xiii. As part of Public Hearing commitment to improve the livelihood and socio-economic conditions of the surrounding and affected villages, the infrastructure development such as renovation of school building, playground, road development, causeway construction on Ghodakhadi, building of computer lab, class rooms, mid-day meal hall, hostel rooms and bathroom, compound wall, etc.; eye check-up camps, providing school bag kit, primary education, etc. will be taken up. After the Public hearing, medical check-up camps were arranged by GSECL in the nearby villages like Vagda, Dumda, Nanikhervan, & Motikhervan during September 2019 at the total expense of Rs.60,000/-.

xiv. The Timelines for installing FGD for units # 3, 4, & 5 is December 2021 and for Unit 6 of Ukai TPS is March 2022.

xv. As per the DPR, Water consumption in FGD of unit 3, 4 & 5 shall be @ 122 m^3/h, while that for unit 6 shall be @ 150 m^3/h, in case of wet lime dosing.

xvi. Draft Tender for FGD installation in old units 3,4 & 5 of Ukai TPS received and is under Scrutiny. EPC tender for FGD in unit-6 of Ukai TPS will be re-invited soon. However, the same can be delayed on account of Covid-19 pandemic.

xvii. CPCB has given the timeline of June 2022 for installing the cooling Towers in place of Once Through Cooling system in unit 3, 4, 5 of Ukai TPS. However, GSECL has requested MoEF&CC and CPCB to grant exemption from providing Cooling towers considering the age of units and space constraints.

xviii. In case of OTC system, the water loss is @ 1%, whereas in case of closed cycle system, (i.e. cooling tower) it is @ 1.5 to 1.7% of the CW flow.

xix. Regarding the possibility of using cooling water discharge for the proposed project, the consumption of Water for proposed 800 MW unit will be only make up water of 1900 m^3/h, in line with methodology of cooling being implemented in existing unit no-6 having capacity of 500 MW. Recently in 2017, 100% civil lining work of irrigation canal is carried out by GSECL, incurring huge expenses, and GSECL is stake holder of Ukai hydro power plant and power block of DAM,

regularly spending considerable expenses on maintaining the same through irrigation department of Government of Gujarat.

xx. It is proposed to install a closed re-circulating cooling water system using Natural draft cooling towers, with 9°C temperature rise across the condenser. It is envisaged to design the system for five (5) cycles of concentration (CoC). Clarified water shall be used in closed recirculating cooling water system. With 28°C Design Wet Bulb Temperature, the optimum Cooling Water temperature which can be achieved is 33°C.

xxi. The cooling water discharge (OTC system) temperature shall be higher by 5-9°C as compared to the intake temperature from the Left Bank Main canal. This water gets normalized up to 1.55 km from the discharge point. If the cooling water discharge of OTC system is used for the proposed 1x800 MW project, it will directly affect the cooling system performance. Further, to use the water with higher temperature, very big size cooling system shall be required, which is techno-economically not feasible.

xxii. Regarding non-compliances highlighted by the Regional Office, stack emissions exceeding the standard, effluent release into natural drain, no garland drain around the coal stock yard, no settling pond near ash pond, housekeeping, the following measures were taken to control pollution:

a. High efficiency Electrostatic Precipitator is provided for unit no. 6 with Collection efficiency of 99.897%. ESP up-gradation work of unit No. 3 to 5 is completed & PM norms were achieved in all units

b. As per directive of CPCB, timelines for implementation of FGD to meet SO_2 norms in old units 3, 4 & 5 is December 2021 & Unit 6 is March 2022. Draft Tender for FGD installation in old units received and is under Scrutiny. EPC tender for FGD in unit 6 of Ukai TPS will be re-invited soon. However, the same can be delayed on account of COVID-19 pandemic.

c. The Over Fire Air (OFA) and Lower Over Fire Air (LOFA) System is provided in unit 6 for reduction of NOx emission.

d. Work order issued for Consultancy work for ash water recirculation and establishing ZLD scheme to M/s Radical Engineering, Vadodara vide dated 24.01.2019. Survey work completed and DPR is received on 10.01.2020. After implementation of this scheme, the effluent release into natural drain will be zero. The same can be delayed on account of COVID-19 pandemic.

e. Construction work of coal settling tank has been completed. Has been advertised for providing both sides drain of coal stacker & reclaimer in coal plant. Technical bid was opened on 18.06.2020.

f. For improvement of housekeeping in the plant, scrap & usable material is segregated by concerned section. Scrap collected & credited to store section by concerned section as per scrap lifting work. Scrap management is in place. Further, Work order was issued for painting to steel structure and work started from 12.12.2019.

xxiii. The ash generation vis-à-vis utilization for the existing power plant is given as below:

Year	Ash generation in Tons	Ash utilisation in Tons	% of ash utilisation
2015-16	1257297	1010955	79.45
2016-17	1195325	1058145	88.52
2017-18	1404886	1065143	75.82
2018-19	1311946	1081131	82.41
2019-20	1355128	1156495	85.34

(1.4.4) Committee took note of the assumption made by consultant that the pollution load of emissions from existing units was already considered in base line data. For example, the baseline data of PM: 88 μg/m^3, SO_2: 18 μg/m^3, NO_X: 26 μg/m^3 mentioned by the proponent was measured during March-May, 2018. The details of baseline and the present emission load are mentioned as below for reference:

Parameter	Baseline during March-May, 2018	Emissions (Tons/day) from 1110 MW operational plant	The total emissions from the power plant since June, 2018 till June, 2020 (750 days)
PM	88 μg/m^3	9.66 Tons/day	750x9.66=7,245 tons
SO_2	18 μg/m^3	146.8 Tons/day	750x146.8=1,10,100 tons
NO_X	26 μg/m^3	57.37 Tons/day	750x57.37=43,027 tons

The baseline data collected during March-May, 2018 for SO_2 is 18 μg/m^3. However, during the last 750 days since May, 2018, the power plant contributed 1,10,100 Tons SO_2 into the atmosphere. Committee is of the opinion that irrespective of the baseline data, the total emission load from the power plant (operating and proposed) is essential to understand the impact of the project on environment. The assumption that pollution from existing plant is already added to the baseline may be true to some extent, but to understand the total pollution load from the power plant (operational and proposed), cumulative load is to be estimated.

