

## **MINUTES OF THE 36<sup>th</sup> MEETING OF THE RE-CONSTITUTED EXPERT APPRAISAL COMMITTEE ON ENVIRONMENTAL IMPACT ASSESSMENT OF THERMAL POWER & COAL MINING PROJECTS**

The 36<sup>th</sup> Meeting of the reconstituted Expert Appraisal Committee (Thermal Power) was held on **19<sup>th</sup>-20<sup>th</sup> May, 2015** at Brahmaputra Meeting Hall, Vayu Wing, First Floor, Indira Paryavaran Bhawan (New Building), Jorbagh Road, New Delhi-110003. The members present were:

1. Prof. C.R. Babu - Vice Chairman (Acting Chair)
2. Shri T.K.Dhar - Member
3. Shri A.K. Bansal - Member
4. Shri G.S. Dang - Member
5. Shri N.K. Verma - Member
6. Shri N.S. Mondal - Member (Representative of CEA)
7. Dr. S.S. Bala - Member (Representative of CPCB)
8. Ms. Sanchita Jindal - Member Secretary

In attendance: Dr. M. Ramesh, Scientist 'D', MoEF&CC.

Shri J.L Mehta, Dr. C.B.S Dutt, Dr. S.D. Attri, Dr. Ratnavel, and Dr. Asha Rajvanshi were not present.

### **Item No.1: CONFIRMATION OF THE MINUTES OF THE LAST MEETING.**

The Minutes of the 34<sup>th</sup> EAC meeting held during 29<sup>th</sup>-30<sup>th</sup> April, 2015 were confirmed with the following correction.

The proposal No. 2.4 shall be read as, "*Marwa Thermal Power Plant of 2x500 MW at Marwa, District Janjgir Champa in Chhattisgarh by M/s Chhattisgarh State Power Generation Company Ltd. – For Reconsideration for Extension of EC*".

### **Item No. 2: CONSIDERATION OF PROJECTS**

#### **2.1 Barethi Super Thermal Power Project of 2640 (4x660) MW at Villages Barethi, Basari, Sandni & Satna, Tehsil Rajnagar, District Chhatarpur, Madhya Pradesh by M/s NTPC Ltd. – For EC.**

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

- (i) ToR for carrying out EIA study for Barethi STPP (6X660 MW) was accorded by the Ministry initially on 09.09.2010, which was valid till 08.09.2013. Public Hearing was conducted on 17.06.2011 and the final EIA report was submitted to the Ministry on 18.10.2011. However, the same was not considered by the Ministry due to non-availability of firm coal linkage. Accordingly, the Project proponent (PP) had applied for fresh ToR for revised capacity of 2640 (4X660) MW, Stage-I and also requested for exemption of Public Hearing (PH).
- (ii) ToR for carrying out EIA study for Barethi STPP of 2640 (4X660) MW was accorded on 25.07.2014 with PH exemption as there was no change in the location of project site and no TPP or any other industry came up within 10 Km radius from the project site

etc. during the intervening period. In accordance with the TOR, based on one season (November 2014 - January 2015) baseline data, an EIA report has been submitted to MoEF&CC for accord of EC.

- (iii) Govt. of Madhya Pradesh vide letter dated 31.03.2010 have accorded in-principle commitment for availability of about 3400 acres of land for the project. However, so far physical possession of 2900 acres land has been taken by NTPC as the land requirement for Stage-I is 2110 acres. It was earlier proposed to put up 2x660 MW as Stage- II for which 790 acres was required hence the land was taken into possession. However now, as of now, no expansion is envisaged due to shortage of water therefore, no Stage-II shall be there. There is no ecologically sensitive area such as Biosphere Reserve, National Park and Wildlife Sanctuary within a radius of 10 km from the site. Panna Tiger Reserve and World Heritage Site “Khajuraho Temple” are located at a distance of about 12 km and 23.4 km respectively. The estimated Project Cost is Rs. 17,820.98 Crores and proposed Environmental Protection Cost is Rs. 1,348.98 Crores.
- (iv) The coal requirement of 12.0 MTPA will be met from Banai coal mine block of Mand Raigarh in the State of Chhattisgarh allotted to NTPC by Ministry of Coal (MoC) vide letter dated 31.03.2015. The Sulphur and Ash contents in Coal would be in the range of 0.4 % - 0.5 % and 40-43 % respectively. Coal is proposed to be transported from coal mine block to the project site by Indian railway system rakes. The rakes will be unloaded at the wagon tippers.
- (v) High efficiency ESP will be installed to control particulate emissions to < 50 mg/Nm<sup>3</sup>. Two twin-flue stacks of 275 m height each will be installed. Baseline Environmental monitoring has been conducted from November, 2014 to January, 2015. The base line concentration for PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub> and NO<sub>x</sub> is in the range of 40.0-56.0 µg/m<sup>3</sup>, 12.0-20.0 µg/m<sup>3</sup>, 4.0-5.6 µg/m<sup>3</sup> and 9.0 - 14.2 µg/m<sup>3</sup> respectively. The maximum incremental concentration of PM, SO<sub>2</sub> and NO<sub>x</sub> would be 0.94 µg/m<sup>3</sup>, 36.60 µg/m<sup>3</sup> and 11.97 µg/m<sup>3</sup> respectively. Final GLC of all these will be within the prescribed ambient air quality limits.
- (vi) The water requirement of 80 MCM will be sourced from Shyamari and Majhgaon dam. Water Resource Department (WRD), Government of Madhya Pradesh (GoMP) vide letter dated 03.09.2012 has allocated 40 MCM water each from Shyamari and Majhgaon dams. The dams are under construction phase by M.P. State Government. Water requirement has been optimized with designed COC of 5.0 in line with CEA norms. The total make up water during operation is 9805 m<sup>3</sup>/h (i.e. 2.96 m<sup>3</sup>/h/MW which is as per the CEA norms). The treated wastewater quality will conform to prescribed standards and used in greenbelt development in and around project site to the maximum extent. Closed cycle cooling system will be installed to avoid hot water discharge for the protection of aquatic life. Zero Liquid Discharge (ZLD) system with maximum recycle/reuse of water will be implemented and thereby small quantity of make-up water shall be drawn. Therefore, the impact of water discharge on ecology will be insignificant. Marine impact is not applicable as the site is land locked.
- (vii) All the required measures to protect the natural surface drainage pattern of the area shall be taken. To study the existing drainage pattern and to plan the drainage of plant without disturbing the natural pattern, “Area Drainage Study” is already done by IIT, Roorkee and recommendations of the study are being followed in planning/execution of the project.

