MINUTES OF THE 36th MEETING OF THE RE-CONSTITUTED EXPERT APPRAISAL COMMITTEE (EAC) ON ENVIRONMENTAL IMPACT ASSESSMENT (EIA) OF THERMAL POWER PROJECTS HELD DURING 04th December 2019.

The 36th Meeting of the re-constituted EAC (Thermal Power) was held on 04th December, 2019 in the Ministry of Environment, Forest & Climate Change at Brahmaputra Meeting Hall, First Floor, Vayu Wing, Indira Paryavaran Bhawan, Jorbagh Road, New Delhi under the Chairmanship of Dr.Navin Chandra. The following members were present:

1.	Dr.Navin Chandra	-	Chairman
2.	Shri Gururaj P. Kundargi	-	Member
3.	Shri Mohan Karnat	-	Member
4.	Dr. Jai Krishna Pandey	-	Member
5.	Dr.(Mrs.) Manjari Srivastava	-	Member
6.	Shri N.S. Mondal	-	Member (Rep. of CEA)
7.	Dr. S. Kerketta	-	Member Secretary

Dr. S. Lele, Dr. N.P. Shukla, Shri S.D. Vora, Dr R.K. Giri, Dr. S.K. Gupta and Dr. S.K. Paliwal could not be present due to pre-occupation.

Item No.36.0: CONFIRMATION OF THE MINUTES OF THE 35th EAC MEETING.

The Minutes of the 35th EAC (Thermal Power) meeting held on 14.11.2019 were confirmed in presence of members present in the meeting.

Item No. 36.0: CONSIDERATION OF PROJECTS

(36.1) Regularisation of 3x21 MW Gas based Thermal Power Station at Rokhia in Village Manikyanagar, Boxanagar PS, Sipahijala District, Tripura by M/s Tripura State Electricity Corporation Ltd.-reg. ToR.
(F.No. J-13012/13/2019-IA.I(T)& Proposal No. IA/TR/THE/125111/2019)

(36.1.1) Project Proponent has submitted the online application on 13.11.2019 for grant of Terms of Reference for regularisation of 3x21 MW (63 MW) Gas based Termal Power Plant located at Rokhia, Dist.Sepahijala, Tripura.

(36.1.2) Project Proponent along with QCI-NABET Consultants M/s MITCON Consultancy & Engineering Services Ltd. have made the presentation inter-alia submitted the following information:

i. Tripura State Electricity Corporation Ltd. has received the Environmental Clearance for 75 MW Gas based Thermal Power Project vide Ministry's leter dated 8.2.1988. Out of 75 MW, only 16 MW (2x8 MW) project was established and decommissioned.
ii. Further, one more EC was accorded for establishing 32 MW gas based power project vide Ministry's letter dated 20.9.1991. The capacity of 32 MW (4x8 MW) has been established and decommissioning of these units is in process.
iii. Subsequently, another project of 4x21 MW Gas based power project has been established without obtaining Environmental Clearance.
iv. Further, the proposal for grant of ToR for 3x21 MW Open cycle Gas based Power Project was considered in the EAC (Thermal) meeting held during 28th -

29th August, 2014 and the Committee deferred the project for providing the information on the installed capacity *vis-à-vis* EC granted capacity.

v. The details of these units and date of commissioning are as below:

Sl.No.	Phase	Unit No.	Capacity	EC details	Date of Commissioning	Date of De-commissioning
1.	I	1	8 MW	EC for 75 MW accorded by Ministry on 8.2.1988	07/03/1990	22/01/2006
2.		2	8 MW		20/12/1990	14/02/2002
3.	II	3	8 MW	EC for 32 MW accorded on 20.9.1991	04/06/1995	Not operational & Decommissioning in process
4.		4	8 MW		15/12/1995	
5.	III	5	8 MW		02/03/1997	
6.		6	8 MW		05/08/1997	
7.		7	21 MW	No EC was granted	02/08/2002	Currently operational
8.		8	21 MW		31/03/2006	
9.		9	21 MW		31/08/2013	

vi. It has been admitted that Project Proponent is in violation of Environmental Clearance.

vii. 3x21 MW Gas based power project is Category-B project. However, it is to be treated as Category-A project as Bangladesh boundary is located at 3.25 km E from the project site.

viii. The fuel requirement is 0.57 MMSCMD (5.7 Lakh m^3/day) which is being sourced from ONGC gas fields which at a distance of 5 km from the project.

ix. Water requirement is 600 litres/day which is sourced from water pond within the plant premises.

x. Total Project Cost is Rs. 251.11 Crores (Unit-1:21 MW- 85.17 Crores, Unit-2: 80.94 Crores & Unit-3: 85 Crores). Employment is 55 persons.

(36.1.3) Committee first noted that 3x21 MW Gas based power project has been established without obtaining EC. Two units (2x21 MW) have been established prior to EIA Notification, 2006 (14.9.2016) and remaining one unit was established after EIA Notification, 2006. The establishment of third unit is certainly a violation under EIA Notification as there is no fresh EC. However, the violation of first two units (2x21 MW) is to be determined based on the project cost. As per the EIA Notification, 1994 (dated27.1.1994) and amendment Notification dated 13.6.2002, fresh thermal power projects with project cost less than Rs.100 Crores and expansion proposals with project cost less than 50 Crores do not require Environmental Clearance. It has been informed that the project cost for first Unit (21 MW) is Rs.85.17 Crores and second unit (21 MW) is Rs.80.94 Crores. Accordingly, all three units are required to obtain Environmental Clearance which are now under violation of EIA Notification. Project Proponent has also admitted that the project is under violation.

(36.1.4) Committee further noted that project proponent has established open cycle gas based power plant which flares the flue gas at 500^0C which is not permitted. Further, as there is no EC available for the third unit, the power

plant needs to be immediately stopped as it cannot run without valid Environmental Clearance under EIA Notification, 2006. Further, to deal with violation cases, the window of six months provided under S.O.804 (E) dated 14.3.2017 has been given to proponents to apply for appraisal of projects involving violations. Subsequently, based on the orders of Hon'ble High Court of Madras in the in WMP No.3361, 3362 & 3721 of 2018 in WP No.11189 of 2017 dated 14.3.2018, Ministry vide Office Memorandum dated 16.3.2018 gave a further window of one month. All these windows are now not available taking up violation cases.

(36.1.5) **Committee after detailed deliberations, recommended the following to the Competent Authority in the Ministry**:

i. Direct the proponent to stop the operations of 3x21 MW Power Plant with immediate effect.
ii. Direct the State Government to take Credible action under Section 19 of Environment (Protection) Act, 1986 for operating the 3x21 MW Gas based Power Plant without obtaining valid Environmental Clearance.
iii. After complying with the above, the proposal may be sent to the IA (Violations) for comments to stipulate any additional ToR viz., ecological damage assessment and remediation plan based on guidelens of the CPCB.
iv. After receiving additional ToR, the EAC (Thermal) will prescribe the comprehensive ToR for conducting EIA studies and Public Hearing.
v. The proposal after receipt of EIA report, remediation plan and Public Hearing, fresh appraisal will be done by the EAC (Thermal) and also comments may be obtained, if need be, from IA (Violation). Accordingly, **the proposal is deferred**.

(36.2) 15 MW Captive Power Project at Village Digvijaygram, Jamnagar District, Gujarat by M/s Shree Digvijay Cement Company Ltd.- reg. ToR. (F.No. J-13012/10/2019-IA.I(T)& Proposal No. IA/GJ/THE/112735/2019)

(36.2.1) Project Proponent vide online application dated 30.7.2019 submitted online application for grant of ToR for establishing 15 MW Captive Power Plant in Jamnagar District. Though the proposal is Category-B project, it is to be treated as Category-A project, since the location is 2.5 km from the Jamnagar Marine Sanctuary.

(36.2.2) Project Proponent along with QCI-NABET Consultants M/s Eco Chem Sales and Services have made the presentation inter-alia submitted the following information:

i. The company has set up 1.2 MTPA Cement Plant which has been under operation since 1944. The clinker manufacturing capacity of the kiln is 3000 TPD. Limestone is being obtained from Limestone mines of the company located at a distance of 100 km. The limestone is transported through trucks. Since, the cement plant is operational since 1944, it did not have environmental clearance and is operating based on Consent to Operate from Gujarat Pollution Control Board.
ii. Company at presently is meeting the power requirement from the grid.
iii. Company wants to have uninterrupted and affordable power supply fto the Cement Plant.

iv. The total land availability in the plant premises is 99.147 ha out of which 2.5 ha will be used for setting up proposed power project. The coast is 500 m away from the project land.

v. It has been proposed to set up 75 TPH CFBC boiler. The fuel is based on Indonesia coal, Petcoke, South African Coal, Lignite which will be transported by road from the mines and nearest port.

vi. Water requirement for existing cement plant is 525 KLD and the proposed water requirement for power project is 280 KLD. The water requirement is groundwater met through borewells.

vii. The estimated project cost is Rs.108.64 Crores.

(36.6.3) Committee noted that the proposed power plant is to be located 2.5 km rom the Jamnagar Marine Sanctuary which has Marine Bio-diversity such as Corals, Sea Dugong, and several Schedule-I species present in the study area. Further, it has been measured from the google satellite map that the proposed project boundary is less than 500 m from the Coast Line (High Tide Line). The power plant is not permitted activity in the CRZ area. Further, project proponent is transporting limestone by road and also proposed to transport coal by road which will have impact on marine life. Further, proponent has also proposed Petcoke which is not permitted fuel as per the Supreme Court directions. Further, Petcoke being the High Sulphur fuel will have significant impacts on marine biodiversity, if Sulphur emissions are not controlled. Further, the impacts of the existing Cement Plant and adjacent 2x250 MW power plant which in operation needs to be taken.

(36.6.4) **Committee after deliberations and in view of the proximity of eco-sensitive area and CRZ area, recommended for conducting the site visit by Sub-Committee**. **Accordingly, the project is deferred**.

(36.3) 2x195 MW (Stage-II) Coal based Thermal Power Plant, Village Kanti, Dist. Muzaffarpur, Bihar by M/s Kanti Bijlee Utpadan Nigam Ltd.- reg. amendment in EC.
F.No.J-13012/98/2008-IA.II(T)& Proposal No. IA/BR/THE/117021/2019

(36.3.1) Project Proponent has submitted online application on 06.09.2019 for amendment in EC to waive off the recurring CSR expenditure (Rs.2.4 Crores) as stipulated in the EC dated 9.11.2009.

(36.3.2) The Environmental Clearance for 2x195 MW Coal based Thermal Power Plant has been accorded vide Ministry's letter dated 9.11.2009. Subsequently, a corrigendum has been issued for correcting stack height vide Ministry's letter dated 19.11.2009. The validity of EC has been extended for a period of five years (till 8.11.2019) vide Ministry's letter dated 31.12.2014. The Specific condition no.xx of the EC dated 9.11.2009 is reproduced below:

"*An amount of Rs.12.0 Crores shall be earmarked as one time capital cost for CSR programme. Subsequently, a recurring expenditure of Rs.2.4 Crores per annum shall be earmarked as recurring expenditure for CSR activities. Details of the activities to be undertaken shall be submitted within one month along with road map for implementation.*"

(36.3.3) Project Proponent has made the presentation inter alia submitted the following information:

i. The recurring expenditure on CSR of Rs.2.4 Crores per annum may be waived off and the provisions of Companies Act may be stipulated as the Act mentions that 2% of average profits of last three preceding years is to be spent on CSR activities.
ii. Presently, the Company is making losses. Accordingly, 2% on profits will be spent every year.
iii. Project Cost estimated as per EC Rs. 2,929.86 Cores. The revised project Cost is Rs.4,778.65 Crores.
iv. Total of Rs.13.097 Crores has been earmarked for CSR and Community Development activities in the surrounding villages out of which Rs.3.68 Crores have been and the balance works for an amount of Rs.9.415 Crores are under progress.

