

MINUTES OF THE 50th MEETING OF THE RE-CONSTITUTED EXPERT APPRAISAL COMMITTEE (EAC) ON ENVIRONMENTAL IMPACT ASSESSMENT (EIA) OF THERMAL POWER & COAL MINING PROJECTS

The 50th Meeting of the reconstituted EAC (Thermal Power) was held on 28th-29th January, 2016 in the Ministry of Environment, Forest & Climate Change at Teesta Meeting Hall, Vayu Wing, First Floor, Indira Paryavaran Bhawan, Jorbagh Road, New Delhi-110003. The following members were present:

1. Shri Anil Kumar - Chairman
2. Prof. C.R. Babu - Member
3. Shri T.K.Dhar - Member
4. Shri N.K. Verma - Member
5. Shri J.L Mehta - Member
6. Shri G.S. Dang - Member
7. Shri Shantanu Dixit - Member (attended only on 29th January, 2016)
8. Shri P.D. Siwal/
Shri N.S. Mondal - Member (Representatives of CEA)
9. Shri B.B. Barman - Member Secretary

Shri A.K. Bansal, Dr. Ratnavel, Representatives of IMD, CPCB and WII could not be present. List of other participants is at **Annexure-I**.

On the second day i.e. 29th Jan 2016, at the outset, the Committee welcomed the new member, Shri Shantanu Dixit and introduced themselves.

Item No.1: CONFIRMATION OF THE MINUTES OF THE 48th EAC (LAST) MEETING.

No comments/observations were received and therefore, the Minutes of the 48th EAC (Thermal Power) meeting held on 18th December, 2015 were confirmed.

Item No. 2: CONSIDERATION OF PROJECTS

2.1 Expansion of Obra TPP by addition of 2x660 MW at Obra, Tehsil Robertsganj, District Sonbhadra, Uttar Pradesh by M/s Uttar Pradesh Rajya Vidyut Utpadan Nigam Ltd. - reg. EC.

(2.1.1) The Project proponent (PP) along with their environmental Consultant, BHEL, PCRI, Haridwar made a presentation and *inter-alia*, provided the following information:

TOR was granted by MoEF on 05.10.2007. Based on TOR issued, EIA studies were carried out during 2007-2008 and Public Hearing was conducted on 18.12.2008. Request for change in unit configuration from 2X500 MW to 2X660 MW was made by UPRVUNL. The same was considered by EAC during its 36th meeting held on November 14-15, 2011 and it was directed to revise the EIA/EMP report, Form-1 in consonance with the changed scenario with a few points for consideration vide letter dated 30.01.2012 (Letter of Change in Configuration). Accordingly, revised EIA report of the project was submitted for appraisal before EAC during its 60th meeting held on November 5-6, 2012. MoEF desired additional information on some of the issues and also advised to collect the fresh AAQ, Water and Soil data and revise EIA/EMP report and also re-conduct Public Hearing on revised report vide letter dated 25.04.2013. EIA Report has been revised incorporating the points suggested by MOEF. UPPCB re-

conducted Public Hearing on 17.10.2014. Present presentation is as per MoEF letter dated 25.04.2013. It was seen that the baseline data related to the period March to June 2013. The imported coal characteristics of sulphur and particularly ash were very high, while the GCV was low.

(2.1.2) *After detailed deliberations, the Committee sought the following documents/ information which were either not available in the EIA/EMP report or not found in order:*

- (i) *NBWL clearance*
- (ii) *Detailed compliance report to the latest Consent to Operate (CTO) accorded by SPCB for the existing units.*
- (iii) *Action plan for phasing out the older Units to be submitted within six months to the MoEF & CC.*
- (iv) *Imported coal proposed to be used shall have lower sulphur & ash content and higher GCV so that the coal quantity to be imported, and its ash generation can be reduced. The imported coal may also be blended with the domestic coal presently being used for the existing units which will also ensure boiler efficiency to the designed parameters. In any case, the Ministry's O.Ms dated 05.02.2013 and 02.11.2015 on imported coal quality shall be complied with. Accordingly, the MoU/FSA for imported coal shall be revised.*
- (v) *Revised AAQ factoring the R&M and closing down option of the existing Units to be assessed/predicted and submitted.*
- (vi) *Justification/explanation for the high concentration of toxic trace metals in the soil.*
- (vii) *Details of existing fly ash utilization and detailed Action Plan for the same.*
- (viii) *An integrated water balance factoring effluent treatment plan of desired degree to fulfill Zero Liquid Discharge along with water quality profile at various important locations has to be provided.*
- (ix) *Revised Budgeted Action Plan for addressing the issues arising out of the Public Hearing and accordingly, CSR Budgeted Action Plan also to be submitted.*

*In view of the above, the proposal was **deferred with advice to the PP to submit the above information/document/clarification within the validity of baseline data for submission of the same.***

2.2. Addition of 6 MW Turbine to existing 2x18 MW Captive Power Plant (CPP) of Alathiyur Cement Plant at Village Alathiyur, Taluk Sendurai, District Ariyalur, Tamil Nadu by M/s. The Ramco Cements Ltd.- reg. EC.

(2.2.1) The PP along with their environmental consultant, Environmental System Consultants & Ambiente Lab Solutions Private Limited, Chennai made a presentation and *inter-alia*, provided the following information.

- (i) The Ramco Cements Ltd. (RCL) had established its Alathiyur Cement Plant near Pennadam in Ariyalur District in the Year 1996 along with its Township in an extent

of 121.17 Ha falling in Alathiyur village, Sendurai Taluk in Ariyalur District of Tamil Nadu. RCL is operating its Alathiyur Cement Plant (with Lines I & II) for the Clinker production of 2.52 MTPA and Cement production of 3.0 MTPA @ 8200 TPD. The Cement Plant is supported by its Captive Limestone Mines (4 Mines comprising of 7 Nos. of Mining Leases) over an extent of 383.585 Ha in Alathiyur Region. RCL had established 2 x 18 MW Captive Power Plant (CPP) (coal based; water cooled condensers) in the Year 2004 for the smooth operations of Alathiyur Cement Plant, within the cement plant campus over an extent of 6.84 Ha in SF Nos. Parts of 7, 8, 9, 23, 25, 26, etc. with a Project investment of Rs.95.0 crores. The Plant operations are in full compliance with the conditions stipulated in the ECs awarded by MoEF&CC and Consents from the Tamil Nadu Pollution Control Board (TNPCB). The Certified compliance report dated 02.02.2015 from the Ministry's R.O. for the conditions stipulated in the ECs of the existing Cement Plant is also submitted.