- (viii) Ash utilization/management shall be done as per the fly ash utilization Notification dated 03.11.2009. It is estimated that about 15,000 TPD i.e. about 4.8 MTPA of ash shall be generated. In order to assess the ash utilization potential in the vicinity of proposed power plant, a market survey was undertaken by NTPC through M/s Bhagavathi Ana Labs Pvt. Limited. The survey covered cement plants located within 300 km, brick manufacturing plants and major construction activities within the 100 km radius of Barethi STPP. There are 13 cement units within 300 km from the proposed power plant. Apart from this, 16 more cement plants are proposed/ upcoming within 300 km radius from the proposed power plants which will also require fly ash. The total requirement by all the existing Cement & Ready Mix Concrete (RMC) units is estimated to be about 3.5 MTPA. Based on this study, it is proposed to utilize 3.5 MTPA, 0.1 MTPA and 1.2 MTPA of fly ash for Cement & RMC sector, Fly ash bricks and Roads & Highway Embankment & others respectively.
- (ix) A detailed Socio-economic Study for the affected area has been conducted through G.B. Pant Social Science Institute, Allahabad. From the study it is observed that the basic amenities and infrastructural facilities like education, health, electrification, banking and road networking are only accessible to a few sections and small areas of rural society in the project area. Special emphasis for village developmental work may be given to the Sandni and Barethi villages. The number of Project Affected Persons (PAPs) for Sandni and Barethi villages are 565 & 485 respectively where as at Basari and Satna, the number of PAPs are 33 & 12 respectively. The Project Affected Villages (PAVs) having more than 50% of the total PAPs concentrations shall be taken up on first priority.
- (x) A comprehensive Community Development Plan has been formulated (including mainly Education, Health, Infrastructural works, Drinking water facility, training for income generating schemes etc.) in consultation with stakeholders and District Administration under approved R&R plan for Barethi project. The R&R Package, formulated after discussions in the Village Development Advisory Committee (VDAC) meetings was deliberated and finalized after few modifications, in the meeting of the Committee of Secretaries, Govt. of Madhya Pradesh (GoMP). A budget of Rs. 185.64 crores is earmarked for R&R and Rs. 97.995 crores for CSR/community development.
- (xi) Public Hearing/Public Consultation for the project was conducted by Madhya Pradesh Pollution Control Board on 17.06.2011. It was noted that the issues raised in the PH pertained to Permanent Employment for educated young generation, Environmental Pollution & measures for its abatement, Hospital in Village Barethi, Free electricity to the residents of the area, Provisions of Rehabilitation & Resettlement & compensations, Construction of road from Panna-Chhattarpur to NTPC plant avoiding agricultural land etc. The Committee discussed the issues raised in the PH and the reply of the PP.

2. *After detailed deliberations, the Committee opined that the mandatory firm coal linkage is not available for the project as the EC and FC for the coal block are not available. Hence, firm coal linkage is required and accordingly, the EIA/EMP shall be revised. As there is no Stage-II, land requirement for the project shall be considered as only 2110 acres. The PP has not proposed 33% of the area as green belt and hence, the same needs to be done. Since the Panna Tiger Reserve is at a distance of 12 km and a contiguous forest exists, the recommendation/comments of NBWL may be obtained. The ash pond shall be shifted 150 m away from the natural drain and thick green belt shall be developed in between. Since, Khajuraho Temple is made of red stone, long term effect on this also needs to be assessed, mainly due to SPM (Carbon) & SO<sub>x</sub>. As the following information was not available in the*

*EIA/EMP report, and PP could also not provide at the time of presentation, the proposal was **deferred-***

- I. Firm coal linkage i.e. including the EC and FC of coal block. Accordingly, the EIA/EMP shall be revised.*
- II. An authenticated map from CWLW clearly showing the boundary of the project and the Panna Tiger Reserve including the boundary of its eco sensitive zone.*
- III. Considering the scale of the project and proximity with the Panna Tiger Reserve and the contiguous forest, NBWL clearance/comments shall be obtained. The Ministry may also seek comments from its wild life department.*
- IV. Details of compensation given for different categories of land.*
- V. Action plan for green belt development in 33% of the area.*
- VI. Detailed action plan for the development of railway siding and alternate plan, if any.*
- VII. Commitment for using washed coal so as to reduce the ash content < 34%.*
- VIII. Sensitive receptor base-line data for “Khajuraho Temple”. A separate study may be conducted for effects on Khajuraho Temple due to emissions from TPP.*
- IX. Details of effluent treatment and discharge especially during the rainy season.*
- X. The area drainage/hydro-geology study of IIT Roorkee shall be circulated to all the members and shall be presented before the EAC by the concerned Officials of IIT Roorkee in the next meeting.*
- XI. Detailed action plan for rain water harvesting.*
- XII. As agreed, the ash pond shall be shifted 150 m away from the natural drain and thick green belt shall be developed in between. The same shall be submitted on a map.*
- XIII. MoUs for fly ash utilization and Report available on fly ash utilization potential of the area shall be submitted.*
- XIV. Details of health survey records and sources of endemic diseases in the area.*
- XV. Reply to the issues raised by EIA Resource & Response Centre (ERC), New Delhi.*
- XVI. Detailed land use pattern of the project area as per the revenue record.*
- XVII. Justification for such a big ash pond area when there are so many takers for fly ash.*
- XVIII. Impact on water withdrawal on downstream users.*
- XIX. All the studies given in ToRs may be completed and made as a part of EIA/EMP report.*

## **2.2 Expansion of Supercritical Coal Based Kothagudem Thermal Power Station by Addition of 800 MW as Stage-VII at Village & Tehsil Paloncha, Distt. Khammam, Telangana by M/s Telangana State Power Generation Corporation Ltd. (TSGENCO) - Re-consideration for EC.**

The proposal was earlier discussed in the 32<sup>nd</sup> Meeting of the EAC (Thermal) held during **23<sup>rd</sup>- 24<sup>th</sup> February, 2015**, the minutes of which are as under:

**Quote** “The PP along with their environmental consultant, Ramky Enviro Engineers Ltd., Hyderabad has made a presentation and inter-alia provided the following information. The ToR for preparation of EIA/EMP report was accorded on 26.09.2012. The EIA/EMP report after conducting Public Hearing was submitted to the Ministry for consideration of environmental clearance.

(i) Total land required for proposed KTPS Stage-VII is 460 acres i.e. 0.575 acre/MW which is less than the land requirement as per CEA norms (0.67 acre/MW). Existing vacant land of 230 acres will be used for the proposed expansion unit (main plant, coal handling, railway siding, raw water reservoir, roads, etc.) Additional land of 230 acres which is dry agriculture land is being acquired for ash pond only. Kinnerasani Wildlife Sanctuary spread over an area of 635.40 km<sup>2</sup> is around 1.2 km NW from the project site. The proposal was recommended by the Standing committee of NBWL in its 32<sup>nd</sup> meeting held on 25<sup>th</sup> January, 2015. The cost of the project is Rs. 5,291.15 crores. The capital cost and recurring cost of EMP will be Rs.282 crores and Rs.15 crores/annum respectively. The cost towards Ecological Management Plan is Rs. 32.0 Crores.