Further, the consultant in the prediction of incremental concentrations of emission has shown the baseline data of PM: 88 μg/m^3, NO_X: 26 μg/m^3, SO_2: 18 μg/m^3 which was collected during March-May, 2018. The final resultant concentrations (baseline + incremental) were compared to the 24 hourly emission standards. However, the present plant being the operational power plant, the continuous air quality monitoring is collected at several places. In case of expansion projects, air quality monitoring for 104 measurements/year needs to be collected and the annual average is to be estimated. In line with the ToR condition No. xlv, project proponent estimated annual averages of air quality during the year 2017-18. The annual average values at 4 locations are as below:

Parameter	Location-1: Near C.W. Pump house	Location-2: Near LDO Pump House	Location-3: Near Hostel, GSECL Colony	Location-4: AT Store
PM_{10} (µg/m^3)	73	72.92	57.75	74.75
$PM_{2.5}$ (µg/m^3)	27.2	27.7	18.8	26.3
SO_2 (µg/m^3)	21	24.5	17.5	25.1
NOx (µg/m^3)	20.6	21.6	17.4	19.9

From the annual average values of baseline data, PM_{10} values are exceeding the annual standard at several locations, let alone the incremental concentrations. Committee noted that the action plan to bring it below the annual standards is to be submitted by the project proponent and the Gujarat Pollution Control Board should monitor the action plan and the ambient air quality to bring it below the standards.

Committee noted that the existing power plants were given timelines by CPCB to install Flue Gas Desulphurisation Units and meet new emission norms. Further, installation of cooling towers and switching from once through cooling systems to closed system is yet to be done for 2x200 MW and 1x210 MW. Proponent mentioned that they have requested MoEF&CC/CPCB to exempt from installing cooling towers. Further, proponent mentioned that CEA has recently visited the site and a report is awaited on phasing out of existing units as these are very old units. Ministry may look into it. Fly ash utilisation is in the order of 75-88%. However, Proponent needs to achieve 100% utilisation target as per the Fly Ash Notification.

(1.4.5) **Committee after detailed deliberations, recommended for grant of Environmental Clearance** and following additional conditions are stipulated for compliance in addition to the Standard EC conditions for Thermal Power Plants:

i. From the annual average values of baseline data, PM_{10} values are exceeding the annual standard at several locations. An action plan to bring it below the annual standards is to be submitted by the project proponent and the Gujarat State Pollution Control Board should monitor the action plan and the ambient air quality to bring it below the standards.
ii. As the FGD cannot be installed within the timeline given by CPCB, necessary permission shall be obtain once again as to which date the FGD could be installed to meet the new norms.
iii. The stack emissions of PM: 30 mg/Nm^3, SO_2: 100 mg/Nm^3, NOx: 100 µg/Nm^3, Hg: 0.03 mg/Nm^3 shall be complied with. The emission reporting shall be submitted in the compliance report.
iv. The emission norms for the existing power plants as applicable inline with Ministry's Notification dated 07.12.2015 shall be complied with. The status of implementation and the current emission norms to be reported. Plant is not allowed to operate without meeting emission norms, unless an extension of timelines for implementation is granted by CPCB/MoEF&CC.
v. As the proposed 800 MW unit will be built on existing ash pond, the stability of the structure shall also be ensured.

vi. The implementation status of action plan furnished to the observations of the sub-committee such as a) Ash water recirculation system for existing ash ponds and treatment & reuse, b) Municipal Solid waste and hazardous waste and segregation & disposal, c) installation of Vermi composting plant, d) Removal of dry flyash along the roads and embankment & stabilization with vegetation, e) Continuous flow meters at intake & discharge points for cooling water, f) air quality monitoring in the village near Ash pond, g) continuous online ambient air quality monitoring stations both at Plant & Township, and h) Water quality monitoring in the upstream and downstream of Ukai canal, shall be submitted in the compliance report.

vii. Daily average and annual consumption of quantities of Coal consumption and water consumption shall be provided.

viii. ZLD of the plant shall be complied as per the notification dated 07.12.2020 of MoEFCC.

ix. The daily average and monthly quantities of flyash (including bottom ash) generation, utilisation and disposal of unutilised ash including percentages against the target as given in the flyash Notification shall be submitted.

x. No additional ash pond is permitted. Existing ash ponds shall be used to store the unutilised ash pond.

xi. The status of ash ponds such as volume availability, amount of flyash filled, stability of the dyke, greenbelt around the ash dyke, remaining life of ash pond, reclamation plan after its life shall be submitted.

xii. High Concentrated Slurry Disposal System, ash water recirculation system shall be installed for disposal of unutilised ash.

xiii. As proposed Cost of EMP Rs.799.2 crores as capital cost, Rs.47.40 Crores as recurring cost shall be spent to implement environment pollution control measures.

xiv. As proposed, Rs. 12.78 Crores (0.25% of the project cost) has been earmarked for fulfilling the public hearing commitments and for uplifting the socio-economic conditions of the surrounding and affected villages as part of Corporate Environment Responsibility. The progress of implementation is to be submitted.

xv. The 33% of the project area (285.49 ha) would be 94.21 ha. As proposed, 49.44 ha greenbelt is to be developed within the plant area. Due to paucity of land, the remaining 44.77 ha greenbelt is to be developed in Villages Dumda, Ukai, Nanikhervan so that the objective of 33% greenbelt development is achieved.

