MINUTES OF THE 34thMEETING OF THE RE-CONSTITUTED EXPERT APPRAISAL COMMITTEE (EAC) ON ENVIRONMENTAL IMPACT ASSESSMENT (EIA) OF THERMAL POWER PROJECTS HELD ON 21st October, 2019.

The 34thMeeting of the re-constituted EAC (Thermal Power) was held on 21st October, 2019in the Ministry of Environment, Forest & Climate Change at Indus Meeting Hall, Ground Floor, Jal Wing, IPB, Jorbagh Road, New Delhiunder the Chairmanship of Dr.Navin Chandra. The following members were present:

1.	Dr.Navin Chandra	-	Chairman
2.	ShriSuramya D. Vora	-	Member
3.	Dr. N.P. Shukla	-	Member
4.	Dr.Gururaj P Kundargi	-	Member
5.	Shri N.S. Mondal	-	Member (Rep. of CEA)
6.	Prof. S.K. Gupta	-	Member (Rep. of IIT Dhanbad)
7.	Shri N. Mohan Karnat	-	Member
8.	Dr. S. Kerketta	-	Member Secretary

Dr.S.Lele, Dr. (Mrs.)ManjariSrivastava,Dr R.K. Giri (Rep. of IMD), Dr. S.K. Paliwal (Rep. of CPCB) and Dr. J.K. Pandeycould not be present due to pre-occupation.

Item No.34.0: CONFIRMATION OF THE MINUTES OF THE 33rd EAC MEETING.

The Minutes of the 33rdEAC (Thermal Power) meeting held on 25.09.2019 were confirmed in presence of members present in the meeting.

Item No. 34.0: CONSIDERATION OF PROJECTS

(34.1) 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)-reg. ToR.
(F.No.J-13012/12/2019-IA.II(T) & Proposal No. IA/MP/THE/120787/2019)

(34.1.1) Project Proponent has submitted the online application on 07.10.2019 forgrant of ToR. Project Proponent along with M/s Greencindia Consulting Private Limited made the presentation and inter alia submitted the following information:

i. M/s Madhya Pradesh Power Generating Company Ltd. has established the existing capacity of 1642.5 MW out of which 1330 MW power plant is running and the remaining 312.5 MW have been de-commissioned and dismantled. The following units of power plant and proposed project are as given below::

Stage	Capacity	Remarks
Stage-I	5x62.5 MW	De- commissioned and dismantled
Stage-II	1x200 MW	Operational
Stage-III	3x210 MW	Operational
Stage-IV	2x250 MW	Operational
Stage-V	1x660 MW	Proposed Project

ii. The MPPGCL is now proposing to establish 1x660 MW Supercritical Thermal Power Project in place of the land available after dismantling 5x62.5 MW.

iii. Total area 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 coal handling plant and 41 ha for greenbelt. There will not be any additional area for ash dyke for proposed unit. The existing ash dyke will be used for proposed project as well. The area is of 74 ha is within the existing plant area of 3383.17 ha.

iv. The proposed project will be located within the premises of the existing power plant complex, adjacent to the existing operational plants. Therefore, implementation of the project does not involve, land acquisition, rehabilitation or resettlement.

v. The project site is located at a distance of about 20 km from Ghoradongri Railway Station and Satpura TPS is connected by roads from Betul and Itarsi town. The nearest Airport is Bhopal, which is about 180 km from the site.

vi. There are no protected areas such as National Parks, Wildlife Sanctuaries within 10 km radius of the project. The project area does not involve diversion of forest land. Further, there are Reserved forest and Protected forest surrounding the project area. Satpura Reservoir is within 1 km from the project boundary. There is Tawa River at a 2 km distance in the east from the project site

vii. The proposed 660 MW unit will have super critical steam parameters to achieve higher efficiency and hence, lower cost of generation. Steam parameters of supercritical technology are as follow:

Pressure : 247 kg/cm² (a),
Main Steam Temperature : 565°C;
Reheat Steam Temperature : 593°C.

viii. Coal requirement for proposed project is 3.25 MTPA. Coal for existing stages of the power station is received from PatherKheda -II &Sarni coal fields of M/s Western Coalfields Ltd. and Coal mines of M/s South Eastern Coalfields Ltd. by belt, road & rail system. For the proposed unit, coal linkage will be as granted by SLC/MOC. Coal will be transported by Indian Railway System and by road through trucks.