(36.3.4) Committee noted that the major amendment is related to recurring CSR cost. Second amendment sought is related to aligning Capital CSR expenditure (Rs.12 Crores) with the Ministry's OM dated 1.5.2018 regarding CER expenditure. As per the new Circular, calculation of 0.25% of the revised project cost (0.25% of Rs.4778.65 Crore) will be about Rs.11.95 Crores. The earlier stipulation of Rs.12 Crores in the EC is almost equal and slightly higher than the amount given in the new guidelines. Accordingly, there may not be any change needed as far as Capital CSR is concerned. Project Proponent has agreed to the condition on capital CSR cost of Rs.12 Crores to be remained as it is. This Committee has made the recommendations in the past for several cases in this regard. The CSR activities during operation phase may be linked to profits as pre-fixing the recurring amount may be burdensome to proponents. The Companies Act takes care of the CSR compliance during operation phase.

(36.3.5) **Committee after detailed deliberations, recommended for waiving of recurring CSR expenditure of Rs.2.4 Crores per annum and the same is to be linked with the provisions of the Companies Act**. Accordingly, the following additional conditions have been recommended:

i. With respect to the recurring CSR expenditure, any condition stipulating the recurring amount per annum in the EC may be made redundant. The recurring amount shall be in-line with Section 135 of Companies Act, 2013 which states that company shall spend (in every financial year) at least two per cent of the average net profits of the company made during the three immediately preceding financial years, in pursuance of its Corporate Social Responsibility Policy.

ii. The details of average net profit made during the last three years to be submitted including the amount earmarked for CSR activities (at least 2%) from this project and the details of various activities undertaken along with expenditure, extent of villages covered, benefited population, the proximity to the project area, etc. as a part of EC compliance report (October-March) on or before 1st June and (April-September) on or before 1st December of every calender year to the Ministry and its Regional Office.

(36.4) 1x600 MW Coal Based Thermal Power Plant at villages Barela & Gorakpur, Ghansore Tehsil, Seoni Distt., Madhya Pradesh by M/s Jhabua Power Ltd.- reg. permission for road transportation of coal.
(F.No.J-13012/105/2008-IA-II (T) & Proposal No. IA/MP/THE/126388/2019)

(36.4.1) Project Proponent submitted online application on 20.11.2019 to extend the permission for coal transportation by road for 10 months (15.2.2020 till 31.4.2020) owing to some delays in the electrification, balance track work and signalling of railway line from Binaiki siding till power plant (track length of 10.1 km). The power plant was commissioned on 3.5.2016.

(36.4.2) The Environmental Clearance for 1x600 MW Power Project has been accorded vide Ministry's letter dated 17.2.2010. Thereafter, amendments in the EC regarding tribal land & population, cooling towers were accorded vide Ministry's letters of even no. dated 22.12.2010 and 25.1.2012. Further, the extension of validity of EC for two years, i.e. till 16.2.2017 and temporary permission for transportation of coal by road for a limited period of two years, i.e. till 14.2.2018 from Gosalpur (GSPR) and Garha sidings (GGGS) to power plant, has been issued vide Ministry's letter dated 15.2.2016. Further, the temporary permission for transportation of coal from Binaiki railway siding to plant premises has been extended for one more year (till 14.2.2019) vide Ministry's letter dated 30.8.2018.

(36.4.3) Project Proponent along with the Consultants M/s Min Mec Consultancy Pvt. Ltd. made the presentation inter-alia submitted the following information:

i. Delay in final commissioning & operationalization of the private siding of the project proponent is expected to be delayed beyond the presently allowed date of 14th February 2020 keeping in view the present status of completion of the deposit works by Indian Railways, and other works envisaged.
ii. As on date total railway track length of 10.1 Km have been laid (3.0 km connecting line and 7.1 km railway yard) completed. Further, final alignment and initial checking completed. Statutory clearances like CRS are being expedited.
iii. Joining of take-off line to main line and other ancillary works are under progress and expected to be completed by December 2019. Signaling and Telecommunication (S&T) related works are under progress and expected to be completed by February, 2020. Various related documentation like Electronic Interface Drawing, etc. pending for approval from Indian Railways being expedited and scheduled to be completed by March, 2020.
iv. On completion of balance S&T works, commissioning of the S&T system, integration of the siding S&T with station S&T, Inspection and approval by CRS, Kolkata of the railway siding, Integrated commissioning of the siding are the balance works in connecting railway line and are expected to be completed by June, 2020.
v. The progress of the railway line work is as below:

Sl. No.	Activity	Start Date	Finish Date	Remarks
1.	Land Acquisition	-	-	Completed
2.	Statutory approvals	-	-	Completed
3.	Bridge construction	-	-	Completed

4.	Earth filling	Dec'18	Feb'19	Completed
5.	Ballast procurement & spreading	Dec'18	April'19	Completed
6.	Material procurement	Dec'18	Mar'19	Completed
7.	Track lining	Jan'19	Jan'20	95% completed
8.	Signalling commissioning & main line connectivity and safety inspection	Sept'19	June'20	Work is under the scope of Indian Railways
9.	Loco procurement and engine rolling	Nov'19	June'20	Two locos received at site. Engine rolling will start after signalling and safety inspection.
10.	Siding commissioning	Sept'19	June'20	At advanced stage.
11.	Siding and rail line commissioning	July'20	Dec'20	Stabilisation period.

vi. Total capital expenditure for Railway work is Rs.72 Crores out of which Rs.71.3 Crores have been spent till November, 2019.

vii. Road transportation impact assessment study has been carried out for the route from Binaiki railway siding to Power plant for a distance of 1.85 km.

viii. The width and type of the road are given as below:

Stretch	Distance, m	Left Shoulder, m	Right Shoulder, m	Carriage way, m	Total Right of Way (m)	Type of road
Stretch-1 (From Plant gate)	80	0	0	5	5	Concrete
Stretch-2	1464	2.1	2.3	4	8.4 (2.1+4+2.3)	Black top
Stretch-3	65	0	0	6.7	6.7	Concrete
Stretch-4 (upto Binaiki siding)	236	0	0	7.7	7.7	Concrete
Total length	1.85 km (Stretch:2-4 are PMGSY roads in good condition)					

ix. The details of quantity of coal to be transported and number of trucks to be plying on the road are given as below:

Route- Binaiki railway siding to Jhabua Power Plant	
Proposed capacity of coal to be transported from Binaiki railway siding	8767 MT/day
Carrying capacity of hyvas/trucks	25 Tonnes
Hourly hyvas/trucks movement (to & fro)	Approx. 30 Nos.
Daily hyvas/trucks movement (to & fro)	Approx. 702 Nos.
Existing to & fro JPL's trucks (included in traffic study)	57
Additional to & fro JPL's trucks after deducting the existing trucks	645

x. 57 nos. of trucks carrying coal from Binaiki siding to power plant were moving on the road during traffic density survey on 8th-9th November, 2019. This traffic has been included in the existing baseline traffic. Hence, 645 trucks (702- 57) will be the maximum increase in traffic volume.

xi. The baseline and proposed traffic, the adequacy of the roads are as given below:

Existing traffic including present coal transportation & project increment of 10% (in PCU/day)	Additional traffic due to 645 trucks for coal transportation (PCU/day)	Total resultant traffic (PCU/day)	Design Service Volume (PCU/day)	% Utilisation of the road after addition of proposed traffic
758	1935	2693	2800	96%

xii. The current and proposed additional traffic volume on the Binaiki railway siding to Jhabua Power Plant route will have a maximum capacity utilization of road of 96%. Thus, the present road width is capable of supporting the present as well as the additional traffic.

xiii. Ambient air quality has been monitored in nearest villages. The results are shown as below:

Station Code	Location	Date	Air Quality Parameters, µg/m3 (Average Concentration)			
			PM_{10}	$PM_{2.5}$	SO_2	NO_2
AQ1	Binaiki Village	12-13.11.19	64.7	24.6	7.96	15.2
AQ2	Barela Village	11-12.11.19	65.3	28.9	8.94	17.5

xiv. All the parameters of ambient air quality are well within the permissible value specified in NAAQS, 2009.

xv. The incremental ground level concentrations due to additional traffic has been predicted as below:

Pollutant	Maximum Concentration (µg/m³)	Receptor No.
PM_{10}	13.99	R23
$PM_{2.5}$	3.39	R23
SO_2	0.41	R23
NOx	2.78	R23

xvi. The incremental values due to plying of 224 coal carrying trucks, when added to the existing air quality result observed at Binaiki village will be 78.69 (64.7+13.99) µg/m³ for PM_{10}, 27.99 (24.6+3.39) µg/m³ for $PM_{2.5}$, 8.37 (7.96+0.41) µg/m³ for SO_2 and 17.98 (15.2+2.78) µg/m³ for NO_2. Therefore, the resultant air quality would remain well within the prescribed limit. Impact of air pollutant is not anticipated at Barella village as it is at 0.6 km from the routes end edge.

xvii. The noise levels in the villages along the route have been monitored and the values are as below:

Station Code	Location and date of monitoring	Category	Noise levels (Leq) in dB(A)		Permissible Limits in dB(A)	
			Day	Night	Day	Night
N1	Binaiki Village	Residential	52.36	43.98	55.00	45.00
N2	Barela Village	Residential	44.10	52.20	55.00	45.00

xviii. The flora planted along the road and boundary of the plant are Karanj, Gulmohar, Khamir, Mango, Babul, etc.

xix. There is no habitation along the route within 100 m of road except a petrol pump near RW-03. Binaiki railway siding is present in Binaki village. Presently, the transportation of coal from railway siding to power plant is being done by trucks covered with tarpaulin.

xx. Continuous water sprinkling is being carried out at railway siding as well as on road.

xxi. Although M/s Jhabua Power Ltd has permission to transport coal through road for its entire coal demand, the actual truck movement is much lower due to the thermal power plant being operated below full capacity. A "Road Health And Safety Plan" has been already developed and followed by Jhabua Power Ltd.

(36.4.4) Committee has seen the drone videography on the progress of railway line. Committee observed that significant progress has been achieved. It can be commissioned as anticipated. However, Project Proponent informed that Indian Railways are insisting for electrification of the line from take off point to power plant so that electric loco can directly reach the power plant. The electrification work may take some time and accordingly, proponent requested for extension of 10 months. It was informed that the DPR for electrification is under preparation. The road condition has also been checked. The road condition and adequacy to take up existing traffic and proposed traffic has been verified and found within the design volumes of the road.

(36.4.5) **Committee after detailed deliberations recommended for extension of permission dated 30.4.2019 for transportation of 8767 MT/day coal by road from Binaik railway siding till plant premises (1.85 km) for a period of ~10 months (w.e.f. 15.2.2020 till 31.12.2020)** with following additional conditions:

i. The progress report on railway line including Electrification works shall be submitted as part of six monthly compliance report.

ii. The details of coal quantities transported daily along with Plant Load Factor/No.of units generated shall be submitted as part of six monthly compliance report.