(1.5) Expansion of existing 2x150 MW TPP by installation of 185 MW (165+20 MW) Imported coal based Thermal Power Plant at Meramundali, Dist. Dhenkanal, Odisha by M/s Bhushan Steel Energy Ltd.- amendment in Environmental Clearance for change in coal source.
(File No. J-13012/78/2011-IA.II(T) & Online No. IA/OR/THE/163319/2020)

(1.5.1) M/s Angul Energy Ltd. (Subsidiary of M/s Tata Steel BSL Ltd.) vide online application dated 13.07.2020 requested for amendment in Environmental Clearance dated 12.2.2015 for change in coal source from imported to domestic coal.

(1.5.2) The Environmental Clearance for establishing 185 MW captive power plant in Dist. Dhenkanal, Odisha was issued to M/s Bhushan Energy Ltd. vide Ministry's letter dated 13.7.2015. Application for transfer of EC from M/s Bhushan Energy Ltd. to M/s Angul Energy Ltd. was submitted to the Ministry on 9th June, 2020 which is under consideration by the Ministry.

(1.5.3) Committee noted that the EC transfer application is under consideration by the Ministry which is an administrative matter and does not come under the purview of EAC. Committee allowed the presentation by the new proponent subject to the EC transfer by the Ministry. M/s Angul Energy Ltd. (a subsidiary of M/s Tata Steel BSL Ltd.) made the presentation and *inter-alia* submitted the following information:

i. As per EIA Notification, 2006, the thermal power projects of capacity <500 MW fall under category "B" and requires EC to be granted by the State Environment Impact Assessment Authority (SEIAA). However, as the present project was coming under Odapada Block of Dhenkanal district, Odisha, which was under Anugul-Talcher Critically Polluted as per CEPI of 2012. Accordingly, it was considered as Category "A" project and the EC was granted by MoEF.

ii. Tata Steel BSL Steel Limited (TSBSL), a subsidiary Company of Tata Steel Limited successfully completed acquisition of Bhushan Energy Limited (BEL) on 30th May, 2019 under the Corporate Insolvency Resolution Process of Insolvency and Bankruptcy Code 2016.

iii. Subsequent to acquisition, Bhushan Energy Limited has been renamed as Angul Energy Limited, following an approval from Govt. of India for name change w.e.f. 27th February, 2020.

iv. After name change, application has been submitted to MoEF&CC for change of name of Bhushan Energy Limited to Angul Energy Limited and transfer of 485 (300 + 185) MW EC vide proposal No. IA/OR/THE/156851/2020, dated 9th June, 2020 which is under consideration.

v. Post-acquisition of the Company, the new management is working on performance improvement including pollution control equipment and facilities. Multiple initiatives to reduce pollution load and carbon footprint have been identified, those are at various stages of implementation.

vi. The Environmental Clearance was granted based on Imported coal (Indonesia) with ash and Sulphur content 6% and 0.3%, respectively and Washery rejects.

vii. Indonesian coal contains very high percentage of moisture (30-40%) which leads to lower overall efficiency of the system. This additionally manifests in handling and feeding of coal during monsoon seasons. Long storage of Indonesian coal leads to issues of self-ignition & fire. Sourcing of Indonesian coal restricts use of options available domestically & requires maintaining a minimum of 60 days stock level to account for supply chain disruptions.

viii. Foreign exchange expenditure is incurred on commodity which is available in the country. Moreover, cost of Indonesian coal (1.15-1.20 Rs./GCV) is significantly higher than domestic coal cost (0.8 Rs./GCV).

ix. As on date only 165 MW CFBC boiler was installed and the remaining 20 MW could not be installed.

x. The domestic coal requirement is 1.6 MTPA with Ash content 45-50%, Sulphur: 0.4 - 0.5%, Moisture: 10-15%, GCV: 2800 - 3200 kcal/Kg.

xi. The domestic coal has been planned to be sourced from the raw material yard of Tata Steel BSL Limited (TSBSL) which is just 1 km from the thermal power plant (TPP). From the yard it will be conveyed to the boilers by conveyers. However, Tata Steel BSL Limited sources coal from MCL mines, Talcher from distance 27 km. The preferred mode of transport is by rail, however depending on the rake availability and railway siding issues, Coal could also be transported by road. It is to be noted that State govt. of Odisha is also planning for a dedicated Angul - Talcher-Chhendipada Common railway corridor project in partnership with railways. The common corridor will support 10 coal blocks operating in Talcher coalfields under the command area of Mahanadi Coal fields limited & 55 Industries including steel plants & power projects would be benefitted by this project.

xii. The company is planning to get some coal mines as captive source for the Thermal Power plant by participating in auction of coal blocks and based on the location of the mine, the coal is envisaged to be sourced preferably by rail or by road.

xiii. The ash generation from the Imported coal and domestic scenarios is given as below:

Type of coal	Fly ash	Bottom ash	Total
Imported coal	80,000 TPA	40,000 TPA	1,20,000 TPA
Domestic Coal	5,40,000 TPA	2,30,000 TPA	7,70,000 TPA

xiv. 100% flyash utilization has been planned for road construction, brick & paver block making, use in Cement Plants etc. At present, unutilized ash is disposed in the ash pond area of 5 acres. The same will be used in case of disposal of unutilized ash.

xv. The Boiler is based on CFBC technology which has inherent lime dosing.

