

MINUTES OF THE 18th MEETING OF THE RE-CONSTITUTED EXPERT APPRAISAL COMMITTEE ON ENVIRONMENTAL IMPACT ASSESSMENT OF THERMAL POWER & COAL MINING PROJECTS

The 18th Meeting of the reconstituted expert appraisal committee (thermal power) was held on **31st July and 1st August, 2014** at Indus meeting hall, Jal wing, Ground floor, Indira Paryavaran Bhawan (new building), Jorbagh, New Delhi-110003. The members present were:

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|---------------------|---|------------------------------|
| 1. Dr. C.R. Babu | - | Vice Chairman (Acting Chair) |
| 2. Shri T.K.Dhar | - | Member |
| 3. Shri J.L Mehta | - | Member |
| 4. Shri N.K. Verma | - | Member |
| 5. Shri G.S. Dang | - | Member |
| 6. Dr. S.D. Attri | - | Member |
| 7. Dr. S.S. Bala | - | Representative of CPCB |
| 8. Shri N.S. Mondal | - | Representative of CEA |
| 9. Dr. Saroj | - | Member Secretary |

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

Shri A.K. Bansal, Dr. Ratnavel, Dr. C.B.S Dutt and representative of WII could not be present.

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

The Minutes of the 16th EAC meeting held during July 1-2, 2014 were confirmed.

Item No. 2: CONSIDERATION OF PROJECTS

2.1 5x660 MW Dondaichal Coal Based Thermal Power Plant at Village Vikharan, Methi & Varjhadi, in Sindhkheda Taluk, in Dhule Distt., in Maharashtra by M/s Maharashtra State Power Generation Co. Ltd. – reg. EC

1. The ToR for preparation of EIA/EMP report for the above proposal was accorded on 13.05.2011 and extension of validity of ToR was accorded on 03.12.2013. The EIA/EMP report after conducting Public Hearing on 25.03.2014 was submitted to the Ministry for consideration of environmental clearance. The project proponent along with their environmental consultant, M/s Desein Private Limited Consulting Engineers, New Delhi made a presentation before the EAC.

2. At the outset, the committee noted that MoC has allocated Chendipada I and II coal blocks for Phase I and Mahanadi coal block (Macchakata), Odisha for Phase II. The PP is not clear of the EC and FC status of the coal blocks and it seems that there is no significant progress in the EC and FC. Further, the PP has requested MoC for change in coal linkage.

3. After perusal of the presentation made and detailed discussion, the committee opined that the proposal is premature at this stage and **deferred** the proposal. The committee also sought the following additional information:

- i) *Status of the EC and FC of the coal blocks allocated. If there is any change in the coal linkage, the status of the EC and FC of the revised coal blocks.*

- ii) *The transportation plan depending on the final coal linkage.*
- iii) *The plant layout shall be revised to maintain the surface drainage of the area.*

- iv) *Firm action plan and MoUs for fly ash utilization.*

- v) *An official of IIT Roorkee involved in the Hydro-geological study shall present the findings of the study before the EAC.*

- vi) *The wind speed values and units need to be checked.*

- vii) *Since the project site is a plateau and supports endemic flora and fauna, detailed flora, fauna and ecological survey of the area shall be studied.*

- viii) *Since tribal land is involved in the project site, compliance to the PESI Act in consultation with the State Govt. shall be submitted.*

- ix) *Revised and detailed PH action plan along with budgetary provisions.*

2.2 (175+3x27) 256 MW CFBC Imported Coal based Thermal Power Plant at Meramandali, Distt. Dhenkanal, in Orissa by M/s Bhushan Steel Ltd. – reg. re-consideration for EC

1. The proposal was earlier discussed in the 6th Meeting of the EAC (Thermal) held during **December 5-6, 2013**, the minutes of which are as under:

Quote “At the outset, the committee was informed of the directions of closure notice under Section 33(A) of Water (PCP) Act, 1974 & 31A of Air (PCP) Act, 1981 issued by the Orissa State Pollution Control Board dated 19.11.2013 for the integrated steel plant and power plant at the above location (i) to close down the operation of Blast Furnace-II of the expansion project and Cold Rolling Mill forthwith (ii) to close down the operation of Boiler No-I of the new Thermal Power Plant of capacity 256 MW and stop installation activities of another two boilers of this power plant forthwith.

The Committee was also apprised of the complaint received from an NGO of Orissa regarding gross violation of Environment (Protection) Rules, 1986 by M/s Bhushan Steel Ltd./Bhushan Energy Ltd. by starting construction of two power plants at the above location without obtaining prior environmental clearance.

The committee was also informed of the observations of the MoEF Regional Office, Bhubaneswar that the EIA/EMP reports for the two proposed power plants (256 MW and 185 MW) by M/s Bhushan Steel Ltd. and M/s Bhushan Energy Ltd. were prepared for expansion independently without reflecting the cumulative impacts. It was suggested that an EMP on comprehensive study for the units together should be prepared.

In view of the above serious non-compliance/violations and lacunae, the proposal was deferred. The PP shall first comply with all the directions issued and after receipt of compliance report from the Regional Office of MoEF and SPCB, the project could be reconsidered.” Unquote

2. The PP vide letter dated 04.02.2014 has also informed the Ministry that they do not contest the allegation of violation and also requested for initiating action under the Environment (Protection) Act, 1986. The Ministry has taken action as per O.Ms dated 12.12.2012 and 27.06.2013 for consideration of proposals for EC involving violation of the Environment (Protection) Act, 1986/EIA Notification, 2006. Further, the PP has submitted the revised EIA/EMP based on the comprehensive study of all the units.

3. At the outset, the committee noted that the proposal is an expansion within the existing steel plant and certified report from the Ministry's R.O for compliance to the conditions stipulated in the ECs of the existing units has not been submitted by the PP. The same is a pre-requisite for consideration of the proposal.

4. After perusal of the presentation made and detailed discussion, the committee sought the following additional information and **deferred** the proposal. The committee also recommended for a site-visit by a sub-committee regarding fly ash disposal etc.

- i) Certified compliance report from the MoEF R.O for the existing units.*
- ii) Cumulative impacts including the proposed units and also the rise in temperature within 10/ 15 km, as applicable*
- iii) Comparison of the data and predictions of the EIA/EMP report placed before Public Hearing and the addendum EIA/EMP report based on cumulative impacts.*
- iv) Compliance to the action plan formulated by SPCB.*
- v) Stack height shall be 220 m since the overall capacity is more than 350 MW.*
- vi) Aerial view, photographs and action plan for Green belt development.*
- vii) CSR activities undertaken and proposed along with budget.*
- viii) Revised and detailed PH action plan along with budgetary provisions.*
- ix) Response to the complaint received by the EAC/MoEF.*

2.3 (165+20) 185 MW CFBC Imported coal based TPP at Meramandali, Distt. Dhenkanal in Orissa by M/s Bhushan Energy Ltd. – reg. re-consideration for EC

1. The proposal was earlier discussed in the 6th Meeting of the EAC (Thermal) held during **December 5-6, 2013**, the minutes of which are as under:

Quote “At the outset, the committee was informed of the directions of closure notice under Section 33(A) of Water (PCP) Act, 1974 & 31A of Air (PCP) Act, 1981 issued by the Orissa State Pollution Control Board dated 19.11.2013 for the integrated steel plant and power plant at the above location (i) to close down the operation of Blast Furnace-II of the expansion project and Cold Rolling Mill forthwith (ii) to close down the operation of Boiler No-I of the new Thermal Power Plant of capacity 256 MW and stop installation activities of another two boilers of this power plant forthwith.

The Committee was also apprised of the complaint received from an NGO of Orissa regarding gross violation of Environment (Protection) Rules, 1986 by M/s Bhushan Steel Ltd./Bhushan Energy Ltd. by starting construction of two power plants at the above location without obtaining prior environmental clearance.

The committee was also informed of the observations of the MoEF Regional Office, Bhubaneswar that the EIA/EMP reports for the two proposed power plants (256 MW and 185 MW) by M/s Bhushan Steel Ltd. and M/s Bhushan Energy Ltd. were prepared for expansion independently without reflecting the cumulative impacts. It was suggested that an EMP on comprehensive study for the units together should be prepared.

In view of the above serious non-compliance/violations and lacunae, the proposal was deferred. The PP shall first comply with all the directions issued and after receipt of compliance report from the Regional Office of MoEF and SPCB, the project could be reconsidered.” Unquote

2. The PP vide letter dated 04.02.2014 has also informed the Ministry that they do not contest the allegation of violation and also requested for initiating action under the Environment (Protection) Act, 1986. The Ministry has taken action as per O.Ms dated 12.12.2012 and 27.06.2013 for consideration of proposals for EC involving violation of the Environment (Protection) Act, 1986/EIA Notification, 2006. Further, the PP has submitted the revised EIA/EMP based on the comprehensive study of all the units.