ix. Dedicated railway link from Ghodadongari Railway siding (20 km) to site is available for the transportation of coal and fuel oil for the power plant and transportation of dry fly ash through rail / road. The rail system will be augmented/new system will be developed.

x. Water requirement of existing power station is met from Satpura reservoir constructed on Tawa River. The storage capacity of Satpura reservoir is 110.44 million cu.m with maximum water level as 1433 ft MSL. Due to silting of reservoir, water storage capacity has gone down to approx. 50 million cubic meters.

xi. For Units # 10 &11 (2x250 MW) with close cycle cooling system and wet ash disposal system with recycling & zero discharge, water requirement is estimated as 1600 M3/hr. i.e. 14.01 million cu.m/year and for the proposed extension unit, water requirement will be in the order of maximum 1977 cum/hr i.e. 17.32 million M^3/year. Thus, the requirement of water will be (29.14) + (14.01) + (17.32) M^3/hr i.e. 60.47 MCM /year. The storage deficit will be about (60.47-50) = 8.54 million M3/year i.e. 975 cum/hr.

xii. The following options were considered for enhancing water availability to the TPS:-

a. Recirculation of water from ash pond/power station and colony to reuse in process
b. Desilting of reservoir.

xiii. Effluent treatment plant is being installed with the ongoing scheme of 2x250 MW units to treat all effluents of power station and take the treated water back forreuse.

xiv. Adequate measures for disposal of silt will also be required while arranging to carry out de-silting operation. Necessary provision will be made in the project cost for de-silting about 35 lakh cubic meter deposit silt in the reservoir.

xv. MPPGCL complex at Sarniis spread over an area of 3382.95 ha. Power plant and facilities is in about 136.78 ha and township in 273.98 ha. Balance area is mainly covered with greenery. Greenbelt of around 41 ha has been proposed for the proposed expansion plant.

xvi. Estimated employment generation from the proposed project is 75 persons. Estimated Project cost is Rs.4,616.36Crores.

(34.1.2) Committee noted that the proposed expansion will use the existing land made available after dismantling the 312.5 MW capacity power plant. Committee further noted that the there is no additional ash pond for the proposed project and existing ash pond will be used as an emergency ash dyke. However, the committee noted that the water availability in the Satpura reservoir is limited due to siltation of the pond. A study on availability of water for the proposed project is to be conductedby taking the existing in-stream users. Further, the action plan for achieving zero liquid discharge and revised emission norms for existing power plants needs to be submitted at the time of final appraisal for taking a decision on this project regarding water availability. It has been informed by the project that the effluent treatment plant is under installation for 2x250 MW power plant. Further, committee noted that the power plant is surrounded by forests and Satpura hills. The impact on surrounding ecology is to be studied. Committee felt that there are several ecologically sensitive areas such as water bodies (Satpura Reservoir), forest area and hills located surrounding the proposed project.

(34.1.3) Committee after deliberations, recommended for conducting a site visit for prescribing the additional Terms of Reference for preparing EIA studies including the prevailing Environmental settings. The sub-committee comprising of following members will conduct the site visit:

i. Shri Suramya Vora - Member
ii. Shri Gururaj Kundargi – Member
iii. Shri Mohan Karnat - Member
iv. Dr. J. K. Pandey - Member
v. Shri N. S. Mondal - Member
vi. Dr. S. Kerketta - Member Secretary

Accordingly, **the proposal is deferred**.

(34.2) Expansion by addition of 2x660 MW Stage-V (Unit-7 &8) Coal based Thermal Power Plant at Village Thukrana, Suratgarh Tehsil, Sri Ganganagar Dist., Rajasthan by M/s Rajasthan RajyaVidyutUtpadan Nigam Ltd.- reg. re-consideration of extension of validity of Environmental Clearance.
(F.No. J-13012/14/2009-IA.II(T) & Proposal No. IA/RJ/THE/10394/2009)

(34.2.1)Project Proponent submitted online proposal on 22.04.2019 for extension of validity of Environmental Clearance dated 23.5.2012 (valid till 22.5.2019) for one year (beyond seven years). The proposal was earlier considered in the EAC meeting held on 28.5.2019 and EAC sought the following information:

i. Water allocation letter from the State Government.
ii. The details of ash pond (area & volume).

iii. Details of use of flyash for achieving 100% utilisation as per the Flyash notification.
iv. Copy of latest report submitted to CEA regarding progress and implementation of new emission norms.
v. A firm plan and commitment with financial allocations and timelines for commissioning pollution control equipment (FGD, De-NOx systems, etc.)
vi. Copy of CPCB extension, if any, for achieving revised emission norms.
vii. The details of budget for implementation of CSR/CER activities as per the revised project cost in line with Ministry's Office Memorandum vide dated 1.5.2018.
viii. A copy of latest six monthly EC compliance report.

