

## **MINUTES OF THE 46<sup>TH</sup> MEETING OF RE-CONSTITUTED EXPERT APPRAISAL COMMITTEE ON ENVIRONMENTAL IMPACT ASSESSMENT OF THERMAL POWER AND COAL MINE PROJECTS**

The 46<sup>th</sup> Meeting of the reconstituted Expert Appraisal Committee (Thermal) was held during **April 9-10, 2012** at Scope Convention Centre, SCOPE Complex, Lodhi Road, New Delhi. The members present were:

- |    |                   |   |                  |
|----|-------------------|---|------------------|
| 1. | Shri V.P. Raja    | - | Chairman         |
| 2. | Dr. C.R. Babu     | - | Vice-Chairman    |
| 3. | Shri T.K. Dhar    | - | Member           |
| 4. | Shri J.L. Mehta   | - | Member           |
| 5. | Dr. G.S. Roonwal  | - | Member           |
| 6. | Shri M.S. Puri    | - | Member           |
| 7. | Dr. P.L. Ahujarai | - | Member Secretary |

Dr. CBS Dutt, Dr. S.D. Attri, Dr. K.K.S. Bhatia, Shri V.B. Mathur and Member Secretary CPCB were absent.

In attendance: Sh. W. Bharat Singh, Deputy Director, MoEF.

The deliberations held and the decisions taken are as under:

**DATE: 09.04.2012.**

### **ITEM No.1 CONFIRMATION OF THE MINUTES OF THE LAST MEETING.**

The Minutes of the 44<sup>th</sup> Meeting held during March 5-6, 2012 were confirmed with minor amendments.

### **ITEM NO. 2.0 CONSIDERATION OF PROJECTS**

#### **2.1 2x660 MW Imported Coal Based Shahdol Thermal Power Project (based on super critical technology) of M/s SJK Powergen Ltd. at village Lalpur, in Sohagpur Taluk, in Shahdol Distt., in Madhya Pradesh - reg. Environmental Clearance.**

The proposal is for consideration for environmental clearance. The project proponent made a presentation along with its consultant M/s B.S. Envi-tech (P) Ltd., Hyderabad. The project proponent informed that the proposal was earlier proposed based on domestic coal but due to non-availability of the

same, it has been decided to go ahead with imported coal from Indonesia for an interim period until domestic coal is available.

The proposal is for setting up of 2x660 MW Supercritical Imported Coal Based Thermal Power Plant at village Lalpur, in Sohagpur Taluk, in Shahdol Distt., in Madhya Pradesh. Land requirement will be 700 acres, of which 163 acres is Govt. land (chote jhar ka jungle), 527 acres is private land and 10 acres is revenue land. Stage-I forests clearance has been obtained for diversion of 66.294 ha of revenue forest land). The co-ordinates of the site are located within Latitude 23°15'50"N to 23°17'10" N and Longitude 81°28'12" E to 81°30'20" E. Imported coal requirement will be 4.72 MTPA at 85% of PLF and will be obtained from Indonesia, Kuansinglnti Makmur (KIM) Coal mines and PT Borneo Indobara (BIB) Coal mines. MoU has been signed with M/s GMR Coal Resource Pvt. Ltd, Singapore. Ash and sulphur contents in imported coal will be 7.5% and 0.59% respectively. Total ash generation will be 0.356 MTPA. Fly ash will be supplied to M/s ACC Keymore Cement Works of Katni, MP. Ash pond area will be 240 acres and co-ordinates of the ash pond site is located within Latitude 23°15'50"N to 23°16'57" N and Longitude 81°29'1" E to 81°30'20" E. HCSD is being envisaged for disposal of ash from power plant. Twin flue Stack of 275m shall be provided. Induced Draft cooling system shall be installed. Water requirement of 34.69 MCM will be sourced from the River Son through a pipeline at a distance of about 2.5km from project site. Permission to draw water has been obtained from the Govt. of Madhya Pradesh and the Central Water Commission. Water will be drawn upstream of Bansagar Dam in River Son. Sarpha nala (seasonal) is located at 0.2 km distance from the project site. There are 9 reserve forest blocks within 10 km of the study area of the project site. There are no National Parks, Wildlife Sanctuaries, Heritage Sites, Tiger/Biosphere reserves etc. within 10 km of the site. Public Hearing was held on 08.10.2009. Cost of the project will be Rs.8000.0 Crores.

The Committee noted that land has been optimized from 950 acres to 700 acres in order to reduce the area of forest land Jhudpi jungle. It was also informed that proposed ash pond has been relocated further away from the River Son. Colony has also been removed.

The project proponent also informed that their intention for installation of Assisted Spray Air Cooled Condensers is under serious examination at their end.

The Committee discussed the issues raised in the Public Hearing held on 18<sup>th</sup> December, 2009 and the responses provided by the project proponent. The major issues raised were regarding unemployment of local youth and provision of employment especially to land losers and educated youth; pollution due to stone crushers in the area; educational facilities; request for non-disposal of fly ash in Son river or Sarpha nallah as these are sources of drinking water for the

villagers; regular monitoring of air and water, general pollution, plantation of trees, provisions of drinking water, electricity, hospital and roads.

The project proponent also informed that there were no litigation in any court pertaining to the project.

The Committee also discussed the reply given by the project proponent to the written communication received during the Public Hearing.

The Committee noted that even though water allocation appears to be in place, a detailed analysis on the water availability during lean season, taking into account the flow available in Son river, (considering the riparian needs) and the storage capacity for meeting the lean season period, need to be submitted.

The Committee also noted that transportation of coal and associated impacts including coal handling at ports and railway rolling stocks availability etc. need to be substantiated with available study reports / materials / data etc.

It was also observed that the study area has Schedule-I species including Sloth Bear for which conservation plan should be prepared for immediate implementation.

In view of the missing gaps and requisite information sought as above, the Committee decided to defer the project for reconsideration on receipt of following information:

- i) Detailed Action plan for implementation on relevant issues / concerns raised in Public Hearing along with response made and the rough budgetary allocation shall be prepared.
- ii) Geological map of the plant area shall be furnished;
- iii) Location of additional ash pond details shall be provided;
- iv) MoU for Fly Ash Utilisation signed with contracting parties shall be submitted;
- v) Transportation of coal and associated impacts / barriers, including coal handling capacity at Ports and railway rolling stocks availability shall be studied and report submitted;
- vi) A copy of R&R plan to be submitted.
- vii) CSR Action Plan shall be revised and financial break up activity wise along with firm commitment shall be submitted;
- viii) Detailed analysis on the water availability during lean season taking into account the flow available in Son river (considering the riparian needs) and the storage capacity for meeting the lean season requirement shall be prepared and report submitted; and
- ix) Wildlife Conservation Plan drawn in consultation with the office of the Chief Wildlife Warden for immediate implementation shall be prepared and submitted.