3. At the outset, the committee noted that the proposal is an expansion within the existing steel plant and certified report from the Ministry’s R.O for compliance to the conditions stipulated in the ECs of the existing units has not been submitted by the PP. The same is a pre-requisite for consideration of the proposal.

4. After perusal of the presentation made and detailed discussion, the committee sought the following additional information and **deferred** the proposal. The committee also recommended for a site-visit by a sub-committee regarding fly ash disposal etc.

- i) *Certified compliance report from the MoEF R.O for the existing units.*
- ii) *Cumulative impacts including the proposed units and also the rise in temperature within 10/15 km, as applicable*

- iii) *Comparison of the data and predictions of the EIA/EMP report placed before Public Hearing and the addendum EIA/EMP report based on cumulative impacts.*
- iv) *Compliance to the action plan formulated by SPCB.*
- v) *Stack height shall be 220 m since the overall capacity is more than 350 MW.*
- vi) *Aerial view, photographs and action plan for Green belt development.*
- vii) *CSR activities undertaken and proposed along with budget.*
- viii) *Revised and detailed PH action plan along with budgetary provisions.*
- ix) *Response to the complaint received by the EAC/MoEF.*

2.4 Change in Configuration from 3x135 MW to 3x150 MW Coal Fired Thermal Power Plant at Haldia, Distt. Purba Medinipur, West Bengal by M/s India Power Corporation (Haldia) Ltd. – reg. amendment of EC

1. The project proponent made a presentation and provided the following information. EC and “Consent to Establish” for 3x135 MW was accorded by SEIAA, Govt. of West Bengal and WBPCB on 12.04.2010 and 22.06.12 respectively. The subject amendment is being considered at the Centre due to location of the project in CPA of Haldia, even though the moratorium has been lifted. The Company has also entered into Power Purchase Agreement (PPA) with WBSEDCL for the power generated from the Plant. An amount of Rs. 1,500 crores was spent for the construction of the project and another Rs. 1,500 crores will be spent to complete the project. The project carries extreme significance in West Bengal, as most of power generated will be supplied to the state.

2. The construction of the said TPP was conceived with a configuration of 3x135MW capacity. This was later optimized by OEM Supplier, M/s BHEL to 3x150 MW with better technology PF boiler having higher efficiency, resulting-in lower unburnt carbon losses. The turbine heat rate, station heat rate and boiler efficiency of 150 MW units will be 1998 KCal/KWH, 2326 KCal/KWH and 85.9 % respectively as against 1940 KCal/KWH, 2460 KCal/KWH and 78.86 % respectively for 135 MW units. This change in configuration can be accommodated in the allocated land by Haldia Development Authority and cause reduction in the pollution load.

3. The EIA report prepared prior to the EC dated 12.04.2010 based on blending of domestic coal (75%) sourced either through linkage or captive coal block and imported coal (25%). MoEF is mandating requirement of firm coal linkage from 01.11.2010 and EC &FC for the coal source from 19.04.2012. Subsequent to the EC, FSA was signed by the PP with WBMDTC on 01.03.2011, wherein it is stated that 20% of the total coal extracted will be

supplied to the project from Jaganathpur 'B' Coal Block. The geological report prepared by Tata Consulting Engineers Ltd. engaged by CMPDI for Jaganathpur 'B' Coal Block states that the net in situ reserves of 169.57 million tonnes of coal have been estimated in the block and with a proven reserves of 152.75 million tonnes. From this, it is clear that the required quantity of coal for the project is met through the FSA. The annual production capacity as per the mine plan referred to is 0.8 MTPA.

4. The ash and sulphur contents (%) of the said coal block range from 18.6 to 43.7 and 0.38 to 0.64 respectively. L2 Schedule of BHEL shows that the first unit will be commissioned in November 2015, which matches the commercial production of the coal block as per mine production plan. In case the TPP get commissioned earlier than the mine operational date, the PP shall use coal of similar grade by sourcing through e-auction. During the course of last few years, e-auction has been in the vicinity of 15-20 million tonnes on the subsidiaries of Coal India i.e. ECL, MCL and CCL. In the near future as per the initiative taken by Ministry of Coal, more coal is likely to be available from captive miners and supplies of coal mined by them. It is planned to transport by rake to Durgachak and Electrosteel sidings in Haldia and further by road (3-4 km) to the project through specially designed covered trucks. The subject shall be pursued with WBMTDC on continuous basis. The usage of imported coal is not being considered at present due to the cost economics. *The committee noted that as per the FSA, 20% of the coal from Jaganathpur 'B' Coal Block (0.8 MTPA) is allocated for the project which will be only 0.16 MTPA as against the requirement of 2.03 MTPA. The shortage of 1.87 MTPA of coal will be met through e-auction as proposed by the PP.*

5. The CSR activities undertaken and proposed include socio economic development of the locals by providing necessary support for education/training to students and training to Self Help Group (SHG), medical support to the locals by organizing medical camps, health and hygiene camps and capacity building of Govt. Health Centre, strengthening education and cultural fibre of the community by providing funding to clubs and associations, conducting sports tournaments etc. and local infrastructure development by developing roads, tubewells, toilets etc.

6. *Based on the information and clarifications provided by the Project Proponent and detailed discussions held on all the issues, the committee recommended the proposal for Change in Configuration from 3x135 MW to 3x150 MW and stipulation of the following conditions. Further, the Committee recommended that the conditions which were not stipulated in the EC accorded by SEIAA, but being stipulated by the Ministry be also stipulated.*

- i) *The PP shall pursue the matter regarding firm coal linkage in light of the FSA signed with WBMDTC and considering the EC and FC status of Jaganathpur 'B' Coal Block and the shortage of the coal as mentioned above. Accordingly, the firm coal linkage documents shall be submitted to the Ministry.*
- ii) *The coal transportation shall be by rail to the extent feasible and the transportation by road shall be through mechanically covered trucks, if feasible, else through tarpaulin covered trucks.*
- iii) *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 Government Authorities.*

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 Government Authorities.*

v) *The Action Plan formulated by CPCB/SPCB for Haldia shall be complied with.*

vi) *The PP shall advertise in the newspaper and place on the website, the amendment issued by the Ministry for public information.*

2.5 1x600 MW Coal Based Thermal Power Plant at villages Barela & Gorakpur, in Ghansore Tehsil, in Seoni Distt., in Madhya Pradesh by M/s Jhabua Power Ltd. - reg. amendment of EC for temporary permission for road transportation of coal.

1. The PP made a presentation and provided the following information. EC was accorded for the above project on 17.02.2010. About 90% construction work of proposed thermal power plant has been completed and it will be ready by September 2014 for COD. The PP had proposed the transportation of coal from coal pit-head to plant site by way of railway. Work for connection of railway network to plant site is in advanced stage. However, the work is not complete; hence, it is proposed to transport coal by way of road for the interim period of 3 years from September 2014 to August 2017.

2. Regarding the status of railway line, In-Principle Approval and DPR Approval were accorded on 10.08.2010 and 26.08.2012 respectively. The ESP approval has been applied for on 28.08.2013 and is under approval in SECR-Nagpur Division. The railway route length is 68 km (Jabalpur to Binaiki) and 12.15 km outside and inside the plant respectively. The outside track conversion from narrow to broad gauge is about 65% complete. It is proposed to take-off from Binaiki station which falls under Jabalpur-Gondia Section. Since Jabalpur-Gondia Section is under Gauge Conversion stage; the Engineering Scale Plan (ESP) submitted to M/s South East Central Railway in August 2013 is still under approval. Without formal approval of ESP, the PP cannot move ahead for execution of the railway line.

3. The proposed route of coal transportation by road is Gosalpur Rly. Station-Jabalpur Bypass-Bargi- Dhuma-Lakhnadon-Mehta-project site which is about 162 km. The turn around time for each truck is 10 hrs and 8 hrs during day time and night time respectively. The coal requirement is 8767 tonnes/d for which 351 trucks of coal @25 MT would be required. The total traffic load for coal transportation is $351 \times 2 = 702$ truck trips (to and fro) per day. The impact on AAQ due to the proposed increase in road traffic was assessed and the resultant concentrations of PM₁₀, PM_{2.5}, SO₂ and NO_x would be within the NAAQS.