(36.5) **2x660 MW Super Critical Thermal Power Plant at Village Koradi, Tahsil-Kamptee, District Nagpur, Maharashtra by M/s Maharashtra State Power Generation Company Limited (MAHAGENCO)-reg. re-consideration of ToR. F.No.J-13012/07/2019-IA.I(T) & Online No. IA/MH/THE/102533/2019.**

(36.5.1) M/s Maharashtra State Power Generation Company Ltd.(MAHGENCO) has applied for grant of Terms of Reference (ToR) pm 20.4.2019 for establishing 2x660 MW Power Project in the premises of 2x210 MW & 3x660 MW Koradi Power Plant near Village Koradi, Tehsil Kamptee, District Nagpur.

(36.5.2) The proposal of ToR was earlier considered by the EAC in its meeting held on 28.52019 and the committee recommended for a site visit by the Sub-committee to review the pollution levels in the surrounding area, emissions from the operating power plants, impact on Nagpur and Koradi towns, review the implementation of pollution control equipment, availability of land without compromising the greenbelt area. The Committee visited Koradi Power Plant during 01-3 August, 2019.

(36.5.3) The site visit report has been placed before EAC in its meeting held on 23rd August, 2019 and the committee suggested that Project Proponent should submit the action plan to the observations made in the site visit report for reducing the pollution levels in the area. The action plan has been submitted The action plan has been submitted by the Project Proponent on 20.11.2019.

(36.5.4) Project Proponent along with QCI-NABET consultants M/s Pollution and Ecology Control Services have made the presentation inter-alia submitted the following information:

i. Earlier 275.39 ha land was identified (inclusive of Ash bund, Railway siding & Green belt) for proposed 2x660 MW supercritical thermal power plant. After detailed layout design and area calculation total 168.72 acres (68.28 ha) land (excluding ash bund, railway siding) is sufficient and is available for proposed project. The existing Koradi ash bund will be used for proposed project.

ii. The break-up of total land requirement for the proposed project is as below:

Sr. No.	**Facility**	**Required Area (acres)**
1	Main Plant	40
2	Coal Handling System	29.07
3	Water System	16.06
4	Switch Yard	12.90
5	Miscellaneous BoP facilities, stores, road	12.25
6	Green Belt(33% of total area)	36.39
7	Roads(20% of total area)	22.05
8	Total	168.72

iii. The above area excludes the railway siding and ash bund area. The Koradi ash bund is of approximately 262.50 Acres and railway siding is extended towards ash bund to accommodate 2-3 lines extra for proposed plant and area require for railway siding is 25 Acres. Accordingly, the total area required for entire

2x660 MW plant including Ash bund, Railway siding and Green belt is 456.22 Acres. i.e. 182.50 Ha.

iv. The board has approved for demolition of existing structure fouling in the layout of 2x660 MW project and required land will be made available by demolition of the same within six months. For operational 2x210MW Thermal Power Plant 52.2 Ha land is available.

v. At present high capacity (50 mg/Nm^3) ESPs are installed with design efficiency of 99.9% for 3x660MW Units Koradi & 1x500 MW Khaparkheda. Particulate matter concentration is within the prescribed limit i.e. below 50 mg/Nm^3 for 3x660 MW Units Koradi & 1x500 MW Khaparkheda. Low NOx burners are installed to ensure that NOx does not exceed the prescribed limit. Order for installation of FGD for 3x660 MW units shall be awarded by November, 2019 and installed by December, 2021. For 1x500 MW Unit at Khaparkheda FGD tender will be floated in month of Nov 2019 & installation of FGD will be completed in Sep. 2022. Action has been initiated for consultancy services for installation of FGD for 210 MW units at Koradi TPS & Khaparkheda TPS.

vi. Rs. 523 Cr. has been spent till date towards EER&M of Koradi Unit#6 (210 MW) which includes up gradation of ESP and to minimize the Pollution concentration and efforts to achieve the present emission standards. For Koradi U#7 and Khaparkheda U#1&2 ESP retrofitting is proposed & same shall be completed by April 2022. Flue gas emission is monitored regularly and latest report for month of October, 2019.

vii. FGD and SCR installation is included in main package of 2 x 660MW proposed plant. 2 x 660MW proposed unit will be commissioned only after installation of all pollution control equipment's. Consultancy services for installation of FGD for 2 x 210 MW units is in progress. EER&M was carried out already for Koradi Unit 6.

viii. AAQ monitoring is regularly carried out in Koradi TPS and the latest reports of September 2019 shows that the AAQ at Koradi premises and at CAAQMS station is within the limit.

ix. At the time of visit, ETP was in operation partially due to O&M issues. After resolving these issues, ETP is made fully functional and operational. ETP water is treated and used in ash slurry and ash handling purpose. Effluent along with ash slurry is discharged in to ash slurry pond through dedicated pipeline.

x. Apart from ETP, three collection pits are constructed for collection of effluents generated during washing of ESP area, turbine area and CHP area. The provision is made to avoid discharge any plant effluents outside plant premises and recover all trade effluents. For collection of Turbine side drains, one tank is provided. Second tank is provided near Unit No. 8 AHP side for collection of washings in ESP area. Third tank is constructed near NDCT of Unit No. 10 for collection of washing effluents if any. All these tanks are provided with pipeline and pumps. The collected effluents in these tanks are admitted to central monitoring basin of ETP where those effluents are treated and utilized for ash disposal.

xi. The ash pond of Koradi & Khaparkheda are in operation since commissioning of Stage-I. HDPE lining is not possible at this stage. However, HDPE lining is proposed for new ash pond at Nandgaon under installation for 1x500 MW Khaparkheda Power Plant. Also, the old Koradi ash bund is empty about 70-75%, for which also HDPE lining is proposed. The said work will be completed in March 2021.

xii. Ash water recovered from Khasara ash bund is pumped from Khasara Ash water recovery pump house to Koradi Ash water recovery pump house. The pipeline from Koradi Ash water recovery pump house to 210MW is tapped near 210MW CHP and then further connected to CMB of ETP. This ash recovery water is treated at ETP and utilized for ash disposal.

xiii. MAHAGENCO has established its 100% own subsidiary company (namely MAHAGAMS). MAHAGAMS will carry out business of Ash Utilization or manufacture of any ash based product in vicinity of TPS. A fly ash cluster is being under development by MAHAGENCO at Koradi TPS & Khaparkheda TPS. It is expected that this cluster will be operational by 2021.

xiv. Two Piezo wells are proposed for ground water monitoring & to check the percolation of ash pond water in to ground water system. These Piezo wells will be located at in the periphery of Koradi & Khasara ash bund.

xv. Total 5 units will be dismantled. Koradi Unit 1 to 4 i.e.(4x120MW) and Unit no.5 1x200 MW. The last date for dismantling, deliveries and site clearance as follows. Unit 1 : 01/05/2019, Unit 2 : 23/11/2019, Unit 3 : 15/03/2020, Unit 4 : 04/07/2020, Unit 5 : E-auction is completed.

xvi. Approx. 1000 nos. of tree will be felling in the proposed area. Out of 1000 trees, maximum number of trees will be relocated to the vacant land and care will be taken for their survival. Additional 39 ha land is identified for development of green belt.

xvii. Greenbelt will be further strengthened near Pond No. 3 (On Ghoghli side), Near Pond No. 2 (On NH Side) and in Fodder Farm Nos. 3, 4 & 5.

xviii. As per the CPCB observations during its site visit, the action plan to achieve the compliance has been drawn and is at various stages of implementation. Automatic water spraying system is provided at all wagon tipplers of CHP. 02 Nos. of air borne mist operated fogging systems are commissioned at both the stack yards and are operated as per requirement.

xix. For control of dust emission from roads in plant area, water spraying system is installed in water tanker and it is being sprayed on roads regularly. The photographs are attached as Annexure-F.

xx. Dust extraction system installation is in process. It is expected to complete by December, 2019 and operational by January, 2020. Cement road construction is in progress for approach to Koradi ash pond.

(36.5.5) Committee has reviewed the action plan submitted Proponent. The greenbelt of 33% area including Koradi operational plants is to be shown on the map. After leaving 33% greenbelt area, the available area for proposed project is to be drawn. While calculating 33% greenbelt, roads (22.06 acres) are also to be made part of total project area. Project proponent needs to submit the revised map showing the operational units, proposed units and greenbelt. Further, Committee noted that as per the observations of the site visit report, the action on non-compliance of the EC condition and Ministry's permission dated 23.3.2017 regarding installation of FGD one unit (Unit-8: 1x660 MW) at the time of commissioning and subsequent extension till 7.12.2017, is to be taken by the Ministry.

(36.5.6) Committee after deliberations, **deferred the proposal for submitting the revised map showing operational units, proposed project and to cover 33% greenbelt of the total area and map showing piezometric wells around the ash pond. Simultaneously, Ministry may take the action on non-**

compliances regarding FGD installation and other issues mentioned in the site visit report.

(36.6) 2x250 MW Lignite based Thermal Power Project at Padva, Bhavnagar District in Gujarat by M/s Bhavnagar Energy Company Ltd.- reg. amendment in EC.
(File No.J-13011/39/2008-IA.II(T) & Online No. IA/GJ/THE/116337/2019)

(36.6.1) Project Proponent has submitted online application on 02.11.2019 for amendment in EC for change in water source and correction in the coal source. The Environmental Clearance for 2x250 MW Lignite based Thermal Power Plant has been accorded vide Ministry's letter dated 10.2.2010 in favour of M/s Bhavnagar Energy Company Ltd. Present application has been submitted by M/s Gujarat State Electricity Corporation Ltd.(GSECL).

(36.6.2) M/s GSECL had made the presentation and inter-alia submitted the following information:

i. Gujarat State Electricity Corporation Limited (GSECL), is a company promoted in 1993 by Gujarat Urja Vikas Nigam Ltd.; (GUVNL-formerly GEB, Gujarat Electricity Board) as 100% owned subsidiary.
ii. As per the Energy & Petrochemicals Department, Government of Gujarat notification No.: GHU-2018-(66)-BEC-12-2018-3332-K dated 27.08.2018, Bhavnagar Energy Company Limited (BECL) is merged with Gujarat State Electricity Corporation Limited (GSECL).
iii. The Padva TPS of erstwhile BECL is now known as GSECL, Bhavnagar Lignite Thermal Power Station (BLTPS).
iv. An application for transfer of EC from M/s Bhavnagar Energy Company Ltd. to M/s GSECL had already been submitted to Ministry which is under consideration.
v. As per the Environmental Clearance, the water requirement will be met from Sea from Gulf of Khambat at a distance of 6 km from the plant. It has been informed that the intake water channel for drawing sea water and outfall channel for discharging cooling tower water and blowdown could not be constructed. Though, the plant has achieved COD, it was not in continuous operation since commissioning and operated at very low PLF (8-10%) due to water shortage and operational issues.
vi. As per the Revised Tariff Policy dated 28.1.2016, notified by Government of India, and as per the Policy of Government of Gujarat for Reuse of Treated waste water, 2018, it is mandatory for all the Thermal Power Plants within a distance of 50 km. from STP or city limits to use Treated Sewage.
vii. The Power plant is using the treated sewage water from Sewage Treatment Plant (STP) of Bhavnagar Municipal Corporation, instead of sea water for cooling purpose in the plant.
viii. The water requirement for the power plant is 5 MLD (5000 KLD) for plant utility and drinking water purposes and 37 MLD (37,000 KLD) for cooling purposes. It has been proposed to obtain 5 MLD from GWIL, Budhel Sump (10 km) and 37 MLD from Bhavnagar Sewage Treatment Plant (45 km).
ix. In view of the changes in cooling water source, there is no need of laying intake water channel from Sea to Power Plant. However, a pipeline for discharging

cooling tower blow don in to the sea is to be laid which will take another 24 months.

x. Further, the specific condition No. (x) of Environmental Clearance, mentions that emission parameters of PM_{10} and $PM_{2.5}$ are to be monitored in the stacks through online continuous emission monitoring system. At present, there is no technology to monitor Particulate Matter separately as PM_{10} and $PM_{2.5}$ from the flue gas. Accordingly, suitable modification may be issued.

xi. Further, as per the EC, the Lignite is to be sourced from Surkha-I, Kharsliya- I & II and Surkha North mine blocks of M/s GMDC. However, there is a minor correction is needed for the Surkha-I mine and mine operators. Accordingly, the following may be incorporated as an amendment.
"Lignite will be sourced from Surkha-I **(Ghogha-Surka)**, Kharsliya I & II mines of **M/s GPCL** and Surkha North mine blocks of M/s GMDC".