- (ii) The power demand of existing Plant operations and Township is 32 MW and the Auxiliary consumption of CPP is 4.2 MW. The activities on the expanded Cement Plant viz. Limestone Beneficiation Plant, Wagon Tippler, Stack & Reclaimer, Bulk Loading, etc. needs another 4 MW additionally. Thus, RCL has to expand the existing CPP power generation capacity to meet the additional power demand. The existing Captive Power Plant Boiler is a Conventional Rankine Steam Cycle Thermal Power Plant with single drum natural circulation, Atmospheric Fluidized Bed Combustion Boiler (AFBC) with underbed fuel feeding system. The total steam generation capacity of existing two Boilers (of 76 TPH each) is 152 TPH. The steam requirement for 36 MW is only 148 TPH. There is a surplus steam capacity of 4 TPH unutilized now. Also, with Imported Coal as only fuel, the Boilers can generate additional steam @ 10 TPH per Boiler and total 20 TPH additionally. Thus, 172 TPH steam from existing Boilers can be used for the required power generation of 42 MW. Accordingly, RCL has proposed to augment the power generation capacity of the existing CPP at Alathiyur by adding only 6 MW Turbine based on Air cooled condensers. The total power generation of **existing** 2 x 18 MW CPP will **now** be 42 MW.
- (iii) ToR for carrying out EIA study and preparation of EMP for the above proposal was accorded by the Ministry on 12.11.2014. The EIA Consultant has been provisionally accredited for the Sectors 1 (Mining), 9 (Cement Plants), 31 (Industrial Estates/SEZs), 33 (Ports & Harbours), 38 (Building Proposals) and assessed for Sector 4 (Thermal Power Plants) – Category 'A' Projects by the National Accreditation Board for Education & Training (NABET), Quality Council of India (Sl. No. 57 in the List of Accredited EIA Consultants-7th May, 2015). The EIA Report has been prepared as per the generic structure proposed in EIA Notification 2006. Public Hearing was conducted on 14.10.2015. No litigation is pending against the proposal.
- (iv) The existing Power Plant along with standby 6 MW DG sets and Switch Yard are established in an extent of 6.84 Ha within the Cement Plant with a builtup area of 32,525 sq. m. The additional Turbine will be installed in the Building of 574 sq. m. Additionally, about 520 sq. m area will be utilized for housing the Air Cooled Condensers. There is no additional land requirement for the Proposal, as it is proposed within the existing Premises. There are no National Parks, Biosphere Reserves, Elephant Corridor, Mangroves, Archaeological/Historical Monuments, etc. within 10 km radius area other than the Reserved Forests (RFs) viz. Mudukulam RF (@ 7.8 km in southeast) and Ayyur RF (@ 8.3 km in southeast).

- (v) The Cement Plant has the Railway Sidings, Coal Storage, Township, etc. and the existing CPP does not require dedicated infrastructures for its operations. Also, as the entire Ash being generated in the CPP is being consumed in the Cement Plant for PPC manufacture, thus, there is no Ash Storage (Pond/Dyke) in the CPP. there is no Rehabilitation & Resettlement (R&R) issue also. The Project Cost for the addition of 6 MW Turbine is Rs.21.42 crores. Additional EMP Budget of Rs.1.00 crore has been earmarked to existing Rs.5.20 crores EMP Budget. The Operating Cost will be Rs. 0.11 crores to existing Rs.0.59 Crores/annum. The proposal will be completed in 12 months after obtaining all statutory clearances.
- (vi) The Plant Heat Rate is 3,250 Kcal/ Kwh. Mainly imported coal from Indonesia (with average 12% Ash Content & average 0.75% Sulphur content; GCV maximum 6,300 kcal/kg; receiving Port at Karaikal) will be used in the CPP. The Coal Supply Agreement has been made on 19.04.2014 with M/s. Devendran Coal International (P) Ltd. for the uninterrupted imported coal supply. Presently, 490 TPD coal is used and on augmentation additional 80 TPD is required and thus, a total of 570 TPD imported coal is required for the total 42 MW power generation. The maximum sulphur and ash content of imported coal shall be 1.0% and 14 % respectively. Karaikal Port vide letter dated 30.01.2016 has confirmed that the Port can handle the additional coal and deliver the same by Rail.
- (vii) By considering 12% Ash Content (mean) of the imported coal, the ash generation will be 68.4 TPD, 9.6 TPD increase from existing 58.8 TPD. The entire ash generated from the CPP is being transported pneumatically and fully utilized in the Cement Plant for PPC manufacture.
- (viii) An effective ESP System of 99.98% efficiency is installed in the CPP to control the SPM emission <50 mg/Nm³ through the Boiler Stack of 90 m height (3.0 m dia). The same existing Stack is capable of handling the increase Flue Gas volume of 2,50,000 cum/hr. Online monitoring system is provided connected online to Care Air Centre of TNPCB. There will not be any significant impact on the Air Environment due to the Proposal.
- (ix) The Cement Plant Complex water demand is 5,220 cu.m/day which includes the consented water demand of existing CPP of 3,843 cu.m/day. In addition to the own Mine Pit Water supply of 3,720 cum/day, borewells within the Complex yield about 1,500 cu.m/day. RCL has obtained the NOC for ground water drawl of 1,500 cu.m/day from TN State Water Resource Department vide its Certificate No. OT9/G-1/478/NOC/Chennai/2014 dated 27.10.2014.
- (x) With domestic consumption of 3 cu.m/day, the total water demand for existing CPP operation is 3,826.5 cum/day only. On Augmentation of CPP, there will not be any man power addition and Air Cooled Condensers are proposed with no water demand. Thus, additional water is required only for Boiler makeup i.e. 16.3 cu.m/day. The proposed water demand of 3,842.8 cu.m/day is well within the consented quantity by the Board. The entire quantity of 875 cu.m/day trade effluent from the CPP is neutralized and treated in a Neutralisation Pit and pumped to the Cement Plant for equipment Cooling. Cycles of Concentration (COC) of the CW system of existing CPP is 4.7 and there will not be any change on Augmentation as ACCs are employed.

- (xi) Existing CPP generates domestic sewage to the tune of 2 cu.m/day which is being treated in the common STP of 300 cu.m/day at the Cement Plant. There is no addition to the sewage quantity on the proposed Augmentation. In the total area of 121.17 Ha, so far 47.5 Ha was brought under green belt (39.20% coverage) with about 1,20,300 trees, native tree species predominantly. Treated sewage is being used for Green belt development and maintenance. As entire effluents from the CPP are treated and utilized within the Campus, Zero Effluent Discharge is maintained.
- (xii) Public Hearing (PH) was conducted by Tamil Nadu Pollution Control Board on 14.10.2015. The issues raised in the PH pertained to appreciation for the CSR activities undertaken by the PP, future ground water depletion due to the TPP, employment to land losers & locals, enhancement of the CSR activities etc. The Committee discussed the issues raised in the PH and the reply of the PP.
- (xiii) CSR budget of Rs. 1.5 crores/annum has been earmarked for various activities such as education, medical camps, infrastructure, etc.