(ii) The existing Units total capacity is 1720 MW (4X60, 4X120, 2X250 and 1X500). The 60 MW and 120 MW Units were commissioned during 1966-67 and 1974-78 respectively. These old Units were renovated and modernized during 1998-2004 at a total investment of Rs. 604 crores and their performance is quite reasonable. It is proposed to phase out the 60 MW Units during 2023-24 and the 120 MW Units during 2018-19. *However, the Committee recommended that all the old units of 60 and 120 MW shall be phased out by 2018-19.*

(iii) Regarding the certified compliance report of the Ministry's R.O. for the monitoring done on 18-19.11.2014 for compliance of EC conditions by the existing Units, the PP submitted that provision is made in the project cost for installation of STP in the residential town ship of KTPS complex duly connecting all the existing quarters and proposed quarters to be constructed under KTPS VII stage. The STP will be taken up on priority immediately after commencement of KTPS VII stage works. On the observation regarding in-effective fly ash utilization, it was submitted that efforts are being made with nearby cement companies for lifting of fly ash from KTPS complex as most of the cement companies are located far away from the plant. Also 25 Nos Brick Industries are located around KTPS complex to whom the fly ash is being supplied at free of cost. Experimental studies were taken up at M/s. SCCL mines near Bhoopalpally, Warangal Dist. for promotion of ash utilization in mine stowing. The same will be taken up at M/s. SCCL mines near Kothagudem after acceptance of the results of mine stowing at Bhoopalapally Mines. Recycling system for utilization of ash pond water is also provided at KTPS complex and the water is being utilized for ashing and green belt development in the plant. However, ash pond water being discharged in the nearby agriculture fields after decantation of ash water as per the request of the farmers only as a special case particularly during drought period. TSS of the decanted ash water is well within the statutory limits.

(iv) On the observation that frequency of AAQ monitoring & parameters have not been conformed with CPCB guidelines, it was submitted that frequency and monitoring of parameters of Ambient Air Quality will be followed as per CPCB guidelines. Procurement of two more CAAQ monitoring stations is also under process and Purchase order is placed on M/s. Environment SA India Pvt Limited, Navi Mumbai and equipment are expected at site by end of March, 2015. As soon as the equipment is received at site, they will be installed and connected to PCB web site. Regarding uploading of six monthly monitoring reports along with monitored data on the website of the company, the same will be complied. Regarding not obtaining PLI, it was submitted that the same has been obtained on 21.02.2015.

(v) Originally, the requirement of coal for the project is envisaged from Suliary Belwar Coal Block, Madhya Pradesh being developed by State Mineral Development Corporation and the EIA/EMP was prepared accordingly. However, the said coal block was inter-alia cancelled by the Hon'ble Supreme Court. Hence, it is proposed to meet the coal requirement of 3.95 MTPA /12,023 TPD (based on GCV of 3700 kcal/kg) from SCCL. The analysis of fuel shows that ash content is 38% and sulphur content is 0.62%. MoU has been entered with M/s SCCL, a Govt. of Telangana State undertaking for supply of 4.0 MTPA coal to the proposed Unit. The quality of coal offered by SCCL is similar to the quality of coal originally proposed from Suliary Belwar Coal block. Coal transportation will be done by wagons, necessary line side equipment and signaling arrangement for rake movement will be provided.

(vi) Water requirement is calculated as 2.5 m<sup>3</sup>/h/MW, which is less than CEA norm 3.0 m<sup>3</sup>/h/MW. Permission for drawl of water was obtained from Irrigation & CADD Department, Govt. of Telangana to draw 25 cusecs of water throughout the year (0.8 TMC) through existing pipeline laid from Godavari River near Burgampahad, Bhadrachalam Mandal, Khammam District. Annual quantity of water available in the River is more than 2000 TMC out of which only 0.62 TMC is required for the project. The optimum COC of cooling tower water is considered as 5.0 after evaluating several factors and experience gained in the existing stations.

(vii) For rain water harvesting, roof water collection tanks will be provided in the Plant & Colony areas to recharge the ground water. Rain water harvesting pits will be provided along the storm water drainage network at definite pitch. Storm water drainage system consists of well-designed network of open surface drains with bottom stone pitched for better infiltration / recharge of rainwater into ground will be provided. Rainwater harvesting pits will be provided along the drains at equal intervals so that all the storm water is efficiently drained off without any water logging. The wastewater generated 444 m<sup>3</sup>/h will treated in ETP and reused for dust suppression, bottom ash slurry of stage VII, greenbelt, etc. and maintains zero discharge concept.

(viii) For meteorological and AAQ data, baseline data collection has been carried out during the Post monsoon season (Sep. to Nov. 2012). *The committee noted that AAQ data submitted for December, 2014 is exceeding the limits. Hence, recommended that the annual average data and January-February, 2015 data shall be submitted.* 100 % dry fly ash collection facilities are proposed for the expansion unit. Action plan has been drawn for 100% fly ash utilization as per the fly ash Notification. M/s. My Home Cements have given consent for lifting of 40,000 to 50,000 MT of fly ash per annum from the proposed Plant.

(ix) Hydro-geological study of the area has been conducted through M/s. National Institute of Hydrology (NIH) to assess the impact on ground and surface water regimes. Kinnersani reservoir is the major surface water body in 10 km radius (8 km NW). Karaka vagu and Kodipunjula vagu passes within 10 km radius in dry condition except for seasonal flows

during monsoon season. Vertical Electrical Soundings were carried at 18 locations. As per the VES the first layer thickness is up to 12.5 m and the second layer thickness is up to 57.5 m. Major soil types found are clay and silty clay in proposed ash pond area. The assessment of groundwater quality in and around the plant area indicates there is no impact of colony sewage on groundwater. Water samples were analysed for heavy metals (As, Cd, Cu, Pb, Hg and Zn) and compared with BIS 2012 standards and found within limits except Hg. Based on hydrogeology, soil properties, existing groundwater levels, contaminant plume direction (leaching from ash pond) has been demarcated using MODFLOW software. The leaching direction is mainly into the Kinnerasani River and leaching analysis indicates that there is less scope for leaching contaminant from ash pond to groundwater as long term process. There is no diversion of any nallah/drain in the proposed project area & ash pond area. The proposed plant is more than 500 m away (1.0 km) from the HFL of the nearest stream, Karakavagu.