(36.6.3) Committee noted that M/s GSECL has applied for the amendments in the EC and the EC transfer application is under consideration by the Ministry. Further, w.r.t. water source change, the existing proposal of raw/fresh water drawal from GWIL (Budhel Sump) for a quantity of 5 MLD as per original proposal remains the same. Committee has verified the EIA report submitted at the time of EC appraisal. It was mentioned that 4.8 MLD raw water is to be obtained form GWIL and 144 MLD is to be obtained from sea for cooling purposes. Only change that was requested is to source Treated Sewage Water instead of Sew water for a quantity of 37 MLD for cooling purposes. After cooling, the same quantity of water after evaporation losses will be discharged into the sea through pipelines. It was informed that the discharge pipelines are yet to be laid. Committee noted that the existing CRZ recommendations/ permission is for intake water lines, discharge lines and storage pond which may have got expired by now. Further, there is a change in scope in the CRZ area. Accordingly, Committee suggested that Proponent should first obtain a GCZMA recommendations inline with the CRZ notification and approach Ministry for amendment regarding discharge pipelines. Further, w.r.t. correction in coal source and PM emissions in the flue gases may be amended suitably as these are only factual corrections.

(36.6.4) **Committee after detailed deliberations, recommended for amendment in EC for following subject to transfer of EC to the new incumbent subject to the transfer of EC by the Ministry**:

i. Use of 5000 KLD raw water from Budhel Sump, GWIL and use of 37,000 KLD Treated Sewage Water from Bhavnagar Sewage Treatment Plant is recommended.

ii. Sources of Lignite will be from Surkha-I **(Ghogha-Surka)**, Kharsliya I & II mines of **M/s GPCL** and Surkha North mine blocks of M/s GMDC.

iii. In the Specific Condition No. (x), "Particulate Matter (PM)" shall be substituted in place of "PM_{10} and $PM_{2.5}$".

iv. As the validity of existing CRZ permissions expired, Proponent shall obtain fresh recommendations from GCZMA under CRZ Notification, 2019 and approach for amendment in EC for discharging cooling water blow down (sewage water after cooling) in to the Sea through pipelines, along with CRZ mapping.

v. A final layout map showing the fresh water intake point, STP, discharge point and associated pipelines shall be submitted to the Ministry within 6 months.

(36.7) 55 MW Greenfield (Dual Fuel Power Project) Andaman & Nicobar Gas Power Project at Hope Town at Ferrargunj Tehsil in South Andaman District, Andaman and Nicobar by M/s NTPC Vidyut Vyapar Nigam Limited. - reg. discussion on Site Visit report.
(F.No. J-13012/14/2018-IA.I(T) & Proposal No.IA/AN/THE/113957/2018)

(36.7.1) As the site visit report was last considered in the 35th EAC meeting held on 14.11.2019, the same was not discussed in this meeting again. The Member Secretary informed in the EAC meeting that it has been listed in the agenda inadvertently.

****

(36.8) 1x660 MW Satpura Supercritical Thermal Power Project (Expansion, Phase-V, Unit No. 12), Tehsil Ghoradongri, Village Brahmanwada Ryt, District Betul, Madhya Pradesh by M/s Madhya Pradesh Power Generating Co. Limited (MPPGCL)-reg. discussion on Site Visit Report for ToR.
(F.No.J-13012/12/2019-IA.II(T) & Proposal No. IA/MP/THE/120787/2019)

(36.8.1) Project Proponent has submitted the online application on 07.10.2019 for grant of ToR. The proposal for grant of ToR was earlier considered by the EAC (Thermal) in its meeting held on 21.10.2019 and the Committee recommended for conducting a site visit for prescribing the additional Terms of Reference for preparing EIA studies including the prevailing Environmental settings.

(36.8.2) The Sub-committee comprising of following members held discussions with the Officials of MPPGCL on 22.11.2019 at Bhopal and visited the project site on 23.11.2019. During the visit, proposed Power Plant area, Ash Pond Areas, existing Power Plant, etc. were visited.

1.	Dr. Navin Chandra	:	Chairman
2.	Shri Gururaj Kundargi	:	Member
3.	Shri Mohan Karnat	:	Member
4.	Shri N.S. Mondal	:	Member
5.	Dr. J.K. Pandey	:	Member
5.	Dr. S. Kerketta	:	Member Secretary

(36.8.3) During the site visit, the sub-committee made the following observations:

i. Five Reserve Forests and two Protected Forests are present within 10 km radius of the proposed Power Plant. Similarly, 10 water bodies viz., rivers, nallah, ponds and reservoirs are also located in and around the proposed project.
ii. Several Court Cases are pending before the High Court of Jabalpur, NGT and District Courts mainly on issuance of Consent to Operate, non-compliance of Fly Ash Notification and inadequate compensation provided to the villagers for construction of Ash Pond for Units# 10&11.
iii. The project area is also surrounded by hills and ancient monuments. It is located in a lowlying area.

iv. Till today, 3,37,300 plants have been planted of different tree species in an area of 271 ha.

(36.8.4) Sub-committee has recommended for the following additional ToRs:

i. As many Environmental Sensitivities are present, impact on surrounding ecology mainly on Schedule-I and RET species are to be studied and conservation plan be provided.
ii. Many water bodies are located in and around the project area, proper inventorization on aquatic lives be made and umbrella fish species of the area to be identified so that minimum e-flow be ensured during lean season for all the perennial rivers/nallah.
iii. Status of court cases and the reason thereof will be provided in the EIA/EMP report. Reason of non-compliance of Fly Ash Notification and inadequate compensation provided to the villagers for construction of Ash Pond for Units# 10&11 will be provided.
iv. The genesis of selection of tree species be provided including density of plantation @2,500 Nos. tree per ha. Besides, local species should be given preference for development of greenbelt for better habitat and survival.
v. Re-conciliation of data on employment after the post commissioning of the project. The completion time schedule of the project has not been given in PFR.
vi. Use of Abandoned Stone Mines to be governed by the Notification MoEF & CC vide OM dated 28.08.2019. Fly Ash to be used for road construction of NH-69 as well as other roads. In this regards, an undertaking in the form of an Affidavit will be submitted.
vii. Technology selection for adoption of FGD for control of SOx. In case of wet FGD, source of limestone, impact of transportation, handling, storage and disposal of Gypsum including land requirement.
viii. Alternate technology analysis and justification of Technology Selection for NOx reduction.
ix. Satpura reservoir is an old one, sustainability of water supply be studied including soil erosion in its upper catchment and siltation into the reservoir. In case of inadequate water supply, alternate sources be identified and included in the EIA/EMP report.
x. In the PFR, water requirement for FGD has been provided but water requirement in the FGD to be installed in the existing units has not been given. Therefore, water balance to be modified based on the water requirement for whole units including a plan on ZLD for the proposed unit.
xi. As the coal will be sourced from either of WCL, SECL and NCL. Modeling of emission shall be made based on different coal quality from different Coalfields.
xii. A plan on 100% utilization of fly ash from the proposed power plant and attempt shall also be made for utilization of Legacy Ash from the existing Ash Pond. A study on the dyke stability of the ash pond considering future raising of height of the dyke. This may also include permeability of heavy metals and leaching behaviour of ash pond water and provision of recycling it through AWRS for slurry making.

(36.8.5) Committee deliberated the site visit report of the sub-committee and agreed with the ToRs recommended in the report. **Committee after detailed deliberations, recommended for grant of following ToRs in addition to the ToRs prescribed by the Sub-committee and Standard ToRs:**

i. The action plan for achieving zero liquid discharge for the proposed power plant and emissions as per the revised norms for both existing power plants and the proposed power plant shall be submitted.
ii. The details of existing plants regarding date of commissioning, date of de-commissioning, copies of past environmental clearances, consents from State Pollution Control Board shall be submitted.
iii. The total plant area along with the 33% greenbelt, as whole complex needs to be mapped and submitted the status of compliance.
iv. As proposed, no new additional area for ash dyke is permitted. Existing ash pond shall be utilized for the proposed unit. The details of existing ash pond such as area, co-ordinates, dyke height, total volume, volume utilized and available and peripheral greenbelt shall be submitted.
v. The plume dispersion modeling shall take into account of terrain features such as Satpura hills, valleys and geographical undulations for predicting the incremental concentrations. Further, while predicting the incremental emissions from the proposed project, the emissions from the stacks of the operating power plants shall be considered for assessing cumulative impacts.

(36.9) 2x300 MW (Phase-I) Coal Based Thermal Power Plant at Villages Ghanmukh (Bijora), Tehsil Mahagaon, Yavatmal District, Maharashtra by M/s Jinbhuvish Power Generations Pvt Ltd.- reg. re-consideration of extension of validity of EC.
(F.No.J-13012/158/2010-IA.II(T)&Proposal No. IA/MH/THE/108493/2019)

(36.9.1) Project Proponent has submitted online application on 22.06.2019 for extension of validity of EC for a period of 5 years. The environmental clearance was issued on 30.07.2012 and valid for five years, i.e till 29.7.2017. By virtue of EIA amendment Notification dated 14.09.2016 increasing the validity of EC from 5 years to 7 years, the said EC validity is automatically increased to seven years, i.e. till 29.07.2019. The proposal has earlier been considered by the EAC in its meeting held on 25.7.2019 and EAC sought additional information. The information has been submitted by Project Proponent. The proposal has been re-considered on 21.10.2019. However, Project Proponent did not attend the meeting. Accordingly, the proposal has been re-listed in the present meeting. However, Project Proponent has informed that the company is in the process of resolving issues related to project funding and other issues, and expected to be completed by March, 2020. Accordingly, Project Proponent requested for re-consideration of the proposal in the month of April, 2020.

(36.9.2) Committee noted that the this is the second time project has been listed. Committee noted that Project Proponent has requested to re-list the project in April, 2020 due to issues related to project funding. However, proponent did not turn up for the meeting. Proponent may approach Ministry by quoting Online Proposal no. IA/MH/THE/108493/2019 dated 22.6.2019 to re-list the proposal as and when they are ready. **Committee after deliberations, deferred the project and suggested that Member Secretary may de-list the project from the pendency**.