4. The assessment of proposed road for its categorization & carrying capacity as per IRC: 64-1990 – Guidelines has been carried out. Route survey has been carried out at 16 locations and the observation on road condition & width made. Traffic surveys were carried out as per IRC: 9-1972- Traffic Census on Non-Urban Roads. The traffic measured was converted into equivalent Passenger Car Units (PCU) as per IRC: 64 -1990. The carrying capacity of the roads has been assessed based on current traffic, proposed traffic and road width. It was observed that all the roads were black topped and in good condition. The average width was found to be 7.35 m with width of 4.0 m to 17.4 m. No bottlenecks & issues were found at any location at the time of study and there were no traffic jams. When the PCU projections for the future percent utilization were estimated it was found that the carrying capacity (as per IRC 64-1990) were within limits for Traffic Census Points except near JPL plant (151% utilization)

where the road width is merely 4 m. Widening of bitumen road is proposed by the PP for existing road (mehta to plant area road). Design capacity of road will increase from 6-8 tonne to 30-50 tonne and existing road carriage way width is proposed to increase to 5.5 m. Provisions of road furniture and traffic sign & ornaments in proposed roads will be made.

5. As per the traffic survey & the measured road widths along the entire transportation route, there is no need for widening except at the project. Near the project, after the proposed widening of road from 4.0 m to 5.5 m, the future percent utilization would be only 50.3%. The maintenance of road will be carried out diligently with due follow up with the State Department. The vehicles used for transportation will be covered with tarpaulin, be spill-proof, have their PUC certificates, be well maintained and the drivers sensitised to their specific work to minimise accidents and pollution.

6. *Based on the information and clarifications provided by the Project Proponent and detailed discussions held on all the issues, the Committee recommended for amendment of EC for road transportation of coal for a limited period of **three years**, by which time the railway siding shall be put in place for coal transportation and subject to the following additional conditions*

- (i) The coal transportation by road shall be through mechanically covered trucks to the extent feasible, else, shall be through tarpaulin covered trucks.*
- (ii) 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 Government Authorities.*
- (iii) 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 Government Authorities.*
- (iv) The PP shall advertise in the newspaper and place on the website, the amendment issued by the Ministry for public information.*

2.6 3x660 MW North Karanpura STPP at Distt. Nagpur, Maharashtra by M/s NTPC Ltd. – reg. amendment of EC for the use of Air Cooled Condenser System.

1. The PP made a presentation and provided the following information. EC was accorded for the above project on 29.11.2004 and revalidated on 19.02.2014. The project was originally proposed to have a conventional closed cycle cooling system with cooling towers with the source of make-up water supply as Garhi Reservoir being constructed on Garhi River by Govt. of Jharkhand. As an endeavour to reduce the requirement of natural resources for power generation, thereby minimising impact on environment, NTPC is continuously exploring new areas, and one of such areas is the use of water for condenser cooling. NTPC, for the first time in its power projects, is planning to adopt Air Cooled Condenser Cooling (ACC) system at North Karanpura STPP.

2. Apart from reducing the water requirement of the project from 5,835 m³/hr (based on 5 COC) to 2,180 m³/hr, ACC system will have the distinct advantages such as, it will reduce the height of dam (by about half) being constructed on Garhi reservoir for North Karanpura STPP, reduction in dam height will result in reduction in submergence area, which in turn

will reduce the forest area to be submerged as well as R&R issues. About 3,655 m³/hr of River water, which would otherwise be lost in evaporative cooling, shall be available for downstream users. With ACC System, North Karanpura STPP will save about 32 million cubic meters of water every year.

3. In ACC Technology, the exhaust steam from LP turbine is directly cooled in a system of finned tubes by ambient air. Mechanical draft is used to move the air through the fin tube heat exchange elements. The finned tubes are generally arranged in the form of an 'A' frame over a forced draft fan with steam distribution manifold connected horizontally along the apex of 'A' frame. ACC consist of several such 'A' frame structures each comprising of several cells. Steam flowing down inside the tubes condenses due to the cooling effect of the ambient air drawn over external finned surface of the tubes by the fans. The condensate drains from finned tubes into condensate manifolds and then drains into a condensate tank before being pumped to the condensate cycle. Typical height of the ACC is 50 to 80 meters and is installed close to turbine hall.

4. After perusal of the above, the committee has sought detailed justification for use of ACC. In response, the PP has submitted a report on the techno-economic feasibility of adopting ACC which inter-alia states that the dam height will be 12 m by adopting ACC instead of 22.33 m for conventional WCC. The water requirement will be 20 Cusecs as against 60 cusecs for WCC. The submergence land requirement will be 1000 acres (200 acres of forest land) as against 4950 acres (1700 acres of forest land) for WCC. The use of ACC shall reduce the capital expenditure by about 530 crores which will reduce the energy cost by Rs. 0.06 per unit. However, the deterioration of heat rate shall increase the fuel charges by Rs. 0.08 per unit. Hence, the overall impact is on Rs. 0.02 increase in energy cost per unit. When compared to the intangible benefits the ACC offers, like saving of scarce natural resources (water, forest etc.) the increase in energy cost is negligible.

5. *Based on the information and clarifications provided by the Project Proponent and detailed discussions held on all the issues, the Committee recommended for amendment of EC for use of ACC in place of WCC and also stipulated the following condition. Regarding the amendments of EC conditions requested, since they are generic in nature, they shall be discussed by the committee at a later stage as a separate item.*

- i) The PP shall advertise in the newspaper and place on the website the amendment issued by MoEF for public information.*

2.7 Expansion by addition of 1x64 MW Imported Coal Based Thermal Power Plant at Village Kharagprasad, in Odapada Taluk, in Dhekanal Distt., in Odisha by M/s Nava Bharat Ventures Ltd. – reg. amendment of EC for change in source of coal from imported to domestic.

1. The PP along with their environmental consultant, B S Envitech Pvt. Ltd., Hyderabad made a presentation and provided the following information. The PP had completed the EIA with Indigenous coal and completed the Public hearing for the project on 21.02.2010. However, since the coal linkage was not available at the time of EC presentation, the PP opted for use of imported coal and EC was accorded on 23.01.2012 with imported coal as fuel. The plant has been constructed and is in **idle condition since 02.03.2013.** The main reason for this idling is commercial unviability of using imported coal due to increase in royalty and imposition of customs duty.

2. It is now proposed to use (a) Indigenous coal (through E-auction route) or (b) Blend coal (70 % Indigenous coal + 30 % Imported coal). The option of blend coal is only considered to meet the stipulation of 34% ash content in the EC. *The committee opined that blend coal of domestic and imported may not be recommended as the PP informed that imported coal was unviable and because of which the units are lying idle.*

3. The domestic coal will be sourced from Talcher Coal Mines of Mahanadi Coalfields Ltd. through e-auction and will be transported by road through trucks duly covered with tarpaulin. The coal transportation was envisaged by road at the time of EC, the distance of which is about 200 km and now it is only 30 km. *Upon query, the PP informed that rail transportation of coal is not feasible for the project at present.* The sulphur, ash and GCV of domestic coal will be 0.5 %, 42% and 3,800 Kcal/Kg as against 0.5 %, 7% and 5,500 Kcal/Kg respectively for imported coal. The estimated resultant concentrations of PM, SO₂ and NO_x would be within the NAAQS by using indigenous coal.

4. The total ash quantity generated with the use of domestic coal will be 486 TPD of which fly ash and bottom ash generation will be 389 TPD and 97 TPD respectively. The Ash extracted from various hoppers is collected in RCC Silos. Two RCC Silos are provided for collecting bed ash and fly ash, each having 24 h storage capacity. The fly ash is transported by road to the designated ash dumping sites in an ecofriendly manner. The Fly Ash will be utilized for manufacture of fly ash bricks in own Fly Ash Brick Manufacturing Plant, for supply to outside Brick Manufacturers, for land filling inside and outside the plant, for Embankment/Dyke rising in the designated ash mound, for back filling of South Balanda Mines allotted by MCL, for filling of abandoned Stone Quarries allotted by Odisha Government. The PP is confident of complying with the conditions stipulated in MOEF Notification for utilization of Fly Ash. *The committee recommended that use of fly ash for land filling is not permitted.*

5. The total quantity of coal to be transported is 1152 TPD and the number of dumpers required are 77 per day @ 15 tonnes per dumper. The road to be used is a two way road of 20 m width. The present traffic on the road is 1320 PCU/hr and additional traffic due to the road transportation of coal of the project will be 40 PCU/hr resulting in total traffic of 1360 PCU /hr. The capacity of the road as per IRC is 2500 PCU/hr.