(2.2.2) *Based on the information and clarifications provided by the Project Proponent and detailed discussions held on all the issues, the Committee recommended the project for granting environmental clearance subject to stipulation of the following additional specific conditions:*

- I. *The boiler shall have at least 10% margin capacity to the TMCR (Turbine Maximum Continuous Rating).*
- II. *The Sulphur and ash content of coal shall not exceed 0.8% and 14 % respectively, and the MoU/FSA shall be amended accordingly. In case of variation of quality at any point of time, fresh reference shall be made to the Ministry for suitable amendments to the environmental clearance.*
- III. *As committed, a minimum amount of Rs. 1.5 Crore/annum or the amount as per the CSR policy of GOI for the operational phase whichever is higher, shall be earmarked for CSR activities.*
- IV. *The PP would obtain port and railway clearances for the additional coal being imported.*

(2.2.3) *The above is also subject to the PP satisfying the MoEF&CC regarding the accreditation of its consultant which had prepared the EIA report.*

2.3 Durgapur Captive Power Project (2x20 MW) at Durgapur, District Burdwan, West Bengal by M/s NTPC-SAIL Power Company Private Ltd.- reg. EC amendment.

(2.3.1) The PP along with their environmental Consultant, Vimta Labs Ltd., Hyderabad made a presentation and *inter-alia*, provided the following information:

EC for the above CPP was accorded by MoEF&CC on 29.09.2015. A stack of 120 m height shall be provided was stipulated as specific condition in EC. Chimney Height clearance for 75 m was earlier obtained from Airport Authority of India (AAI) and Ministry of Defence (MoD) on 20.03.2015 and 29.09.2014 respectively. Subsequent to the EC, the PP has applied for revised NOC to AAI and MoD for 120 m. AAI granted

NOC for 108.28 m vide letter dated 30.11.2015. In this regard, it is requested to amend the EC for stack height of 108.28 m.

(2.3.2) *The Committee noted that it has earlier recommended stack height of 120 m since there was an existing stack of 120 m height. Hence it was not clear to the EAC why the Airport Authority had cleared a lower height of 108.28 for the additional stack. It was also however noted that the PP did not explicitly inform AAI of the height of the existing stack. Hence, the PP shall again approach the AAI, categorically bringing out that the existing stack height is 120 m. In case however the AAI reiterates the lower stack height of 108.28 m, the PP shall then submit to the EAC the additional pollution control measures that will be required. Further, the requirement or otherwise of Defence Clearance shall be ascertained by the PP and if required, the same shall be obtained for the requisite height.*

2.4 2x300 MW coal based TPP at Villages Bhengari, Nawpara, Katangdih & Khokhrama, Tehsil Ghargoda, District Raigarh, Chhattisgarh by M/s. TRN Energy Pvt. Ltd. – reg. EC amendment.

The PP requested the Ministry for deferment.

2.5 Coal Fired Thermal Power Plant of 3x150 MW at Haldia, District Purba Medinipur, West Bengal by M/s India Power Corporation (Haldia) Ltd. – reg. EC amendment

(2.5.1) The PP made a presentation and inter-alia provided the following information-

- (i) EC was accorded to the above proposal (3X135 MW) by SEIAA, West Bengal on 12.04.2010. Subsequently, Application was made to SEIAA on 20.04.2011 for change in configuration from 3x135 MW to 3x150 MW due to optimization done by BHEL. However, due to the moratorium in Haldia and its lifting only on 17.09.2013 etc., the amendment of EC for change in configuration from 3x135 MW to 3x150 MW was accorded by the Ministry on 14.10.2014. Consent to Establish for 3x150 MW was accorded by WBPCB on 12.11.2014. As the original EC expires on 12.04.2015, an application was made for extension of validity of EC to MoEF&CC in January, 2015 and the same was extended by MoEF&CC on 13.08.2015 for 2 years i.e. till 12.04.2017. The EC validity extension is based on domestic e-auction coal due to de-allocation of coal blocks by Hon'ble Supreme Court.
- (ii) The usage of imported coal was not considered earlier due to the cost economics. However, due to the change in global pricing policy and business scenario, the imported coal price has come down significantly and it is now competitive to domestic coal price. As per the design of boiler, it is capable to fire independently 100% domestic coal, 100% imported coal and also capable to fire blend of imported and Indian coal in various ratios. BHEL has also given the clearance to operate the boiler with 50% Indian coal with any of the imported coal.
- (iii) An agreement has been signed with M/s GMR Coal Resources PTE Limited (GCRPL) for supply of 1.74 MT (\pm 15%) imported coal with maximum sulphur and ash contents of 0.6% and 20% respectively. Haldia Port is at a distance of only 6 km from the TPP and pipe conveyor system from the Port can be explored. The Kolkata Port Trust (Haldia Dock Complex) vide letter dated 19.10.2015 has committed for handling the imported coal for the TPP. There would be a positive environmental

impact due to imported coal against the domestic coal because of the lower ash & sulphur contents of imported coal and also from the logistics point of view.

- (2.5.2) *Based on the information and clarifications provided by the PP and detailed discussions held on all the issues, the Committee recommended for amendment of EC for **using imported coal and in case of the shortfall of imported coal, if any, a blend of maximum 30% domestic e-auction coal may be used** subject to the following additional conditions.*
- (i) *The Heads of Agreement for the imported coal shall be translated into a firm MoU/FSA and submitted to the Ministry.*
 - (ii) *The blending of coal shall be strictly in conformity with the recommendations of BHEL.*
 - (iii) *The Sulphur and ash contents in the imported coal shall not exceed 0.6% and 20% respectively any given time. The Sulphur and ash contents in the blended coal shall not exceed 0.5% (maximum as per the EIA/EMP) and 30% respectively any given time as indicated in the PP's presentation. In case of variation of coal quality at any point of time, prior approval of the Ministry shall be obtained. Ash % in domestic coal shall be governed by the MOEF&CC policy/guidelines.*
 - (iv) *The CSR Budget for the construction phase be suitably enhanced by Rs. 20 to 25 Lacs per annum as agreed to during the deliberations. However, the budget for operation phase cannot be less than that or the amount as per the CSR policy of GOI till the operation of the plant.*
 - (v) *The PP shall advertise in the local leading newspapers and place on their website, the Ministry's approval on the above amendment for public information.*

2.5A 2x800 MW (Stage-I) Darlipali Supercritical Coal Based Thermal Power Plant at Village Darlipali, Taluk Lephripara, District Sundergarh, in Orissa by M/s NTPC Ltd.-reg. EC amendment

The Committee was informed that the Ministry has already taken a decision in the matter based on the response of NTPC.

2.5B 2x300 MW Yamuna Nagar Thermal Power Project, Stage-II, Phase I, Yamuna Nagar by M/s Haryana Power Generation Corporation Ltd.- reg. EC amendment

- (2.5B.1) The PP made a presentation and *inter-alia*, provided the following information:

MoEF while granting EC dated 18.11.2004 to the above TPP had stipulated under (Clause No. 3-IX) that, "A 500 m distance from National Highway/Railway line and 500 m distance from HFL of river Yamuna from the plant site, ash pond and Township must be kept". Accordingly, ash disposal area for the thermal power station having an effective area of 200 acres was kept 500 m away from Yamuna Nagar-Saharanpur Railway Track. As a result, the land measuring about 90 acres was kept vacant and is still lying vacant in compliance of the directions of the Ministry. It is requested to grant EC for installation of a Solar Power Project of about 15 MW in the said vacant land.