(36.10) **4x360 MW Coal based Thermal Power Plant at Uchipinda, Tehsil Dabara, Dist. Janjgir Champa in Chhattisgarh by M/s R.K.M Powergen Pvt. Ltd.- reg. permission to transport coal by road.**
(File No.J-13012/12/2008-IA.I(T) & Proposal No. IA/CG/THE/19853/2008)

(36.10.1) Project Proponent has submitted online application on 11.08.2017 for permission to transport coal by road.

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

i. The temporary permission for transport of coal by road was accorded for three years vide Lr. No J-13011/12/2008-IA.II (T) dated 23rd September, 2014 by MoEF&CC and was extended up to 25.08.2018 in 9th EAC meeting held on 30th August, 2017. Minutes were uploaded. Formal letter awaited.

ii. Due to various factors like Delay in land acquisition, Delay in signing of FSA, Delay in receipt of funds from banks etc., the work on railway line was delayed. Hence RKM requests the Ministry to permit transport of coal by road for a further period of two years until the Railway line up to plant is completed and commissioned.

iii. All four units are commissioned and Commercial operation dates are given below:

Unit No.	COD	Present Status
Unit-I (1x360 MW)	27.11.2015	Commissioned and in operation.
Unit-II (1x360 MW)	12.2.2017	Commissioned and in operation.
Unit-III (1x360 MW)	14.11.2017	Commissioned and in operation.
Unit-IV (1x360 MW)	20.3.2019	Commissioned and CTO awaited for regular operations.

iv. Units 1, 2 and 3 are operated alternatively for supply of 350 MW to UPPCL. PPA for 550 MW supply to Telangana under Ministry of Power Aggregated Power purchase scheme-1 through PTC is to be operationalized shortly on release of working capital from Lenders. Unit 4 is not in operation after COD as Chhattisgarh Environment Control Board is demanding commitment BG for compliance with new environmental norms of MoEF&CC for issue of CTO and Lenders are not willing to issue required BG. Letter from our Bank and our assurance letter to meet new environmental norms as per FGD implementation plan of CEA have been submitted to CECB.

v. At present company has two FSAs on permanent basis, i.e. a) FSA No. 109 dated 03.09.2013 and FSA No. 113 dated 23.09.2019 with SECL for 4.03 MTPA for 900 MW capacity.

vi. These FSA's are in operation for 350 MW from 01.10.2016 onwards for an effective quantity of 1.68 MTPA out of the allotted quantity of 4.03 MTPA.

vii. At present FSA coal is being transported up to nearest sidings (Kharsia, etc.) from various SECL mines by Rail and transported from siding to plant for about 16 km by road. Shortfall in FSA coal is being sourced through various E

auctions / Special allotment of SECL/MCL/CCL and transported directly from mine to plant by road.

viii. The distances of various mines of SECL are given below.

Sl.No.	Mines	Distance in km
1	Mines in Korba area	100-130
2	Mines in Raigarh area	40-85

ix. The details of the quantity of coal transported by road since the commissioning of the first Unit are as below:

Year	Quantity in Metric Tonnes				
	2015-16	2016-17	2017-18	2018-19	2019-20 (till Sept'19)
Rail Mode	59,258	69,120	5,12,603	8,95,931	3,55,693
Road Mode	28,036	-	1,39,687	3,68,039	1,97,146
Total	87,294		6,52,290	12,63,970	5,52,839

x. The present status of rail link from Kharsia to Power plant site is as follows:

a. DPR for railway siding was submitted to railways and approved on 02-05-2012.

b. ESP & L – Section was approved by SECR on 22.10.2013.

c. Work order was released for Railway siding supply and erection for RKMPPL portion on 20.07.2013 and common portion on 29.04.2013.

d. Bridge-2 was been approved by SECR on 10.09.2014.

e. Provisional approval for wagon tippler installation at plant site was obtained from Research Designs & Standards Organization (RDSO) on 21.04.2015.

f. Approval/NOC awaited from PWD for bridge 1 & 4 and from WRD for bridge 3 for onward submission to SECR for approval.

g. The railway track stretch from Kharsia railway station to Athena take off point was approved in the name of joint venture company (JV company of RKMPPL and Athena). The stretch from Athena take off point to RKMPPL in plant was approved in the name of RKMPPL.

h. A request for change in approval from ACPL to RKMPPL for the entire stretch was submitted and In principal approval for the same has been granted by Railways on 29.01.2019.

i. RKMPPL has already deposited initial codal charges as applicable to railways amounting to Rs.3.57 Crores.

j. Railway land 3.49 acres for common satellite yard for common portion of railway siding allotted on 06.01.2014.

k. Demand note for depositing advance premium amount of Rs.19.27 Crs (Common portion of RKMPPL and ACPL) for land acquisition of Rs.135 acres private land for common portion of railway siding received on 28.08.2015 from CSIDC. Social impact assessment study payment of Rs.27 Lakhs (RKMPPL's siding) made on 28.12.2015.

l. For RKMPPL portion of railway siding, 5.78 acres private land has been purchased and 27.35 acres lies on land allotted to RKMPPL for greenbelt development. Land diversion application submitted and is in process.

m. Order for fresh survey works has been placed on railway consultants M/s. AARVEE Associates. Survey work has been completed and report has been submitted for scrutiny.

n. Area grading, Removal of improper soil, bed preparation has almost been completed and Murram filling works for RKMPPL In-plant yard stretch from the wagon tippler (CH: 15.493Km) to ROB over Dewarghatta-Dhurkot road (CH: 14.708Km) has been started and under progress.

o. Half portion of Bridge No 5 (CH: 15.038 km) is completed and balance is under progress.

p. The Cost estimate for the entire siding work from Kharsia station to RKMPPL in-plant siding is Rs.193.15 Crores. Of the total Cost estimated, the amount of Rs.16.92 crores is for the modification/ alteration works at the Kharsia station which are to be taken up by railway approved Contractor/railway authorities under the supervision of RITES/IRCON as a deposit work.

xi. The delay in constructing railway siding has happened due to delay in land acquisition, delay in signing of Fuel Supply Agreement (FSA) as this is a pre-requisite for traffic study and approval by railways, delay in approval from Railways & PWD, and delay in release of funds from financial institutions.

xii. At the beginning m/s ACPL, M/s KSK and M/s RKMPPL were to share the part of the railway line construction cost common to the companies as per MOU signed. But on cancellation of coal block by Supreme Court and delay in release of funds for construction the partnership could not be continued. Now RKM has proposed to complete the entire line and has submitted the proposal and got approval from their Lenders and in principle approval from Railways.

xiii. After Supreme Court cancelled all Coal Blocks allotted, Enforcement Directorate by an illegal and baseless order stopped the companies banking operations for 6 months from February, 2015 to September, 2015. This action of Enforcement Directorate had caused additional interest burden of Rs 590 Crores. The banks also stopped all further sanctions. Subsequently, the company approached the Hon'ble High Court of Madras, which stayed the company being classified as NPA.

xiv. This was specifically done to enable Banks to take suitable remedial measures to put the company back on track. However, in spite of several JLF meetings and assurances before the Project Monitoring Group (PMG), the banks are yet to sanction the necessary BG limits and working capital for the project.

xv. Presently, coal transportation is done through mechanically covered trucks. The avenue plantation has been done along the road. Periodic road maintenance is done by the company.

xvi. ISM, DHANBAD has conducted the Road transportation impact study and concluded that "From the traffic survey, maximum traffic was observed near Raigarh – Bhupdevpur Road, Village- Naharpail (Near Vimla Siding) and the

distance of this location from nearest Kosa cultivation centre ie. Farkanarais was found to be about 22 Kms and is not likely to have any significant impact on Kosa cultivation due to existing transportation of coal on account M/s. RKMPPL".

(36.10.3) Committee noted that permission to transport coal by road for a period of three years (i.e. till 22.9.2017) was issued vide Ministry's letter dated 23.9.2014. Subsequently, the EAC (Thermal) in its meeting held on 30.8.2017 recommended for extending the permission for transportation of coal by road for temporary period of one year or till the expiry of the validity (i.e. till 25.8.2018). The Member Secretary has informed that the Ministry has not yet issued the approval communicating the recommendations of the EAC due to CBI matter connected to the project regarding allocation coal blocks. Further, the proponent is transporting the coal by road even after 25.8.2018 till date without valid clearance which is a non-compliance to be appropriately dealt by the Ministry. The proponent is mentioning that they have submitted the online application several months back. However, after examining the proposals submitted by the Proponent on PARIVESH, it was found that there is only one application pending (**IA/CG/THE/19853/2008 dated 11.8.2017**) for which EAC in its meeting held on 30.8.2017 had already made the recommendations for transportation of coal by road for one year (25.8.2018). There is no new application submitted by Proponent for seeking extension beyond 25.8.2018.

(36.10.4) As earlier recommendations are yet to be communicated by the Ministry, and Proponent is transporting coal by road without approval from the Ministry, Committee recommended that the Ministry may take a separate call for dealing with the earlier recommendations and non-compliances and subsequently may further place before the EAC for appraisal. **Accordingly, the proposal is deferred**.

(36.11) **Any oter item with the permission of the Chair.**

(a) **1x800 MW (Phase-II) 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. amendment in EC for change in coal source.**
(File No.J-13012/25/2012-IA.II(T)& Proposal No. IA/AP/THE/10486/2012)

(36.11.1) M/s Andhra Pradesh Power Development Corporation Ltd. has submitted online application on 13.08.2019 for amendment in EC dated 2.7.2015 for change in coal source from imported to domestic coal to be sourced from Mahanadi Coalfields to the Power Plant.

(36.11.2) The Environmental Clearance for Phase-II (1x800 MW) has been issued on 2.7.2015 which is under construction at present. The Environmental Clearance for Phase-I (2x800 MW) has been issued on 17.07.2007 which is under operation.

(36.11.3)As per the EC dated 2.7.2015 for Phase-II Project, the coal source is based on imported coal with quantity of 2.5 MTPA and to be transported by conveyor belt from Krishnapatnam port. The estimated Ash and Sulphur contents are in the

range of 12-16%, 0.45-0.8%, respectively in the imported coal. In the present application, project proponent proposed to obtain coal from M/s Mahanadi Coalfields Ltd. Since the ash content is high, it has been proposed to wash the coal from MCL washery or proponent's own washery to maintain ash content below 34%.

(36.11.4) The proposal for change in coal source from imported coal to domestic coal has been considered by the EAC (Thermal Power) in its 32nd meeting held on 23.8.2019 and the Committee recommended for amendment in EC for change in coal source from imported coal to domestic coal subject to following additional condition:

i. Coal transportation shall not be carried out by road mode. It should be transported either by rail, sea route or conveyor belt.
ii. The installations of Flue gas De-sulphurization (FGD) Unit shall be made for 800 MW (Phase-II) while commissioning so as to meet the revised emission norms issued vide dated 7.12.2015.
iii. In line with the Ministry's notification 2.1.2014 and as proposed, the washed/beneficiated coal from M/s MCL shall be used to keep the ash content below 34% as the power plant is located more than 500 km from the source of coal (Talcher coalfields).
iv. Un-utilized ash shall be disposed in the ash pond of Stage-I (2x800 MW) in an area of 130 acres. No additional ash pond will be permitted. The aim is to utilize the 100% ash in road making, bricks, cement manufacturing, etc.