6. *Based on the information and clarifications provided by the Project Proponent and detailed discussions held on all the issues, the Committee recommended for amendment of EC for change in source of coal from imported to domestic subject to the following additional conditions. The permission for mine void filling of fly ash is recommended for **only one year** as a pilot project and shall be reviewed based on the outcome of studies recommended below.*

- (i) *Sulphur and ash contents in the coal to be used in the project shall not exceed 0.5 % and 42% respectively at any given time. In case of variation of coal quality at any point of time, fresh reference shall be made to the Ministry for suitable amendments to environmental clearance condition wherever necessary.*
- (ii) *Fly ash shall be collected in dry form and storage facility (silos) shall be provided. No ash shall be disposed off in low lying areas.*

- (iii) Concentration of heavy metals in the fruits, vegetables and fodder grown on the ash dyke shall be analysed and only then they shall be used for consumption.
- (iv) A study shall be commissioned from reputed institutes like BARC, IITs, RRL, Bhubaneswar etc. to assess the impact of fly ash disposal in the mine voids and to carry out Toxicity Characteristics Leaching Procedure (TCLP) and submit the report to the Ministry, CPCB and SPCB within a year for review. The study shall collect baseline data of fly ash to be dumped, identify characteristics in fly ash and analyze its radio activity contents.
- (v) Monitoring of acid leaching and heavy metals in ground water in nearby mine areas shall be regularly carried out and immediate preventive action shall be taken.
- (vi) The monitoring reports of mine voids water sample analysis shall be submitted to the SPCB and the Regional Office of the Ministry regularly and the results shall be uploaded in public domain on the website.
- (vii) The SPCB shall regularly collect mine void water samples and analyse the results and take/suggest action as required.
- (viii) Adequate number of piezometers, both at confined and unconfined aquifers, around the mine voids shall be installed in consultation with the SPCB.
- (ix) Fly ash disposal shall be restricted to atleast 1.0 m below the general ground level and clay/soil layer of 1.0 m on top of filled in dump shall be ensured.
- (x) Alternative time bound action plan for fly ash utilization with details of fly ash utilization potential of the activities proposed shall be submitted within six months.
- (xi) The coal transportation by road shall be through mechanically covered trucks to the extent feasible, else, shall be through tarpaulin covered trucks.
- (xii) 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 Government Authorities.
- (xiii) 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 Government Authorities.

(xiv) *The PP shall advertise in the newspaper and place on the website, the amendment issued by the Ministry for public information.*

2.8 2x150 MW (Phase-I) and 2x150 MW (Phase-II) Middlings & Coal Fine Based Thermal Power Plant at Village Dongamahua, in Raigarh Distt., in Chhattisgarh by M/s. Jindal Steel & Power Ltd. - reg. amendment of EC for change in fuel mix, setting up of 250 TPH mobile coal crusher and transportation of coal by road.

1. The PP along with their environmental consultant, Min Mec Consultancy Pvt. Ltd., New Delhi made a presentation and provided the following information. JSPL is operating an open cast coal mine at Dongamahua having coal crushing, screening and washing plant. In the process of coal washing, large amount of coal middlings and fines are generated. For effective utilization of the same, JSPL has proposed the above CPP and EC for Phase-I (2x150 MW) and Phase-II (2x150 MW) were accorded on 31-07-2008 and 09-11-2010 respectively. An amendment to the EC condition of Phase-II regarding ash content was accorded on 09.01.2012. All the four units have been commissioned and are in operation. The R.O of Ministry at Bhopal has monitored the project on 10.07.2014 and reported that the implementation of environmental safeguards is satisfactory.

2. The middlings & coal fines (5.058 MTPA) for the project (Phase I & II) were to be sourced from the Captive Coal washery of Captive Coal mines at Gare IV/1 and Gare IV/6. However, Gare IV-6 washery is yet to be operational. Gare IV/6 Block has been de-allocated by MoC on 17-02-2014. JSPL has challenged the de-allocation in Hon'ble Delhi High Court. It is estimated that it shall take about 4 years for Gare Pelma IV/6 to supply the desired quantity of middlings and fines. In view of this, permission is requested to procure and transport 0.5 MTPA raw coal with GCV of 3400 Kcal/kg from nearby mines of Mahanadi Coalfields or South Eastern Coalfields located at Kulda and Barod respectively and transport by road using 40 Tonnes covered trucks for blending with available middlings & coal fines for a period of four years till the envisaged commencement of Coal mine at Gare IV/6. Permission is also requested for setting up of 250 TPH mobile coal crusher within the existing land of Power plant. For setting up of mobile coal crusher there would be no requirement of additional land. After blending, the resultant coal characteristics shall be within the permitted values for Ash (54%) and Sulphur content (0.6%) as stipulated in EC.

3. The traffic survey was carried out on both the proposed coal transportation routes. The carrying capacity of the roads has been assessed based on current traffic, proposed traffic and road width as per Indian Road Congress guidelines. It was observed that all the roads were black topped and in good condition. No bottlenecks & issues were found at any location at the time of study and there were no traffic jams. When the 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 (monitored locations) were within limits. The impact on AAQ in the study area due to the proposed increase in road traffic and mobile coal crusher was assessed and the resultant concentrations of PM₁₀, PM_{2.5}, SO₂ and NO_x were presented and they would be within the NAAQS.

4. *Based on the information and clarifications provided by the Project Proponent and detailed discussions held on all the issues, the Committee recommended for amendment of ECs (phase I and II) for procurement of 0.5 MTPA coal through e-auction for blending with available middlings & coal fines for use in existing power plant and transportation of coal by road from MCL/SECL mines for a period of **four years** and for setting up of 250 TPH Mobile Coal Crusher within the existing project premises subject to the following additional conditions:*

- (i) The coal transportation by road shall be through mechanically covered trucks to the extent feasible, else, shall be through tarpaulin covered trucks.*
- (ii) 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 Government Authorities.*
- (iii) 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 Government Authorities.*
- (iv) The PP shall advertise in the newspaper and place on the website, the amendment issued by the Ministry for public information.*
- (v) The air pollution control measures for mobile crusher shall include enclosing the crusher unit, use of dry fog/water sprinkling system and dust extractors at the time of unloading.*

2.9 2x685 MW Super Critical Imported Coal Based TPP at Villages Raikheda, Gaitara and Chicholi, in Talda Block, Raipur Distt., in Chhattisgarh by M/s GMR Chhattisgarh Energy Ltd. – reg. amendment of EC for change in transportation of coal from rail to road.

1. The PP made a presentation and provided the following information. EC was accorded for the above project on 09.05.2011 and subsequent amendment on 13.06.2013. Consent to Establish and Consent to Operate were received from CECB on 13.06.2011 and 16.07.2014 respectively. The first unit (1x685 MW) is scheduled to be completed by August/September 2014. The entire coal required for the plant will be transported by using Railway Siding from Tilda Railway station which is about 13 kms from Project Site. Although, balance 1 Km land acquisition process has been completed, physical possession is getting delayed due to various stakeholder issues. The railway siding is under construction and is likely to take another 10-12 months for completion. Hence, it is proposed to temporarily transport the coal (2-3 years) from Siliyari railway station which is about 30 kms to plant by Road through 35 T capacity covered trucks.

2. Regarding the status of railway siding, RTC (Railway Transport Clearance) was obtained on 04.07.2011 from Ministry of Railways. DPR (Detail Project Report), ESP (Engineering Scale Plan) and L Section were approved on 13.10.2011, 11.11.2011 and 30.11.2013 by South Eastern Central Railways (SECR). All major & minor bridge drawings are approved by SECR. The OHE (Overhead Head Electrification) Plan and Signaling Plan were approved by SECR on 25.04.2014 and 27.05.2014 respectively.

3. The proposed route of coal transportation by road is Siliyari – Kirna - Tilda – Plant, which is a two Lane 7 m road. The existing traffic density on the road is 2389 PCU/day and additional traffic density due to the proposed road transportation of coal of the project will be

690 PCU/day resulting in total traffic density of 3079 PCU/day. The capacity of the road as per IRC is 15,000 PCU/day.

4. The impact on AAQ due to the proposed road transportation was assessed. For prediction of maximum Ground Level Concentrations (GLCs), the air dispersion modeling software (AERMOD version 7.1.0) was used. The emission rates as inputs to the line source model are calculated based on "Emission factor development for Indian Vehicles", a project executed by Automotive Research Association of India, Pune, 2008. Study area within a radius of 10 km around the project site has been taken into consideration to compute the GLCs. It can be observed that the maximum incremental concentrations of CO and NO_x due to the additional traffic load would be about 9.8 µg/m³ and 15.2 µg/m³ respectively and likely to occur at 10 m from the centre of the road. The CO and NO_x concentrations are likely to be very low when compared with the NAAQS for CO (4000 µg/m³) and WHO standard of 400 µg/m³ for hourly average for NO_x.