## **2.2 Expansion power generation capacity by addition of 2x660 MW (Units 5-6) Imported Coal based TPP of M/s LANCO Amarkantak Power Ltd. at village Pathadi, in Korba Tehsil & Distt., in Chhattisgarh -reg. Environmental Clearance.**

The proposal is for consideration for environmental clearance. The project proponent made a presentation along with its consultant M/s B.S. ENVI-TECH (P) Ltd., Hyderabad and provided the following information:

The proposal is for expansion by addition of 2x660 MW (Units 5-6) Imported Coal Based Supercritical TPP at village Pathadi, in Korba Tehsil & Distt., in Chhattisgarh. There are two units under operation viz. Unit –I and Unit-II consisting each of 1x300 MW. Unit-III & IV (2x660 MW) are under implementation. Additional land requirement will be 550 acres, which is a single crop agriculture land, comprising of 250 acres of land for ash pond, 250 acres for water reservoir and 50 acres for external facilities. Total land requirement for 3240 MW will now be 1945 acres. The co-ordinates of the site including all six units and ash pond of Units-1,2,3&4 are located within Latitude 22°13'12.76" N to 22°14'55.36" N and Longitude 82°43'17.77" E to 82°44'9.37" E. Coal requirement will be 5.06MTPA at 85% PLF. Imported Coal will be obtained from Australia. FSA has been signed with M/s The Griffin Coal Mining Company Pty Ltd. Ash and sulphur contents in imported coal will be 10% and 0.5% respectively. About 0.506 MTPA of ash will be generated. Fly ash will be supplied to M/s ACC Keymore Cement Works of Katni, M/s Vedant Infrastructures, M/s KJSL Coal & Power Ltd. Infrastructures, M/s Gajanan Ash Bricks, M/s Ganpati Ash Bricks, M/s Ultratech Cements etc. Ash pond area will be 250 acres and co-ordinates of the ash pond site is located within Latitude 22°12'41.75" N to 22°13'9.44" N and Longitude 82°42'19.82" E to 82°43'19.28" E. Twin flue Stack of 275m shall be provided. Natural Draft cooling system will be installed. Water requirement of 85848 m<sup>3</sup>/day (31.33 MCM) will be sourced from the Hasdeo River through a pipeline at a distance of about 2.4km from the project site. Approval from Water Resource Department, Govt. of Chhattisgarh has been obtained. Sakti Reserve forest is at a distance of 10.7 km from the plant site. There are no National Parks, Wildlife Sanctuaries, Heritage Sites, Tiger/Biosphere reserves etc. within ten km of the project site. Public Hearing was held on 07.01.2012. Cost of the project will be Rs.7062.0 Crores.

The Committee discussed point-wise compliance of TOR and the status of compliance of the conditions stipulated in the environmental clearance accorded for the earlier stages. *The Committee observed that the status of compliance to the conditions stipulated in the environmental clearance for the earlier stages shall be submitted to the Ministry within a fortnight.*

On the question of cumulative impact assessment of AAQ in the study area, the project proponent clarified that the assessment has been done based on their existing and proposed units only as no other source of air pollution in the 10 Km area exists or is proposed to be coming up as per the records available.

The Committee also discussed the issues raised in the Public Hearing and the responses made by the project proponent. The Committee noted that major issues raised were regarding compensation for land acquired; employment of PAPs; community development; discharge of effluents into Jogi nallah affecting human and animal; noise pollution due to operation of existing units; fly ash/ dust falling on houses of villages and also affecting nearby agricultural land; non willingness of some villagers to part with land; adverse impact on ground water used for construction of plant etc. All these issues were addressed by the proponent.

The project proponent also informed that no litigation was pending / filed pertaining to the power project.

The Committee advised the proponent that radio activity in coal and ash needs be studied on a long term basis and mitigative action should be taken based on the outcome of the study. The project proponents were advised to avoid the acquisition of tribal land. However, in the event of extreme necessity, the relevant rules should be followed.

On the issue of drinking water for villages and contamination of Jogi nalla, which was also an issue raised in the Public Hearing, the proponent informed that they are adopting a zero discharge system.

The Committee desired to seek information regarding status of compliance to the conditions stipulated for the earlier phases of the project; cumulative impacts on the ambient air quality within 15 km of the plant; report on the transportation of coal, including coal handling capacity at ports and railway rolling stacks availability; report on the water availability in Hasdeo River; action plan for implementation of issues raised in Public Hearing and CSR plan and point wise response to representation received by MEF.

The proponent have submitted a detailed information on the above. The proponent have complied with conditions stipulated in the environmental clearance granted for the previous phases. High efficiency electrostatic precipitators have been installed to control particulate emission below 50mg/Nm<sup>3</sup>; space provision has been made for installation of FGD; cooling towers with closed cycle cooling are installed. The company is achieving zero discharge and environment lab has been set up.

Cumulative impacts on the Ambient Air Quality (AAQ) have been assessed within 20km distance of the plant site. The only power plant which is in

operation within 15 km radius is the 1120 MW power station of Chhattisgarh State Electricity Board. The other thermal power plants which are operating near Korba are more than 15 km distance from the Lanco Power Station are 2600 MW NTPC Korba, 2010 MW Balco plant and 840 MW CESB Korba West. The overall ground level concentration at a distance of 20 km radius taking into account all the power plants of PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub> and NO<sub>x</sub> is 69.28 µg/m<sup>3</sup>, 26.02 µg/m<sup>3</sup>, 56.5µg/m<sup>3</sup> and 33.5µg/m<sup>3</sup> respectively. The values are within the prescribed standards.