Accordingly, the power plant is complying with the emission norms. The status of emissions are given as below:

Parameter	Emissions	Standard (power plants installed between January, 2003 and December, 2016)

PM	30.5 mg/Nm^3	50 mg/Nm^3
SO_2	594 mg/Nm^3	600 mg/Nm^3
NOx	96.1 mg/Nm^3	300 mg/Nm^3
Hg	0.022 mg/Nm^3	0.03 mg/Nm^3

(1.5.4) Committee noted that the project proponent has established 165 MW out of total sanctioned capacity of 185 MW under EC dated 12.2.2015. Further, by switching from imported coal to domestic coal, only ash generation will increase. Proponent has committed that 100% ash utilisation will be achieved. At present, it was informed that 5 acres of ash pond was already constructed and used for disposal of unutilised ash. Committee will not permit additional ash pond owing to increase in ash generation due to domestic coal. M/s Angul Energy Ltd. has agreed to this. Further, the plant is complying with the new emission norms. However, the Environmental Clearance has not stipulated new emission norms as these norms were notified subsequent to the EC grant. Further, Ministry of Power vide letter dated 28.4.2020 is encouraging all power plants to switch over to domestic coal to reduce dependency on imported coal.

(1.5.5) Committee after detailed deliberations recommended change in coal source from imported to domestic coal subject to the transfer of EC to M/s. Angul Energy Ltd and with the following additional conditions:

i. Increase in ash generation due to change in coal source from imported to domestic coal shall be utilised 100% as per the targets provided in the Flyash Notification. Ash generation, utilisation, disposal along with the target achieved (percentage utilisation) annually shall be submitted in the compliance report. Mercury in the coal to be analysed and submitted.

ii. The ash pond of 5 acres of ash pond was already constructed for disposing unutilised ash. No additional land is permitted for ash pond owing to increase in ash generation. PP should take proper implementation measures for control of fugitive dust during storage, handling and transport flyash.

iii. The emissions from the flue gases and chimney shall meet the standard of PM: 50 mg/Nm^3, SO_2: 600 mg/Nm^3, NOx: 300 mg/Nm^3, Hg: 0.03 mg/Nm^3 as per the Ministry's Notification dated 07.12.2015. Emission reporting shall be submitted in the compliance report.

iv. The coal transportation shall be carried out by rail as far as possible. In case, the rail/conveyor belt infrastructure is not available, road transportation may be done with tarpaulin covered trucks. The coal transportation and the ash content in the coal are governed by the Ministry's Notification dated 21.05.2020.

(1.6) 2x800 MW Udangadi Super Critical Imported Coal Based TPP at village Udangudi, in Thiruchendur Taluk, Thoothukudi district, Tamil Nadu by M/s. Udangudi Power Corporation Ltd.- extension of validity of Environmental Clearance.
(File No. J-13012/19/2008-IA.II (T) & Online No. IA/TN/THE/164027/2020)

(1.6.1) Project Proponent vide online application dated 18.07.2020 requested for extension of validity of Environmental Clearance dated 14.10.2013 for further period of 3 years.

(1.6.2) Project proponent has made the presentation inter-alia submitted the following information:

i. The Environmental Clearance for setting up of 2x800 MW Udangadi Super Critical Imported Coal Based Thermal Power Plant in Thiruchendur Taluk of Thoothukudi district, Tamil Nadu was accorded vide Ministry's dated 14.10.2013.

ii. Subsequently, the project capacity has been revised form 2x800 MW to 2x660 MW vide Ministry's amendment letter dated 26.4.2017. The Environmental Clearance is valid for seven years, i.e. till 13.10.2020.

iii. The land requirement for the project is 939 acres. Government of Tamil Nadu has alienated about 305.311 Ha for Power Plant and 1.2355 Ha for cooling water corridor totalling 306.5455 Ha (757.47 acres). G.O No.31, dt.22.3.2010 has been issued for acquisition of Patta lands of 114.75.5 Ha (283 acres)

iv. Government Poramboke Lands have been alienated and boundary marked

v. W.r.t. acquisition of Private Land, Gazette Notification has been issued under 3(2) and 3(1) clauses of the Tamil Nadu Industrial Purposes Act. The District Collector has issued enter upon permission on 7.8.2013. Compensation amount for private lands have been deposited. The break-up of land for the project facilities is given as below:

Sl.No.	Description	Land required for 2x660 MW (Acres)
1.	Main Plant, Transformer Yard, Switch yard and FGD	65
2.	Coal Yard	65
3.	Cooling water system	43
4.	Fuel Oil system	4.2
5.	Water system including Chlorination system	19.23
6.	Ash Dyke	120
7.	Administration building and other Non-plant buildings	11.66
8.	Miscellaneous such as Corridor for CW piping, Ash piping, Intake & outfall, Silo & its utility building, Workshop, Stores, Roads etc.,	198.1
9.	Green Belt	412.81 (about 44% of total area)

10.	Total	939

vi. Coal requirement is 3.87 MTPA with GCV 5700 kcal/kg based on imported coal. TANGEDCO has entered into a MOU dt.19.11.2012 with MMTC for supply of 4.5 Million Tonnes per Annum of imported coal from Indonesia. Water requirement is 13,790 m^3/h is to be sourced from Bay of Bengal through pipeline. Desalination Plant with capacity of 16 mld is proposed

vii. In order to establish the Project under single EPC (Engineering-Procurement-Construction) cum Debt Financing Basis, TANGEDCO floated International Competitive Bidding and opened the tenders on 19.7.2013. After detailed tender analysis, as it was noted that the bids suffered deficiencies and infirmities, TANGEDCO decided on 13.3.2015 to lodge the tender and call for fresh tender under single EPC and without Debt Financing.

viii. Meanwhile, one of the bidders of the previous tender, challenged the lodging of Tender in the Hon'ble High Court of Madras and stayed for floating of fresh tenders. TANGEDCO filed writ appeal to vacate the stay. The Hon'ble High Court of Chennai passed orders on 30.10.2015, allowing TANGEDCO to process the fresh tender. The fresh tender has been opened on 15.12.2015. The work was awarded to M/s BHEL.

ix. Physical progress of Main Plant Area (Boiler, ESP, Chimney, NDCT, Power House Building etc.,) & Non Plant Area (Compound Wall, Site Grading, Sea water intake and outfall structures , CW pipe lines etc.,) achieved up to 39%.

x. The amount of Rs.7,359 Crores has been spent till date towards project of the construction, out total revised project cost of Rs.13076.705 Crores.

xi. Further, the funds have been earmarked for FGD installation to meet revised emission norm. At present, quotations have been received and the evaluation of techno-commercial bids is under process. It is expected to place the orders by October, 2020.

xii. The completion of project construction activities and the COD of first unit is expected by May, 2023. The COD of second unit is expected by June, 2023.