5. *Based on the information and clarifications provided by the Project Proponent and detailed discussions held on all the issues, the Committee recommended for amendment of EC for road transportation of coal for a limited period of **three years**, by which time the railway siding shall be put in place for coal transportation and subject to the following additional conditions*

- (i) The coal transportation by road shall be through mechanically covered trucks to the extent feasible, else, shall be through tarpaulin covered trucks.*
- (ii) 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 Government Authorities.*
- (iii) 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 Government Authorities.*
- (iv) The PP shall advertise in the newspaper and place on the website, the amendment issued by the Ministry for public information.*

2.10 2x270 MW Thermal Power Plant at Goindwal Sahib Tehsil, Taran Taran Distt. Punjab by M/s GVK Power (Goindwal Sahib) Ltd. - reg. amendment of EC for change in source of Coal.

1. The PP along with their environmental consultant, Bhagavathi Ana Labs Pvt. Limited, Hyderabad made a presentation and provided the following information. EC for 2x300 MW (600 MW) for Goindwal Sahib TPP was accorded on 09.05.2008 and an amendment for revision of plant configuration to 2x270 MW was accorded. The validity of EC has been extended on 19.02.2014 for a further period of five years, i.e., till 08.05.2018. The unit 1 & 2 were synchronized to grid on 06-07-2013 and 04-03-2014 respectively. Greenbelt development activities are in progress with 50 m width all along the boundary and 100 m around the ash pond area. About Rs 3.43 Crores have been spent on greenbelt activities till date. Under CSR activities, houses were provided for economically weaker section at Manikhera Village.

2. As per the EC, coal will be sourced from captive coal mines in Tosikud North Sub-Block in Jharkhand by rail and that the Sulphur and ash contents in the coal to be used in the project shall not exceed 0.5% and 34% respectively. However, as the mine development has been delayed due to reasons beyond control of the company, the PP proposes to use imported coal from South Africa (2.28 MTPA or 130.32 tph/unit at 100% PLF with 30% of maximum ash content and 0.8% of maximum Sulphur content) as a stop gap arrangement to commission the plant operations. It is also proposed that in case Ministry of Coal (MoC) allocates tapering coal linkage from CIL (177.38 tph/unit at 100% PLF with 37% of maximum ash content and 0.5% of maximum Sulphur content) through MOU as per the recommendations from Govt. of Punjab and SLC, the PP would like to use the same. Once the Tosikud North Sub-Block captive mine becomes operational, the coal from same will be used.

3. The imported coal will be sourced from Richards Bay, South Africa by sea route till Kandla port, Gujarat and then by trains to the coal storage yard at the plant complex. FSA has been signed on 12.06.2014 with M/s Coal and Oil Company DMCC, UAE for supply of 2.0 MTPA of imported Coal to the project. The PP has signed Coal Transportation Agreement on 11.12.2008 with ECR for development of private railway siding near Khadur Sahib railway station on Beas-Tarn Taran section. The Work Order for handling all shipment and delivering of imported coal to power plant site has been given to M/s Coastal Energy Pvt. Ltd. Meanwhile, tapering coal linkage recommendation has been made from the Chief Minister, Govt. of Punjab to the Minister of State for Power, Coal & NRE, GoI. SLC also recommended allotment of 2.4 million tonnes of tapering coal on MoU basis as the plant is ready for coal firing. The tapering coal from CIL will be transported through rail.

4. Impacts (air environment and ash generation) due to change in type of coal are anticipated during operational phase due to change in fuel quality and quantity. The resultant SO₂ concentrations due to use of imported and tapering coal will be 33.2 µg/m³ and 32.4 µg/m³ as against 31.3 µg/m³ due to use of captive coal. The ash generation due to change in fuel from Indigenous coal (Case-1) to Imported coal (Case-2) will reduce from 0.82 MTPA to 0.68 MTPA i.e. a decrease in total ash generation of 0.14 MTPA. For tapering coal, the ash generation will increase by 0.32 MTPA. The PP is committed to comply with the Fly Ash Utilization Notification and as amended thereof. The ash will be utilized in various construction materials to the maximum extent and 100% utilization will be achieved. The PP has signed MoU with M/s Ambuja Cements for off-take of ash of 4.8 lakh TPA.

5. *Based on the information and clarifications provided by the Project Proponent and detailed discussions held on all the issues, the Committee recommended for amendment of EC for change in source of coal for **maximum two years** subject to the following additional conditions.*

- (i) *Sulphur and ash contents in the coal to be used in the project shall not exceed 0.5 % and 37% respectively for domestic coal and 0.8 % and 30% respectively for imported coal at any given time. In case of variation of coal quality at any point of time, fresh reference shall be made to the Ministry for suitable amendments to environmental clearance condition wherever necessary.*
- (ii) *The PP shall advertise in the newspaper and place on the website, the amendment issued by the Ministry for public information.*

2.11 2x500 MW TPP at Marwa Distt. Janjgir-Champa, Chhattisgarh by M/s Chhattisgarh State Electricity Board (CSEB). - reg. Extension of validity of EC

Neither the project proponent nor its representatives were present in the meeting. The proposal was accordingly deferred.

2.12 1980 MW (3x660 MW) Coal fired TPP at Tamminapatnam and Momidi Villages, Chillakur Mandal, Nellore Distt., Andhra Pradesh by M/s Krishanapatnam Power Corporation Ltd.- reg. Extension of validity of EC

1. The proposal is for extension of validity of EC accorded by MoEF for the above project on 17.07.2009. The PP along with their environmental consultant, B S Envitech Pvt. Ltd., Hyderabad made a presentation and provided the following information.
2. The PP has acquired the required land to an extent of 1139 acres in the plant area and additional 50 acres for Right Of Way (ROW) for pipelines is under progress. Sea water drawl permission was accorded by Govt. of A.P on 31-11-2008 and CRZ clearance was accorded by MoEF on 18.09.2009. Defence clearance was accorded by Ministry of Defence on 29.05.2009 and accordingly Clearance from SHAR was obtained. Airport Authority of India had accorded clearance for height of chimneys on 25.08.2008 and APPCB had accorded CTE on 10.05.2010. Site Enabling works are initiated and works are in progress for boundary wall, access road, plants roads, site office building and stores building. EPC Contract has been awarded to M/s Navayuga Engineering Company Limited on 06.05.2010. Received proposals and discussions held with M/s Toshiba, Shanghai Electric Corporation, DongFang Electric Corporation, Doosan, B&W on supply of Main plant (BTG).
3. Tata Consulting Engineers have been appointed as Owner's Engineer. Engineering is under progress & technical details of the project are finalized. Fuel linkage for Indigenous Coal is awaited. Application submitted to Ministry of Coal on 26.02.2008. PPA - LOI from UPPCL for supply of 800 MW to the UP Discoms and from APPDCL for supply of 250 MW to AP Discoms have been received and the PPAs shall be signed in due course. An amount of 227 crores is already invested into this project under various heads as on 31.03.2013. Discussions are on with Investors, Financial Institutions and Banks for project financing. Financial closure is expected to happen shortly.
4. Regarding the reasons for project delay, the outlook in the financial market for infrastructure projects in India has not been encouraging to attract investments easily. Banks and Institutions are reaching their sectorial exposure limits and are therefore taking more time in considering fresh proposals. The appraisal process adopted by banks and institutions have become very long and comprehensive leading to a process time of almost 18 to 24 months from the start of appraisal to financial closing. Indigenous Coal Linkage from Ministry of Coal (MoC) is still awaited as the committee has not allocated fresh Coal Linkages for the past 2-3 years even though the project is considered by MoC. There were 2-3 years delays in Case I bidding processes and issuing of LOI from both UPPCL and APPDCL.
5. In response to the issues raised by EIA resource and Response Centre, New Delhi, it was submitted that, EC was granted by the Ministry after due consideration of EIA and EMP studies carried out by the company considering all the prescribed aspects. The

project is promoted by the Navyuga Group. The Navyuga Engineering Co., the flagship company of the group, is executing orders worth US\$ 7 billion. The Krishnapatnam Port Company Ltd. is developed and operated by the Group, having revenue of over US\$ 165 million handling over 25 MMTPA during the last year. The company promoters are committed to and have adequate capacity to execute the project and have already spent an amount of Rs. 227 crores on the project.