(36.11.5) The Ministry while processing the proposal, it has been found that coal transportation by road is involved for a stretch of about 10-15 km from the Mahanadi coal mines to the Washery which involves transportation of coal having quantity approx. 10,000 MT/day and 1215 truck trips/day. Accordingly, Ministry vide letter dated 21.10.2019 advised Proponent to carry out Traffic Impact Assessment for further consideration by the EAC. Proponent submitted the traffic impact assessment report on 29.11.2019. Accordingly, the proposal has been placed in the present meeting.

(36.11.6) Project Proponent along with M/s Vimta Labs Ltd., Hyderabad have made the presentation *inter-alia*, submitted the following information:

i. Ministry of Coal vide letter dated 19th September 2017 granted long term coal linkage to APPDCL Stage-II 800 MW unit. M/s Mahanadi Coal Fields Limited (MCL) issued Letter of Assurance (LOA) vide Lr MCL/SBP/GM(M&S)/Comml./2018-19/5779 Dt:04-03-2018 for the supply of 3.548 MTPA of coal of grade G11 to G15.
ii. The mode of transportation from the Mahanadi Coalfields to the Power Plant is given in the next table.

Coal Transportation	Distance	Mode of Transport	Quantity of Coal to be Transported per annum
From mines to washery	10-15 km (based on the mines allocated by MCL)	Road	35.48 Lakh MT
From washery to Paradip port	195 km	Rrail	26.08 Lakh MT

From Paradip port to Krishnapatnam port	1186 km or 640.4 nautical miles	Sea route	26.08 Lakh MT
From Krishnapatnam port to SDSTPS	8 km	Port/ APPDCL pipe conveyor	26.08 Lakh MT

iii. The route between Mahanadi Mines to Washery involves road transportation of about 10-15 km.

iv. The coal from MCL mines will be sourced from any of the four mines blocks – Hingula OCP, Balaram OCP, Bharatpur OCP and Bhubaneswari OCP

v. The coal required for MCL blocks will be transported to washery by road. Approximately 10,000 MT/day of coal will be transported to washery nearly 1215 trips/day.

vi. The details of the roads originating from mines to the Washery are given in the table.

Sr.No	Description of the Mine	Name of the Stretch/Road	Length (km)	Carriage Way Width (m)	Berms (m)	Type of Road	Owned by
A	Solarha Mandir Chowk Junction	Kalamunchi to Solarha	1.0	5.5	-	BT	Village road
		Solarha to Kalamunchi	1.0	6.6	-	BT	Village road
		Balaram OCP to Hingula OCP	7.0	8.2	-	WBM	MCL
		Hingula OCP to Balaram OCP	7.0	8.2	-	WBM	MCL
B	Salvoni Chowk	Angul to Kalamunchi (To & Fro)	20	6.8	-	BT	Village road
		Hingula OCP to Loading point	14.0	7.2	1.5+1.5	BT	Village road
		Loading point to Hingula OCP	14.0	7.2			Internal Road
C	Baidya Chowk	Hingula OCP to Bhubaneswari OCP (to & fro)	20.2	6.8	-	WBM	MCL
		Dera colony to Hensumla village	6.0	5.5	1.5+1.5	BT	Village road
		Balaram OCP to Hingula OCP	7.0	8.2	-	WBM	MCL
		Hingula OCP to Balaram	7.0	8.2	-	WBM	MCL

		OCP					
D	Zero Point (Coal Washery)	Angul to Jambubahali (To & Fro)	25 km	6.3	1.5+1.5	BT	Village road
		Bhuvaneswari OCP to Hingula OCP	14.0	7.2		Cement road	MCL

vii. The details of baseline and proposed traffic along with the adequacy of the roads are provided next table.

S. No.	Road	Carriage way	Traffic Volume (Veh/Day)	Traffic Volume in PCU/Day (V)	Capacity/Design Service Volume in PCU/Day (C)	V/C ratio	% Utilisati	LOS	Performanc
I	**Saloda Mandir Chowk**								
1	Existing Traffic	7.00 m - Two Lane Undivided	5514	9536	15000	0.63	63%	C	Good
2	Coal Trucks		304	912		0.06	6%		
3	Future Traffic		5818	10,448	15000	0.69	69%	C	Good
II	**Baidya Chowk**								
1	Existing Traffic	10.00 m - Two Lane Undivided	3937	11399	15000	0.75	75%	D	Fair
2	Coal Trucks		304	912		0.06	6%		
3	Future Traffic		4241	12311	15000	0.82	81%	E	Poor
III	**Salvoni Chowk**								
1	Existing Traffic	7.00 m - Two Lane Undivided	3079	6258	15000	0.41	41%	C	Good
2	Coal Trucks		304	912		0.06	6%		
3	Future Traffic		3383	7170	15000	0.47	47%	C	Good
IV	**Zero Point**								
1	Existing Traffic	-	5170	7874	15000	0.52	52%	C	Good
2	Coal Trucks		304	912		0.06	6%		
3	Future Traffic		5474	8786	15000	0.58	58%	C	Good

viii. In the present traffic study, the level of service (LOS) is observed as C for all the three junction points and D for Baidya Chowk as per the existing traffic scenario. After adding the additional coal trucks the LOS is shifted from D to E

on the Baidya Chowk and the LOS will remain same on the other three junction roads.

ix. The actual emissions released from the 1215 trips/day as per the BS-VI emission norms have been estimated as below:

Description	**Details**			
Coal Qty (TPD)	10,000			
No. of trips/day	1215			
Parameter	**BS-VI Norms**	**Emission in (g/s)**	**Prediction (µg/m³)**	**Distance from Centre line of the Road (km)**
CO	2.27	9.52	15.5	100 m
NOx	0.16	0.16	1.06	100 m
PM	0.082	0.08	0.54	100 m
HC	0.0045	0.004	0.03	100 m

x. The baseline ambient air quality has been monitored and the maximum incremental concentrations have been predicted through Line Source model and the resultant concentrations are as below:

Parameter	Maximum Baseline (µg/m³)	Maximum GLC (µg/m³)	Resultant Concentration (µg/m³)	NAAQS 2009 (µg/m³)
PM	64.3	0.54	64.8	100
NOx	22.4	1.06	23.5	80
CO	399	15.5	414.5	2000
HC	-	0.03	0.003	-

xi. It is observed that the maximum incremental concentrations of major pollutants CO and NOx due to the additional traffic load would be about 15.5 µg/m³ and 1.06 µg/m³ respectively likely to occur at 10 m from the centre of the road. The CO and NOx concentrations are likely to be very low when compared with the NAAQ standards for CO (2000 µg/m³) and WHO standard of 400 µg/m³ for hourly average for NOx. It is to be noted that the model results are predicted considering the worst case scenario i.e stable atmospheric conditions which normally occurs in the early hours. However, during daytime the predicted GLC's will be less.

xii. The modelling exercised has been executed considering 25% of coal transport from each bock of MLC mines to washery all put together 100%. Hence, it is assessed that the impact on the present ambient air quality will be marginally increased due to the additional traffic from the proposed project.

xiii. The area from mines to washery and transportation road is almost MLC roads which are devoid of habitation. The habitation is at a distance of neary 500 m from the village roads.

xiv. The noise levels have been monitored and the values are within the limits of residential standard except two places, i.e. Jambubahali and Singida Villages.

(36.11.7) Committee noted that roads near Washery is broken at several places and needs repair. The repair work is to be done by proponent through the washery owner (Spectrum Washery). Further, two tankers should continuously be used for water sprinkling for dust suppression. Proponent while carrying out the traffic

impact assessment has distributed the 1215 trips equally between four different mines (2500 TPD for each mine) located within the radius of 10-15 km.

(36.11.8) The Condition No.i as recommended in the EAC meeting dated 23.8.2019 regarding "Coal transportation shall not be carried out by road mode. It should be transported either by rail, sea route or conveyor belt" shall be removed as there is a road transportation involved in the proposal.

(36.11.9) Committee after detailed deliberations**, recommended for change in coal source and transportation of 10,000 TPD coal by road from different mines of Mahanadi Coalfields Ltd up to Spectrum Washery for a distance of maximum 15 km** subject to following additional conditions.

i. The coal transportation from MCL mines to Washery for a distance of 15 km is permitted by road. Subsequently, the coal is to be transported from Washery to Paradip port (195 km) by rail, from Paradip Port to Krishnapatnam Port (1186 km) by sea, from Krishnapatnam port to power plant (8 km) by closed conveyor belt.
ii. The road near Washery is to be repaired by the Proponent through Washery Owner.
iii. Two water tankers should be continuously be plying on the road for dust suppression. The details of quantity of water used for dust suppression and the number of tankers used shall be submitted to the Ministry.
iv. The details of coal quantity transported daily from MCL mines to Washery, and from Washery to Power Plant along with mode of transportation shall be submitted to the Ministry and its Regional Office as part of Compliance Report.
v. The MCL and Spectrum Washery together should find a long-term solution for avoiding the road transportation such as conveyor belt, aerial ropeway, rail line, etc. In this regard, a commitment letters from MCL and Washery are to be submitted.

(36.11.2) Vote of Thanks to the EAC and MoEF&CC.

As the EAC tenure will be completing on 8.12.2019, the present meeting is the last meeting. Accordingly, Dr. Navin Chandra, Chairman-EAC has taken opportunity to thank all the Committee members for successfully conducting 36 meetings in Thermal Power Sector since its constitution in cordial manner. The Chairman has also expressed gratitude to Dr. S. Kerketta, Member Secretary for organising meetings and co-ordinating with members throughout the tenure of the Committee. At the end, Chairman has also thanked Shri N. Subrahmanyam, Scientist C, Shri Sarvesh Narwal, ASO, Shri Kunal, OA and Shri Pradip, OA for extending the technical and logistical support.

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

***

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_X within the plant area at least at one location. The monitoring of other locations (at least three locations outside the plant area covering upwind and downwind directions at an angle of 120° each) shall be carried out manually.
7. Adequate dust extraction/suppression system shall be installed in coal handling, ash handling areas and material transfer points to control fugitive emissions.
8. Appropriate Air Pollution Control measures (DEs/DSs) be provided at all the dust generating sources including sufficient water sprinkling arrangements at various locations viz., roads, excavation sites, crusher plants, transfer points, loading and unloading areas, etc.

D. Noise pollution and its control measures:

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

E. Human Health Environment:

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

also include impact due to heavy metals associated with emission from power plant.

4. Sewage Treatment Plant shall be provided for domestic wastewater.

F. Water quality monitoring and Management:

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

Grease: 20 mg/l; Copper: 1 mg/l; Iron:1 mg/l; Free Chlorine: 0.5; Zinc: 1.0 mg/l; Total Chromium: 0.2 mg/l; Phosphate: 5.0 mg/l;

10. Sewage generation of …….KLD will be treated by setting up Sewage Treatment plant to maintain the treated sewage characteristics of pH: 6.5-9.0; Bio-Chemical Oxygen Demand (BOD): 30 mg/l; Total Suspended Solids: 100 mg/l; Fecal Coliforms (Most Probable Number): <1000 per 100 ml.

G. Risk Mitigation and Disaster Management:

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

H. Green belt and Biodiversity conservation:

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

I. Waste management:

1. Solid waste management should be planned in accordance with extant Solid Waste Management Rules, 2016.
2. Toxicity Characteristic Leachate Procedure (TCLP) test shall be conducted for any substance, potential of leaching heavy metals into the surrounding areas as well as into the groundwater.
3. Ash pond shall be lined with impervious liner as per the soil conditions. Adequate dam/dyke safety measures shall also be implemented to protect the ash dyke from getting breached.