Regarding coal transportation, it has been informed that the coal will be imported from Griffin Coal Mining Pty Limited, Australia. The fuel supply agreement is for 5 MTPA. The coal will be imported to Vishakhapatnam port or Gangawaram port and then to the plant augmentation site at Korba in BOXN rakes. The company has submitted a letter of comfort to handle 2 MTPA of coal from Vishakhapatnam Port Trust. Company would also transport coal from the Gangawaram Port which has handled 14 MT of coal in 2011- 2012 and it is proposed to enhance the cargo handling capacity to 45 MT in next two years. The current handling capacity is 24 MT. As regards, the rail transportation from ports, rails rakes from both the ports are available. The company has submitted an application to railways for Rail Traffic Clearance (RTC). To meet the transportation requirement, the proponent will need 4 rakes per day on average. As per the report submitted, the requisite rakes for the transportation to Amarkantak unit 5 & 6 will be easily available. The PP may also institute a long term study to check radioactivity in coal and ash and furnish details to the Ministry.

As regards the water availability from Hasdeo River, the lean season capacity of the storages from Hasdeo Barrage at Korba up to the confluence of Hasdev with Mahanadi is 99.949 MCM. While the lean season allotment to the power plants and industries is 86.952 MCM, providing a cushion and net positive balance of 12.997 MCM. As per the hydrology study of the area, the construction of dams, barrages, antcuts and canals has resulted in storage of sufficient quantity of water for use during the lean months. The flow profile of Hasdeo River during lean months has increased with the construction of the water storage facilities and to meet the water requirement of Lanco Amarkantak Power project and other power plants / industries in the area.

A detailed action plan for implementation of issues raised during Public Hearing and CSR plan has been submitted. The issues raised in the representation received by the Ministry regarding employment and resettlement, environment conservation, pollution in the area and EIA report based on the old facts have been addressed. As per the information furnished, M/s Lanco have provided employment to 317 affected persons. One time capital CSR expenditure of Rs. 25 Crore, to be raised to 28 Crore, till the commissioning of the plant and annual CSR budget thereafter to be Rs. 5.60 Crores till the operative life of the plant. Annual Social Audit to be conducted

by a reputed University in the vicinity. There is no displacement of families. Regarding environment conservation, high efficiency ESPs are in operation and there is no discharge of effluent out side the plant. Continuous monitoring for stack emissions is being carried. Green belt has been developed in 75 acres of plant area. The ground water analysis carried shows that the levels of various parameters are within the prescribed standards. Lanco Amarkantak project is located at a distance of 13 km from Korba and does not fall in the critically polluted area. The AAQ data has been collected in the post monsoon season from September - November, 2010 subsequent to issuance of TOR. As discussed during the meeting, the PP may explore the possibility of setting up of a cement plant capacity to consume bulk fly ash.

It is given to understand that Chhattisgarh Environment Conservation Board (CECB) had issued show cause notice to the proponent for not complying with the conditions for green belt development and utilization of fly ash.

The Committee decided that the proponent should first provide the details regarding the show cause notice issued by the State Pollution Control Board before taking decision regarding the project.

**2.3 1620 MW (2x660MW + 1x300MW) Coal Based Thermal Power Plant of M/s Sai Jyothi Industries & Ventures Pvt. Ltd. at villages Muttur & Samudram, Ilayangudi Tehsil, in Sivaganga Distt., in Tamil Nadu - reg. TOR.**

The proposal was considered for determination of terms of reference for undertaking EIA/EMP study as per the provisions of EIA Notification, 2006. The project proponent gave a presentation through its consultant M/s Vimta Labs Ltd., Hyderabad and provided the following information:

The proposal is for setting up of 1620 MW (2x660MW + 1x300MW) Coal Based Thermal Power Plant at villages Muttur & Samudram, Ilayangudi Tehsil, in Sivaganga Distt., in Tamil Nadu. The proposal is to be set up in three phases viz. (Phase-I) 1x660 MW; (Phase-II) 1x300 MW; and (Phase-III) 1x660 MW. Land requirement will be 738 acres of which 425 acres has been acquired. About 30% of land is single crop agriculture land & 70% is waste land. Coal will be domestic and imported in the ratio 30:70. Domestic and imported coal requirement will be 10.91 MTPA at 85% PLF. Alternatively the 100% imported coal requirements is also envisaged and the requirement will be 9.38 MTPA at 85% PLF. Water requirement of 181 cuses with closed cycle cooling water system will be sourced from the Sea. A desalination plant is also proposed. River Kotta Karai flows at a distance of 7 km from the project site. There are no National Parks, Wildlife Sanctuaries, Tiger/Biosphere Reserves etc. within 10 km of the site. About 200 land oustees will be involved from this project site.

The Committee noted that sea water is required to be brought over a distance of about 22 Kms which may lead to salt water ingress in the ground water along the route unless appropriate measures are taken.

The Committee also noted that the area has acute shortage of drinking water and the project proponent may take up social welfare activity in consultation with TWAD and supply drinking water from its proposed desalination plant by enhancing its capacity if required.

The project proponent informed the Committee that considering the requirement for collection of appropriate season AAQ data, they have started collection of data from March onwards. The project proponent therefore requested the Committee that the data collected from March to May, 2012 be accepted for impact assessment. The Committee decided that the request could be acceded to.

Based on the information provided and presentation made, the Committee prescribed the following specific TOR over and above the standard TORs as at **Annexure-A1 & A2** for undertaking detailed EIA study and preparation of EMP.

- i) Explore the possibility of setting up desalination plant near the coast;
- ii) Detailed Scheme for supplying drinking water to the villages in the study area shall be formulated by adequately enhancing proposed desalination plant capacity in consultation with Tamilnadu Water and Drainage Board (TWADB)
- iii) Details of coal transportation by railway from Port to site shall be submitted with documents on rolling stock availability confirmed from Railways.

**2.4 4x150 MW Coal Washery Reject Based Sarguja Thermal Power Plant of M/s Adani Mining Pvt. Ltd. at village Parsa, in Udaypur Taluk, in Surguja Distt., in Chhattisgarh - reg. TOR reconsideration.**

The project proponent informed its inability to be present and requested for deferment of the proposal. The matter was accordingly deferred for reconsideration at a later stage.

**2.5 2x600 MW (Stage-II), North Chennai TPP of M/s Tamil Nadu Generation & Distribution Corporation Ltd. at villages Ennore & Puzhuvakkam, in Ponneri Taluk, in Thiruvallur Distt., in Tamil Nadu - Revalidation of Environmental Clearance regarding.**



The matter was earlier deliberated at length in the 40<sup>th</sup> Meeting held during January 9-10, 2012. M/s TANGEDCO now has submitted: (a) copy of final Award of the Tribunal in the matter of M/s Videocon Power Ltd. Vs TNEB & Canara Bank; and (b) a copy of SLP No. 3589 of 2009.