6. *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 to 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.*

2.12A 3x660 MW Thermal Power Project at Bara, Allahabad, Uttar Pradesh by M/s Parayagraj Power Generation Co. Ltd. - reg. Extension of validity of EC

1. The proposal is for extension of validity of EC accorded by MoEF for the above project on 08.09.2009. The PP made a presentation and provided the following information.
2. The requisite land admeasuring 601 Ha. for the project has been acquired and land deed of conveyance was executed on 23.02.2010. Land development and infrastructure development has progressed well. To meet the capital investment for the Project, necessary equity and debt have been tied up. The financial closure for the project was achieved by 6th July 2010. M/s. Tata Consulting Engineers (TCE) was appointed as Technical Consultants for the project on 08.02.2010 and TCE has completed major part of the project engineering activity. Orders for various packages of Plant & Machinery (BTG & BOP) were released on renowned Contractors for executing the job under respective contracts, on a turn-key basis. Civil construction work for the Boilers and Turbine Hall has been completed to the extent of 98% and for BOP Packages, civil construction work to the extent of 91% has been completed.
3. For Unit-I of 660 MW, Hydro-test of Boiler successfully has been completed and further works for Boiler light up are underway. For Unit-II and Unit-III of 660 MW each, installation works for Hydro-test are in progress. Pollution Control Equipment installation works have been completed to the extent of 88%. BOP is expected to become operative by mid 2015. The CODs of Unit-I, Unit-II Unit-III are expected by December 2015, June 2016 and December 2016 respectively. The photographs of various units/facilities of the project were also presented.
4. Regarding the major reasons for delay in completion of various activities, the acquisition & possession of land was delayed in initial stages of the project itself and the requisite land was transferred to the project in 2 stages in February 2010 & August 2010. Railway Siding work was delayed due to delay in providing Right of Way for laying of the track and at present only about 55% of the work has been completed. The project involves 20 Km of water pipeline from Yamuna River to the project site and about 17 K.M. of pipeline has already been laid. However, work on obtaining Right of Way for the balance works is in progress. The transmission line for the project is being installed by UPPCL, which is being grossly delayed and consequently, the Start Up power for Boiler light up and subsequent transmission of power generated is being delayed.

5. *Based on the information and clarifications provided, the Committee decided that, in public interest, the request for extension can be agreed to 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.*

2.13 Expansion by addition 2x830 MW (Phase-II) Supercritical Imported Coal fired Based Thermal Power at Village Tunda Wand, in Mundra Taluk, in Kutch Distt., in Gujarat by M/s. Coastal Gujarat Power Ltd. - reg. EC

1. At the outset, the committee noted that the proposal is an expansion project in the existing UMPP area. It was appraised that although the committee has recommended EC to a parallel case of Sasan UMPP, the proposal is still pending with the Ministry for clarification from Ministry of Power and the State Government whether a standalone thermal power plant can be set up in the same land allotted for UMPP (perhaps the land was procured by the State Govt.) and by using the same water allocation. *Hence, in order to avoid a fait-accompli situation, the committee decided that the said clarification be submitted first for the above project also before detailed appraisal.*

2. Further, the MoEF R.O compliance report of the EC of existing UMPP show that some of the conditions like mangrove plantation, green belt etc. are either non-complied/partly complied.

3. *After perusal of the presentation made and detailed discussion, the committee sought the following additional information and **deferred** the proposal. The committee also recommended for a site-visit by a sub-committee for the issues regarding mangrove plantation etc.*

i) Detailed Action Plan for compliance to the conditions stipulated in the EC of UMPP.

ii) Detailed action plan along with budgetary provisions for Public Hearing issues.

2.14 2640 (4x660) MW Coal based Thermal Power Plant at Village Rohana, Mohadi Tehsil, Bhandara District, Maharashtra by M/s Bhandara Thermal Power Corporation Ltd. - reg. ToR

1. The PP along with their environmental consultant, B S Envitech Pvt. Ltd., Hyderabad made a presentation and provided the following information. ToR for the project was originally granted on 03-02-2011 for setting up of the project covering revenue areas of 3 Villages namely Kushari, Eklara and Rohana. This ToR was amended on 12-09-2011 by the Ministry to setup the project in revenue area of Rohana Village on the request of the PP and MIDC. The validity of ToR was extended till 02-02-2014 and the same has now lapsed.

2. Regarding the progress of activities undertaken till date, clearance from Maharashtra State Industrial Development Corporation was obtained to acquire 556.47 ha (1375 acres approx). Ministry/EAC granted the amendment to earlier ToR covering 1371 acres in September, 2011. About 623 acres of the proposed 1371 acres (555 ha) have been acquired from farmers and balance land of 748 acres has to be acquired. Application was submitted to irrigation department, Govt. of Maharashtra on 18-01-2011 for water drawl permission from Khairre barrage on Wainganga River and in-principle approval to draw water to the extent of 88 Mm³ per annum was accorded on 10-02-2011. The survey of intake point, barrage location was completed by the irrigation department, Govt. of Maharashtra and the draft agreement is

awaited from irrigation department. The PP has applied for coal linkage as per the Govt. of India policy. The project was appraised by CEA and recommended for coal linkage to GoI with 90% weightage marks and is pending with Ministry of Coal, GoI due to policy related issues

3. *Based on the information provided and the presentation made, the Committee recommended the standard TORs at **Annexure-A1** for undertaking detailed EIA study and preparation of EMP in addition to the following ToR.*

i) Impact of construction of barrage on the downstream ecology and availability of water for irrigation, drinking etc. shall be studied.

2.15 4x660 MW Super Critical Coal based Thermal Power Plant at Villages Athiyakurichi, Kulasekharapatnam and Udangudi Tiruchendur Taluk, Thoothukudi Distt., Tamil Nadu by M/s NC Energy Ltd.- reg. ToR

1. The PP along with their environmental consultant, B S Envitech Pvt. Ltd., Hyderabad made a presentation and provided the following information. ToR for the project was originally granted on 15-06-2011. The validity of ToR was extended till 14-06-2014 and the same has now lapsed. The PP could not complete the land acquisition for the project and hence applied for fresh TOR de novo.

2. Regarding the progress of activities undertaken till date, the PP initiated land acquisition in the Villages Athiyakurichi, Kulasekharapatnam and Udangudi. The total estimated land requirement for main plant is 990 acres and land acquired till date is 503.18 acres. NOC from the Village Panchayat is received. DPR is under preparation by Lahmeyer India. In-principle approval to draw sea water from Tamilnadu maritime board has been received on 13-07-2011. COWI consultants had completed the study for locating the intake and outfall based on bathymetry study and the locations were identified. Application was made to District Collector for permission to lay the intake & outfall line and inspection was completed by the Chief Engineer, Water Resources Organization, PWD, Govt. of Tamilnadu. One season study for rapid marine impact assessment study was completed and report is under preparation by Indomer Coastal Hydraulics.

3. Blend coal/Imported coal is the main fuel for the project and the PP is waiting for the coal linkage policy. The PP is in the process of establishing fuel linkage for imported coal from Indonesia/South Africa. The PP engaged the services of Barsyl for studying the coal transport feasibility. Barsyl submitted the report to the Railways and the approval is awaited. Airport Authority clearance has been received for stack height of 275 m.

4. *Based on the information provided and the presentation made, the Committee recommended the standard TORs at **Annexure-A1** and **A2** for undertaking detailed EIA study and preparation of EMP in addition to the following ToR.*

i) Cumulative impact assessment including the rise in temperature for 15 km radius shall be carried out.

2.16 Expansion by addition of 2x660 MW (Phase-III), Super Critical Coal based Thermal Power Plant at Villages Tamminapatnam & Mommidi, Chillakur Taluk, Nellore Distt. Andhra Pradesh by M/s Simhapuri Energy Ltd. - reg. ToR

1. The PP along with their environmental consultant, B S Envitech Pvt. Ltd., Hyderabad made a presentation and provided the following information. ToR for the project was originally granted on 13-05-2011 and the same has now lapsed. Hence, the PP applied for fresh TOR de novo.

2. Regarding the progress of activities undertaken till date, additional land to an extent of 68.91 acres out of 535.34 acres has been acquired. Permission to draw water was received from govt. of AP on 12.04.2012 and no objection certificate for chimney height from Airport Authority of India was received on 27.04.2012.

3. *Based on the information provided and the presentation made, the Committee recommended the standard TORs at **Annexure-A1** and **A2** for undertaking detailed EIA study and preparation of EMP in addition to the following ToR.*

i) Cumulative impact assessment including the rise in temperature for 15 km radius shall be carried out.

2.17 Expansion by addition of 1x135 MW and 1x350 MW Coal Based Thermal Power Plant at Villages Sithurnatham, Sirupulapettai and Eguvarpalayam, in Gummidipoondi Taluk, in Thiruvallur Distt., in Tamil Nadu by M/s ARS Metals Ltd. - reg. ToR

1. The PP along with their environmental consultant, Vimta Labs Ltd., Hyderabad made a presentation and provided the following information. EC was accorded by the Ministry for 2x60 MW imported coal based captive TPP by the Project Proponent at the above location on 20.05.2011. An amendment to the EC for temporary road transportation of coal for a maximum period of 4 years was accorded on 10.11.2012.

