

**MINUTES OF THE 60<sup>TH</sup> MEETING OF RE-CONSTITUTED EXPERT APPRAISAL COMMITTEE ON ENVIRONMENTAL IMPACT ASSESSMENT OF THERMAL POWER AND COAL MINE PROJECTS**

The 60<sup>th</sup> Meeting of the reconstituted Expert Appraisal Committee (Thermal) was held during **November 5-6, 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. S.D. Attri   | - | Member           |
| 8. | Dr. Saroj        | - | Member Secretary |

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

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

The deliberations held and the decisions taken are as under:

**DATE: 05.11.2012.**

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

The minutes of the 58<sup>th</sup> Meeting held during October 8-9, 2012 were confirmed with some minor changes noticed/suggested.

It was also brought to the notice of the Committee that in the minutes of the 56<sup>th</sup> meeting held during September 3-4, 2012, in the item at Sl. No. 2.23 pertaining to 2x800 MW Coal Based Thermal Power Plant of M/s NTPC Ltd. in Raigarh Distt., in Chhattisgarh there are few inadvertent mistakes in the land requirement and others which need correction. The Committee noted that land requirement for Phase-I need to be read as 1205 acres and ultimate land requirement as 2857 acres. It was noted that MGR system of rail transportation was for a distance of 60 kms and not 6 kms. The cost of the project will be Rs 9568.27 crores and not Rs 6996.0 crores as noted earlier. It was informed that Tailaipalli Coal Block has been recommended for the project but yet to be accorded environmental clearance. Existing ITI shall be upgraded.

It was decided that appropriate corrections as detailed above shall be made in the said minutes.

## **2.1 Expansion by addition of 2x660 MW Coal based Obra 'C' TPP of M/s UPRVUNL at Obra Thermal Power Station, District Sonebhadra, in Uttar Pradesh - reg. Environmental Clearance.**

The proposal is for consideration for environmental clearance. The project proponent made a presentation along with its consultant **M/s EQMS India Pvt. Ltd., Delhi** and provided following information:

The proposal is for expansion by addition of 2x660 MW (Unit-14 & Unit-15) Coal Based Obra 'C' TPP at Obra Thermal Power Station, Robertsganj Tehsil, District Sonebhadra, in Uttar Pradesh. Status of the existing units are: Unit-1 of 50 MW commissioned in 1967 and in operation after renovation in 2009; Unit-2 of 50 MW commissioned in 1968 and in operation after renovation in 2009; Unit-3,4 & 5 of 50 MW each which has now been scrapped; Unit-6 of 100 MW commissioned in 1973 which has also been scrapped; Unit-7 of 94 MW commissioned in 1974, which is not in operation (R&M works scheduled to be completed by Dec, 2012); Unit-8 of 100 MW commissioned in 1975 which is closed and under process of being de-rated to 94 MW; Unit-9 of 200 MW commissioned in 1980 and in operation after renovation in Aug 2011; Unit-10 of 200 MW commissioned in 1979 which is presently not in operation (R&M works scheduled to be completed by Feb, 2015); Unit-11 of 200 MW commissioned in 1977 is not in operation (R&M works scheduled to be completed by Feb, 2015); Unit-12 of 200 MW commissioned in 1981 and in operation (and due for R&M works); Unit-13 of 200 MW commissioned in 1982 and in operation (due for R&M works). Additional land requirement for the expansion will be 550 acres, which is within the existing premises. The co-ordinates of the site are located within Latitude 24°26'47.21" N to 24°27'21.29" N and Longitude 82°58'59.13" E to 82°59'14.74" E. Coal requirement will be 7.0 MTPA. Coal will be obtained from Chendipara-I and Chendipara-II coal Block, which has been allocated and LOA was issued on 25.07.2007. Environmental clearances for the coal blocks area awaited. Ash and sulphur contents in coal will be 32% and 0.4% respectively. About 1.792 MTPA of flyash and 0.448 MTPA of bottom ash will be generated. Agreement for flyash utilization has been signed with M/s Jaiprakash Associates Ltd. No additional ash pond area is required for expansion project and existing ash pond area is about 72 ha and co-ordinates of the ash pond site is located within Latitude 28°0'48.67" N and Longitude 78°6'10.65" E. Twin flue Stack of 275m shall be provided. Induced Draft cooling system will be installed. Additional water requirement of 35 cusecs will be sourced from the Obra Dam at Rihand River (upstream) through a canal at a distance of about 2 km from the project site. Approval for water withdrawal from M/s Uttar Pradesh Jal Vidyut Nigam Ltd. has been obtained. Gurma forest and Kaimur Wildlife Sanctuary is present