(34.2.2) Project Proponent submitted the additional information as sought by EAC on 27.9.2019. Project Proponent made the presentation and inter-alia submitted the following information:

i. 18 Cusecs of water has been allocated for the Unit-7 & 8 (2x660 MW) by the Govt. of Rajasthan vide Order dated 2.9.2009.
ii. Area of the existing ash pond is 562.59 ha including 3.2 ha of ash dyke corridor. Height of the dyke is 8 m. The capacity of the existing ash dyke is 27 Million m^3. The dyke height is further proposed to increase 8 m in two stages.
iii. Notice inviting tenders for installing FGD has been issued on 13.5.2019 for existing power plant.For proposed project, In-principle approval from State Govt. for additional capital cost and additional equity support is pending with State Govt. which is under process. The Board of the Company has approved for Rs.1360 Crores for upgradation of ESP, FGD, De-NO_X systems.
iv. CPCB vide letter dated 6.9.2019 stated that the extension of timelines for installation of pollution control equipment to meet revised emission norms for proposed project may not be considered.
v. The revised project cost is Rs.8,966.47Crores. The budget of Rs. 2.616 Crores (0.25% of (Rs.8966.47 Crores-Rs.7920 Crores)) has been earmarked for Corporate Environment Responsibility (CER).
vi. Six monthly EC compliance report has been submitted.

(34.2.2) Committee noted that the project has significantly achieved the progress of nearly 90%. However, the installation of FGD is yet to progress. Only in-principle approval for budget allocation has been approved. It is expected to take atleast three years for commissioning the FGD. Only ash and coal handling units are to be completed. Committee noted that FGD installation may not happen by that time the plant is commissioned. Further, CPCB has not given any extension of timelines for implementation of FGD. Committee opined that Environmental Clearance may be extended subject to the condition that the plant shall not be operated unless FGD is installed or extension from CPCB is sought. Further, committee noted that a condition in the EC had already been stipulated for Capital CSR budget of Rs.31.7 Crores. The present CER cost on revised project cost is estimated as Rs.22.42 Crores (at 0.25% of project cost). Committee noted that the amount stipulated in the EC was higher than the present CER estimation. Accordingly, Committee opined there is no necessity to stipulate additional amount as Rs.31.7 Croeshad already been stipulated.

(34.2.3) **Committee after detailed deliberations, recommended for extension of Environmental Clearance for a period of one year, w.e.f 23.5.2019 till 22.5.2020** subject to the following additional conditions:

i. Progress of installation of FGD, De-NOx systems, ESP upgradation to meet new emission norms shall be submitted for the proposed project and existing operational plants.
ii. For the proposed power project, the new emission norms, zero liquid discharge shall be met at the time of commissioning of the plant. In case, the installation of pollution control equipment to meet the revised norms have not been established, extension from CPCB shall be obtained. In no case, plant shall not be operated without meeting emission norms or extension from CPCB being obtained.

(34.3) 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)

(34.3.1) 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.etill 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 the EAC sought the following information:

i. The physical and financial progress of the project till date. Details of balance activities to be implemented along with timelines in the form of PERT chart.
ii. Details of land acquisition for the power plant and railway siding.
iii. Details of whether any BTG and BOP has been awarded. If yes, copy of award along with details of advance made to the EPC contractor.
iv. Detailed justification to complete the remaining project in the three years instead of five years.
v. A copy of present Board of Directors of the Company shall be submitted.
vi. A copy of fresh water and coal linkages secured for the project.
vii. Revised estimation of project cost including the FGD and NOX control measures to meet new emission norms notified dated 07.12.2015.
viii. Details of location, area and co-ordinates of ash pond.
ix. Revised Water balance diagram in compliance with the specific water consumption of 3 m^3/MWh as per the Ministry's Notification dated 07.12.2015.