(x) Detailed socio economic survey to assess the impact on livelihood of local communities was carried out through an expert agency, M/s. Centre for Management & Social Research (CMSR), Hyderabad. The household survey was conducted by a structured questionnaire that covered the household level socio-economic profile, livelihood dynamics and educational and health status. The sample consists of 270 households spread across the habitations of: Kotha Suraram, Patha Suraram, Pandurangapuram, Somulagudem, Seethanagar Colony, Basavataraka Colony, Bikku Thanda, Pullaiahgudem, Punukulu, Kodipunjulavagu, Pusala Thanda, Devija Thanda, Nagaram, Yanambailu, Vengalaraonagar Colony, Prasanthinagar, Bollerugudem, Gattaiahgudem, Karaku vagu. Around 36.67% depend on the farm wage labour, followed by cultivation (28.52%) and non-farm wage labour (22.96%). A majority of those who reported non farm activities work at KTPS, Sponge Iron Plant NMDC, Nava Bharat Ferro Alloys and many other ancillary units.

(xi) The total capital cost and recurring cost of the various CSR activities are mentioned as Rs. 21.16 Crores (0.4% of the proposed project cost of Rs. 5257.12 Crores) and Rs. 4.23 Crores (0.08% of the project cost) respectively. M/s CMSR suggested various CSR activities along with financial provisions and implementation schedule. The activities are Drinking Water, Sanitation, Education, Health care, Infrastructure Development, Livelihood Enhancement & Youth Empowerment, Environment/Greenbelt Development, Assistance to vulnerable groups, Rehabilitation of Physically Challenged Land losers. Under CSR budget, a provision is made for training of local people to upgrade their skills for getting employment in the project and other companies. The budget allotted for Livelihood Enhancement & Youth Empowerment is around Rs. 19.04 lakhs/annum. Similarly, tribal issues have been studied and necessary provisions are made in the action plan to upgrade the skill and improve socio economic conditions and the budget allotted for assistance to vulnerable groups is Rs.34 Lakhs/annum.

(xii) A disaster management plan along with risk assessment study including fire and chemical hazards due to storage, handling and usage was carried out. Fire detectors and toxic gas detectors will be put in appropriate place for early warning at all potential locations where accidents can occur, with the provision for alarms. Plantation of native species of 2 to 3 years aged plants will be taken up in 50 to 100 m wide in 3 tiers around plant boundary and tree density will be maintained around 2000 to 2500 plants/ha.

(xiii) It is proposed to tap the solar power by Installation of P.V Solar Plant (with seasonal tilt mechanism) on roof tops of Administrative and Power house buildings at an estimated cost of Rs. 3.2 Crores to generate 400 kW power for plant internal loads. Tenders are invited for establishing 5 MW solar power plant in the vacant lands of KTPS complex. TSGENCO is the

pioneer in the establishing of solar plant by putting 1 MW plant at Jurala (Mahaboobnagar Dist.) and is operating with 20% PLF.

(xiv) Public hearing/public consultation was conducted by the State Pollution Control Board on 25.07.2014. It was noted that the issues raised in the public hearing include regularization of the services of outsourcing employees, employment to locals, compensation to land losers, uninterrupted power supply in the Paloncha Town, CSR activities, taking back of 409 Nos. of ST casual laborers (EPF issue), justice for the tribal people in terms of jobs, welfare etc. The Committee discussed the issues raised in Public Hearing, the responses made by Project Proponent including the action plan for compliance.

(xv) *After detailed deliberations, the Committee sought the following information and **deferred** the proposal-*

- (i) Action plan along with MoUs etc. for fly ash utilization.*
- (ii) Commitment for no additional land for ash dyke. Fly ash utilization shall be enhanced and the existing ash dykes shall be utilized for disposal of the unutilized ash.*
- (iii) Action plan for rehabilitation of the existing ash dykes.*
- (iv) Drainage pattern of the area*
- (v) Commitment for STP with timeline*
- (vi) Details of existing effluent treatment*
- (vii) AAQ data, annual average and January-February, 2015 data along with calibration certificate.*
- (viii) Commitment for phasing out all the old units of 60 and 120 MW by 2018-19.” **Unquote***

2. On submission of the above information, the proposal was placed before the EAC, wherein the PP made a presentation along with their environmental consultant, Ramky Enviro Engineers Ltd., Hyderabad and inter-alia provided the following information:

(i) Although the fly ash utilization during 2014-15 is only **15.89%**, the same is picking up due to promotional measures being taken up by the Government of Telangana/TSGENCO for capacity additions of cement plants and installation of new cement plants. Currently, 8 cement industries are lifting fly ash from the existing units under KTPS I to VI stages. There are about 25 Brick Industries around KTPS complex being run by private agencies to whom the fly ash is being given from KTPS. Further, KTPS complex is also running and maintaining two brick industries on their own and manufacturing around 15,000 bricks per day on an average. All the construction in KTPS complex was carried out using fly ash bricks only and the same is proposed for this 1x800 MW Unit also. It is planned to utilize 100% fly ash from the existing units of KTPS complex (I to VI stages) in the manufacture of Cement, Bricks/Blocks/RMC & Others by 2018-19.

(ii) Three cement companies have come forward to lift fly ash from the proposed 1X800 MW Unit (Stage-VII). The Letter of Intents/requests received from the said companies have been submitted and entering of MoUs is under process. It is planned to utilize 100% fly ash from the proposed Unit in the manufacture of Cement, Bricks/Blocks/RMC & Others by 2020-21.

(iii) As directed by the EAC, TSGENCO is committed to utilize the existing ash ponds for disposal of ash generated from the proposed expansion unit and also no additional land will be acquired for ash dyke. An undertaking in this regard is already furnished vide letter dated 02.05.2015.

(iv) The existing ash ponds will be utilized for its full capacity and these will be rehabilitated by undertaking mass plantation. Already plantation has been taken up in 130 acres of abandoned ash pond and is being maintained. The photographs showing the green belt were submitted.

(v) The drains from KTPS I-IV stages are connected to sedimentation tank for settlement of suspended matter and only clear water is being let out into the Karakavagu. The drains in the KTPS Stage - V are also connected to two silt chambers for settlement of suspended matter and only clear water is let out into the Karakavagu. However, separate sedimentation tank with recirculation system is also planned for 2x250 MW KTPS-V Stage. The consultancy has already been placed and the work will be taken up & completed by end of August, 2016. The drawings showing the existing and proposed drainage pattern were presented. For KTPS-VI Stage (1X500 MW), ETP with re-cycling system is available for ensuring zero discharge. The treated water in the ETP is being used for cooling tower make up, for ash slurry, green belt development and floor wash. Analysis of existing effluents discharged from sedimentation tank, DM plant and other outlets of KTPS Stage I to IV and KTPS Stage V&VI were also presented.