within 10 km of the project site. Public Hearing was held on 18.12.2008. Cost of the project will be Rs.8777.709 Crores.

The Committee was informed that M/s UPRVUNL had approached the Ministry for change in configuration from 2x500 MW to 2x660 MW for the proposed expansion. The matter was discussed in the 36<sup>th</sup> Meeting of the Committee held during November 14-15, 2011. The Committee in the said meeting had decided that while the request can be agreed to, the project proponent shall revise its EIA / EMP Report in consonance with the changed scenario and also take into consideration the cumulative impact of all present and future sources of environmental pollutants in the study area. Revise Form-I compliance to the conditions stipulated for the existing power plant shall also be submitted along with the revised EIA/EMP Report. The Committee decided that the Ministry may communicate the above decision to the project proponent.

The Ministry vide its letter no. J-13012/144/2007-IA.II(T), dated 30.01.2012 had sought the requisite information and the same has been submitted in part compliance only on October 20, 2012. The revised Form-I mentions that the proposal does not involve approval/ clearance under Wildlife (Protection) Act, 1971 which may be factually incorrect as a notified sanctuary is located in close vicinity. The revised Form-I also mentions that there will be no cumulative effect due to proximity to other existing or planned projects with similar effects, which needs to be further clarified.

*The Committee decided that the project proponent shall submit copy of application for clearance/approval to the Standing Committee of the National Board of Wildlife.*

*The Committee noted that the area is in an identified critically polluted area and the cumulative impact assessment need to have been carried out as decided in the aforementioned 36<sup>th</sup> Meeting held during November 14-15, 2011. That the cumulative impact assessment shall also take into consideration impact on source of water to the downstream recipients.*

*It was observed that the project proponent also needs to take into account the action plan for the critical polluted area formulated by the State Pollution Control Board and integrate with the project proposal.*

The Committee also noted that public hearing was held in 2008 with data of AAQ collected in 2007-2008. The Committee noted that the project proponent did not felt the necessity to detail out the issues raised earlier and responses made in its presentation.

*It was observed that the green belt development in and around the thermal power station seem dismal and the project proponent seem to have not given any serious attention in developing the same. The Committee therefore decided that*

*the project proponent shall submit a detailed action plan along with budget allocation for development of green belt in a time bound manner and consisting of an in-built monitoring mechanism.*

*The Committee also observed that the project proponent shall submit action plan for ecological restoration of ash dumps for which they may seek the assistance of Dr.,C.R. Babu, Member, EAC and Emeritus Professor, University of Delhi. It was also observed that the ash pond seem very close to river and overflow from ash pond during monsoon cannot be ruled out. An action plan for mitigative measures of occurrence of such a case shall therefore be submitted.*

*The Committee also took note of the coal issue and desired that the Ministry should look into, whether the present proposal conforms to the circulars issued by the Ministry on 01.11.2010 and 19.04.2012.*

***The Committee decided that the project proponent shall go for fresh public hearing based on revised EIA/EMP incorporating issues flagged above and reapply for consideration for environmental clearance.***

***In view of the above the Committee decided that the project proposal should submit all the details as sought. As would take some time, meanwhile the project would be delisted from the pendency list.***