(34.3.2) Project Proponent submitted the additional information sought by the EAC. However, Project Proponent did not attend the meeting. Accordingly, the **project has been deferred**.

(34.4) 2x660 MW Imported Coal Based Super-Critical Thermal Power Plant at Villages Chhatai, Majhtoliya&Umarda, in KotmaTaluk, in Anuppur District, in Madhya Pradesh by M/s Welspun Energy AnuppurPvt. Ltd.-reg. extension of validity of EC.
(F.No.J-13012/144/2010-IA.II(T)&Proposal No. IA/MP/THE/120793/2019)

(34.4.1)M/s Anuppur Thermal Energy (MP) Private Ltd. has submitted online application on 10.10.2019 for extension of validity of EC for a period of three

years (till 26.11.2022). The Environmental Clearance for 2x660 MWThermal Power Project in Annuppur District of Madhya Pradesh has been accorded to M/s Welspun Energy AnuppurPvt. Ltd. on 27.11.2012 which was earlier valid for five years. By virtue of EIA amendment notification dated 14.9.2016, the validity of EC is extended for seven years, till 26.11.2019.

(34.4.2) M/s Anuppur Thermal Energy (MP) Private Ltd. which is subsidiary of M/s Adani Power Ltd. has made the presentation and submitted the following information:

i. The construction of Thermal Power Plant could not be started in the absence of Power Purchase Agreement and Financial Closure. Also, prevailing policies of the Govt. of India have prevented ATEMPL from obtaining coal for the project due to which the plant could not be set up till date.
ii. Company would like to implement this project, once the PPA is signed and the Financial Closure achieved. Power Purchase Agreement could not be tied up for sale of Power which is one of the main reasons why construction activities of power plant have not been initiated.
iii. Application to MoEF&CC for change in name of the Company from Welspun Energy Anuppur Private Limited to Anuppur Thermal Energy (MP) Private Limited has been made vide application no. SW/117248/2019 & proposal no. IA/MP/THE/117249/2019 dated 06.09.2019.
iv. The company has completed infrastructure development like Boundary Wall, Site Office, Technical Studies and Executing R&R activities as approved by Government of Madhya Pradesh.
v. It may also be mentioned that as per the RFQ, the Govt. of MP has already been allocated coal for the said bidding process under the provisions of SHAKTI Policy notified by the Ministry of Coal, Govt. of India (and which coal linkage will be transferred to the successful bidder).
vi. The company will be participating in the same through its Anuppur Project. Given ATEMPL's favorable location w.r.t. distance from likely coal sources as well as parent company Adani Power Limited's competitive expertise, M/s ATEMPL stands a fair chance of being successful in the said tender and development of the plant at the said site.

(34.4.3) Committee noted that a separate application for change in name of the company has been submitted in the Ministry. However, Committee noted that it is not change in name of the company but there is change in ownership of the asset. When the EC was issued, it was the Welspun Energy Company and presently, it has been transferred to subsidiary of M/s Adani Power Ltd. Accordingly, Project Proponent should submit the transfer of EC application in accordance with Para 11 of the EIA Notification. Committee further noted that EC was issued based on imported coal from Indonesia. As informed, only land acquisition has been completed and a boundary wall has been constructed. There has not been significant progress in the last seven years. However, project proponent gave PERT chart stating that power plant will be commissioned within 33 months from the zero date. Further, start of zero date is not known at present. It will be decided only after obtaining Power Purchase Agreement (PPA). Committee further noted that the extension of EC would have been sought after transferring the EC in the name of new incumbent.

(34.4.4) **Committee after detailed deliberations, recommended for extension of validity of EC for further period of three years, w.e.f. 27.11.2109 till 26.11.2022** subject to the condition that the EC is transferred in the name of new

owner. The following additional conditions shall be stipulated in the Environmental Clearance:

i. The details regarding Financial Closure, and copy of Power Purchase Agreement shall be submitted. Accordingly, the zero date of construction shall be informed to the Ministry.
ii. The physical and financial progress of implementation of pollution control equipment (ESP, FGD and De-NOx systems) to meet new emission norms dated 7.12.2015shall be submitted to the Ministry, its Regional Office and CPCB.
iii. Progress of construction of power plant with detailed report on physical activities and financial expenditure shall be submitted till the plant is commissioned.