(vi) A provision has been made in the project cost of 1X800 MW expansion Unit for installation of Sewage Treatment Plant (STP) in the residential township of KTPS duly connecting all the existing & proposed quarters to be constructed under KTPS-VII stage. The construction of STP will be taken up on priority basis immediately and will be commissioned by the end of April, 2016. The commitment letter in this regard has already been submitted.

(vii) AAQ data, annual average and January-February, 2015 data along with calibration certificate was submitted. Few values of PM<sub>10</sub> have exceeded the limits for which necessary corrective measures are being taken. At present, online AAQ Station is available in the Residential Colony of KTPS Complex and procurement of two more online AAQ Stations is under process and will be installed by the end of June, 2015 as assured during the EAC meeting held on 24-02-2015. Commitment letter dated 02.05.2015 for procurement & installation of two more online AAQ Stations has already been submitted.

(viii) The old units (4 x 60 MW), commissioned during 1966 & 1967 were renovated and modernized in the year 1998-2004 with a total investment of Rs. 604 Crores and their performance is satisfactory. The 4x120 MW units which were established during the years 1974 to 1978 will be phased out by the end of 2019. Earlier it was stated that 4x60 MW will be phased out in 2023-24, keeping in view of present power crisis. However, as directed by the Committee, TSGENCO will take up phasing out of all 4x60 MW and 4x120 MW units by the end of 2019. The commitment letter dated 02.05.2015 signed by the CMD, TSGENCO in this regard has already been submitted.

3. The Committee has received a communication from ERC, New Delhi raising certain issues on the EIA/EMP of the proposed project and the non-compliance of the existing Units. The reply of PP on the issues raised and compliance report from the Telangana State Pollution Control Board (TSPCB) for the directions issued were sought. The same have been submitted by the PP and examined by the Committee.

4. *TSPCB vide letter dated 21.05.2015 has informed the Ministry that they have been regularly reviewing the status of Pollution Control by the existing Units of KTPS. The Board has reviewed KTPS Units and issued directions on 03.12.2014 to ensure compliance of pollution control norms. Subsequently, KTPS took certain specific measures to control the pollution. KTPS*

vide letter dated 07.03.2015 has submitted time bound action plan to comply with the various directions issued by the Board, by April, 2016. The TSPCB satisfied with steps taken and action plan submitted by TSGENCO has issued Consent for Operation on 20.03.2015 (for stage-V) and 27.03.2015 (for stage-I to IV) for a period upto 30.09.2016. The Board has been regularly monitoring the Units to ensure that the industry complies with all the pollution control norms. The time lines for taking up the remaining works as submitted by the TSGENCO vide letter dated 21.05.2015 has been considered by the Board and the TSGENCO has been directed to take necessary steps to ensure the timely completion of the above works. In view of the above, the application for EC for the proposed expansion Unit of 1x800 MW, KTPS VII stage may be considered for approval.

5. The Committee noted that the directions issued by SPCB are for Stages I-V and the PP has already committed to Phase out all the 4x60 MW and 4x120 MW units (commissioned during 1966-67 and 1974-78 respectively) of Stages I-IV by the end of 2019. However, the PP needs to ensure that these Units are complying with all the norms till they are operational. Although the certified compliance report of Ministry's R.O. for Stage-VI has highlighted few non-compliances, the PP has taken corrective action or has committed for immediate action. The PP shall adhere to the commitments and their timelines made to SPCB and the Ministry's R.O.

6. Based on the information and clarifications provided by the Project Proponent, TSPCB and detailed discussions held on all the issues including the power situation of the newly formed Telangana State, the Committee **recommended the project for environmental clearance** subject to stipulation of the following additional specific conditions:

- I. The TSPCB and Ministry's R.O. shall jointly monitor all the existing Units of KTPS on a six monthly basis till they are satisfied with the compliance. Further, TSPCB shall only accord CTO for Stage-VII after all the existing Units of KTPS are in total compliance to the norms.
- II. As committed, all the 4x60 MW and 4x120 MW units of Stages I-IV shall be phased out latest by the end of 2019.
- III. As committed, the existing ash ponds shall be utilized for disposal of ash generated from the proposed expansion unit and also no additional land shall be acquired for ash pond.
- IV. As committed, the construction of STP shall be taken up on priority basis immediately and shall be commissioned latest by the end of April, 2016
- V. Latest authenticated satellite imagery shall be submitted on an annual basis to monitor the alterations of the area.
- VI. The Sulphur and ash content of coal shall not exceed 0.62% and 38 % respectively. 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.
- VII. Fly ash utilization notification of MoEF&CC should be followed. Explore the possibility of setting up cement plant and enhance the brick manufacturing capacity.
- VIII. The ground water quality shall be monitored in and around all the ash ponds.
- IX. To mitigate dust pollution, a thick green belt should be developed around the plant and Ash dyke area.

- X. *Health Surveys of the people living in 10 sq. km. radius of the plant complex should be carried out annually with respect to respiratory disorders.*
- XI. *As committed, a minimum amount of Rs. 21.16 Crores shall be earmarked as capital cost for CSR activities and Rs. 4.23 Crores/annum or the amount as per the CSR policy of GOI whichever is higher shall be earmarked as recurring cost per annum till the operation of the plant.*

**2.3 Manuguru Thermal Power Project of 1080 (4x270) MW at Villages Ramanujavaram, Eddulabayyaram & Seetharampuram, Mandals Manuguru & Pinapaka, District Khammam, Telangana by M/s Telangana State Power Generation Corporation Ltd. (TSGENCO) - Reconsideration for ToR.**

The proposal was earlier discussed in the 32nd Meeting of the EAC (Thermal) held during 23rd- 24th February, 2015, the minutes of which are as under:

**Quote** “The project proponent along with their environmental consultant, Vimta Labs, Hyderabad made a presentation and inter-alia provided the following information. Three sites were examined for setting up the proposed power plant. Site- 2 & 3 were not considered as they are falling within the Reserve Forest Block area. The land for the proposed project is 1183.24 acres (for Thermal power plant is 1110.38 acres and for future expansion of Solar power plant is 72.86 acres). Kinnerasani wildlife sanctuary is at a distance of 10.8 km in the SW direction. The total estimated project cost is approx. Rs. 7,360.21 Crores.

(i) Coal requirement will be 4.07 MTPA (50% domestic coal + 50 % imported coal) at 85% PLF with GCV of 4550 Kcal/kg and 3.24 MTPA (100% imported coal) at 85% PLF with GCV of 5700 Kcal/kg. Domestic coal is proposed to be sourced from the SCCL mines and imported coal will be sourced from Indonesia or other available good quality imported coal. Ash content of Indigenous coal and imported coal will be 40% and 15% respectively. The total water requirement of 4155 m<sup>3</sup>/h (1.4 TMC/annum) shall be sourced from River Godavari.