## **2.2 4000 MW Ultra Mega Thermal Power Plant of M/s Deoghar Mega Power Ltd. at Husainabad and 10 other villages, in Devipur Division, in Deoghar Distt., in Jharkhand - reg. TOR.**

The proposal was considered for determination of terms of reference (TOR) for undertaking EIA/EMP study as per the provisions of EIA Notification, 2006. The project proponent gave a presentation through its consultant M/s Tata Consulting Engineers, Bangalore and provided the following information:

The proposal is for setting up of 4000 MW Ultra Mega Thermal Power Plant at village Husainabad and 10 other villages, in Devipur Division, in Deoghar Distt., in Jharkhand. Land requirement will be 2600 acres which comprises of 450 acres of revenue land; 100 acres of forest land; 1950 acres of single crop agriculture Land; and 100 acres of waste land. The site for the UMPP was identified by the team of CEA, PFC in consultation with State Govt. of Jharkhand. The co-ordinates of the site are located in between Latitude 24°20'42.84" N to 24°22'7.17" N and Longitude 86°35'31.07"E to 86°37'1.14"E. Coal requirement will be 18-20 MTPA. Water requirement will be restricted to norms set by CEA and will be sourced from Ajay River through a pipeline at a distance of 11 km from the project site. There will be about 450 project affected families consisting of about 2500 population in total. There are no National Parks, Wildlife Sanctuaries, and Tiger/Biosphere Reserves etc. within 10 km of

the site. There are 450 project affected families and 2500 population will be affected.

*The Committee noted that land required is very large and need to be optimized. It was decided that forests area shall be either deleted or submit reduce and revised layout with new co-ordinates. The question of compliance with the rights of tribal was also felt necessary to be identified and mechanism compliance thereof shall be submitted.*

*The Committee also noted that availability of water requirement for the project seems to be questionable as in-principle approval of water allocation is only 80 MCM against the requirement 106 MCM. It was also noted that a barrage is being proposed in Ajay River for which a detail separate EIA - Basin River study reputed institutes like IIT, Roorkee need to be undertaken on the impact of drawl of water for the proposed. The Committee therefore decided that a separate EIA for the construction of the barrage shall be submitted.*

*It was also decided that third party verification by CWC for water availability of the UMPP shall be obtained and submitted along with CWC data on Ajay River for the past 3-4 decades.*

*The Committee agreed that for such a large project, a detailed cumulative impact assessment on air, water and soil due to the proposed UMPP and other industrial activity in existence or proposed in the area of 15 Kms radius of the UMPP need to be prepared.*

*The Committee noted that the PAPs seem fairly large and the project may entail untold human suffering. It was therefore decided that a comprehensive Social Impact Assessment by an Institute like Tata Institute of Social Science or any other institute of repute shall be carried out and report submitted.*

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

- i) Forests area shall be either deleted or if not feasible, reduced and revised layout with new co-ordinates shall be submitted.
- ii) Rights of tribals shall be identified and mechanism of compliance thereof shall be submitted.
- iii) A detailed separate EIA - Basin River study by an institute of repute like IIT, Roorkee on the impact of drawl of water for the proposed UMPP on the other competing sources downstream of the proposed barrage shall be carried out and submitted.

- iv) Third party verification by Central Water Commission (CWC) for water availability for the UMPP shall be obtained and submitted along with CWC data on Ajay River for the past 3-4 decades shall be submitted.
- v) Detailed cumulative impact assessment on air, water and soil due to the proposed UMPP and other industrial activity in existence or proposed in the area of 15 Kms radius of the UMPP shall be prepared and submitted.
- vi) A comprehensive Social Impact Assessment by an Institute like Tata Institute of Social Science or any other institute of repute shall be carried out and report submitted.