(34.5) 2x60 MW Imported Coal based Captive Thermal Power Plant at Village Kariajhar/Majhagawan, Rampur NaikinTaluk, Sidhi Dist., Madhya Pradesh by M/s Ultratech Cements Ltd.- reg. amendment in Environmental Clearance for change in source of coal and its transportation. (F.No. J-13012/94/2009-IA.II(T)& Proposal No. IA/MP/THE/118128/2019)

(34.5.1) Project Proponent has submitted online application on 26.09.2019for amendment in EC for changing the EC condition nos. iii, iv and vi. The Environmental Clearance for 2x60 MW Imported based Captive Power Plant has been issued to M/s Jaiprakash Associates Ltd. vide Ministry's letter dated 30.1.2012. Subsequently, the EC has been transferred to M/s Ultratech Cements Ltd. vide Ministry's letter dated 16.11.2018. The said conditions of EC are reproduced as below:

a. 'Specific condition 4(A)(iii): In case source of fuel supply is to be changed at a later stage for the proposed 2x60 MW, now proposed to be run on imported coal, the project proponent shall intimate the Ministry well in advance along with necessary requisite documents for its concurrence for allowing the change'.
b. Specific condition 4(A)(iv):Coal transportation shall be undertaken by rail and no road transportation shall be permitted.
c. Specific condition 4(A)(vi):Sulphur and ash contents in the coal to be used in the project shall not exceed 0.6% and 12-14 % respectively at any given time. In case of variation of coal quality at any point of time fresh reference shall be made to MoEF for suitable amendments to environmental clearance condition wherever necessary.

(34.5.3) Project Proponent sought change in coal source from imported coal to domestic coal, change in transportation from rail to road, change in ash content from present stipulation of 12-14% to 36%.

(34.5.2) Project Proponent along with M/s JM EnvironetPvt. Ltd. has made the presentation and inter alia submitted the following information:

i. The Captive Thermal Power Plant will fulfill the power requirement of the cement plant and other captive mines of Sidhi Cement Works.
ii. As per existing Environmental Clearance, Imported coal was proposed to be used as fuel in the plant. But now, due to nearbyavailabilityof indigenous coal,UTCL has proposed touseIndigenous coal.
iii. The coal will be obtainedfrom two sources from NCL (Northern Coalfields Limited), Bina Project, Madhya Pradesh (~169 km from plant site) and SECL (South Eastern Coalfields Limited), Dhanpuri OC, Madhya Pradesh. (~ 163 km

from plant site). Agreement has been made with the companies for the procurement of coal.

iv. The details of quantity and quality of coal for imported coal and domestic coal as proposed now are as below:

Sl.No.	Particulars	Imported Coal	Domestic Coal
1	Quantity of Coal	0.65 MTPA	0.9 MTPA
2.	Characteristics of coal		
a)	Calorific Value	5500	3800
b)	Sulphur content (%)	2.53%	0.6%
c)	Ash content %	12-14%	36%
3	Quantity of Ash generated	344 TPD (Fly ash: 275 TPD & Bottom ash: 69 TPD)	1065 TPD (Fly ash: 852 TPD & Bottom ash: 213 TPD)
4	Source	From US shipped to Gangavaram Port	BinaProject of NCL and Dhanpuri OC of SECL
5	Distance	~1000 km(from port to the plant site)	~ 169 km from plant site NCL, Bina Project. ~ 163 km from plant site SECL, Dhanpuri OC
6	Mode of transportation	By Rail& Road	By road

v. Considering the sulphur content of indigenous coal, sulphur emission rate will be reduced from 1042.92 g/sec to342.36g/sec.After adopting adequate pollution control measures, controlled emission rate for SO2 will be17.118g/sec.

vi. On the other hand, particulate emission will be increased due to higher ash content in the indigenous coal. Predicted incremental concentrations for particulate matter have been calculated as 2.34 µg/m3.

vii. Existing value has been covered in the Background Ambient Air Quality Monitoring. The maximum GLCs calculated for the proposed amendment project are very much likely to be within the prescribed NAAQstandards.

viii. It is expected to transport coal of 2465 Tons per day by road from various mines by 99 trucks (to and from 198 trips)