(ii) *After detailed deliberations, the Committee sought the following information and **deferred** the proposal.*

*I. Minimum two alternate potential sites on a topo sheet.*

*II. Optimize the land requirement as per CEA norms.*

*III. Revise the Plant layout by shifting the locations of ash pond and township.*

*IV. Examine the feasibility of switching to super-critical technology and accordingly, revise the configuration of proposed Units. ” **Unquote***

2. On submission of the above information, the proposal was placed before the EAC, wherein the PP made a presentation along with their environmental consultant, Vimta Labs Ltd., Hyderabad and inter-alia provided the following information:

(i) A number of sites were surveyed in various Districts of Telangana State for establishing the proposed TPP. But no suitable site having rail connectivity, availability of water source

and good road connectivity is identified other than three sites including the proposed one. Though site-2 & site-3 (two sites) are also suitable for establishing the proposed TPP in view of area advantage to rail connectivity, nearby water source and road connectivity, they were not considered as they are falling within the eco-sensitive zone of Kinnerasani wild life sanctuary. Finally, the site-1 at Manuguru is selected for establishing the proposed TPP due to availability of about 87% of Government lands, 13% of Patta lands and basic inputs such as rail connectivity, availability of water source from Godavari River and good road connectivity to nearest State Highway connecting Eturu Nagaram and Manuguru town.

(ii) The land required for establishing the 4 x 270 MW TPP including green belt has been optimized and worked out to be 936.92 acres (492.88 +165.42 + 278.62) as against actual requirement of 1177.20 Acres as per CEA norms.

(iii) An extent of 149.55 acres (67.84+15.62+66.09) has been excluded and ash dyke boundary is shifted away from the forest area and Perantala Cheruvu on South side of the Block-II. An extent of 62.44 acres has been excluded and shifted township boundary 500 m away from the Godavari River.

(iv) A note was furnished by the Government of Telangana vide letter dated 15.04.2015 justifying the setting up of 4X270 MW Sub-critical power plant. As there is acute shortage of power in Telangana State, the State government has directed TSGENCO to establish 4 x 270 MW Thermal Power Station at Manuguru to meet power demand in the Telangana State in view of the assurance given by M/s BHEL to complete the project in two years period on fast track mode. TSGENCO will ensure the stipulation of MoEF & CC, GOI & TSPCB suitably for Sub-Critical technology

3. *The Committee opined that in view of the latest Orders of CEA/ Ministry of Power for allowing only supercritical technology, the company shall seek an exemption from CEA, if supercritical technology is not proposed. Further, the PP has not proposed 33% of the area as green belt which needs to be done. Based on the information provided and the presentation made, 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.*

*I. Shall explore the feasibility of installing Super Critical Technology. If subcritical is proposed, prior approval of MoP shall be submitted. Accordingly, the EIA/EMP shall be prepared.*

*II. Action plan for development of green belt in 33% of the area and thick green belt between the Road and the River.*

*III. Green belt plantation should be started as soon as possible, before starting any construction activity.*

#### **2.4 Expansion of Coal Based Thermal Power Plant from 414 MW (2 x 77 MW, 1 x 80 MW & 1 x 180 MW) to 1134 MW by addition of imported coal based 2 x 360 MW (Unit V & Unit VI) TPP at Periya Obulapuram, Cinna Obulapuram & Pappankuppam Villages, Gummidipoondi Tehsil, Thiruvallur District, Tamil Nadu by M/s. OPG Power Generation Private Ltd.- For ToR.**

The project proponent along with their environmental consultant, Greencindia Consulting Private Limited, NCR, Ghaziabad made a presentation and inter-alia provided the following information-

(i) OPG Power Generation Pvt. Ltd., a subsidiary of OPG Power Ventures PLC presently has 2 x 77 MW Units and 1 x 80 MW Unit in operation. The 1 x 180 MW Unit is in advanced stage of installation and expected to be commissioned by May, 2015. It is proposed to install 2 x 360 MW Units based on imported coal after decommissioning the existing Sponge Iron plant located adjacent to the site. The existing project area is 115.5 acres and the land requirement for the proposed expansion is 77.5 acres. The entire land is under possession of the PP. There are no R&R issues. Pulicat Bird Sanctuary is at a distance of 7 km in NE direction. The project site does not fall in the defined eco-sensitive zone (2 km) of the bird sanctuary. The project site is about 25 km away from the sea front. Drain passing along the boundary of the project site will not be disturbed. The project cost is about Rs. 4320 crores.

(ii) The imported coal (Indonesian) requirement is about 2.645 MTPA (PLF @ 90%) considering the installed capacity as 720 MW. The existing and proposed water requirement is 206 m<sup>3</sup>/d and 425 m<sup>3</sup>/d respectively. The Company has already obtained approval from Tamil Nadu WRD/ PWD for drawl of ground water to the extent of 1540 m<sup>3</sup>/d (1.54 MLD). The existing units are based on air cooled condensers and the same is proposed for the expansion units also.

2. *Based on the information provided and the presentation made, 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 also took note of the issues/suggestions of ERC, New Delhi.*

- I. *Shall install Super Critical Technology only. If it is not possible, then an approval of MoP shall be sought for using subcritical technology. Accordingly, the EIA/EMP shall be prepared.*
- II. *An authenticated map from CWLW showing the boundary of the project and the Pulicat Lake Sanctuary including the boundary of the eco sensitive zone. NBWL clearance shall be obtained, if required.*
- III. *Detailed study on the availability of ground water and effect of its extraction by power plants and all other industries in the area shall be carried out.*
- IV. *Cumulative impacts of all the existing and proposed units on air and water quality of the area.*
- V. *Funds for CSR shall be as per the Companies/ CSR Act.*

## **2.5 1x300 MW CPP at Godapiasal, Tehsil Salbani, District Paschim Medinipur, West Bengal by M/s JSW Energy Bengal Ltd. - For ToR**

1. The project proponent along with their environmental consultant, Ghosh, Bose & Associates (P) Ltd., Kolkata made a presentation and inter-alia provided the following information.

(i) JSW Steel Ltd. was granted EC for establishing 3.0 MTPA Integrated Steel Plant (ISP) and 300 MW CPP at the present location on 19.02.2008. Subsequently, the said EC was transferred on 03.09.2012 in favor of M/s JSW Bengal Steel Ltd. and M/s JSW Energy (Bengal) Ltd. for 3.0 MTPA ISP and 300 MW CPP respectively. Since the validity of the said

EC dated 19.02.2008 had expired on 18.02.2013, the PP was asked to apply afresh for ToR. Hence, the instant application was made.