(1.6.3) Committee noted that the EC was issued to M/s Udangudi Power Corporation Ltd. (UPCL) which was under Joint venture of M/s Tamil Nadu Generation and Distribution Corporation Ltd. (M/s TANGEDCO) and M/s Bharat Heavy Electricals Ltd. (M/s BHEL). Later Tamil Nadu Government decided to execute the project on their own and terminated the joint venture with M/s BHEL by purchasing all shares in M/s UPCL. Transfer of assets have been finalized with M/s TANGEDCO which is the sole owner of the project. Further, based on the progress of the project, it is possible to complete remaining activities within 3 years. Regarding FGD package, proponent is yet to award the contract. Proponent has been suggested to place the orders immediately so that FGD installation will also be completed along with the COD of the plant so that the new plant can operate with new revised emission norms.

(1.6.4) **Committee after detailed deliberations, recommended for extension of validity of EC dated 14.10.2013 for further period of three years, w.e.f.14.10.2020 till 13.10.2023** subject to following additional conditions:

i. The physical and financial progress of FGD and other pollution control measures to meeting revised emission norms vide Notification dated 07.12.2015 shall be submitted as part of compliance report.
ii. Progress of construction of the project till the COD of both units achieved shall be furnished in the compliance report.

(1.7) 2x800 MW (Phase-I) Imported coal based Sri Damodaram Sanjeevaiah Thermal Power Project at Nelaturu Village, Muthukuru Mandal, SPSR Nellore District, Andhra Pradesh by M/s Andhra Pradesh Power Development Corporation Ltd.- reg. re-consideration for permission ash pond for addition. (File No.J-13012/25/2012-IA.II(T) & Online No. IA/AP/THE/114419/2007)

(1.7.1) M/s Andhra Pradesh Power Development Corporation Ltd. submitted online application dated 13.08.2019 for amendment in EC for increasing the ash pond area from 130 acres to 200 acres.

(1.7.2) The Environmental Clearance for 2x800 MW Thermal Power Plant vide dated 17.7.2007 initially allowed only 100 acres of ash pond as an emergency ash pond. Subsequently, Ministry vide letter dated 3.9.2019 allowed to use additional 30 acres ash pond. Further, Ministry considering the request of proponent for the urgent need to dispose ash in the additional ash pond, granted permission to use another 30 acres (Total: 100 acres + 30 acres + 30 acres) vide letter dated 27.2.2020.

(1.7.3) Project Proponent has given the commitment of 100% flyash utilisation as per the agreements with Inpower cements: 3000 MT/Day, Penna Cements: 1500 MT/day, NCL Altek (Bricks): 350 MT/day which would be materialised by March, 2020. Considering the implementation of agreements with ash users, Ministry decided that the proposal is to be referred to EAC for assessing the additional requirement of ash pond. At the same time, Ministry has also decided that a sub-committee would conduct site visit to assess the ash utilisation and need for further ash pond requirement.

(1.7.4) The proposal was earlier considered by the EAC in its meeting held on 10.4.2020. Committee noted that the Ministry has recently granted additional 30 acres of ash pond to the proponent. Accordingly, proponent can use this area for disposing unutilised ash from the plant. As per the Ministry's decision to constitute a committee, the sub-committee comprising of following members is formed for conducting site visit:

i. Dr. Navin Chandra
ii. Shri Suramya Vora
iii. Shri Gururaj Kundargi
iv. Dr. S.K. Paliwal
v. Dr. S. Kerketta

(1.7.4) As the tenure of the earlier EAC completed by June, 2020 and the EAC has been re-constituted on 9.7.2020, the composition of the committee has changed. Accordingly, the sub-committee comprising following members will conduct the site visit.

i.	Shri Gururaj Kundargi	-	Chairman
ii.	Shri Suramya Vora	-	Member
iii.	Shri P.K. Mohapatra	-	Member
iv.	Dr. S.K. Paliwal	-	Member
v.	Dr. S. Kerketta or his representative	-	Member Secretary

(1.7.5) The report of the sub-committee after conducting the site visit shall be placed before EAC for examination. The dates of site visit may be decided based on the ground situation of COVID-19 pandemic.

(1.8) 2000 MW Gas based Combined Cycle Power Plant (CCPP) at Village Godhra, Kutch District, Gujarat by M/s Nana Layja Power Co. Ltd.- amendment Ein C as per the Orders of NGT dated 3.7.2020 in the matter of Conservation Action Trust vs UoI & Ors.
(File No. J-13012/10/2012-IA.II(T))

(1.8.1) M/s Nana Layja Power Co. Ltd. has obtained Environmental Clearances for the following projects by MoEF&CC :

a. 2000 MW Gas based combined cycle power plant, Village Godhra, Kutch District, Gujarat vide Letter No.J-13012/10/2102-IA.II(T) dated 29.9.2016 in favour of M/s Nana Layja Power Co. Ltd (IL&FS group company)

b. 3960 MW Coal based Thermal Power Plant at Vilalge Layja Mota, Mandiv Taluk, Kutch, Gujarat vide letter No.J-13-12/13/2011-IA.I(T) dated 26.6.2015.