(34.5.3) Committee noted that the EC condition stipulates transportation of imported coal by rail only and has also categorically mentioned that road transportation shall not be carried out. However, the report submitted by Project Proponent mentions that transportation is done by both rail and road. Further, the committee noted that project proponent has not carried out traffic impact assessment study by taking traffic sufficiency, load bearing strength of the road, details of roads (type, make, width, shoulders, ownership, details of narrow streches). Further, the incremental pollutions from the truck transportation is to be assessed by taking the emissions from the exhaust pipe of the vehicle and fugitive dust emissions. Further, line source model is to be used for predicting emissions along side of the road. The report does not mention these details. Further, details of sensitive areas such as villages along the road within 100 m, forests and impact due to transportation are to be given. The mitigation measures suggested in the report are generic and have to be site specific depending on the road type, its conditions

and back ground pollutions along the road. Ambient air quality along the proposed route is also to be monitored to know the present level of pollution.

(34.5.4) **Committee after deliberations, deferred the project for want of following:**

i. Details of quantity of imported coal (Month-wise) used, mode of transportation since commissioning of the plant till date. In case of road transportation, the quantities are to be clearly specified. The details of transportation as how the imported coal is brought from Gangavaram Port is to be mentioned.
ii. Details of operations of the power plant since commissioning and its preparedness to meet the new emission norms.
iii. Detailed traffic impact assessment study is to be conducted.

(34.6) Expansion of 1000 MW (4x250 MW) by addition of 4x600 MW (2400 MW) Coal Based Thermal Power Plant at Village Tamnar, TalukGharghoda, Raigarh District, Chhattisgarh by M/s Jindal Steel & Power Ltd.- reg. amendment in EC for coal transportation by road.
(F.No.J-13012/117/2008-IA.II(T)&Proposal No. IA/CG/THE/119664/2019)

(34.6.1)Project Proponent has submitted online application dated 30.09.2019 for amendment in EC for extending the coal transportation by road till December, 2020 and permitting the use of coal crusher permanently as it was installed within the plant.

(34.6.2) The Environmental Clearance for 4x600 MW power project was issued on 18.3.2011 (2x600 MW) and 4.11.2011 (2x600 MW). An amendment to EC was accorded on 10.1.2014 for permitting transportation of coal by road temporarily for three years. Another amendment to EC was issued on 27.3.2015 for allowing transportation of coal by road for two years. The above mentioned permissions have been extended till 30.4.2017 vide Ministry's letter dated 22.12.2016. Further, transportation of coal by road has been permitted for another 30 months vide Ministry's letter dated 26.4.2017.

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

i. JPL planned to reduce the dependence on transportation of coal by road. JPL has planned to develop bulk rail transportation system from various mines of SECL and MCL. JPL is developing railway siding, taking off from The Bhalumuda Railway station which is under construction. The east corridor between Kharsia and Ghargoda had already been commissioned and the section between Gharghoda to Bhalumuda is expected to be commissioned by December, 2020.
ii. As the railwaylines are under construction, the company has to transport coal by Closed Circuit Pipe Conveyor (CCPC) and partly by road up to December, 2020.
iii. Traffic Impact Assessment report has been prepared by M/s Minmec Consultants in November, 2018. Since there is no increase in quantity of coal being transported, no change in traffic density is envisaged.
iv. As the CCPC from Kula mines including crushing facilities at Kulda is not feasible, it is essential to continue use of coal crushing unit installed within the plant boundary at Tamnar to crush coal received from various mines.

(34.6.4) Committee in the first instance noted that the traffic impact assessment study was conducted in November, 2018 for another power plant of 4x150 MW in Tehsil of Tamnar, District Raigarh. Project Proponent has submitted the same report for the present proposal which is different from the previous one. The coal quantities

used for 4x150 MW and 4x600 MW may vary as the capacity of the power plant is increased four times. Further, there is a likely change of coal source and routes. However, the proponent mentioned that the routes used for 4x600 MW (present proposal) are same as that of 4x150 MW. Further, the present baseline environmental quality and baseline traffic may vary from last November, 2018. The proponent should have revised the traffic impact assessment report as per the coal quantities the present power plant, revised routes, and present baseline ambient air quality scenario. However, Proponent chose to submit the same report without mentioning the details that the report submitted for 4x150 MW is being submitted for present proposal.