(ii) The proposed CPP will meet the power requirement of the proposed ISP and will be installed within the land already acquired for setting up the ISP. The land requirement for the CPP is 137 acres including ash dyke and green belt. The site is in conformity with CRZ regulations (500 m away from HTL) and guidelines of distance (500 m) from HFL of River, Highway and Railway line. There are no ecologically sensitive areas within 10 km radius of the site, no R&R issues and no litigations. The project cost is about Rs. 1,600 crores.

(iii) The coal requirement is 1.5 MTPA and is proposed to be sourced from Ichhapur coal block and transported by Rail. The raw water requirement is 698 m<sup>3</sup>/h and will be sourced from River Rupnarayan. Recirculating closed cycle cooling system with COC of 5.0 shall be used. Zero discharge concept will be adopted for the effluent treatment.

2. ToR for preparation of EIA/EMP for 660 MW (IPP) in the same location was accorded by the Ministry on 7.1.2014 and the baseline data was collected during December, 2014 - February, 2015. The PP requested for utilizing the same data for the preparation of the EIA/EMP for the proposed CPP. *The Committee agreed for the same.*

3. *Based on the information provided and the presentation made, the Committee observed that these are two different companies for ISP and CPP. Therefore, it cannot be considered as CPP. It would be considered as a separate power plant which will be supplying its whole electricity to the steel plant. 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.*

(i) *Certificate from SPCB that no other developmental activity has taken place in the study area since the collection of base-line data i.e. December, 2014 - February, 2015.*

## **2.6 Coal Based Thermal Power Plant of 2x300 MW (Phase-I) at Village Ghanmukh (Bijora), Mahagaon Taluk, Yavatamal District in Maharashtra by M/s. Jinbhuvish Power Generations Pvt. Ltd.- For Amendment of EC.**

The PP informed that due to some unavoidable circumstances they are not in a position to come for presentation before the Committee. It was decided that this proposal may be taken up in the next meeting.

## **2.7 Coal Based Captive Thermal Power Plant of 2x10 MW at Village Tatisilwai, District Ranchi in Jharkhand by M/s. Usha Martin Ltd. – For Amendment of EC.**

The PP along with their environmental consultant, Min Mec Consultancy Pvt. Ltd., New Delhi, made a presentation and inter-alia provided the following information-

(i) EC was accorded to the above CPP on 07-04-2011 and the same is under operation. As per the EC, the coal will be obtained from captive Lohari coal block near Daltonganj in Jharkhand, which is about 200 km from the project. While obtaining EC, it was also submitted that the coal requirement shall be met through local market/E-auction as the coal linkage is in process by Ministry of Coal. The coal characteristics proposed were GCV (2880 Kcal/Kg), sulphur (0.3 to 0.5%) and ash (41.7%).

(ii) The first unit of CPP (10 MW) was operational from 31.03.2012 and second unit of 10 MW was operational since 31.12.2012. However, only one of the units is in operation due to non-availability of JSEB Grid synchronization systems and thus only 10 MW Unit was in operation till April, 2014. During this period, coal requirement of about 180 TPD was met through various mines like – Purnadih (CCL), KDH, Ashoka Mines etc. through E-auction and High GCV Slag coal from Heavy Engg. Corporation, Ranchi through Window sale which are at a varying distances of 22 to 80 Kms from CPP. This coal was transported by road in 20 MT trucks.

(iii) The Lohari coal block has been de-allocated by the Hon'ble Supreme Court along with all the coal blocks. However, the PP has now been allocated Brinda-Sasai coal blocks in Chatra-Hazaribagh Districts of Jharkhand. The vesting order for the same has been issued on 22.04.2015. As the allocated coal block is yet to be developed, and shall take considerable time for commencement of production and supply to the project, it is requested initially, minimum of 3 years, be permitted for procurement of coal through E-auction from Ashoka Piparwar area and Skini Mines and transport to the CPP.

(iv) Further, the EC stipulates at specific condition no. I that, *“Road transportation of coal shall be permitted for a limited period of 36 months only. The project proponent shall shift to railway transportation thereafter. The project proponent shall be vicariously responsible for liabilities incurred for road transportation such as accidental damages to public, coal fines emission from transporting trucks etc. The project proponent shall immediately start its action plan for rail transportation with consultation with the Railways and shall submit half yearly action taken report to the Ministry on the matter.”*

(v) The nearest railway siding is Tatisilwai (approx. 1 km from CPP). It is a loading siding and no provision for unloading is there. As per MOEF's stipulation, the PP has pursued through various correspondence since 2011 for development of this siding. Divisional Railway Manager (DRM), Hatia has informed that there is no scope for coal handling at Tatisilwai (as it is tech-economically unviable). For small quantities of coal, railways does not give rakes. Further, Central Coal fields Ltd. (CCL) has issued letter dt. 09.09.2014 stating that *“from October, 2014 onwards, the coal allotment will be made by road mode only”* for non core consumers. A study of existing rail & road network brings out that road transportation needs to be done in addition to the rail transport and material handling.

(vi) A study of impact of coal transportation by road for the requisite coal 0.183 MTPA (500 TPD) by 20 T trucks was carried from the two sources of coal either in part or in full, namely, Ashoka and Piparwar mines (e-auction) of CCL or Sikni (purchase) or a combination of both. The distance from Sikini and Ashoka/Piparwar mines to the Plant is 106 Km and 84 Km respectively. The proposed routes are State Highways and maintained by the State Govt.

(vii) The study concludes that the existing road capacity, type and condition from mines to CPP are adequate to accommodate the additional traffic of 50 Trucks/day (to & fro) for 500 TPD coal movement (maximum of 2 trucks per hour). No bottle necks and issues were found at any location at the time of study & there were no traffic jams observed. When the Passenger Car Units (PCU) projections for the future percent utilization were estimated, it was found that the carrying capacity (as per IRC 64-1990) at all Census points were within limits. However, at Bijupara needs attention as already 96.8% of the capacity is being utilized. The resultant concentrations of PM<sub>10</sub>, CO and NO<sub>x</sub> shall remain within limits after additional traffic load. Environment protection measures were also suggested.

(viii) Further, there are typographical errors in the EC in respect of Land i.e. actual land proposed was 22.437 Acres instead of 12.278 Acres mentioned in EC and ash content in coal proposed was 41.7% instead of 34% stipulated in Specific Condition (iii) of the EC. Hence, corrections in the EC are requested.