The Committee observed that on records the environmental clearance for Stage-II stands in the name of M/s Videocon Power Ltd. and hence prima facie it would not be appropriate to discuss the matter ex-parte (i.e. in the absence of M/s Videocon Power Ltd.). Old EC has already lapsed in May, 2006.

The Committee therefore decided that the application received from TANGENDCO for Stage-II for TOR could be taken up on the next day i.e. on 10<sup>th</sup> April, 2012 if the project proponent is ready for a TOR presentation. The project proponent affirmed the suggestion and the present matter was accordingly dropped.

**2.6 2x800 MW Super Critical Coal Based Thermal Power Plant of M/s TANGEDCO (A subsidiary of TNEB Ltd.) at villages Uppur, Valamavoor and Thiruppalaikudi, in Thiruvadana Taluk, in Ramanathapuram Distt., in Tamil Nadu -reg. TOR reconsideration**

The proposal was earlier considered in the 42<sup>nd</sup> Meeting held during February 6-7, 2012, wherein the project proponent gave a presentation and provided the following information:

The proposal is for setting up of 2x800 MW Super Critical Coal Based Thermal Power Plant at villages Uppur, Valamavoor and Thiruppalaikudi, in Thiruvadana Taluk, in Ramanathapuram Distt., in Tamil Nadu. Land requirement will be 1200 acres, which is mostly barren land. The co-ordinates of the plant site are located in between Latitude 9<sup>o</sup>35'N to 9<sup>o</sup>37'N and Longitude 78<sup>o</sup>54'E to 78<sup>o</sup>54"E. Coal will be indigenous and imported. Indigenous and imported coal requirements will be 5.234 MTPA and will be used in the ratio of 30:70 respectively. Use of 100% imported coal is also being explored. About 2950 TPD of bottom ash and 11800 TPD of fly ash will be generated. Water requirement will be sourced from the Sea. There are no National Parks, Wildlife Sanctuaries, Tiger/Biosphere Reserves etc. within 10 km of the site.

*The Committee in the 42<sup>nd</sup> Meeting held during 6<sup>th</sup> - 7<sup>th</sup> February, 2012 had observed that the project proponent has not identified other environmentally acceptable alternative sites as required and have come up with the present site only. The Committee also noted that topo-sheet of the site or satellite imagery of appropriate resolution was not made available. The proposal was therefore deferred for re-consideration at a later stage.*

The matter was again taken up on receipt of request from M/s TANGEDCO along with description of alternative sites.

The Committee noted that the proposal entails acquisition of Poramboke land, to which the project proponent clarified that the same is a Taravai land and not used for lift irrigation.

The Committee also noted that the area appears to have many village ponds and large tracts of low lying area which need to be preserved and regenerated.

Based on the information provided and presentation made, the Committee prescribed the following specific TOR over and above the standard TORs as at **Annexure-A1 & A2** for undertaking detailed EIA study and preparation of EMP.

- i) Once through system shall not be undertaken for cooling and accordingly details of closed cycle cooling system shall be furnished;
- ii) CRZ clearance shall be obtained and submitted along with EIA/EMP Report;
- iii) Scheme for regeneration and preservation of village ponds in the study area shall be formulated;
- iv) Diversion of community land to be strictly in accordance with the rules and approval of Panchayat/Gram Sabha shall be obtained for acquisition of Panchayat/Gam Sabha / Community land (as applicable).

## **2.7 Extension of validity period of environmental clearance for 1300 MW (Stage-II) Kawas Gas Based Combined Cycle Power Plant of M/s NPPC Ltd. at Mora, in Surat Distt., in Gujarat - reg.**

M/s NTPC Ltd. have requested the Ministry for extension of validity period of the environmental clearance accorded for 1300 MW (Stage-II) Kawas Gas Based Combined Cycle Power Plant at Mora, in Surat Distt., in Gujarat. The environmental clearance for the power plant was accorded on 30.05.2005.

M/s NTPC Ltd. had submitted that they had issued LOI for sourcing Gas for the power plant to M/s Reliance Industries Ltd. (M/s RIL) and also finalized main plant turnkey package. However, the tender for the main plant was annulled due to dispute on gas supply contract with M/s RIL. M/s NTPC further informed that in view of the recent developments in respect of domestic gas allocation to power sector and the decision taken by the Apex Court, they now intend to take up the project immediately. It was also informed that during these intervening period they have completed all studies/ investigation and International Competitive Bids are being issued shortly. The Kawas Gas Based CCPP Stage-II is an expansion project to be commissioned within the existing

premises of the existing Stage-I Combined Gas Based Plant. The site was already developed during Stage-I and no major activities related to site development were to be undertaken except site leveling. The activities related to award of main plant package for Stage-II are in full swing. The project could not be awarded as the issue of supply of gas to the project by M/S RIL became sub-judice in Mumbai High court.

It was also informed that in view of the recent developments in respect of domestic gas allocation to Power Sector, they have been made to understand that the allocation of gas for the project is under active consideration of Empowered Group of Ministries (EGOM) and that such allocation is expected shortly, notwithstanding the legal dispute between M/s NTPC & M/s RIL. M/s NTPC, therefore, now intend to take up implementation of Kawas GBCCPP, Stage-II immediately, for which extension of validity of EC is sought.

M/s NTPC Ltd. further elaborated that the delay in implementation of the project is due to "Force Majeure" beyond the control of NTPC, and therefore had requested the Ministry that the validity of the environmental clearance for Kawas GBCCPP, Stage-II may be extended for a further period of five years.

In view of the explanation given by M/s NTPC, the Committee recommended that the Ministry may accept the request for extension of validity of environmental clearance for a period of five years from 30.05.2010 to 29.05.2015.

## **2.8 Extension of validity period of environmental clearance for 1300 MW (Stage-II) Jhanor Gandhar Gas Based Combined Cycle Power Plant of M/s NTPC Ltd. at Jhanor, in Baruch Distt., in Gujarat - reg.**

M/s NTPC Ltd. requested the Ministry for extension of validity period of the environmental clearance accorded for 1300 MW (Stage-II) Jhanor Gandhar Gas Based Combined Cycle Power Plant at Jhanor, in Baruch Distt., in Gujarat. The environmental clearance for the power plant was accorded on 10.06.2005.