(34.6.5) Committee deliberated on the issues in detail as per the presentation made by the PP. As the traffic impact assessment study was carried out in November, 2018, the committee felt that the PP should carry out the baseline study and incremental pollution load for the increased coal transportation along the proposed routes once again and the same may be compared with earlier report along with existing traffic sufficiency of the road conditions. Accordingly, **the proposal has been deferred for submission of revised Traffic Impact Assessment Study and shall be considered in the subsequent meeting**.

(34.7) Stipulation of additional conditions to prohibit the use of High Sulphur Coal for power Plants in Meghalaya-regarding.

(34.7.1)The Ministry's Regional Office, Shillong vide their letter dated 26.9.2019 communicated the recommendations of Committee constituted by the NGT in its 18th sitting held on 16.9.2019. The recommendations mention that an additional condition may be stipulatedin the Environmental Clearance of Thermal Power Plants in Meghalaya State for prohibiting the use of High Sulphur Coal.

(34.7.2) The committee deliberated the matter at length. The committee has noted that the revised emission norms for power plants vide Ministry's notification dated 7.12.2015 stipulates the emission standards for Sulphur Dioxide also and these standards are applicable to Captive Power Plants as well as Independent Power Plants. Further, Committee has taken a note of a directions issued by the CPCB vide dated 16.4.2018 to comply the SO2 norms as below:

a. Captive Power Plants based on FBC (CFBC/AFBC and PFBC) shall comply with new norm for PM & SO2 by December, 2018.
b. Captive Power Plants which have to install FGD shall comply with new emission norms for SO2 by June, 2020 and to comply with PM norms by December, 2018.

(34.7.3) Committee noted that new emission norms had already been notified on 7.12.2015 and are applicable to all power plants in Meghalaya. These power plants have to comply with the new emission norms within 2 years from the date of publication of the notification (by December, 2017) unless CPCB categorically gives an extension. W.r.t. Sulphur emissions, CPCB had already extended the timelines up to December, 2018 for FBC based captive power plants and June, 2020 for other power plants. Accordingly, Committee felt that there may not be further necessity to restrict the Sulphur content in the coal to be used in power plants as the emissions are to be controlled as per the new standards.

(34.7.4) Committee further noted that the new emission standards were notified in the year 2015. Those ECs which were issued prior to 7.12.2015 may not have been stipulated to control Sulphur emissions as there was no standard available at that time. The Member Secretary appraised that as the matter pertains to emissions of

power plant, ideally it should have been consulted the CP Division of the Ministry. The EAC agreed the proposal of the Member Secretary and suggested that the matter may also be referred to CP Division. Accordingly, **committee recommended to stipulate the following condition w.r.t Sulphur emissions from Power Plants in Meghalaya**:

i. The revised emission norms for Power Plants vide Ministry's Notification dated 7.12.2015 including Sulphur emissions shall be complied with.
ii. The compliance shall be achieved within timelines given by the CPCB in its directions dated 16.4.2018 for installing the pollution control equipment such as ESP, Flue Gas De-sulphurisation and De-NOx systems.

The committee opined that, in case of any recommendations of the CP Division, the same may also be included along with the above recommendations.

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) Corporate Environment Policy

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

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

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

Annexure-I

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.

Attendance Sheet

34th EXPERT APPRAISAL COMMITTEE MEETING (Thermal)

DATE & TIME : 21st October 2019, 10:30 AM
VENUE : Indus Hall, Jal Wing, Ground Floor, 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	S.D.Vora 21/10/19
3.	Dr. Narmada Prasad Shukla Member	
4.	Sh. N. Mohan Karnat, IFS Member	21/x/2019
5.	Dr. Sharachchandra Lele Member	Abs
6.	Sh. N.S. Mondal, CEA Member	21/10/19
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	21/10/19
10.	Dr. Jai Krishna Pandey Member	- Abs -
11.	Dr. Manjari Srivastava Member	- Abs -
12.	Dr. Gururaj P Kundargi Member	
13.	Dr. S. Kerketta Member Secretary, MoEFCC	S Kerketta

Approval of Minutes by the Chairman-EAC

AGENDA OF 34thMEETING OF THE RE-CONSTITUTED EXPERT APPRAISAL COMMITTEE ON THERMAL POWER PROJECTS

DATE : 21st October, 2019
TIME : 10.30 A.M. ONWARDS
VENUE : INDUS MEETING HALL, GROUND FLOOR, JAL WING, IPB,JORBAGH ROAD, NEW DELHI-110003.