2. *Based on the information and clarifications provided by the Project Proponent, the detailed discussion and considering the status/progress of the project, the Committee recommended for **sourcing of coal through e-auction and extension of permission for temporary road transportation of coal by three years i.e. till 31.03.2018** subject to the conditions given below. Further, the Committee also recommended for corrections in the EC i.e. land requirement shall be 22.437 Acres instead of 12.278 acres and restriction of ash content in coal shall be 41.7% instead of 34%.*

- i) Coal shall be procured by e-auction only and not from open market*
- ii) The transportation by road shall be through mechanically covered trucks to the extent feasible, else through trucks covered by tarpaulin.*
- iii) Explore the possibility of upgrading road shoulders into pakka road in consultation with the State Govt.*
- iv) Periodic maintenance of the road shall be done by the project proponent at its own expenses and shall also facilitate the traffic control on the road in consultation with the State Govt.*
- v) Avenue plantation of 2/3 rows all along the road shall be carried out by the project proponent at its own expenses in consultation with the State Govt.*
- vi) The PP shall advertise in the local leading newspapers and place on the website, the temporary permission accorded by the Ministry for public information.*

## **2.8 Coal Based Captive Thermal Power Plant of 2x67.5 MW at Village Anantapur, Tehsil Athagarh, Distt. Cuttack, Orissa by M/s. Bhubaneswar Power Pvt. Ltd. - For Extension of validity of EC.**

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

- (i) EC was accorded to the above proposal by the Ministry on 14.05.2010. One of the Specific Condition of the EC is that, EC is subject to obtaining prior clearance from the NBWL under WL (Protection) Act. 1972. Application for NBWL clearance was made on 03.06.2010 and was received on 22.08.2012 (*26 months*). In addition to the delays in receiving the approvals from the State and Central Governments to start the project, the construction and schedule of the project have been adversely affected due to *Cyclone Phailin in October 2013 & Cyclone Hudhud in October 2014*.
- (ii) The Plant construction is 85% complete. The detailed progress of various units/facilities along with photographs was presented. The time required to complete the balance activities was also submitted. A minimum period of 20 months would be required for operation of the Units.
- (iii) The delay in starting the Project because of the time taken for receiving the NBWL Clearance also had its impact on the Railway Siding for the project. The Railway Siding

could not be taken up till the revised Mid-Section take off arrangement was received from East Coast Railway (ECoR) in May, 2014. The DPR preparation as per the revised Mid-Section take off arrangement is under progress. The land acquisition process is also being revisited due to the variation in the alignment of the Railway siding and provision of another loop line. The funds towards land acquisition have been deposited to Government of Odisha on 15.01.2015. Since the Railway Siding will take considerable time, the PP needs to transport coal by Rail and Road from Mahanadi Coalfields as an interim arrangement. Permission was also obtained for utilizing the Rajathagarh railway siding which is located just 18 km from the Project Site. Hence, permission for alteration in the coal transportation route and road transportation of coal as an interim arrangement is also sought.

2. It was observed by the Committee that so far not a single CSR activity has been undertaken by the PP and no green belt has been developed. The Committee expressed its unhappiness about it. The PP assured to undertake the same immediately. The Committee asked the PP to give an undertaking for the same providing of the activities and funds for these. The requisite undertaking has been submitted by the PP stating that as per EC condition, the projects worth of Rs. 2.5 cores (one time capital investment) to be taken up under the CSR activities will be finalized with the District Authorities & Rehabilitation and Peripheral Development Advisory Committee (RPDAC) and shall be implemented within next one year. Further, they will take up the green belt development immediately and plant one lakh saplings within the next one year.

3. *Based on the information and clarifications provided, the Committee noted that the project is in an advance stage of implementation and decided that, in public interest, the request for extension **till 13.05.2017 only** can be agreed in accordance with the provisions of EIA Notification, 2006. The Committee further recommended that additional conditions which were earlier not prescribed but relevant now be stipulated while issuing the extension of validity. The undertaking given by the PP should also be made as the condition.*

4. *Regarding the amendment in EC for coal transportation, the Committee recommended that a separate application shall be made by the PP after conducting a detailed study on the impact of transportation of coal by road on the environment and people in the area.*

## **2.9 Coal Fired Thermal Power Plant of 3x150 MW at Haldia, Distt. Purba Medinipur, West Bengal by M/s India Power Corporation (Haldia) Ltd. – For Extension of validity of EC.**

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 in January, 2015.

(ii) Out of the project cost of Rs. 2,665 Crores, the expenditure incurred till 30.04.2015 is Rs.1,700 Crores. The Engineering and installation of Chimney were completed. The Boiler, Turbine, Balance of Plant (BoP), Water System and Plantation were 70%, 60%, 60%, 95% and 30% completed. The photographs of various units/facilities and green belt

depicting the progress made were also shown. The COD of Unit-I, II & III are targeted for 30.12.2015, 30.12.2016 and 30.11.2017 respectively. However, considering uncertainty of supply of materials and other unforeseen situations, extension of validity of EC is requested till 31.12.2018.

(iii) Regarding coal linkage, earlier it was proposed to source coal from Jagannathpur B Block and through e-auction. Due to the de-allocation of all the coal blocks by the Hon'ble Supreme Court, it is now proposed to source all the coal through e-auction till firm coal allocation is made available. The PP is participating in the auction of coal blocks. The sulphur and ash contents of the coal shall be restricted to 0.64% and 43.7% respectively as stipulated by the Ministry.

(iv) Upon the recommendation of the Committee, the PP has submitted the details of CSR activities executed & proposed, action plan for green belt development and revised Form-I. An expenditure of about Rs. 1.43 Crores has been incurred on CSR activities till date and an amount of Rs. 1.58 Crores is earmarked for CSR activities during the construction phase of the project i.e. 2015-18. During the operation phase, CSR activities will be carried out as per the Companies Act. Out of the total plant area of 198.32 acres, 65 acres is earmarked for green belt development, of which plantation has been done in 19 acres and the balance 46 acres will be developed with green belt within the construction period i.e. 2015-18. About 33,660 plantations will be done as per the guidelines of DFO and WBPCB.

2. *Based on the information and clarifications provided, the Committee noted that the project is in an advance stage of implementation and decided that, in public interest, the request for extension can be agreed only till **31.12.2018** in accordance with the provisions of EIA Notification, 2006.*

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

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**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 PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub>, NO<sub>x</sub>, 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 CO<sub>2</sub> 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.

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**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.

(Prof. C.R. Babu)  
Vice Chairman (Acting Chair)

(Shri T.K.Dhar)  
Member

(Shri A.K. Bansal)  
Member

(Shri G. S. Dang)  
Member

(Shri N.K. Verma)  
Member

(Shri N.S. Mondal)  
Member

(Dr. S.S Bala)  
Member

(Ms. Sanchita Jindal)  
Member Secretary