4. Fly ash shall be collected in dry form and ash generated shall be used in phased manner as per provisions of the Notification on Fly Ash Utilization issued by the Ministry and amendment thereto. By the end of 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.

Site visit report of 1x660 MW Satpura Supercritical Thermal Power Project (Expansion, Phase-V, Unit No. 12), Tehsil Ghoradongri, Village Brahmanwada, District Betul, Madhya Pradesh by M/s Madhya Pradesh Power Generating Co. Limited (MPPGCL)

****

Background:

During 34th meeting of the EAC for Thermal Power Project held on 21.10.2019 at Ministry of Environment, Forest and Climate Change, New Delhi, it was decided by the EAC that a Sub-committee consisting of six Member Committee could be constituted, which shall visit the proposed project site for installation of 1x660 MW Satpura Supercritical Thermal Power Project (Expansion, Phase-V, Unit No. 12), Tehsil Ghoradongri, Village BrahmanwadaRyt, District Betul, Madhya Pradesh by M/s Madhya Pradesh Power Generating Co. Limited (MPPGCL). The Sub-committee would comprise of the following:

1.	Shri S.D. Vora	:	Chairman
2.	Shri Gururaj Kundargi	:	Member
3.	Shri Mohan Karnat	:	Member
4.	Shri N.S. Mondal	:	Member
5.	Dr. J.K. Pandey	:	Member
5.	Dr. S. Kerketta	:	Member Secretary

Subsequently, Shri S.D. Vora opted out from the scheduled date of the site visit due to pre-occupation and Dr. Navin Chandra was replaced him.

Based on the site visit, this Sub-committee shall submit a report on the viability of implementation of the project at the proposed site. The Sub-committee was duly approved by the Competent Authority vide Ministry's Office Order No. J-13012/12/2019-IA.II (T), dated 19.11.2019. The Sub-committee held discussion with the Officials of MPPGCL on 22.11.2019 at Bhopal and visited the project site on 23.11.2019. During visit, proposed Power Plant, Ash Pond Areas, existing Power Plant, etc. were visited. The following officials and other senior officers were present from the project site:

1.	Shri V.K. Kailasia	:	C.E. (Gen.)
2.	Shri Sanjay Pendor	:	Addl. C.E. (Civil)
3.	Shri P.D. Gupta	:	Sr. Chief Chemist
4.	Shri D.K. Kashyap	:	S.E. (1x660 MW)
5.	Shri S.K. Malviya	:	S.E (Opn.) Unit#IV
6.	Shri S. Gurunath	:	S.E. (ET & I) Unit#IV.
7.	Shri V.C. Tailor	:	S.E. (MPC)
8.	Shri I.R. Khan	:	E.E. (CHP)
9.	Shri S.K. Wagadre	:	E.E. (Civil)
10.	Shri Sunil Selkari	:	E.E. (Ash Handling)

Discussion was held with the PP and *inter-alia,* the PP and Consultant provided the following information to the Sub-committee:

M/s Madhya Pradesh Power Generating Company Ltd. has established the existing capacity of 1642.5 MW, out of which 1,330 MW Installed Capacity

power plants (Stage-II: 1x200 MW, Stage-III: 3x210 MW, Stage-IV: 2x250 MW and Stage-V: 1x660 MW) are in operation and the remaining 312.5 MW (Stage-I: 5x62.5 MW) have already been retarted from 2012 to 2014. Now, establishment of 1x660 MW Supercritical Thermal Power Project has been proposed at the same land where the retarded units were installed. Total land of the proposed project is 74 ha which includes 10 ha for Main Plant, 2 ha for Switch Yard, 9 ha for Cooling Systems, 12 ha for CHP and 41 ha for development of GB. No additional land will be used for ash dyke for proposed unit. The existing ash dyke of 111 ha (Phase-I, II & III) will be used for proposed project as well. No protected areas such as National Parks, Wildlife Sanctuaries, etc. are located within 10 km radius from the proposed project. Further, some RF and PF are present within the surrounding of the project area. Coal requirement for proposed project is 3.25 MTPA and shall be sourced from WCL/SECL/NCL by road and rail system. The estimated Project cost is Rs.4,616.36 Crores. During construction, about 3,000 people will be engaged on temporary basis and 400 people will be employed for operation, maintenance, etc.

Observation of the Sub-committee:

1. Five Reserve Forests and two Protected Forests are present within 10 km radius of the proposed Power Plant. Similarly, 10 water bodies viz., rivers, nallah, ponds and reservoirs are also located in and around the proposed project.
2. Several Court Cases are pending before the High Court of Jabalpur, NGT and District Courts mainly on issuance of Consent to Operate, non-compliance of Fly Ash Notification and inadequate compensation provided to the villagers for construction of Ash Pond for Units# 10&11.
3. The project area is also surrounded by hills and ancient monuments. It is located in a low lying area.
4. Till today, 3,37,300 plants have been planted of different tree species in an area of 271 ha.

Way Forward:

1. As many Environmental Sensitivities are present, impact on surrounding ecology mainly on Schedule-I and RET species are to be studied and conservation plan be provided.
2. Many water bodies are located in and around the project area, proper inventorization on aquatic lives be made and umbrella fish species of the area to be identified so that minimum e-flow be ensured during lean season for all the perennial rivers/nallah.
3. Status of court cases and the reason thereof will be provided in the EIA/EMP report. Reason of non-compliance of Fly Ash Notification and inadequate compensation provided to the villagers for construction of Ash Pond for Units# 10&11 will be provided.
4. The genesis of selection of tree species be provided including density of plantation @2,500 Nos. tree per hectre. Besides, local species should be given preference for development of greenbelt for better habitat and survival.

5. Re-conciliation of data on employment after the post commissioning of the project. The completion time schedule of the project has not been given in PFR.

6. Use of Abandoned Stone Mines to be governed by the Notification MoEF & CC vide OM dated 28.08.2019. Fly Ash to be used for road construction of NH-69 as well as other roads. In this regards, an undertaking in the form of an Affidavit will be submitted.
7. Technology selection for adoption of FGD for control of SOx. In case of wet FGD, source of limestone, impact of transportation, handling, storage and disposal of Gypsum including land requirement.
8. Alternate technology analysis and justification of Technology Selection for NOx reduction.
9. Satpura reservoir is an old one, sustainability of water supply be studied including soil erosion in its upper catment and siltation into the reservoir. In case of inadequate water supply, alternate sources be identified and included in the EIA/EMP report.
10. In the PFR, water requirement for FGD has been provided but water requirement in the FGD to be installed in the existing units has not been given. Therefore, water balance to be modified based on the water requirement for whole unts including a plan on ZLD for the proposed unit.
11. As the coal will be sourced from either of WCL, SECL and NCL. Modeling of emission shall be made based on different coal quality from different Coalfields.
12. A plan on 100% utilization of fly ash from the proposed power plant and attemept shall also made for utilization of Legacy Ash from the existing Ash Pond. A study on the dyke stability of the ash pond considering future raising of height of the dyke. This may also include permiability of heavy metals and leaching behaviour of ash pond water and provision of recyling it through AWRS for slurry making.

Any other matter:

1. Few photographs of the site visit are annexed as **Annexure-I.**

4/12/2019
(S. Kerketta)

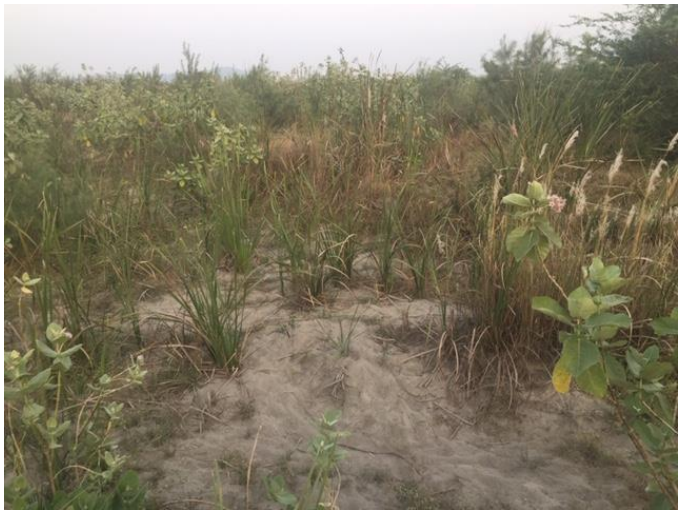
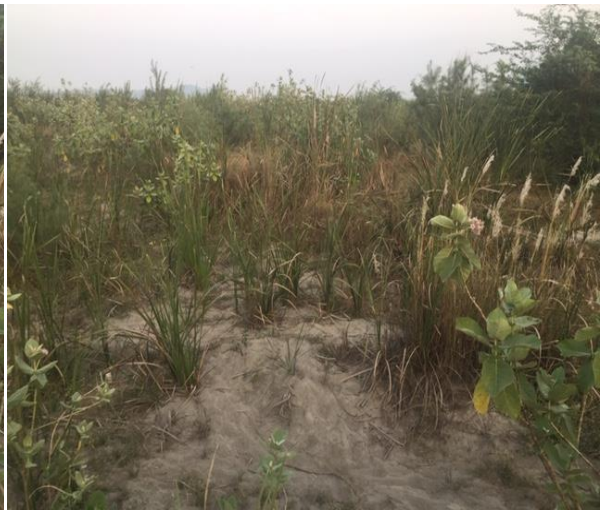
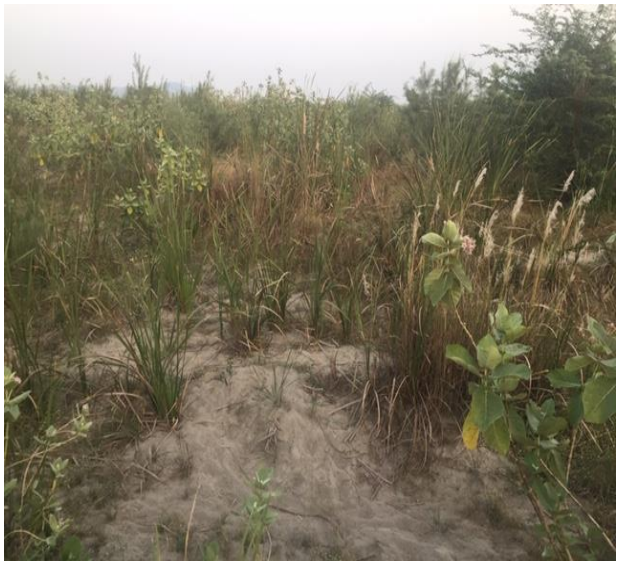
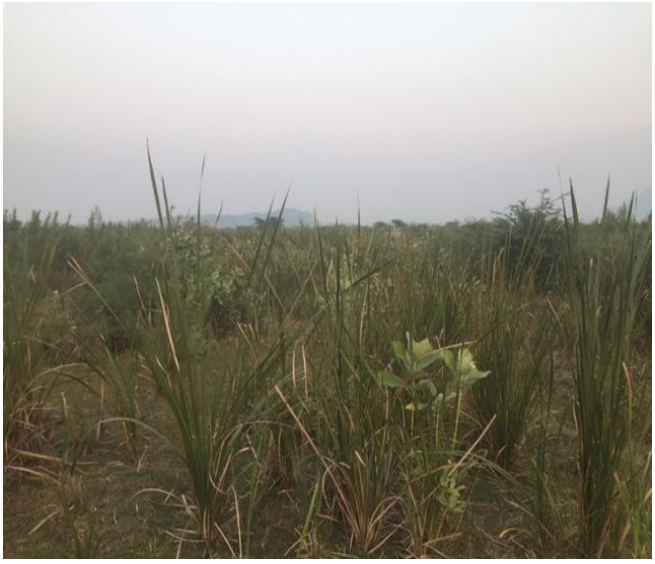
4/12/19
(J.K. Pandey)