ITEM	
Item No. 34.0	**CONFIRMATION OF MINUTES OF 33rdEAC (THERMAL) MEETING**
Item No.	**CONSIDERATION OF PROJECTS**
34.1	1x660 MW SatpuraSupercritical 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)-reg. ToR.** F.No. J-13012/12/2019-IA.II(T)& Proposal No. IA/MP/THE/120787/2019
34.2	Expansion by addition of 2x660 MW Stage-V (Unit-7 & 8) Coal based Thermal Power Plant at Village Thukrana, Suratgarh Tehsil, Sri Ganganagar Dist., Rajasthan by **M/s Rajasthan RajyaVidyutUtpadan Nigam Ltd.- reg. re-consideration of extension of validity of Environmental Clearance**. F.No. J-13012/14/2009-IA.II(T)& Proposal No. IA/RJ/THE/10394/2009.
34.3	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
34.4	2x660 MW Imported Coal Based Super-Critical Thermal Power Plant at Villages Chhatai, Majhtoliya&Umarda, in KotmaTaluk, in Anuppur District, in Madhya Pradesh by **M/s Welspun Energy Anuppur Pvt. Ltd.-reg. extension of validity of EC.** F.No.J-13012/144/2010-IA.II(T) & Proposal No. IA/MP/THE/120793/2019.
34.5	2x60 MW Imported Coal based Captive Thermal Power Plant at Village Kariajhar/Majhagawan, Rampur NaikinTaluk, Sidhi Dist., Madhya Pradesh by **M/s Ultratech Cements Ltd.- reg. amendment in Environmental Clearance for change in source of coal and its transportation.** F.No. J-13012/94/2009-IA.II(T) & Proposal No. IA/MP/THE/118128/2019
34.6	Expansion of 1000 MW (4x250 MW) by addition of 4x600 MW (2400 MW) Coal Based Thermal Power Plant at Village Tamnar, TalukGharghoda, Raigarh District, Chhattisgarh by **M/s Jindal Steel & Power Ltd.- reg. amendment in EC for coal transportation by road.** F.No. J-13012/117/2008-IA II (T)& Proposal No. IA/CG/THE/119664/2019.
34.7	**Stipulation of additional conditions to prohibit the use of High Sulphur Coal for power Plants in Meghalaya-regarding.**
34.8	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.

-------- Original Message --------
From: **navin chandra** <navinchandrarrl@yahoo.com>
Date: Nov 8, 2019 9:05:10 AM
Subject: Re: 34th EAC Minutes for Thermal Power Projects held on 21.10.2019 reg.
To: Dr S Kerketta <s.kerketta66@gov.in>

08/11/2019

Dear Dr. Kerketta,

I have gone through the Minutes of the 34th EAC held on 21st October. They are in order and ready for uploading on the website of the Ministry of Environment, Forest 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 Thursday, 7 November, 2019, 7:14:10 pm IST, Dr S Kerketta <s.kerketta66@gov.in> wrote:

Dear Sir,

The minutes of EAC (Thermal Power) meeting held on 21.10.2019 have been circulated to all members. After incorporating their comments, the final minutes are prepared and submitted for your kind approval please.

--
regards,

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

34th EXPERT APPRAISAL COMMITTEE MEETING (Thermal)

DATE & TIME : 21st October 2019, 10:30 AM
VENUE : Indus Hall, Jal Wing, Ground Floor, 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	SDV 21/10/19
3.	Dr. Narmada Prasad Shukla Member	
4.	Sh. N. Mohan Karnat, IFS Member	21/X/2019
5.	Dr. Sharachchandra Lele Member	Abs
6.	Sh. N.S. Mondal, CEA Member	21/10/19
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	21/10/19
10.	Dr. Jai Krishna Pandey Member	- Abs -
11.	Dr. Manjari Srivastava Member	- Abs -
12.	Dr. Gururaj P Kundargi Member	
13.	Dr. S. Kerketta Member Secretary, MoEFCC	S Kerketta