(2.5B.2) *Regarding utilization of the area kept vacant in pursuance of the EC condition, the Committee was of the view that the Ministry may take a suitable decision in the matter as the said condition seems to have been stipulated by the Ministry based on its guidelines.*

2.5C Proposed 2,000 MW Combined Cycle Power Plant at Guhagar, District Ratnagiri, Maharashtra by M/s Synergy Li Power Resources India Pvt. Ltd. – reg. reconsideration for TOR (after site visit)

(2.5C.1) The proposal was earlier discussed in the 13th & 48th Meetings of the EAC (Thermal Power) held during 25th -26th March, 2014 & 18th December, 2015 respectively, the minutes of which are as under:

Quote *“At the outset, the Committee noted that the alternate sites proposed have land acquisition issues, are falling within the HFL of the River etc. Hence, the committee opined that minimum two proper alternate sites may be proposed by the PP on a topo sheet other than those currently proposed. The requirement of CRZ clearance for the proposed site (s) also needs to be confirmed by the PP through an organization/institute of repute.*

The PP submitted that the three sites that have been proposed have been technically valid sites for the project. The site near Dabhol meets the entire requirement for setting up the project. As expressed during the meeting, the site has been extensively studied for other power projects and in fact is adjoining an existing operating power project (Ratnagiri Gas and Power erstwhile Enron Power) and also another proposed but now withdrawn coal based power project (proposed by Mahagenco: Dhopave power project) for which TOR had been issued earlier. The Dhopave coal based power project has been withdrawn since the issuance of the TOR due to various reasons.

The other two sites proposed had been technically valid. Due to the passage of time based on the moratorium, we have been informed that there could be possible legal difficulties in acquiring suitable land at Navhare village. The land would also be much more expensive than the preferred site and would require R and R for some of the nearby village infrastructure that would add to the cost and delay of the project.

The other site near Nimgaon village is about 1.5 kms from the river and at a height of over 50 meters above the high flood line. Although the Maharashtra state Pollution Control Board have an unclear regulation for siting industries that are for thermal power project as are classified under Red category (generally meant for coal based power plans and may or may not be applicable for gas based power plants) we have been advised that although the State can relook at the site for their regulatory requirement in giving an exception especially since the project shall not cause any river pollution and since it is gas based. But we have been strongly advised to pursue the preferred site near Dabhol and the State has also given a letter of support for that site near Dabhol.

Developing newer options for land especially under the cloud of the proposed Land Acquisition Bill would be quite frustrating and economically unviable especially when good options have already been presented. It is also proposed that if the recommended site is found unsuitable, then a new site shall be looked for and presented for a review.

*After detailed deliberations, the committee recommended that a sub-group of EAC shall visit the proposed site and submit report to chart out decision on further course of action. The proposal was accordingly **deferred**.*

The committee noted that the site-visit by a sub-group of EAC could not take place yet and also the Ministry has de-listed the proposal from their pendency list. Subsequently, based on the request of PP for ToR, the proposal was again referred to the EAC for its considerations/recommendations. PP informed that the proposed site(s) doesn't fall under the Western Ghats prohibited areas. The proposal is being appraised by the committee subject to confirmation of the same. The PP also submitted that the preferred site does not fall under CRZ. However, CRZ clearance shall be obtained for the intake and outfall points as it would attract the provisions.

After detailed deliberations and considering that the proposed site is in Ratnagiri, the presence of and impact on alphonso mango trees, mangroves, impact on the creek etc., the Committee re-iterated its earlier recommendation for a Site-Visit by a sub-group of EAC for further consideration. The same shall be undertaken before the next EAC (Thermal Power) meeting. The Sub-committee shall also find out if the site falls under Western Ghat restricted zone.” Unquote

(2.5C.2) A Sub-Group of the EAC visited the site on 19.01.2016 and submitted its report to the Committee which was discussed in detail. A copy of the report was also provided to the PP during this Meeting and in response, the PP conveyed his acceptance to the recommendations made by the Sub-Group in its report.

(2.5C.3) *After detailed deliberations, the Committee recommended the following ToR in addition to the standard TORs (as applicable) at **Annexure-A1** and **Annexure-A2** for undertaking detailed EIA study and preparation of EMP.*

- (i) *The valley forests should be excluded from the site and the forest around the site should be maintained and enriched with local species as buffer.*
- (ii) *The forest status of the land and need of Forest Clearance (FC) or otherwise shall be certified by the Competent authority of forest department. Accordingly, if required, the PP should apply for FC. This is necessary in view of the vegetation growth and orders of the Hon'ble Supreme Court regarding definition of forest.*
- (iii) *The intake and outfall of cooling water shall be from/into the sea and not the river/creek. No effluent should be discharged into rivulets & their creeks and the Vashishti River creek. No solid waste should be dumped into the creeks.*
- (iv) *The fugitive emissions of NOx and SOx should be minimized by using latest technologies and developing a thick green belt around the Power Plant.*
- (v) *Cumulative impact assessment of air and water of terrestrial, brackish and marine ecosystems should be carried out.*
- (vi) *The cumulative impact on the fisheries in the study areas should be carried out as a part of marine EIA.*
- (vii) *The colony of the proposed Power Plant should be located elsewhere to reduce the land requirement, so that patches of scrub can be saved.*
- (viii) *No surface drainage should be altered at the site.*
- (ix) *The mangroves must be conserved.*
- (x) *No activity relating to CCPP should be permitted in Vashishti River creek as it is the lifeline of fishermen.*
- (xi) *Plantation of alphonso mango should be promoted in the villages located in the study area and the impact of emissions, if any, on the production or quality of alphonso mangoes should be assessed based on long-term monitoring.*
- (xii) *A permanent corpus/endowment fund of Rs. 5 Crores shall be created by the Project Proponent for the welfare of the locals under the name 'Community*

Welfare fund' within three months of commissioning of the Project. The corpus/endowment fund shall be maintained as a fixed deposit asset and the interest accrued thereof should be used for creating productive assets including professional education and health care of the villagers located in 5-10 km radius of the project. A budgeted action plan in this regard shall be submitted in the EIA/EMP.

2.6 Expansion of 1,080 (8x135) MW MW TPP by adding 1x660 MW Lignite based Super Critical Power Plant at Village Bhadresh, Tehsil & District Barmer, Rajasthan by M/s Raj West Power Ltd.- reg. EC.

(2.6.1) The PP along with their environmental Consultant, EMTRC Consultants Pvt. Ltd., Delhi made a presentation and inter-alia, provided the following information:

(i) EC for existing 1,080 MW power plant was issued by MOEF on 20.07.2007 (amendment dated 19.11.2009). Regional Office of MOEF has submitted the Compliance Report. Existing plant is 100% compliant. Jalipa and Kapurdi Lignite mines of Barmer Lignite Mine Corp Ltd (BLMCL – JV with Rajasthan Govt.) are located close to the plant site. Lignite (7 MTPA) is supplied to the existing Units using belt conveyors.

(ii) TOR for expansion unit (1x660 MW) issued by MOEF on 25-2-2105. Public Hearing was held on 23-7-2015. The expansion will be done inside the existing premises (1,186 acres). Entire land is in the possession of RWPL.