M/s NTPC Ltd. submitted that they had issued LOI for sourcing Gas for the power plant to M/s Reliance Industries Ltd. (M/s RIL) and also finalized main plant turnkey package. However, the tender for main plant was annulled due to dispute on gas supply contract with M/s RIL. M/s NTPC further informed that in view of the recent developments in respect of domestic gas allocation to power sector and the decision taken by the Apex Court they now intend to take up the project immediately. It was also informed that during these intervening period they have completed all studies/ investigation and International Competitive Bids are being issued shortly. The Gandhar Gas Based CCPP Stage-II is an expansion project to be commissioned within the existing premises of the existing Stage-I Combined Cycle Gas Based Plant. The

site was already developed during Stage-I and no major activities related to site development were to be undertaken except site leveling. The activities related to award of main plant package for Stage-II are in full swing. The project could not be awarded as the issue of supply of gas to the project by M/S RIL became sub-judice in Mumbai High court.

It was also informed that in view of the recent developments in respect of domestic gas allocation to Power Sector, they have been made to understand that the allocation of gas for the project is under active consideration of Empowered Group of Ministries (EGOM) and that such allocation is expected shortly, notwithstanding the legal dispute between M/s NTPC & M/s RIL. M/s NTPC, therefore, now intends to take up implementation of Gandhar GBCCPP, Stage-II immediately, for which extension of validity of EC is sought.

M/s NTPC Ltd. further elaborated that the delay in implementation of the project is due to “Force Majeure” beyond the control of NTPC, and therefore had requested the Ministry that the validity of the environmental clearance for Gandhar GBCCPP, Stage-II may please be extended for a further period of five years.

In view of the explanation given by M/s NTPC. The Committee recommended that the Ministry may accept the request for extension of validity period of environmental clearance for a period of five years from 10.06.2010 to 9.06.2015.

## **2.9 Change in location of Ash Dyke for Rihand Super Thermal Power Project (Stage-II) of M/s NPPC Ltd. at Bijpur village in Sonebhadra Distt., in Uttar Pradesh - reg.**

M/s NTPC were accorded environmental clearance for 2x500 MW Rihand Super Thermal Power Plant (Stage-III) on 05.02.2009. The condition at clause nos. (i) and (ii) of the environmental clearance prescribes as under:

- (i) “No additional land shall be used / acquired in excess of 730 acres for any activity/facility of this project”; and
- (ii) “Ash pond shall be at least 500 m away from FRL of Govind Ballabh Pant Sagar (Rihand Reservoir)”.

M/s NTPC informed that the ash disposal area was proposed to be located at Parbatwa (Jheelo Khamariya area) situated at a distance of about 10 Km from the project site, in an area already in possession of M/s NTPC. However, the area could not be evacuated and people are still residing in the area. Over the years the number of PAPs have also increased.

M/s NTPC therefore requested for suitable amendment of environmental clearance as they now intend to shift the ash pond area (430 acres) from the earlier site at Parbatwa (10 kms away) to Bijpur area (365 acres) located at a distance of 2-3 Kms. The new location is on the reserve forest area and application for diversion of forest land has been submitted.

The Committee decided that M/s NTPC shall first obtain Stage-I forest clearance and surrender the earlier land to the State Government if in case the earlier site is not feasible for location of ash pond due to compelling reasons. It was also decided that M/s NTPC shall submit a detailed status of compliance to the conditions stipulated in the environmental clearance before requesting for any amendment. Accordingly the matter was deferred.

### **2.10 Amendment of environmental clearance accorded for Mouda Super Thermal Power Project of M/s NTPC Ltd. at Mouda Tehsil, in Nagpur Distt., in Maharashtra - reg.**

M/s NTPC were accorded environmental clearance for 2x500 MW Mouda Super Thermal Power Plant (Stage-I) on 25.01.2008 and for Stage-II (2x660 MW) on 30.12.2010.

M/s NTPC informed that the Maharashtra State Pollution Control Board has insisted for amendment in the environmental clearance by mentioning the quantity and type of auxiliary fuel (startup fuel) to be used in the power plant.

M/s NTPC informed that the condition no. (vii) under para no. 3 of the environmental clearance letter read as "Treated effluents conforming to the prescribed standards shall be re-circulated and reused within the plant". That the quantity of effluent from the main plant is almost zero during normal operations. However, whenever losses in the system are reduced, there will be excess quantity discharge outside the plant premises and therefore requested that the condition no. vii be suitably amended.

The Committee deliberated the above issues and observed that use of small quantity LDO as startup fuel is an inherent requirement for the thermal power plant and the insistence of the Maharashtra State Pollution Control Board is not justified.

Regarding amendment of treated effluent discharge, the Committee did not accede to the request to the PP.

**DATE: 10.04.2012**

**2.11 2100MW (6x350 MW) Combined Cycle Power Plant of M/s Urban Energy Ltd. at village Vangni Tarfe Taloja, Taluka Panvel, Raigad Distt., Maharashtra - reg. Environmental Clearance.**

The proposal is for consideration for environmental clearance. The project proponent made a presentation along with its consultant M/s Aditya Environmental Services Pvt. Ltd., Mumbai and provided the following information:

The proposal is for setting up of 2100 MW (6x350 MW) Combined Cycle Power Plant of M/s Urban Energy Ltd. at village Vangni Tarfe Taloja, Taluka Panvel, Raigad Distt., Maharashtra. The plant is to be implemented in three phases of 2x350 MW each. Land requirement will be 420 acres, of which 360 acres is Government land and 60 acres is private land. The co-ordinates of the site are located within Latitude 19°05'3.26"N to 19°05'41" N and Longitude 73°11'5.88" E to 73°11'56.2" E. Gas Requirement will be 9 MMSCMD with calorific value of 8150 k. Gas will be obtained through spur of existing East-West Pipeline/ GAIL network which is at about 4 km distance from the site. Stacks of 75m each numbering 6 in total will be installed. Water requirement of 58000 m<sup>3</sup>/day will be sourced from the Balganga Dam through a pipeline at a distance of about 45 km from the project site. Sea is at about 26 Kms distance. Palvel Creek is at about 17 Kms distance. There are no National Parks, Wildlife Sanctuaries, Heritage Sites, Tiger/Biosphere reserves etc. within 10 km of the site. Public Hearing was held on 28.07.2010. Cost of the project will be Rs.6510.0 Crores.

**The Committee informed the project proponent of a Circular issued by the Ministry of Power regarding NELP Gas production and subsequent advice not to plan projects based on domestic gas till 2015-16.**

The project proponent informed that they are aware of the circular and stated that the circular only mentions domestic gas and they may likely shift to RLNG/LNG in the event domestic gas is not made available. It was informed that the high cost of LNG is not going to last for a long time. The project proponent also informed that power plants based on imported coal can be compared with those based on LNG in terms of economic viability. The project proponent further stated that 50% of the power to be generated shall go to the State Govt.