**2.3 2x660 MW Coal Based Thermal Power Project of M/s Patratu Energy Ltd. (a joint venture with M/s JSEB) at village Patratu, in Ramgarh Distt., in Jharkhand - reg. TOR.**

The proposal was considered for determination of terms of reference (TOR) for undertaking EIA/EMP study as per the provisions of EIA Notification, 2006. The project proponent gave a presentation along with its consultant **M/s Tata Consulting Engineers, Bangalore** and provided the following information:

The proposal is for setting up of 2x660 MW Coal Based Thermal Power Project at village Patratu, in Ramgarh Distt., in Jharkhand. Land requirement will be 1050 acres which is already in possession of Jharkhand State Electricity Board. The co-ordinates of the site are located in between Latitude 23°36'49.65" N to 23°37'20.14" N and Longitude 85°15'58.34" E to 85°16'44.61" E. Coal requirement will be 6.3 MTPA. Water requirement of 37 MCM will be sourced from Patratu Reservoir of M/s JSEB through a pipeline at a distance of 1.5 km from the project site. There are no National Parks, Wildlife Sanctuaries, and Tiger/Biosphere Reserves etc. within 10 km of the site.

The Committee noted that the present proposal is being proposed in the premises of the existing Patratu Thermal Power Station of M/s Jharkhand State Electricity Board (JSEB) and the land belongs to JSEB. There are 10 existing units of JSEB in the Patratu Thermal Power Station out of which Unit-1,2,3&4 is 50 MW, Unit 5&6 is 100 MW and Unit 7,8,9&10 is 110 MW, of which only Unit 4,6&10 are operational at present. *The Committee therefore noted that the present case is more of an expansion of the existing units and cannot be termed a green field project as claimed by the project proponent.*

The Committee also noted that the area has large number of mines in operation and highly polluted. That the existing units of JSEB are very old and may have outlived its life and a life cycle assessment of the old units is a necessity. The Committee therefore desired that M/s JSEB shall furnish full details of the existing units and come out with full facts on the joint venture.

*The Committee further noted that the existing site does not prima facie seem to meet the siting criteria for a thermal power plant and therefore decided that layout of the site indicating complete details of proposed location of the 2x660 MW and the old units shall be furnished. It was further decided that compliance of the environmental regulations for the thermal power station shall be submitted.*

In view of the above the proposal was deferred for re-consideration at a later stage.

**2.4 3x800 MW Super-Critical TPP of M/s Odisha Thermal Power Corpn. Ltd. at village Kamakhyanagar, in Dhenkenal Distt., in Odisha - reg. TOR.**

The Committee noted that neither the project proponent nor its representative were present in the meeting. The matter was accordingly deferred for re-consideration at a later stage.

**2.5 2x600 MW Singhitarai TPP of M/s Athena Chhattisgarh Power Ltd. at village Singhitarai, Dabhara Tehsil, Janjgir-Champa Distt., in Chhattisgarh - reg. Amendment in EC.**

M/s Athena Chhattisgarh Power Ltd. was accorded environmental clearance for its 2x600 MW Singhitarai TPP at village Singhitarai, Dabhara Tehsil, Janjgir-Champa Distt., in Chhattisgarh on 04.06.2010.

M/s Athena Chhattisgarh Power Ltd.(M/s ACPL)requested the Ministry for increase in land required for the main plant area of the project from 850 acres to 871.475 acres excluding the 80 acres for external facilities. M/s ACPL has also requested that township will be developed at a new site in an area of 35.77 acres. That the total land required for the power project will be now 1043.43 acres in lieu of 930 acres mentioned in the environmental clearance accorded for the power project. It was also informed that out of additional 113.43 acres requested about 39 acres is forests land for which forestry clearance is required.

The Committee noted that the request cannot be viewed in isolation and the social and environmental implications need a detail deliberation. The details regarding use of common property resource such as grazing land, forests land etc. is unavailable and these need to be submitted with full facts.

The Committee therefore decided that the project proponent shall advertise in two local newspaper of highest circulation in local language and call for objections from stake holders on the issue and disclosing the necessity for the

requirement of the additional 113.43 acres. It was further decided that after receipt of objections the matter be brought back to the Committee. Accordingly the request was deferred.