(2.6.2) The Committee noted that there is no firm coal linkage for the entire requirement i.e. there is a shortage of 2.75 MTPA out of the required 4.75 MTPA. Further, out of the requisite 2.75 MTPA, 2 MTPA is proposed to be sourced from the expansion of Jalipa mines, for which the PP/State mining company needs to apply for EC. The Committee was informed that that the firm coal linkage documents were sought by the Ministry. However, the PP has not submitted the actual position, due to which the proposal was placed before the EAC.

(2.6.3) *After detailed deliberations, the Committee sought the following documents/ information which were either not available in the EIA/EMP report or not found appropriate:*

- I. Wildlife study (ToR 1) needs to be completed.*
- II. Firm coal linkage documents including EC and FC of the linked mine.*
- III. The present water allocation for the project is 80 CUSEC whereas even after the expansion under consideration, the water requirement is likely to be only 56 CUSEC. Thus the water requirement is less than the water allocation and hence, the same shall be surrendered by the PP to the State Government and compliance in this regard to be submitted. MOEF & CC is also requested to communicate this position to the concerned State agency for its information.*
- IV. An integrated water balance factoring effluent treatment plan of desired degree to fulfill Zero Liquid Discharge along with water quality profile at various important locations has to be provided for the existing and proposed Units.*

- V. *Comparison of the water quality data prior to the installation of the existing Unit and the current data.*
- VI. *Revised Budgeted Action Plan for addressing the issues arising out of the Public Hearing and accordingly, CSR Budgeted Action Plan also to be submitted.*
- VII. *The wild life conservation fund shall not be part of the CSR. Accordingly, the CSR budget and activities shall be revised.*
- VIII. *Latest certified compliance report from the R.O. as and when the PP submits all the above information/documents sought. The compliance/action plan of the existing Units to the recent standards notified by MoEF&CC on 07.12.2015 shall also be submitted.*

*In view of above, the proposal was **deferred**.*

2.7 Expansion project of 4x660 MW at Tamnar, Taluk Gharghoda, District Raigarh, Chhattisgarh by M/s. Jindal Power Ltd. - reg. EC amendment

(2.7.1) The PP made a presentation and *inter-alia*, provided the following information:

- (i) EC Clearance for the above expansion project was accorded on 18.03.2011 for Units #1 & 2 and 04.11.2011 for Units # 3&4. Subsequently, all four units of 2,400 MW have been synchronized and three units have achieved COD. The requested amendment is for change in ash dyke location.
- (ii) Initially, ash dyke for 4x600 MW was proposed to be constructed on an area of 491 Ha, comprising of 250 Ha land near Dolessara village and another 241 Ha land near Rodapali village. Details of both patches were included in the Draft and Final EIA report and both the patches of land were part of Public Hearing. In order to optimize the land requirement, JPL requested MOEF to consider only 241 Ha of land near Rodapali village for proposed ash dyke. Accordingly, MOEF while granting EC to the project has approved 241 Ha of land near Rodapali village for locating the ash pond for the expansion project. However, land near Rodapali village could not be acquired for construction of ash dyke, as the same became part of Gare Pelma Sector-II coal block.
- (iii) Due to delay in acquisition of land for ash dyke, JPL requested MOEF to permit use of existing ash dyke of 4x250 MW for expansion project of 4x600 MW. Same was permitted by MOEF for period of 3 years i.e. till 09.01.2017. Now, JPL proposes to construct the ash dyke near Dolesara village on an area of 239 Ha. This land has already undergone Public Hearing as a part of EIA for 4x 600 MW.
- (iv) Regarding the land acquisition status of proposed new dyke area, in-principal approval for land acquisition has been received from State Industrial Promotion Board. Compensation of Rs. 57.36 crores has already been deposited with Chhattisgarh State Industrial Development Corporation (CSIDC), Raipur. R&R plan for the land has been approved by CSIDC, Raipur vide letter dated 03.08.2015. Section 11 notification for land acquisition completed on 31.08.2015. Issue of section 12 for preliminary survey of land completed on 15.11.2015. Issue of Section 15 for hearing of objection of Section 11 completed on 18.01.2016.

(2.7.2) While the PP had not intimated about any court case, the Committee noted that the Ministry was informed by the representative of Appellant in Appeal No. 6/2012, Mehnatkash Majdoor Kisan Ekta Sangthan & Anr. Vs. UoI & Ors. that its appeal against the EC of 2011 is still under consideration of Hon'ble N.G.T. and any amendment in EC should not be considered by EAC. *In this regard, the Committee requested the Ministry to study the NGT Orders and clarify whether there is any direct or implied stay by NGT on the project in general and the requested amendment in particular.*

(2.7.3) *After detailed deliberations, the Committee sought the following and **deferred** the decision on the proposal.*

- (i) *Hydro-geological study of the proposed ash pond area for a minimum one month.*
- (ii) *Although the Public Hearing for land acquisition was held earlier, to make the public aware about the proposed new location of ash pond, public notices in the leading local newspapers, Gram Panchayats, Website of PP etc. should be published, along with the intimation that the public can send its comments if any to the PP and also MoEF & CC within one month after publication of the public notice.*

2.8 2x660 MW Coal Based Super Critical TPP at Village Mandva, Taluk & District Wardha, Maharashtra by M/s. Lanco Vidarbha Thermal Power Ltd. – reg. EC extension and amendment.

(2.8.1) The PP made a presentation and requested for the following with detailed justification:

- (i) Extension of validity of EC for 2 years
- (ii) Amendment in Environment Clearance
 - for use of HCSD system for Fly Ash Disposal instead of lean slurry system envisaged earlier
 - for change in location of Water Reservoir from within the project site to a distance of about 3 km from the project site.
 - for increasing Water Reservoir storage capacity from 15 days to 1 month
 - for the following Changes in project area:

Description	Previous (Acres)	Present (Acres)
Ash Pond	323	268
Water Reservoir	70	100
Corridors & Offsite Facilities	200	225

(2.8.2) *It was seen from the PP's submitted documents that till date, physical construction and erection of the project was approximately 21%. After detailed deliberations, the Committee recommended extension of validity of EC for 2 years and the above amendments in EC subject to the following additional conditions:*

- (i) The PP shall advertise in the local leading newspapers and place on their website, the Ministry's approval on the above extension and amendments for public information.
- (ii) The PP shall apply well in time for prior approval of Ministry for the amendment in EC w.r.t matters if any subsequently arising such as shortage of coal, setting up of coal washery, coal transportation etc., such that the related studies as required or necessary, can also be completed within the EC validity period.