4/12/19
(N.S. Mondal)

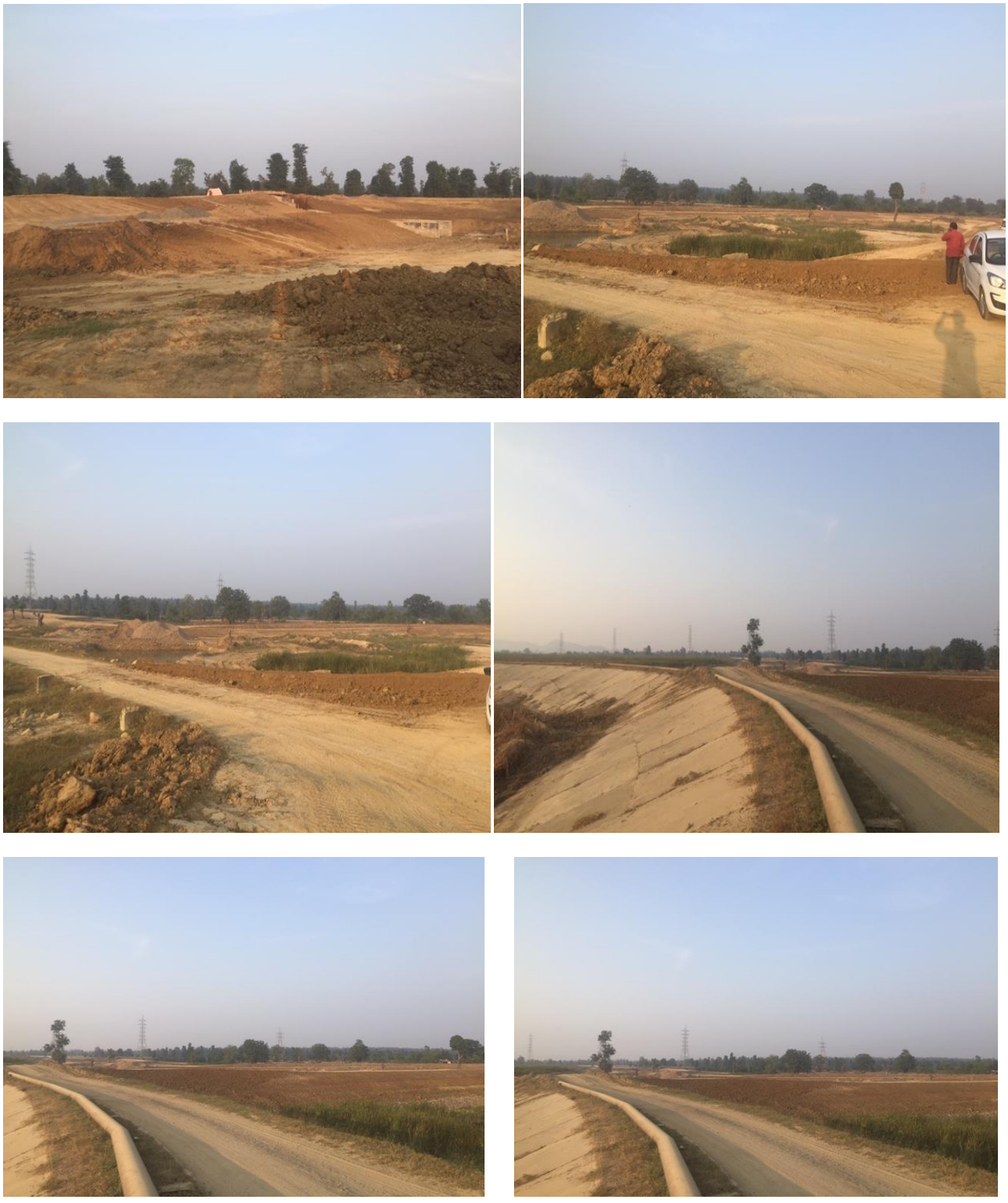
4 December 2019
(Mohan Karnat)

-Sd-
(Gururaj Kundargi)

4/12/19.
(Navin Chandra)

Views of the abandoned Ash Dyke fully filled and stabilised with plantation



Views of the Ash Dyke being prepared

EAC Sub Committee at Under Construction Ash Dyke

Attendance Sheet

36th EXPERT APPRAISAL COMMITTEE MEETING (Thermal)

DATE & TIME : 4th December 2019, 10:30 AM
VENUE : Brahmaputra Hall, Vayu Wing, Indira Paryavaran Bhawan, New Delhi

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

Approval of the Chairman

n subrahmanyam

From: navin chandra <navinchandrarrl@yahoo.com>
Sent: Monday, December 9, 2019 4:17 PM
To: s.kerketta66@gov.in; N SUBRAHMANYAM
Subject: Re: Draft 36th EAC Thermal Minutes held on 4.12.2019 reg.

Dear Dr. Kerketta,

I have gone through the 36th MoM held on 4th December, 2019. The Minutes are in order and ready for uploading on the website of the Ministry of Environment, Forests and Climate Change.

Regards,

yours sincerely,

(NAVIN CHANDRA)

Dr. Navin Chandra,
Vice Chancellor, IES University, Bhopal
Chairman, Coal Mining & Thermal Power,
MoEF&CC, GOI, New Delhi.
Ex-Director General MPCST, Bhopal,
(Retd.) Director (Actg.), CSIR-AMPRI, Bhopal
Member, RC, CSIR-AMPRI, Bhopal.
Phone (Res.) 91-755-2454600
navinchandrarrl@yahoo.com, navinchandraampri@gmail.com

On Monday, 9 December, 2019, 03:17:48 pm IST, N SUBRAHMANYAM <n.subrahmanyam@gov.in> wrote:

Dear Sir,

Kindly find the enclosed draft minutes of EAC (thermal) meeting held on 4.12.2019 for thermal power projects for kind perusal.

Thanks

N. subrahmanyam

Scientist C, MoEF&CC, New Delhi.

1

AGENDA OF 36th MEETING OF THE RE-CONSTITUTED EXPERT APPRAISAL COMMITTEE ON THERMAL POWER PROJECTS

DATE : 04th December, 2019
TIME : 10.30 A.M. ONWARDS
VENUE : BRAHMPUTRA MEETING HALL, FIRST FLOOR, VAYU WING, IPB,JORBAGH ROAD, NEW DELHI-110003.

ITEM	
Item No. 36.0	**CONFIRMATION OF MINUTES OF 35th EAC (THERMAL) MEETING**
Item No.	**CONSIDERATION OF PROJECTS**
36.1	3X21 MW Gas based Thermal Power Station at Rokhia, in Manikyanagar village, Boxanagar PS, Sipahijala District, Tripura by **M/s Tripura State Electricity Corporation Ltd. -reg. ToR.** F.No. J-13012/13/2019-IA.I(T)& Proposal No. IA/TR/THE/125111/2019.
36.2	15 MW Captive Power Project at Village Digvijaygram, Jamnagar District, Gujarat by **M/s Shre Digvijay Cement Company Ltd.- reg. ToR.** F.No. J-13012/10/2019-IA.I(T)& Proposal No. IA/GJ/THE/112735/2019.
36.3	2x195 MW (Stage-II) Coal based Thermal Power Plant, Village Kanti, Dist. Mujaffarpur, Bihar by **M/s Kanti Bijlee Utpadan Nigam Ltd.- reg. amendment in EC.** F.No.J-13012/98/2008-IA.II(T)& Proposal No. IA/BR/THE/117021/2019
36.4	1x600 MW Coal Based Thermal Power Plant at villages Barela & Gorakpur, Ghansore Tehsil, Seoni Distt., Madhya Pradesh by **M/s Jhabua Power Ltd.- reg. permission for road transportation of coal**. F.No.J-13012/105/2008-IA-II(T) & Proposal No.IA/MP/THE/126388/2019.
36.5	2x660 MW Super Critical Thermal Power Plant at Village Koradi, Tahsil-Kamptee, District Nagpur, Maharashtra by **M/s Maharashtra State Power Generation Company Limited (MAHAGENCO)-reg. re-consideration of ToR.** F.No.J-13012/07/2019-IA.I(T) &Online no. IA/MH/THE/102533/2019.
36.6	2x250 MW Lignite Based Thermal Power Project at Padva, Bhavnagar District in Gujarat by **M/s Bhavnagar Energy Company Ltd.**- ***reg. amendment in EC for change in coal source.*** File No.J-13011/39/2008-IA.II(T) & Online No. IA/GJ/THE/116337/2019
36.7	55 MW Greenfield (Dual Fuel Power Project) Andaman & Nicobar Gas Power Project at Hope Town at Ferrargunj Tehsil in South Andaman District, Andaman and Nicobar by **M/s NTPC Vidyut Vyapar Nigam Limited. - reg. discussion on Site Visit report.** F.No. J-13012/14/2018-IA.I(T) & Proposal No.IA/AN/THE/113957/2018.
36.8	1x660 MW Satpura Supercritical Thermal Power Project (Expansion, Phase-V, Unit No. 12), Tehsil Ghoradongri, Village Brahmanwada Ryt, District Betul, Madhya Pradesh by **M/s Madhya Pradesh Power Generating Co. Limited (MPPGCL)-reg. discussion on Site Visit Report for ToR.** F.No. J-13012/12/2019-IA.II(T) & Proposal No. IA/MP/THE/120787/2019
36.9	2x300 MW (Phase-I) Coal Based Thermal Power Plant at Villages Ghanmukh (Bijora), Tehsil Mahagaon, Yavatmal District, Maharashtra by **M/s**

	Jinbhuvish Power Generations Pvt Ltd.- reg. re-consideration of extension of validity of EC. F.No.J-13012/158/2010-IA.II(T) & Proposal no. IA/MH/THE/108493/2019
36.10	4x360 MW Coal based Thermal Power Plant at Uchipinda, Tehsil Dabara, Dist. Janjgir Champa in Chhattisgarh by **M/s R.K.M Powergen Pvt. Ltd.- reg. permission to transport coal by road.** File No.J-13012/12/2008-IA.I(T) & Proposal No. IA/CG/THE/19853/2008
36.11	ANY OTHER ITEM WITH THE PERMISSION OF THE CHAIR.

Note: If project documents are not submitted to Committee Members on time along with brief summary/basic information as per pro-forma, it will be the Committee's discretion to consider the project. Project proponents shall bring shape file (.kml file) containing project boundaries & facilities and shall be saved on computer in the meeting hall. Project Proponents are required to bring hard copy (A0/A1 size) and soft copy (pdf) of a map showing project facilities superimposed on Survey of India Toposheet. Proponents shall submit the attendance form duly filled to the Member Secretary before starting the presentation.