It was noted that first phase of the project is based on harvested rain water. But no detail analysis of water availability and viability report has been submitted even though the proposal is for consideration of environmental clearance. The Committee observed that the fuel and water requirement of a power plant is also not clear. The surface water quality analysis report indicated low pH (about 5.75) and no satisfactory answer was provided. The Committee expressed serious reliability of the data presented.

It was also noted that with regard to AAQ, PM<sub>2.5</sub> and PM<sub>10</sub> were not monitored even though it is a statutory requirement as per revised National Ambient Air Quality standards of 2009. The Committee also noted that the project site is in a valley and the impact on AAQ of the area particularly due to NO<sub>x</sub> emission has been inadequately addressed.

The Committee noted that about 360 acres of land is to be allotted by the Govt. of Maharashtra for which land use pattern, socio economic profile and livelihood vocation of the land owners is not available. The Committee therefore decided that the project proponent shall formulate detailed R&R plan along with time bound scheme for its implementation and shall submit land use details as per revenue records for the entire 420 acres of land involved.

The Committee discussed the issues raised in the Public Hearing and the responses made by the project proponent. The major issues raised were regarding land acquired by Govt. and sold to private industry at cheap rate eventually land owners deprived of adequate compensation; demand for power supply; forest land in project area; return of land in the event industry does not procure land acquired through Govt.; area an eco-sensitive zone; employment of locals; training for youth for eventual employment; measures for local tribals in the area etc. The project proponent informed that there were no litigation pending pertaining to the power project.

In view of the above, the Committee decided that information / documents on the following shall be for reconsideration of the proposal.

- i) Study report including design details of water reservoir for storage of rain water for the use of first phase of the power project. In addition detailed analysis on the availability of water for the remaining phases especially during lean season taking into account the flow available in river from where water is to be drawn considering the riparian needs and the storage capacity for meeting the lean season requirement shall be prepared and report submitted;
- ii) Permission for treatment of waste water at CETP, Taloja;
- iii) Surface water quality needs to be rechecked as the values of pH reported are low.
- iv) NO<sub>x</sub> emissions shall be achieved below 50mg/Nm<sup>3</sup> for which guarantee from supplier shall be obtained.
- v) Action plan to undertake long term study on impacts due to NO<sub>x</sub> on the chemistry of the upper atmosphere;
- vi) Details of Flora and Fauna in the study area;
- vii) Socio economic study of the study area with a CSR Action Plan and scheme to facilitate sustainable alternative livelihood of PAPs. In addition details of R&R plan along with time bound scheme of implementation

- shall be submitted along with land use details as per revenue records for the entire 420 acres involved;
- viii) Details of forests land involved in the project site;
  - ix) Details of court case as mentioned in the Public Hearing;
  - x) Action plan for implementation of issues raised in the Public Hearing;
  - xi) AAI clearance for installation of Stacks;
  - xii) In view of the above details, EIA/EMP report should be revised and submitted to the Ministry.

*The proposal was accordingly deferred for reconsideration at a later stage after receipt of the above information / documents sought.*

**2.12 2x660 MW Coal Based Thermal Power Project of M/s Karanpura Energy Ltd. at villages Turundu&Poje, in Tehsil Kamdara, in District Gumla, in Jharkhand - reg. TOR reconsideration.**

The proposal was earlier considered for determination of Terms of Reference for undertaking EIA/EMP study as per the provisions of EIA Notification, 2006, in the 44<sup>th</sup> Meeting of the Committee held during March 5-6, 2012, wherein the Committee noted that the proposed site appears to be in tribal area and also comprises about 35 acres of forest land which needs to be deleted. The Committee also observed that the original topo-sheet shall be presented as the map provided during the presentation had no clarity. The Committee had also decided that the project proponent shall submit a letter from the Revenue Department stating that no forest land is involved for the proposed site. It was also decided that details of tribals affected by the project directly or indirectly shall be identified.

In view of the above the proposal was deferred for reconsideration at a later stage.

The project proponent along with its consultants M/s PFC Consulting Ltd. & M/s Mecon Ltd. gave a presentation and provided the following information:

The present proposal is for setting up of 2x660 MW Coal Based Thermal Power Project at villages Turundu&Poje, in Tehsil Kamdara, in District Gumla, in Jharkhand. Land requirement will be 1100 acres, of which 250 acres is single crop agriculture land; 35 acres is forest land; 150 acres is waste land; 615 acres is revenue land; and 150 acres is other specified land (GM/GMAM land). The co-ordinates of the plant site are located in between Latitude 22°52'56" N to 22°54'32" N and Longitude 84°57'40" E to 84°58'45" E. Domestic coal requirement will be about 5.21 MTPA and will be obtained from the Mourya Coal Block, located at a distance of 150 Kms. Coal will be transported by rail. Water requirement of 40 MCM will be sourced from the South Koel River through a pipeline at a distance of 10Kms from the project site. There are no



National Parks, Wildlife Sanctuaries, Heritage Sites, Tiger/Biosphere reserves etc. within 10 km of the site. About 350 homestead oustees and 150 land oustees will be affected from the project site.

On receipt of the information / clarification sought the same was taken up again.

The project proponent reiterated that about 34.95 acres of forest land will be involved, for which, application for diversion of forest land has been submitted to the Forest Department. The Committee noted that prima facie the site can be agreed for location of a thermal power plant.

The project proponent informed the Committee that they have started collection of data for the period from April – June, 2012 as in July onwards monsoon will start. Therefore, the proponent requested to accept the data for preparation of EIA report.

The Committee noted the request and agreed that the request can be acceded to.

Based on the information provided and presentation made, the Committee prescribed the following specific TOR over and above the standard TORs as at **Annexure-A1** for undertaking detailed EIA study and preparation of EMP.

- i) Additional green belt of 200-250 m width to be developed adjacent to the sides facing Sal forests;
- ii) Geological map of the site along with details of mineralogy submitted;
- iii) Scheme for regeneration and preservation of village ponds in the study area shall be formulated;
- iv) Diversion of community land to be strictly in accordance with the rules and approval of Panchayat/Gram Sabha shall be obtained for acquisition of Panchayat/Gam Sabha / Community land (as may be applicable).