2.9 2x660 MW Supercritical Coal Based Thermal Power Project at Villages Alailo, Bilipada, Nachhipada & Niamatpur, Taluk Mahakalpara, District Kendrapara, Odisha by M/s. SPI Ports Pvt. Ltd. – reg. reconsideration for ToR

(2.9.1) The proposal was earlier discussed in the 38th Meeting of the EAC (Thermal Power) held during 25th- 26th June, 2015, the minutes of which are as under:

Quote “The PP along with their environmental consultant, B. S. Envi-Tech Pvt. Ltd., Hyderabad made a presentation. At the outset, the Committee noted that all the four sites (proposed and three alternate) are nearby and within the catchment area of River Gobri. Further, water from River Gobri is proposed to be used, which will adversely affect the growth and survival of mangroves etc. The proposed site is said to be 12 km from the eco-sensitive zone of Bhitarkanika Sanctuary. *However, prima-facie, the map of eco-sensitive zone produced appears to be incorrect since the eco-sensitive zone is cutting across the map of the wild life sanctuary. Hence, the PP was advised to obtain a map duly authenticated by the Concerned Authorities. Further, the Committee recommended to explore alternate sites preferably based on use of sea water. The proposal was accordingly deferred.* ” **Unquote**

(2.9.2) Upon submission of the reply by PP to the above, the proposal was again placed before the Committee during this meeting, wherein the PP along with their environmental consultant, B. S. Envi-Tech Pvt. Ltd., Hyderabad, made a presentation on the alternate sites. It was informed that, based on the preliminary evaluation of sites, the team had identified two new alternate sites for establishing the power project. The same were appraised by the Committee and it was observed that the new sites are not appropriate sites, which was also agreed to by the PP. Issues such as the inward movement of coal and other sundry items, and the evacuation of power from the proposed unit, had not even been considered. While the PP continued to prefer his original site, however, as that site is located in an ecologically sensitive area, with a network of backwaters and rivers, the EAC did not agree to the site.

In view of above, the PP was advised to explore feasible alternative sites.

2.10 4x135/150 MW Coal Washery Rejects based Thermal Power Project at Village Parsa, Tehsil Udaypur, District Surguja, Chhattisgarh by M/s. Surguja Power Pvt. Ltd. – reg. extension of ToR validity

(2.10.1) The PP along with their environmental Consultant, Greencindia Consulting Pvt. Ltd. made a presentation and *inter-alia*, provided the following information:

- (i) Surguja Power Private Limited (SPPL), a 100% subsidiary of Adani Enterprises Limited (AEL), has proposed to set up a 4x135/150 MW (FBC) based Thermal Power Plant at Parsa village inside the ML area in order to utilize the coal

washery rejects from Parsa East & Kente Basan Coal Blocks of Rajasthan Rajya Vidyut Utpadan Nigam Limited (RRVUNL). ToR was granted on 01.04.2013. Baseline data was collected for the month of March-May, 2013 (Pre-Monsoon Season). CSR study, SES, Need Based Assessment studies has been carried out by the company on the basis of approved ToR. Draft EIA Report was prepared as per prescribed ToR and submitted to Chhattisgarh Environment Conservation Board (CECB) on 17.10.2014 for conducting Public Hearing.

- (ii) The Hon'ble Supreme Court cancelled the allotment of 214 Coal Blocks, including Parsa East & Kente Basan on 26.09.2014. CECB had put the proposal for Public Hearing in abeyance as the Coal Blocks allotments were cancelled. After the enactment of "Coal Mines Special Provisions Act, 2015", Parsa East & Kente Basan Coal Blocks were re-allotted to RRVUNL in March, 2015. The earlier agreements in favour of Adani Enterprises Limited were ratified again in May, 2015. Subsequently, SPPL started pursuing the proposal once again. Since the validity of said ToR is upto 01.04.2016, it is requested to extend the validity of ToR by one year as per the Ministry's policy.
- (iii) RRVUNL and Adani Enterprises Limited (AEL) have made a Joint Venture Company- Parsa Kente Collieries Ltd. (PKCL) for developing and operating Parsa East & Kente Basan Coal Block. PKCL has engaged Adani Mining Private Limited (AMPL), a fully owned subsidiary of AEL as Mine Developer & Operator for Parsa East & Kente Basan Coal Block. AMPL now merged into AEL is operating the Coal Block for mining of 10 MTPA of Coal, Coal Washery within the Coal Mine of 10 MTPA and supplying the Washed Coal to the Thermal Power Plants of RRVUNL.
- (iv) The EAC (Thermal Power & Coal Mining Projects) recommended the Project for EC on 26.09.2011 for 10 MTPA Coal Mining & Coal Washery over an area of 2,711.034 ha for Mine, Washery and Infrastructure including 1,898.328 ha of Forest Land. One of the condition of the EC is to utilize the washery rejects by establishing 4x135 MW FBC Power Plant within the ML Area. SPPL has proposed Circulating Fluidized Bed Combustion (CFBC) based Thermal Power Plant to use the Coal Washery Rejects from the above mentioned Coal Block. As per the Coal Linkage Policy for 12th Plan, dated 21.10.2009, issued by the Ministry of Power, "For washery rejects, the ratio of coal and rejects to be considered is 22:78 based on grade of coal". The proposal is thus based on 22% Coal and 78% Washery Rejects.

(2.10.2) The Committee noted that as per the Ministry's O.M. dated 22.08.2014 regarding extension of validity of ToR, the PP needs to apply to the Ministry at least three months before the expiry of validity period, together with an updated Form- I, based on proper justification. In the instant case, it is 31.12.2015. Although, the PP has apparently submitted a request to Ministry for extension of validity of ToR within time on 31.12.2015, the same was without a requisite document i.e. updated Form-I. Regarding the mandatory submission of applications through Ministry's online Portal w.e.f. 01.07.2014, the PP informed that due to a technical glitch of the Portal, the same could not be done. Hence, a hard copy was submitted and after sorting out the issue with NIC, the proposal was submitted online through Ministry's Portal.

(2.10.3) *With reference to an ongoing court case, the EAC was informed by the Ministry that no stay had been granted on the TORs. After detailed deliberations on various issues, the Committee was of the view that subject to condonation of delay, by the Ministry in*

submission of the Application, the extension of validity of ToR may be agreed to subject to the following additional ToR.

- I. Detailed reply to the issues raised by the ERC in their letter dated 27.01.2016, a copy of the same was provided to PP.*
- II. The above extension is subject to the outcome of the pending litigation before Hon'ble Supreme Court.*
- III. The "Barr Nalla" shall be restored to its original state.*
- IV. The ToR No. (viii) shall be amended as, "The TPP shall not use any coal and shall only use washery rejects".*

2.10A 5x800 MW Super Critical Coal Based Thermal Power Project at Damaracherla, District Nalgonda, Telangana by M/s. Telangana State Power Generation Corporation Ltd. (TSGENCO) - reg. reconsideration for ToR

(2.10A.1) The proposal was earlier discussed in the 45th & 48th Meetings of the EAC (Thermal Power) held during 29th -30th October, 2015 & 18th December, 2015 respectively, the minutes of which are as under:

Quote "The PP along with their environmental Consultant, Bhagavathi Ana Labs Pvt. Limited, Hyderabad made a presentation. The Committee noted that, a tributary/channel of River Krishna is passing across the proposed site. The Committee had detailed discussions with the PP regarding shifting of the proposed site/revising the layout so that the said channel is not affected. The Committee opined that a site visit by a Sub-Committee is required to ascertain the ground situation before taking a decision. The PP also requested the Committee for the site visit.

In view of above, the proposal was **deferred** and shall be considered after submission of the site visit report by the Sub-Committee.

A copy of the representation received by the Committee from ERC, New Delhi on the proposed project was provided to the PP and a detailed reply was sought on the issues raised.