(1.8.2) Appeal against the above mentioned ECs is pending before Hon'ble NGT, Principal Bench for adjudication in the Appeal No.73/2016 (WZ) and Appeal No.24/2015 (WZ). The Hon'ble NGT vide Orders dated 3.7.2020.

(1.8.3) The above mentioned projects require CRZ area/sea front for drawing water from sea, discharging cooling water into the sea and transporting coal from nearby jetty by conveyor belts. The permissible activities which require foreshore facilities in the CRZ area require clearance under CRZ Notification, 2011. For Projects requiring Environmental Clearance and CRZ Clearance, a procedure was delineated in the CRZ Notification to deal with such projects. The Para 4(i)(b) of the CRZ Notification, 2011 is reproduced below:

"*for those projects which are listed under this notification and also attract EIA Notification, 2006 (S.O.1533 (E) dated 14th September, 2006), for such projects clearance under EIA Notification only shall be required subject to being recommended by the concerned State or Union Coastal Zone Management Authority (hereinafter referred as the CZMA).*"

(1.8.4) The above mentioned two projects also require foreshore facilities under CRZ Notification. It appears while granting EC dated 26.6.2015 for 3960 MW coal

based Thermal Power Plant, the recommendations of State CZMA under CRZ Notification, 2011 were not taken into consideration. This can be seen from a condition stipulated in the EC dated 26.6.2015 which is reproduced below:

'4A(i) The activities attracting CRZ clearance shall only be initiated after obtaining prior CRZ Clearance from the Competent Authority. A copy of the same shall be submitted to the Ministry and its Regional Office.'

(1.8.5) It was noticed that composite CRZ and EC was granted for 'Development of Multi Product SEZ and Free Trade Warehousing Zone and Domestic Tariff Area' at Layja Mota, Dist. Kutch, Gujarat to M/s Sea Land Ports Pvt. Ltd. & M/s Avash Logistic Park Pvt. Ltd. vide Ministry's letter No. 21-68/2011-IA-III dated 12.2.2020. The said clearance mentions the utility corridor consisting of sea water intake pipelines & system, marine outfall & diffuser system, coal conveyor, natural gas pipeline, transmission towers in the CRZ area required for 2000 MW Gas based Power Plant and 4000 MW Coal based Power Plant. The said clearance also takes the Gujarat Coastal Zone Management Authority recommendations dated 29.6.2016 into consideration.

(1.8.6) Earlier Ministry submitted to the Hon'ble NGT that the procedural mismatch, i.e. granting EC without taking the State CZMA recommendations will be rectified once the CRZ clearance is issued by the Ministry. As the CRZ clearance was issued to the foreshore facilities on 12.2.2020, M/s Nana Layja Power Company Ltd. was given opportunity to present the details of foreshore facilities required for power plant and the extent of CRZ area involved. Further, the CRZ clearance was given to another company viz. M/ Sea Land Ports Pvt. Ltd. An agreement/MoU is required if M/s Nana Layja Power Company Ltd. wants to utilise the utility corridor developed by M/s Sea Land Ports Pvt. Ltd.

(1.8.7) Accordingly, the matter has been placed before the EAC in its meeting schedule on 28.7.2020 for appraising the matter and making necessary recommendations. The communication regarding EAC meeting was sent to Shri Bibhu Biswal who is the project in-charge via e-mail and telephone call on 22.7.2020. However, no documents were circulated to EAC members by e-mail in advance as per the protocol given in the agenda. Further, Project Proponent has not attended the EAC meeting held through Video-conference. However, the Member Secretary informed the Committee that Shri Bibhu Biswal told over telephone that the ILFS group company has reduced the manpower to bare minimum from 120 to 20 persons and there are no plans to implement this project at the moment.

(1.8.8) Committee noted that a written communication from the project proponent regarding the status of the project is required before appraising the matter. Without relevant information and commitment from the Proponent, Committee finds it difficult to make recommendations, if any. If, proponent is not going to implement the project, the whole exercise of appraisal is futile. Accordingly, Project Proponent may be asked to submit the status of the project along with

EC compliance report to know the factual status. Hon'ble NGT may also be apprised of the present status. **Accordingly, the matter has been deferred.**

(1.9) Any other points with the permission of the Chair.

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

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ANNEXURE- A1

Terms of Reference (TOR):

i) The proposed project shall be given a unique name in consonance with the name submitted to other Government Departments etc. for its better identification and reference.

ii) Vision document specifying prospective long term plan of the project shall be formulated and submitted.

iii) Latest compliance report duly certified by the Regional Office of MoEF& CC for the conditions stipulated in the environmental and CRZ clearances of the previous phase(s) for the expansion projects shall be submitted.

iv) The project proponent needs to identify minimum three potential sites based on environmental, ecological and economic considerations, and choose one appropriate site having minimum impacts on ecology and environment. A detailed comparison of the sites in this regard shall be submitted.

v) Executive summary of the project indicating relevant details along with recent photographs of the proposed site (s) shall be provided. Response to the issues raised during Public Hearing and the written representations (if any), along with a time bound Action Plan and budgetary allocations to address the same, shall be provided in a tabular form, against each action proposed.

vi) Harnessing solar power within the premises of the plant particularly at available roof tops and other available areas shall be formulated and for expansion projects, status of implementation shall also be submitted.

vii) The geographical coordinates (WGS 84) of the proposed site (plant boundary), including location of ash pond along with topo sheet (1:50,000 scale) and IRS satellite map of the area, shall be submitted. Elevation of plant site and ash pond with respect to HFL of water body/nallah/River and high tide level from the sea shall be specified, if the site is located in proximity to them.

viii) Layout plan indicating break-up of plant area, ash pond, green belt, infrastructure, roads etc. shall be provided.