**2.13 5x400 MW Gas Based Combined Cycle Power Project of M/s GMR Kakinada Energy Pvt. Ltd. at Komaragi village, in East Godavari Distt., in Andhra Pradesh - reg. extension of TOR validity.**

M/s GMR Kakinada Energy Pvt. Ltd was accorded TOR for its proposed 5x400 MW Gas Based CCPP of M/s GMR Kakinada Energy Pvt. Ltd. at Komaragi village, in East Godavari Distt., in Andhra Pradesh on 27.04.2010.

M/s GMR Kakinada Energy Pvt. Ltd informed that the power project is in advanced stage of implementation and 100% land has already been acquired. However, since the intake and outfall location is common for both this plant

and the plant of M/s GMR Coastal Energy Pvt. Ltd, and the location of these facilities need to be changed due to change in layout of proposed KSEZ Port, from where the facilities are proposed to be setup. The company has therefore requested for extension of TOR validity for a period of one more year.

**The Committee informed the project proponent of a Circular issued by the Ministry of Power regarding NELP Gas production and subsequent advice not to plan projects based on domestic gas till 2015-16.**

The Committee decided that the project proponent shall submit to the Ministry, response in writing to the circular of Ministry of Power before extension of validity of TOR.

The Committee noted the request and decided that the same can be agreed to as the engineering details for certain facilities invariably require modifications due to compelling physical reasons. Accordingly the Committee recommended that MoEF may take up further necessary action in their regard.

**2.14 9x700 MW Coal Based TPP of M/s GMR Energy Ltd. at Ontimavadi village, in East Godavari Distt., in Andhra Pradesh - reg. extension of TOR validity.**

M/s GMR Energy Ltd was accorded TOR for its proposed 9x700 MW Coal Based TPP of M/s GMR Energy Ltd. at Ontimavadi village, in East Godavari Distt., in Andhra Pradesh on 27.04.2010.

M/s GMR Energy Ltd informed that the power project is in the advanced stage of implementation. However, since the intake and outfall location is common for both the plants and the plant of M/s GMR Kakinada Energy Pvt. Ltd., and the location of these facilities need to be changed due to change in layout configuration of proposed KSEZ Port, from where the facilities are proposed to be setup. The company therefore requested for extension of TOR validity for a period of one more year.

The Committee noted the request and decided that the same can be agreed to. Accordingly the Committee recommended that the Ministry may do the needful.

**2.15 Clarification/ amendment of environmental clearance issued for 1x43 MW Captive TPP of M/s Arasmeta Captive Power Company Pvt. Ltd. at Gopalnagar, in Janjgir-Champa Distt., in Chhattisgarh - reg.**

M/s Arasmeta Captive Power Company Pvt. Ltd. were accorded environmental clearance on 18.02.2009 for its 1x43 MW (Phase-II) Captive Thermal Power

Plant at Gopalnagar, in Janjgir-Champa Distt., in Chhattisgarh. The coal was to be sourced through e-auction.

M/s Arasmeta Captive Power Company Pvt. Ltd. now informed the Ministry that they have been granted long term coal linkage and LoA for supply of 2.181 LTPA of coal was issued by M/s SECL on 03.06.2010. The company therefore requested the Ministry for amendment in the environmental clearance in order to enable them to sign FSA with M/s SECL.

The Committee recommended for amendment in environmental clearance due to change of source of coal from e-auction to M/s SECL.

**2.16 Clarification/ amendment of environmental clearance issued for 2x300 MW Coal Based TPP of M/s Dhariwal Infrastructure Pvt. Ltd. at MIDC Industrial Area, at village Tadali, in Chandrapur Distt., in Maharashtra - reg.**

M/s Dhariwal Infrastructure Pvt. Ltd. were accorded environmental clearance for its 2x300 MW Coal Based Thermal Power Plant at MIDC Industrial Area, at village Tadali, in Chandrapur Distt., in Maharashtra on 04.12.2009.

The Ministry has received a letter from the Chief Engineer (CE), Water Resources Deptt., Nagpur seeking confirmation to the interpretation by M/s Dhariwal Infrastructure Pvt. Ltd. of a condition prescribed in the environmental clearance letter at condition no. (ii), extracted as under:

“The two radial wells shall be constructed maintaining a distance of atleast 450 m between them and atleast 500 m from the nearest habitation / village boundary”.

The CE, WRD, Nagpur informed that M/s Dhariwal Infrastructure Pvt. Ltd. has started construction of the wells on the understanding that ‘the well location should be 500 m away from the nearest habitation boundary’ as any location at 500 m from a village boundary will fall into another village territory.

The Committee observed that the understanding of the project proponent is valid and recommended that the Ministry may like to confirm accordingly.

**2.17 5x800 MW Imported Coal Based TPP and 60 MLD De-salination Plant of M/s Nana Layja Power Co. Ltd. at Mota Layja village, in Kutch Distt., in Gujarat - reg. amendment of TOR clause no. (vii).**

M/s Nana Layja Power Co. Ltd. was issued TOR for its 5x800 MW Imported Coal Based TPP and 60 MLD De-salination Plant at Kutch Distt., in Gujarat on 28.12.2011.

The condition no. (vii) of the TOR prescribes as under:

“A macro analysis of impact due to power plants likely to be coming up in within 150 Kms range shall be carried out”.

The project proponent requested that the study required to be conducted as specified in TOR condition no. (vii) would be too large and may be as good as a conducting a Regional EIA study. Therefore, it may not be reasonably possible to carry out macro analysis of the area by single project proponent.

The Committee clarified that the project proponent is expected to carry the study based on the secondary data and the request for deletion/amendment of the TOR condition is not acceptable.

#### **2.18 2000 MW Gas Based TPP of M/s Nana Layja Power Co. Ltd. at Godhra village, in Kutch Distt., in Gujarat - reg. TOR**

The project proponent have sent prior information of its inability to be present in the meeting and have requested deferring the matter. Accordingly the proposal was deferred.

#### **2.19 2x660 MW Coal Based Thermal Power Plant of M/s DB Power (Madhya Pradesh) Ltd. at village Gorgi, in Deosar Tehsil, in Singrauli Distt., in Madhya Pradesh - reg. Amendment in environmental clearance.**

M/s D.B. Power (Madhya Pradesh) Ltd. were accorded environmental clearance for domestic coal based 1x660 MW TPP at village Gorgi, in deosar Taluk, in Singrauli Distt., in Madhya Pradesh on 09.09.2010.