2. At present 1x60 MW has been commissioned and fully operational. It is now proposed to install 1x135 MW in place of the remaining 1x60 MW for which EC was accorded as above and also an additional 1x350 MW Supercritical Unit. The 1x135 MW will be GCPP and 350 MW will be IPP. The existing project area is 60 acres and an additional land of 31.38 acres is required for the proposed expansion. 100% imported coal from Indonesia will be used as fuel. The water requirement for the proposed expansion will be 192 KLD and shall be sourced from ground water and rain water harvesting. Air Cooled Condensers will be used to conserve water.

3. The compliance to conditions stipulated in the said EC was also presented and discussed. The PP informed that baseline data collection was started from May, 2014 considering the onset of monsoon, which as per IMD in the area is only from October. Hence, it was requested to use the same in preparation of EIA/EMP report. *The committee has agreed for the same.*

4. *Based on the information provided and the presentation made, the Committee recommended the standard TORs at **Annexure-A1** for undertaking detailed EIA study and preparation of EMP in addition to the following ToR.*

i) Cumulative impacts including the rise in temperature within 10/15 km, as applicable shall be studied.

ii) Detailed justification for use of ACC in-lieu of WCC.

2.18 1x660 MW Coal Based Supercritical Panki Extension Power Project at Panki, Distt. Kanpur, Uttar Pradesh by M/s Uttar Pradesh Rajya Vidyut Utpadan Nigam Limited - reg. ToR

1. The PP along with their environmental consultant, PCRI, Haridwar made a presentation and provided the following information. The existing TPP configuration is 2x32 MW (abandoned) and 2x105 MW. The 2X105 MW units were more than 35 years old and will be eventually phased out. Ministry has lifted moratorium from Kanpur, a critically polluted area on 17.09.2013. As per assessment report 2013 submitted by UPPCB to CPCB, the CEPI score of the Kanpur Industrial Cluster is 72.31. Regarding the compliance status of action plan, the existing STP is functional with full capacity utilization. Environmental monitoring is being carried out by IITR, Lucknow. AWRS is under advanced stage of commissioning and trial run has been done. ESP for 105 MW unit has been retrofitted. Green Belt is being developed in and around power project site. Fly Ash is being given to M/s. ACC for Cement production. Ash from ash pond is being given to ash kilns in the nearby areas for bricks manufacturing and for filling of low lying areas.

2. The site at Panki is considered appropriate in view of availability of land (108 acres) within existing premises, no new land is proposed to be acquired, availability of water from Lower Ganga Canal, adjacent to dedicated freight corridor (under construction) of Indian Railways, connected with NH-2 through approach road, proximity to load centre- Kanpur. Blended coal (70% domestic + 30% imported) will be used. The estimated annual raw coal (blended) requirement for the proposed TPS shall be about 2.99 million tones based on blended GCV of 4030 Kcal/Kg. Coal for the proposed unit would be used from allocation made to UPRVUNL from Deocha-Pachami, Dewanganj- Harinsingha (West Bengal) and Kalyanpur-Badalpara (Jharkhand) coal blocks. The envisaged mode of coal transportation from the coal mines/port to the power plant will be through Indian Railways. High Efficiency ESPs to control dust emission and a single flue stack of 275 m height will be installed. The stack will be fitted with online monitoring systems. Air Pollution Suppression Systems will be provided at coal handling plant and space provision will be made for FGD System.

3. The average ash content of coal would be 34 %. Dry Fly Ash collection System and silos for dry collection and storage will be provided. The existing ash pond would be adequate for disposal of ash from existing units and bottom ash of proposed unit. Provision will be made for Ash Water Recovery System. The water requirement for the proposed project would be 1927 m³/hr (18.9 Cusec) and would be met from the existing allocation for the Panki TPS of UPRVUNL from lower Ganga Canal. The ash water from the ash dyke shall be re-circulated with the help of AWRS. All the plant liquid effluents shall be mixed in CMB and finally will be used for Green Belt Development in the plant premises.

4. *Based on the information provided and the presentation made, the Committee recommended the standard TORs at **Annexure-A1** for undertaking detailed EIA study and preparation of EMP in addition to the following ToR.*

i) An action plan for phasing out the old units shall be submitted.

ii) Compliance to the Action Plan formulated by SPCB for Kanpur.

iii) *No fly ash shall be disposed in existing ash pond & low lying areas and no new ash pond shall be constructed.*

2.19 Expansion of Ramagundam STPP by addition of 2x660 MW (Stage-IV, Telangana STPP, Phase-I) at village Ramagundam, in Ramagundam Mandal, in Karimnagar Distt., in Telangana by M/s. NTPC Ltd. - reg. ToR

1. The PP made a presentation and provided the following information. The installed capacity of Ramagundam STPP is 2600 (3x200 + 3x500 + 1x500) MW. ToR for the Stage-IV project (2x500 MW) was accorded on 08.12.2010. The validity of ToR was extended till 07.12.2013 and the same has now lapsed. Hence, fresh TOR has been applied for.

2. The land required for Stage-IV (235 acres) is available within the existing premises. The water requirement of 40 cusecs will be met from the Sriram Sagar Dam/Yellampalli Project. Water commitment available for RSTPP shall be sufficient to meet the water requirement for proposed expansion. No fresh water commitment is required from State Government. The coal requirement for Stage-I & II is from Singareni Collieries Company Limited (SCCL) and Stage-III is from South Eastern Coal Fields. The coal requirement for Stage-IV (6.6 MTPA) presently intended to be met from one of the captive Coal Mine Blocks of NTPC.

3. River Godavari is approx. 4 km North. State Highway (Rajiv Rahadari) connecting Hyderabad and Ramagundam is approx. 1 km North of the project site. The nearest railway station Ramagundam on the Chennai/Delhi trunk line is approximately 5.0 km west from the site. Singareni Collieries (SCCL), Kesoram Cement Industry and APGENCO (62.5 MW) thermal power station are the existing industries located within 10 km radius. There is no ecologically sensitive area within a radius of 10 km. from the project site. The study area falls under Seismic Zone-III.

4. *Based on the information provided and the presentation made, the Committee recommended the standard TORs at **Annexure-A1** for undertaking detailed EIA study and preparation of EMP in addition to the following ToR.*

i) *Cumulative impacts including the rise in temperature within 10/15 km, as applicable shall be studied.*

2.20 20 MW co-generation Power Plant at Village Simbhaoli, Distt. Hapur, U.P. by M/s Simbhaoli Power Pvt. Ltd. - reg. amendment of ToR for revision of capacity to 28 MW.

1. The PP made a presentation and provided the following information. TOR for the above project was accorded on 17.01.2014. However, seeing the future expansion and availability of biomass (bagasse), the PP proposes to enhance the capacity from 20 to 28 MW.

2. *Based on the information provided and the presentation made, the Committee recommended for revision of capacity from 20 MW to 28 MW with the same TORs prescribed earlier. However, the committee noted that as per the amendment dated 25.06.2014 to the EIA Notification, 2006, TPPs based on biomass fuel ≥ 15 MW are 'B' category projects and hence, the committee recommended that final EIA/EMP shall be submitted to SEIAA for further action.*

3.0 Any other items with the permission of the Chair.

3.1 2x600 MW and 3x660 MW coal based TPP of M/s IL&FS Tamil Nadu Power Company Limited at Villages Kottatai, Ariyagosthi, Vilianallur & Silambimangalam, Chidambaran Taluk, District Cuddalore in Tamil Nadu- reg. Amendment of EC for transportation of coal by rail route.

1. The proposal is for interim permission for transportation of coal by rail route till the captive port is constructed. The project proponent made a presentation along with its consultant M/s L&T-RAMBØLL Consulting Engineers Limited, Hyderabad and provided the following information.

2. IL&FS Tamil Nadu Power Company Limited (ITPCL) is developing a project comprising of 3180 MW (2×600 MW + 3×660 MW TPP with captive desalination plant of 40 MLD and a captive port of 15 MTPA located in Parangipettai block of Cuddalore district, Tamil Nadu. The project was accorded EC and CRZ Clearance on 31.05.2010 and 29.10.2010 respectively. Consent to Establish (CTE) was issued by TNPCB on 14.06.2011. The EC was challenged in the Hon'ble NGT which had directed for carrying out a Rapid Cumulative Environmental Impact Assessment (RCEIA) study over a 25 Km radius. Based on the RCEIA study carried out by ITPCL, a Corrigendum to the original EC was issued with additional conditions on 14.08.2012. Further, an amendment to EC was accorded on 04.02.2014 regarding revision of unit configuration, sulphur content of coal and location of ash pond.