ix) Land requirement for the project shall be optimized and in any case not more than what has been specified by CEA from time to time. Item wise break up of land requirement shall be provided.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

xxxvii) Occupational health and safety measures for the workers including identification of work related health hazards shall be formulated. The company

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

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

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

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

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

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

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

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

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

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

xlvii) Details regarding infrastructure facilities such as sanitation, fuel, restrooms, medical facilities, safety during construction phase etc. to be provided to the labour force during construction as well as to the casual workers including

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

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

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

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

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

lii) Over and above the green belt, as carbon sink, plan for additional plantation shall be drawn by identifying blocks of degraded forests, in close consultation with the District Forests Department. In pursuance to this the project proponent shall formulate time bound Action Plans along with financial allocation and shall submit status of implementation to the Ministry every six months.

liii) <u>Corporate Environment Policy</u>

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

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

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

ANNEXURE- A2

Standard EC Conditions for Thermal Power Sector:

A. Statutory compliance:

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

B. Ash content/ mode of transportation of coal:

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

C. Air quality monitoring and Management:

1. Flue Gas Desulphurisation System shall be installed based on Lime/Ammonia dosing to capture Sulphur in the flue gases to meet the SO_2 emissions standard of 100 mg/Nm^3.
2. Selective Catalytic Reduction (SCR) system or the Selective Non-Catalytic Reduction (SNCR) system or Low NOX Burners with Over Fire Air (OFA) system shall be installed to achieve NO_X emission standard of 100 mg/Nm^3.
3. High efficiency Electrostatic Precipitators (ESPs) shall be installed in each unit to ensure that particulate matter (PM) emission to meet the stipulated standards of 30 mg/Nm^3.
4. Stacks of prescribed height ____m shall be provided with continuous online monitoring instruments for SO_X, NOx and Particulate Matter as per extant rules.
5. Exit velocity of flue gases shall not be less than 20-25 m/s. Mercury emissions from stack shall also be monitored periodically.

6. Continuous Ambient Air Quality monitoring system shall be set up to monitor common/criteria pollutants from the flue gases such as PM_{10}, $PM_{2.5}$, SO_2, NO_Xwithin the plant area at least at one location. The monitoring of other locations (at least three locations outside the plant area covering upwind and downwind directions at an angle of 120° each) shall be carried out manually.
7. Adequate dust extraction/suppression system shall be installed in coal handling, ash handling areas and material transfer points to control fugitive emissions.
8. Appropriate Air Pollution Control measures (DEs/DSs) be provided at all the dust generating sources including sufficient water sprinkling arrangements at various locations viz., roads, excavation sites, crusher plants, transfer points, loading and unloading areas, etc.

D. Noise pollution and its control measures:

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

E. Human Health Environment:

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

F. Water quality monitoring and Management:

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

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

G. Risk Mitigation and Disaster Management:

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

H. Green belt and Biodiversity conservation:

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

I. Waste management:

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

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

J. Monitoring of compliance:

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

4. Monitoring of Carbon Emissions from the existing power plant aswell as for the proposed power project shall be carried out annually from a reputed institute and report be submitted to the Ministry's Regional Office.
5. Energy and Water Audit shall be conducted at least once in two years and recommendations arising out of the Report should be followed. A report in this regard shall be submitted to Ministry's Regional Office.
6. Environment Cell (EC) shall be constituted by taking members from different divisions, headed by a qualified person on the subject, who shall be reporting directly to the Head of the Project.
7. The project proponent shall (Post-EC Monitoring):

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

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

    c. inform the public through advertisement within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the SPCB and may also be seen at Website of the Ministry of Environment, Forest and Climate Change (MoEF&CC) at http://parviesh.nic.in.

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

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

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

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

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

K. Corporate Environmental Responsibility (CER) activities:

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

L. Marine facilities:

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

M. Sea Water Intake:

1. Seawater intake system shall be so designed and constructed to ensure sufficient sweater in terms of quantity and quality.
2. The withdrawal of seawater shall be preferably through a pipeline with a riser equipped with a velocity cap arrangement and bar screen to arrest the impingement of large marine organisms.
3. In all tide conditions (particularly at spring low tides) the riser head must be flooded with the required submergence of seawater above its top.

N. Effluent Release:

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

O. Common to intake and effluent:

1. The pipeline shall be buried below the seabed at a depth to ensure its stability under rough sea conditions particularly during cyclone / tsunami. The depth of burial will depend on the seafloor strata but normally the top of the pipeline shall be at least 1 m below the bed level. In the surf and intertidal zones, the pipeline shall be buried below the maximum scour level.
2. In case of open channel, the channel shall be constructed as per the recommendations of State Coastal Zone Management Authority (SCZMA).

3. If the substratum is rocky the pipeline may be anchored to the rock provided the geology of the area satisfactorily supports the structure which shall be ascertained through geo-technical investigations.
4. Exposed pipeline section and riser shall be protected by armour stone from waves, boats anchoring, fishing activities etc.
5. The location of the riser & diffuser shall be marked with a solar lighted buoy to avoid accidents from boats.
6. Marine / Sea water quality shall be monitored at effluent release location at the center. Parameters to be monitored shall be as follows:
    a. *Physico-chemical:* Temperature, Salinity, pH and Dissolved Oxygen.
    b. *Biological:* Primary Productivity, Phytoplankton (Chlorophyll a, Phaeophytin, Population, Species), Zooplankton (Biomass, Population, Species) and Benthos (Biomass, Population, Species).
7. In case of Coastal Power Plants, the Mangrove plantation shall be taken up in an area of ……ha, along the coast/ on the banks of ……. Estuary.