The committee (in its 48th Meeting of December, 2015) perused the report of the sub-committee which had visited the site on 05.12.2015 in connection with the matters relating to a tributary/channel of River Krishna passing through the proposed site etc.

The committee noted that the presentation of the PP did not appear to deal with the concerns that have been raised by ERC vide their representation dated 28.10.2015, a copy of which was made available to the PP in the October, 2015 meeting. The presentation was lacking in clarity and only verbal submissions were being offered by the PP on the concerns that have been raised.

The committee therefore advised the PP to address the various concerns adequately and comprehensively mentioned in the representation along with an action plan for

the various recommendations of the sub-committee during the site visit, a copy of the report of the sub-committee was provided to the PP during the meeting.

On receipt of the proper response from the PP, the matter may be placed before EAC for reconsideration. **Unquote”**

- (2.10A.2) Upon submission of the reply by PP to the above, the proposal was again placed before the Committee during this meeting, wherein the PP along with their environmental consultant, Bhagavathi Ana Labs Pvt. Limited, Hyderabad, made a presentation on the issues raised by ERC and also on the action plan for the recommendations of the Sub-Committee by accepting the same.
- (2.10A.3) The Committee observed that from the EIA/EMP point of view, one season data shall be adequate. However, it is recommended to continue the collection of baseline data for the other seasons so that the same can serve as a baseline for the area, future expansion, other projects to come up, if any, in the area etc.
- (2.10A.4) *After detailed deliberations, the Committee recommended the following ToR in addition to the standard TORs (as applicable) at **Annexure-A1** for undertaking detailed EIA study and preparation of EMP. The Committee agreed to the request of PP for using the baseline data being collected from 01.12.2015 in the EIA/EMP as the Standard ToR was accorded to this proposal by the Ministry's Online Portal on 02.11.2015.*
- (i) *The Tungapadu Vagu should not be diverted, but it should be preserved, protected and its flows enhanced.*
 - (ii) *The PP should leave a minimum of 100 m buffer on either side of its banks and this buffer should be developed into native forest.*
 - (iii) *No effluent should be discharged into the rivulet or River Krishna.*
 - (iv) *In areas where the banks are breached, the breaches should be plugged and strengthened.*
 - (v) *In areas where the riverbed is silted/partially blocked due to landslides, the blocks and silt should be removed in a way that the original gradient is maintained.*
 - (vi) *No water from the stream shall be extracted.*
 - (vii) *To sustain the downstream ecology of the Tungapadu Vagu, the Irrigation Department should release minimum ecological flows from the reservoirs constructed in the upstream.*
 - (viii) *The plateaus and their slopes within the project area, which are not used for the project purpose, are highly degraded. These should be restored to their original natural forest ecosystem and should be used for the conservation of rare and endemic plants and animals found in the plateaus of project area. These forests not only serve as green belt to mitigate fugitive emissions, CO₂ and other pollutants, but also serve as a conservation area.*
 - (ix) *The reserve forest that demarcates the project boundary on the South is also highly degraded. This intact patch should be restored to its original forest ecosystem and should be connected to the forest ecosystem of the project area and other reserve forest in the area. This would not only serve as buffer for the project but also acts as a corridor for wildlife and enhance stream flow. For this purpose, the PP should provide grants to the State Forest Department and work should start within a reasonable time of 1-2 years after preparing a detailed site specific action plan.*

- (x) *The PP should create a permanent corpus fund for tribal welfare and also provide adequate compensation for the land losers irrespective of their status besides best possible R&R package and extending social welfare schemes and healthcare system for local communities.*
- (xi) *Cumulative impact assessment of air, water, soil and socio-economics should be carried out in view of a number of cement plants already established/operating in the vicinity of the proposed plant.*
- (xii) *As agreed by the PP, the area for ash pond shall be minimized by shifting it towards North. Further, a minimum distance of 500 m buffer shall be maintained between the proposed ash pond and Tungapadu Vagu. The buffer shall be developed into thick green belt/natural forest.*
- (xiii) *As agreed, the impervious lining for the ash pond shall be over and above the clay lining.*

There being no agenda item left, the meeting ended with a vote of thanks to the Chair. The next meeting of the EAC (Thermal Power) is scheduled for **29th February – 1st March, 2016.**

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 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 PM₁₀, PM_{2.5}, SO₂, NO_x, CO and Hg. The location of the monitoring stations should be so decided so as to take into consideration 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.
- xl ii) Radio activity and heavy metal contents of coal to be sourced shall be examined and submitted along with laboratory reports.
- xl iii) Fuel analysis shall be provided. Details of auxiliary fuel, if any, including its quantity, quality, storage etc should also be furnished.
- xl iv) 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
- xl v) 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.
- xl vi) 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.
- xl vii) 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.
- xl viii) 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.
- xl ix) A Disaster Management Plan (DMP) along with risk assessment study including fire and explosion issues due to storage and use of fuel should be carried out. It should take into account the maximum inventory of storage at site at any point of time. The risk contours should be plotted on the plant layout map clearly showing which of the proposed activities would be affected in case of an accident taking place. Based on the same, proposed safeguard measures should be provided. Measures to guard against fire hazards should also be invariably provided. Mock drills shall be suitably carried out from time to time to check the efficiency of the plans drawn.
- l) The DMP so formulated shall include measures against likely Fires/Tsunami/Cyclones/Storm Surges/Earthquakes etc, as applicable. It shall be ensured that DMP consists of both On-site and Off-site plans, complete with details of containing likely disaster and shall specifically mention personnel identified for the task. Smaller version of the plan for different possible disasters shall be prepared both in English and local languages and circulated widely.

- li) Detailed scheme for raising green belt of native species of appropriate width (50 to 100 m) and consisting of at least 3 tiers around plant boundary with tree density of 2000 to 2500 trees per ha with a good survival rate of around 80% shall be submitted. Photographic evidence must be created and submitted periodically including NRSA reports in case of expansion projects. A shrub layer beneath tree layer would serve as an effective sieve for dust and sink for CO₂ and other gaseous pollutants and hence a stratified green belt should be developed.
- lii) Over and above the green belt, as carbon sink, plan for additional plantation shall be drawn by identifying blocks of degraded forests, in close consultation with the District Forests Department. In pursuance to this the project proponent shall formulate time bound Action Plans along with financial allocation and shall submit status of implementation to the Ministry every six months.
- liii) Corporate Environment Policy
 - a. Does the company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be detailed in the EIA report.
 - b. Does the Environment Policy prescribe for standard operating process / procedures to bring into focus any infringement / deviation / violation of the environmental or forest norms / conditions? If so, it may be detailed in the EIA.
 - c. What is the hierarchical system or Administrative order of the company to deal with the environmental issues and for ensuring compliance with the environmental clearance conditions. Details of this system may be given.
 - d. Does the company has compliance management system in place wherein compliance status along with compliances / violations of environmental norms are reported to the CMD and the Board of Directors of the company and / or shareholders or stakeholders at large? This reporting mechanism should be detailed in the EIA report.