Specific condition no. (i) of the environmental clearance letter states as under:

*“Environmental clearance shall be applicable for 1x660 MW. However at a later stage when firm coal linkage for second unit of 660 MW is also available, the project proponent may request the Ministry for inclusion of the second unit of 660 MW, which the Ministry may consider suitably”.*

M/s DB Power (Madhya Pradesh) Ltd. informed that since domestic coal linkage is not available, they have entered into an agreement for supply of imported coal through a MoU with M/s Dynamic Concepts PTE Ltd., Singapore

for supply of Indonesian coal through Paradip Port located at about 1053 kms distance from the plant site. Ash and sulphur contents of the imported coal will be 24.08% and 0.4% respectively.

The Committee noted that information on Port handling capacity and concurrence of Port Authority as well as transportation of coal by rail including rolling stock availability and confirmation from the Ministry of Railways etc. is not available.

The Committee also observed that even for the existing thermal power plants all over the country, rail transportation of coal in terms of logistics of coal movement has huge difficulties and is the major bottle neck faced by power generators. The Committee therefore decided that unless firm confirmation from the Railways is obtained in writing regarding imported coal transportation from Paradip Port the request is premature for consideration. The Committee also advised that the project proponent shall obtain confirmation from the Port Authority for imported coal handling (dedicated berth).

The Committee also decided that the project proponent shall submit its Board's Resolution along with agenda note pertaining to the present request. On receipt of the above information, the matter would be reconsidered by the Committee at a later date.

**2.20 2x150 MW Coal Based Thermal Power Plant of M/s Nagai Power Ltd. at village Okkur, in Kelvelur Taluk, in Nagapattinam Distt., in Tamil Nadu - reg. Amendment in environmental clearance by change in source of fuel.**

M/s Nagai Power Ltd. were accorded environmental clearance based on imported coal for its 2x150 MW Coal Based TPP at village Okkur, in Kelvelur Taluk, in Nagapattinam Distt., in Tamil Nadu by the SEIAA, Tamil Nadu on 27.05.2010. The Department of Environment, Govt. of Tamil Nadu transferred the file of the power project to the Ministry vide its letter dated 22.03.2012 on the request of the project proponent for amendment of the environmental clearance since the SEIAA / SEAC was being reconstituted as its term expired.

M/s Nagai Power Ltd. informed the Committee that they have been issued LoA by M/s Mahanadi Coalfields Ltd. and now intend to use domestic coal and imported coal in the ratio of 70:30. The Company therefore requested for amendment in the environmental clearance order dated 27.05.2010.

The matter was placed before the Committee for its views.

The Committee observed that while ash contents may increase from 12% to 34%, sulphur content has been reduced from 0.8% to 0.56%. Also coal

consumption (blended) has increased from earlier 1.2 MTPA (100% imported) to 1.47 MTPA (70:30 ratio blending).

The Committee observed that the request could be agreed to subject to strict compliance of 100% fly ash utilisation from 4<sup>th</sup> year onwards and accordingly the project proponent shall submit firm MoU signed with contracting cement manufacturers / parties to the Ministry.

**2.21 1x800 MW (Stage-III), North Chennai TPP of M/s Tamil Nadu Generation & Distribution Corporation Ltd. at villages Ennore & Puzhuvakkam, in Ponneri Taluk, in Thiruvallur Distt., in Tamil Nadu - reg. TOR.**

The proposal was considered for determination of terms of reference for undertaking EIA/EMP study as per the provisions of EIA Notification, 2006. The project proponent along gave a presentation and provided the following information:

The present proposal is for setting up of 1x800 MW Imported Coal Based Thermal Power Plant (Stage-III) within the existing premises of North Chennai Thermal Power Station at villages Ennore & Puzhuvakkam, in Ponneri Taluk, in Thiruvallur Distt., in Tamil Nadu. About 190 acres of land is available with the NCTPS complex for setting up the unit. Chennai city is at about 30 Kms distance. Ennore Port is about 2 Kms from the site. It is also envisaged to use 70:30 (imported: domestic) ratio coal. Cooling water requirement will be met from the sea. Closed cycle cooling system will be adopted. Raw water requirement of 2 MGD will be met from the Chennai Metro Water Supply & Sewerage Board. In Stage-I & Stage-II TPPs, are once through cooling system has been adopted. Existing cooling water intake arrangement is sufficient for Stage-III as well. Coal will be obtained through closed conveyor belt from the Port. Cost of the project will be about Rs 4800 Crores.

Based on the information provided and presentation made, the Committee prescribed the following specific TOR over and above the standard TORs as at **Annexure-A1& A2** for undertaking detailed EIA study and preparation of EMP.

- i. AAQ for one year data shall be provided and a comprehensive EIA report encompassing Stage-I & II shall be prepared;
- ii. Cumulative impacts of all the stages of TPP on the AAQ shall be assessed.
- iii. Drinking water quota shall not be diverted for water requirement of the power plant. In case CMWSSB water is to be used, a confirmation from them shall be furnished stating that there will be no impact on drinking water supply due to diversion / allocation of water for the power plant.
- iv. The coal from the port to the Thermal Power plant shall be transported by the pipe conveyors.

- v. The project proponent shall explore setting up its own desalination plant and enhancing the supply of drinking water in the study area;
- vi. Comprehensive Marine EIA shall be prepared and presented.

**2.22 Guidelines for categorization of Category B project into B1 and B2 - reg.**

The Committee desired that a background note on the matter for discussion shall be prepared and circulated among the Committee members.

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

*It was decided that the next meeting of the Committee will be held during 5,6 & 7 May, 2012 at Mumbai.*

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**Terms of Reference (TOR) :**

- i) Vision document specifying prospective long term plan of the site, if any, shall be formulated and submitted.
- ii) Status of compliance to the conditions stipulated for 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, alongwith 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/ organisation 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 alongwith 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 utilisation 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.
  - xxxi) 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.

- xxxii) 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.
- xxxiii) Assessment of occupational health as endemic diseases of environmental origin shall be carried out and Action Plan to mitigate the same shall be prepared.
- xxxiv) 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.
- xxxv) 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), SO<sub>2</sub>, NO<sub>x</sub>, Hg and O<sub>3</sub> (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.
- xxxvi) 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 modelling 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 auxillary 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.
- xlii) 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.
- xliii) 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.
- xliv) 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.
- xlv) 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.
- xlvi) 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.
- xlvii) 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.
- xlviii) 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.

xlix) 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.

- l) 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 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.

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