Attendance of the EAC members during the Video-conference

Name & Address	Role	Attendance
1. Shri Gururaj P. Kundargi	Chairman	Present
2. Dr. N.P Shukla	Member	Present
3. Shri Suramya Vora	Member	Present
4. Dr Santosh Kumar	Member	Present
5. Dr. Umesh Jagannathrao Kahalekar	Member	Present
6. Shri K.B. Biswas	Member	Present
7. Dr. Nandini. N	Member	Present
8. Dr. Unmesh Patnaik	Member	Present
9. Shri Prasant Kumar Mohapatra	Member	Present
10. Dr. S.K. Paliwal	Member (Representative of CPCB)	Present
11. Shri N. S. Mondal	Member (Representative of CEA)	Present
12. Professor S S Rai	Member Representative of IIT/ISM Dhanbad	Present
13. Prof R.K. Giri	Member Representative of IMD	Present
14. Dr. S. Kerketta	Member Secretary	Present

From: gpkundargi@gmail.com
To: "Dr S Kerketta" <s.kerketta66@gov.in>
Sent: Friday, August 7, 2020 9:30:31 PM
Subject: Re: 1st EAC meeting of Thermal Sector - draft MoM- approval reg.

Dear Dr kerketta ji

Small typographical corrections are made at 1.2,2 (xix), 1.3.3 (x), 1.4.5 (viii)

and 1.8 (a).Please correct the same.They are highlighted in yellow. With these

corrections Minutes are approved.

Thank you

Gururaj Kundargi

,

On Thu, Aug 6, 2020 at 10:26 PM Dr S Kerketta <s.kerketta66@gov.in> wrote:

Dear Sir,

Revised PFA. It is revised after including the comments/suggestions of the other EAC members and also as discussed with you. May please approve the same for uploading in the Website of MoEFCC.

regards,

regards,

(Dr. S. Kerketta)

Director- IA (Thermal, River Valley & HEP)

MoEF&CC, New Delhi

Phone: 011-24695314 (O), 26113096 (R)

AGENDA OF 1st MEETING OF THE RE-CONSTITUTED EXPERT APPRAISAL COMMITTEE ON THERMAL POWER PROJECTS

DATE : 28th JULY, 2020
TIME : 11.00 A.M.- 4.00 PM through Video Conference

ITEM	
Item No. 1.0 Time Slot: 11-11:10 AM (10 min)	**CONFIRMATION OF MINUTES OF 41st EAC (THERMAL) MEETING**
Item No.	**CONSIDERATION OF PROJECTS**
1.1 Time Slot: 11:10-11:40 AM	Proposed Expansion of Waste to Energy (WTE) plant from 15 MW to 25 MW for Integrated Municipal Solid Waste Processing Facility (IMSWM) at Village Bandhwari, Tehsil & District Gurugram Haryana, by **M/s Gurugram Municipal Corporation-reg. ToR**. (F.No. J-13012/08/2020-IA.I(T) & IA/HR/THE/162510/2020)
1.2 Time Slot: 11:40-12:00 PM	900 MW (750 MW + 150 MW) RLNG based Combined Cycle Power Plant at Village Kalanji, Taluk Ponneri, District Thiruvallur, Tamil Nadu by **M/s. Chennai Power Generation Limited (CPGL)-reg. ToR**. (F.No.J-13012/09/2020-IA.I (T)& No. IA/TN/THE/162023/2020)
1.3 Time Slot: 12:00 -12:40 PM	3x800 MW NLC Talabira Thermal Power Project at Village Khumberi, Taraikela and Thelkolai, Tehsil and District Jharsuguda, Odisha by **M/s NLC India Ltd. – reg. Environmental Clearance.** (F. No. J-13012/14/2017-IA.I(T) & IA/OR/THE/67938/2017)
1.4 Time Slot: 12:40-01:15 PM	1x800 MW Coal Based Supercritical Thermal Power Plant and Decommissioning of 2x120 MW Units at Ukai Thermal Power Plant at Village Vagda, Tehsil-Fort Songadh, District-Tapi, Gujarat by **M/s Gujarat State Electricity Corporation Limited (GSECL)-reg. Environment Clearance.** (F.No.J-13012/4/2018-IA.I (T) & No. IA/GJ/THE/144074/2018)
Time Slot: 01:15-2:00 PM	Lunch Break
1.5 Time Slot: 02:00-2:20 PM	Expansion of existing 2x150 MW TPP by installation of 185 MW (165+20 MW) Imported coal based Thermal Power Plant at Meeramandali, Dist. Dhenkanal, Odisha by M/s Bhushan Steel Energy Ltd.- **amendment in Environmental Clearance for change in coal source.** (F.No.J-13012/78/2011-IA.II(T)& No.IA/OR/THE/163319/2020)
1.6 Time Slot: 02:20-02:40 PM	2x800 MW Udangadi Super Critical Imported Coal Based TPP at village Udangudi, in Thiruchendur Taluk, Thoothukudi district, Tamil Nadu by **M/s. Udangudi Power Corporation Ltd.- extension of validity of Environmental Clearance.** (F.No.J-13012/19/2008-IA.II(T) & No.IA/TN/THE/164027/2020)

1.7 Time Slot: 02:40-03:00 PM	1x800 MW (Phase-II) Imported coal based Sri DamodaramSanjeevaiah Thermal Power Project at Nelaturu Village, Muthukuru Mandal, SPSR Nellore District, Andhra Pradesh by **M/s Andhra Pradesh Power Development Corporation Ltd.- reg. site visit for permission for additional ash pond.** (F.No.J-13012/25/2012-IA.II (T) & No. IA/AP/THE/114419/2007)
1.8 Time Slot: 3:00-3:20 PM	2000 MW Gas based Combined Cycle Power Plant (CCPP) at Village Godhra, Kutch District, Gujarat by **M/s Nana Layja Power Co. Ltd.- amendment EC as per the Orders of NGT dated 3.7.2020 in the matter of Conservation Action Trust vs UoI & Ors.** (F. No.J-13012/10/2012-IA.II(T))
1.9	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