3. As per the EC, ITPCL was to use its Captive Port with a closed conveyor system for transporting imported coal to the power plant. However, although the requisite clearances to start the construction work for the Port were obtained from MoEF and the Tamil Nadu Pollution Control Board (TNPCB), the captive port design clearance from the Tamil Nadu Maritime Board (TNMB) is yet to be received. Based on current estimates, the Captive Port construction and commissioning is likely to take another three years. As the trial run of the first unit of the TPP is slated for end of December 2014, ITPCL has explored alternate methods for transporting the imported coal to its power plant and has concluded that transportation over rail from the existing nearby port at Karaikal which is already having the necessary facility for unloading/transfer of coal.

4. As part of development plan submitted for approval during the EC, ITPCL had proposed a railway siding/line (~5.3 km) from the Puduchattram railway station to project site for transport of HFO and LDO. In the interest of the project as well as from the point of view of negating any additional environmental impact, the same railway siding/line could also be used for transportation of coal till the Captive Port is commissioned. Therefore, ITPCL requested the Ministry for temporarily transporting coal from Karaikal port through rail up to the ITPCL plant coal stockyard via the Puduchattiram station and thereafter through the private railway siding approved for transportation of HFO/LDO. ITPCL has also obtained approvals in connection to the transportation of coal through rail from the existing nearby port at Karaikal to the TPP and associated railway siding works for the project from Railway Board and Southern Railways, GoI.

5. *Based on the information and clarifications provided by the Project Proponent and detailed discussions held on all the issues, the Committee recommended for amendment of EC for temporary transportation of coal by rail route till the captive port is operational and stipulated the following additional conditions.*

- (i) The PP shall advertise in the newspaper and place on the website, the amendment issued by the Ministry for public information.*

(ii) Status of the Appeals in NGT and all other court cases

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

ANNEXURE- A1

Terms of Reference (TOR):

- i) Vision document specifying prospective long term plan of the site, if any, shall be formulated and submitted.
- ii) Certified compliance report from the Regional Office of MoEF for the conditions stipulated in the environmental and CRZ clearances of the previous phase(s), as applicable, shall be submitted.
- iii) Executive summary of the project indicating relevant details along with recent photographs of the approved site shall be provided. Response to the issues raised during Public Hearing and to 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.
- iv) Harnessing solar power within the premises of the plant particularly at available roof tops and other available areas shall be formulated and status of implementation shall be submitted to the Ministry.
- v) The coordinates of the approved site including location of ash pond shall be submitted along with topo sheet (1:50,000 scale) and confirmed GPS readings of plant boundary and NRS satellite map of the area, shall be submitted. Elevation of plant site and ash pond with respect to HFL of water body/nallah/river shall be specified, if the site is located in proximity to them.
- vi) Layout plan indicating break-up of plant area, ash pond, area for green belt, infrastructure, roads etc. shall be provided.
- vii) 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 and revised layout (as modified by the EAC) shall be provided.
- viii) Present land use as per the revenue records (free of all encumbrances of the proposed site, shall be furnished. Information on land to be acquired) if any, for coal transportation system as well as for laying of pipeline including ROW shall be specifically stated.
- ix) The issues relating to land acquisition and R&R scheme with a time bound Action Plan should be formulated and clearly spelt out in the EIA report.
- x) Satellite imagery or authenticated topo sheet indicating drainage, cropping pattern, water bodies (wetland, river system, stream, nallahs, ponds etc.), location of nearest villages, creeks, mangroves, rivers, reservoirs etc. in the study area shall be provided.
- xi) 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 Office of the Chief Wildlife Warden of the area concerned.
- xii) 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 fill material required; its source, transportation etc. shall be submitted.

- xiii) 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 to be acquired is developed alternatively and details plan shall be submitted.
- xiv) A mineralogical map of the proposed site (including soil type) and information (if available) that the site is not located on economically feasible mineable mineral deposit shall be submitted.
- xv) Details of 100% fly ash utilization plan as per 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.
- xvi) Water requirement, calculated as per norms stipulated by CEA from time to time, shall be submitted along with water balance diagram. Details of water balance calculated shall take into account reuse and re-circulation of effluents which shall be explicitly specified.
- xvii) Water body/nallah (if any) passing across the site should not be disturbed as far as possible. In case any nallah / drain has to be diverted, it shall be ensured that the diversion does not disturb the natural drainage pattern of the area. Details of diversion required shall be furnished which shall be duly approved by the concerned department.
- xviii) 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.
- xix) 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.
- xx) 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/creek/ 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.
- xxi) 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. Commitment regarding availability of requisite quantity of water from the Competent Authority shall be provided along with letter / document stating firm allocation of water.
- xxii) Detailed plan for carrying out rainwater harvesting and its proposed utilization in the plant shall be furnished.
- xxiii) Feasibility of zero discharge concept shall be critically examined and its details submitted.
- xxiv) Optimization of COC along with other water conservation measures in the project shall be specified.
- xxv) Plan for recirculation of ash pond water and its implementation shall be submitted.
- xxvi) 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.
- xxvii) Socio-economic study of the study area comprising of 10 km from the plant site shall be carried out by a reputed institute / agency which shall consist of detail assessment of the impact on livelihood of local communities.
- xxviii) 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.
- xxix) 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.
- xxx) 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. Sustainable income generating measures which can help in upliftment of poor 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.
- xxxii) 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.
- xxxiii) 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.
- xxxiiii) Assessment of occupational health as endemic diseases of environmental origin shall be carried out and Action Plan to mitigate the same shall be prepared.
- xxxv) 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 years shall be conducted with an excellent follow up plan of action wherever required.
- xxxvi) One complete season site specific meteorological and AAQ data (except monsoon season) as per MoEF Notification dated 16.11.2009 shall be collected and the dates of monitoring recorded. The parameters to be covered for AAQ shall include SPM, RSPM (PM10, PM2.5), SO₂, NO_x, Hg and O₃ (ground level). The location of the monitoring stations should be so decided so as to take into consideration the pre-dominant downwind direction, population zone, villages in the vicinity and sensitive receptors including reserved forests. 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.
- xxxvii) A list of industries existing and proposed in the study area shall be furnished.

- xxxvii) Cumulative impact of all sources of emissions (including transportation) on the AAQ of the area shall be well assessed. 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 wind roses should also be shown on the location map as well.
- xxxviii) Radio activity and heavy metal contents of coal to be sourced shall be examined and submitted along with laboratory reports.
- xxxix) Fuel analysis shall be provided. Details of auxiliary fuel, if any, including its quantity, quality, storage etc should also be furnished.
- xl) Quantity of fuel required, its source and characteristics and documentary evidence to substantiate confirmed fuel linkage shall be furnished.
- xli) 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 ii) For proposals based on imported coal, inland transportation and port handling and rolling stocks /rail movement bottle necks shall be critically examined and details furnished.
- xl iii) 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 iv) 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 v) 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.
- xl vi) The DMP so formulated shall include measures against likely Tsunami/Cyclones/Storm Surges/Earthquakes etc, as applicable. It shall be ensured that DMP consists of both on-site and off-site plan, complete with details of containing likely disaster and shall specifically mention personnel identified for the task. Smaller version of the plan shall be prepared both in English and local languages.
- xl vii) Detailed plan for raising green belt of native species of appropriate width (50 to 100 m) and consisting of at least 3 tiers around plant boundary (except in areas not possible) with tree density of 2000 to 2500 trees per ha with a good survival rate of about 80% shall be submitted. Photographic evidence must be created and submitted periodically including NRSA reports.
- xl viii) Over and above the green belt, as carbon sink, additional plantation shall be carried out in identified 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.
- xl ix) 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 system of reporting of non compliances / violations of environmental norms to 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.

- 1) 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 agency shall be submitted.
- c) The soil levelling 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 bunds should be strengthened and desilted.
- d) Additional soil for leveling of the sites should be generated as far as possible within the sites, in a way that natural drainage system of the area is protected and improved
- e) Marshy areas which hold large quantities of flood water shall 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. The outfall should be first treated in a guard pond (wherever feasible) and then 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 of **Fishermen Welfare Fund** should be created out of CSR grants not only to enhance their quality of life through 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 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 is fertile agricultural land used for paddy cultivation.

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

(Shri T.K.Dhar)
Member

(Shri J.L Mehta)
Member

(Shri G.S. Dang)
Member

(Dr. S.D. Attri)
Member

(Shri N.K. Verma)
Member

(Dr. S.S. Bala)
Representative of CPCB

(Shri N.S. Mondal)
Representative of CEA

(Dr. Saroj)
Member Secretary