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

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

Additional TOR for Coastal Based TPPs:

Over and above the TOR mentioned in **Annexure- A1**, the following shall be strictly followed (as applicable):

- a) Low lying areas fulfilling the definition wetland as per Ramsar Convention shall be identified and clearly demarcated w.r.t the proposed site.
- b) If the site includes or is located close to marshy areas and backwaters, these areas must be excluded from the site and the project boundary should be away from the CRZ line. Authenticated CRZ map from any of the authorized agencies shall be submitted.
- c) The soil leveling should be minimum with no or minimal disturbance to the natural drainage of the area. If the minor canals (if any) have to be diverted, the design for diversion should be such that the diverted canals not only drains the plant area but also collect the volume of flood water from the surrounding areas and discharge into marshy areas/major canals that enter into creek. Major canals should not be altered but their embankments should be strengthened and desilted.
- d) Additional soil required for leveling of the sites should as far as possible be generated within the site itself in such a manner that the natural drainage system of the area is protected and improved.
- e) Marshy areas which hold large quantities of flood water to be identified and shall not be disturbed.
- f) No waste should be discharged into Creek, Canal systems, Backwaters, Marshy areas and seas without appropriate treatment. Wherever feasible, the outfall should be first treated in a Guard Pond and then only discharged into deep sea (10 to 15 m depth). Similarly, the Intake should be from deep sea to avoid aggregation of fish and in no case shall be from the estuarine zone. The brine that comes out from Desalinization Plants (if any) should not be discharged into sea without adequate dilution.
- g) Mangrove conservation and regeneration plan shall be formulated and Action Plan with details of time bound implementation shall be specified, if mangroves are present in Study Area.
- h) A common **Green Endowment Fund** should be created by the project proponents out of EMP budgets. The interest earned out of it should be used for the development and management of green cover of the area.
- i) Impact on fisheries at various socio economic level shall be assessed.
- j) An endowment **Fishermen Welfare Fund** should be created out of CSR grants not only to enhance their quality of life by creation of facilities for Fish Landing Platforms / Fishing Harbour / cold storage, but also to provide relief in case of emergency situations such as missing of fishermen on duty due to rough seas, tropical cyclones and storms etc.
- k) Tsunami Emergency Management Plan shall be prepared wherever applicable and Plan submitted prior to the commencement of construction work.
- l) There should not be any contamination of soil, ground and surface waters (canals & village pond) with sea water in and around the project sites. In other words necessary preventive measures for spillage from pipelines, such as lining of Guard Pond used for the treatment of outfall before discharging into the sea and surface RCC channels along the pipelines of outfall and intake should be adopted. This is just because the areas around the projects boundaries could be fertile agricultural land used for paddy cultivation.

List of Participants

2.1 M/s. Uttar Pradesh Rajya Vidyut Utpadan Nigam Ltd.

1. Sh. A.P. Mishra
2. Sh. Rakesh Trivedi
3. Sh. Subir Chakravorty
4. Sh. M.N. Baig
5. Sh. R.K. Jain
6. Sh. Sanjay Tiwari
7. Sh. R.K. Singh
8. Sh. D. Swaroop
9. Sh. Atul Kumar
10. Sh. R.S. Yadav

2.2 M/s. Ramco Cements Ltd.

1. Sh. M. Srinivasan, President
2. Sh. P. Kothandarani, DM (Env.)
3. Sh. K. Sekar, EIA consultant

2.3 M/s. NTPC-SAIL Power Company (Pvt.) Ltd.

1. Sh. Manash Sarkar, CEO
2. Sh. B. Pramesh, GM/BuH
3. Sh. B. Bhattacharya, GM (Engr.)
4. Sh. Amit Gautam, AGM (Engr.)
5. Sh. Saurabh Sharma, DM (Engr.)
6. Sh. Sunil Jadov, Vimta Labs

2.5 M/s. India Power Corporation (Haldia) Ltd.

1. Sh. D. Vijayabhaskar Reddy, President
2. Sh. Somash Das Gupta, President (Corp. Affairs & Admin)
3. Sh. Kamal Kumar Jana, Chief Manager
4. Sh. Rameshwar Singh, Chief Manager

2.5-B M/s. Haryana Power Generation Corporation Ltd.

1. Sh. S.K. Khungar, C.E/planning
2. Sh. R.K. Puri, Exen/Elec.
3. Sh. Vikram Pal, Exen/Elec.
4. Sh. Rinkesh, computer operator
5. Sh. Sunil Sharma, SE/Planning

2.5-C M/s. Synergy Li Power Resources India Pvt. Ltd.

1. Sh. Ajay Mehta, Managing Director
2. Sh. Somdatta , Advisor
3. Sh. E. Shyam Sundar, Bhagavathi Anna Labs

2.6 M/s. Raj West Power Ltd.

1. Sh. G.J. Deshpande, Director
2. Sh. Aditya Agarwal, Director
3. Sh. Dilip Narwani, DGM (Engr.)
4. Sh. Jaishankar Bajaj, Sr. Mgr.
5. Sh. J.K. Moitra, EMTRC
6. Sh. Pallavi Singh, EMTRC
7. Sh. Mukesh Kumar

2.7 M/s. Jindal Power Ltd.

1. Sh. J.K. Soni, Group (EVP)
2. Sh. R.K. Saigal, ED (Engr.)
3. Sh. Yogesh Sindhu, Dy. Mgr
4. Sh. D.K. Bhargava, AVP
5. Sh. A. Samanta, EVP

2.8 M/s. Lanco Vidarbha Thermal Power Ltd.

1. Sh. K.E. Prasad, COO
2. Sh. B.L. Jangir
3. Sh. S.M. Mahajan
4. Sh. Vinod Agrawal
5. Sh. V.S. Prakash Rao
6. Sh. M. Janardhan ,Vimta Labs
7. Sh. S. Kishore Kumar, Vimta Labs
8. Sh. B. Pavan Kumar
9. Sh. M. Krishna Machary
10. Sh. Ankur Varma

2.9 M/s. SPI Ports Pvt. Ltd.

1. Sh. Siva Subbaraj, Director
2. Sh. Nachlappan, Engg. Manager
3. Sh. YBS Moorthy, B.S. Envr. Tech Pvt. Ltd.

2.10 M/s.Surguja Power Pvt. Ltd.

1. Sh. J. Bhatnagar, Jt. President
2. Sh. Santosh Kumar Singh
3. Sh. R.N. Shukla, DGM
4. Sh. Sanjay Tibrewal, G.M
5. Sh. Nandini Choudhury, MD, GCPL
6. Sh. Nilanjan Das,GCPL

2.10-A M/s. Telangana State Power Generation Corporation Ltd.

1. Sh. Arvind Kumar, IAS
2. Sh. D. Prabhakar Rao, CMD
3. Sh. A. Ajay, Chief Engr.
4. Sh. G. Srinivasa Rao, Suptd. Engr.

5. Sh. K. Ramakrishna Reddy, Executive Engr.
6. Sh. M.V. Raghava Charyulu, Bhagavathi Anna Labs
7. Sh. G. Mallikarjuna Murthy, Sr. Engr., Bhagavathi Anna Labs