**2.6 165 MW Combined cycle power Plant of M/s BSES Kerala Power Ltd. at Udyogmandal in Eloor municipality of Ernakulam Distt., in Kerala - reg. Amendment in EC.**

The Committee noted that neither the project proponent nor its representative were present in the meeting. Accordingly the matter was deferred.

**2.7 20.5 MW Cogeneration Power Plant of M/s Rajshree Sugars and Chemicals Ltd. at Semmedu, Villupuram Distt., in Tamil Nadu- reg. Amendment in EC.**

The Committee noted that neither the project proponent nor its representative were present in the meeting. Accordingly the matter was deferred.

**2.8 2000 MW Natural gas based Combined Cycle Power Plant of M/s Urban Energy Generation Pvt. Ltd. (UEGPL) at Dronagiri, Navi Mumbai, Distt. Raigad, in Maharashtra - reg. Extension of validity of EC.**

M/s Urban Energy Generation Pvt. Ltd. was accorded environmental clearance for its 2000 MW natural gas based Combined Cycle Power Plant proposed at Dronagiri, Navi Mumbai, in Raigad Distt., in Maharashtra on 02.01.2008.

M/s Urban Energy Generation Pvt. Ltd. informed that various clearances and approvals required for setting up the power plant have been obtained. That studies required for setting up the power have been completed but firm allocation of natural gas has not been obtained as yet due to which project is getting delayed. M/s Urban Energy Generation Pvt. Ltd, have therefore requested for extension of validity period of the environmental clearance for a period of further five years.

The matter was placed before the Committee for its views.

*The Committee noted that the request can be agreed as allocation of gas is an issue in public domain and the project proponent cannot be faulted for the delay caused due to uncertainty of gas availability. The Committee therefore decided that the Ministry may extend the validity of EC by further five years in accordance with the provisions of EIA, notification 2006. It was also decided that*

*in doing so the Ministry may ensure that conditions which were not stipulated earlier but pertinent now may be incorporated.*

**2.9 2x600 MW Raghunathpur Thermal Power Station of M/s Damodar Valley Corpn. Ltd. at Purulia, in West Bengal –reg. Extension of validity of EC.**

M/s Damodar Valley Corpn. Ltd. was accorded environmental clearance for its 2x600 MW Raghunathpur Thermal Power at Purulia, in West Bengal on 18.10.2007.

M/s Damodar Valley Corpn. Ltd. informed that due to delay in acquisition of land as a result of protest by landowners, labour unrest, and other technical issues, delay is caused in implementation of the project. However, the construction activities of the project at present have picked up but a substantial time is required for balance land acquisition and construction therein. M/s Damodar Valley Corpn. Ltd. has therefore requested for extension of validity period of environmental clearance for further period of four years.

The matter was placed before the Committee for its views.

The Committee noted the physical progress of the work at project site as presented by M/s Damodar Valley Corpn. Ltd.

The Committee noted that the request can be agreed as major delay appears to have been caused due to reasons beyond the control of the project proponent. *The Committee therefore decided that the Ministry may extend the validity of EC by further five years in accordance with the provisions of EIA, notification 2006. It was also decided that in doing so the Ministry may ensure that conditions which were not stipulated earlier but pertinent now may be incorporated.*

**2.10 4x660 MW Super Critical Coal Based TPP of M/s Bhandara Thermal Power Corporation Ltd. at village Rohana, Mohadi Taluk, Bhandara Distt., in Maharashtra– reg. Extension of validity of TOR.**

The Committee noted that neither the project proponent nor its representative were present in the meeting. Accordingly the matter was deferred.

**2.11 5x800 MW Super-Critical Coal Based Vadarevu TPP of M/s APGENCO Ltd. at village Kanuparthi, Naguluppalapadu Mandal, Prakasam Distt., in Andhra Pradesh- reg. Extension of validity of TOR.**

M/s APGENCO Ltd. was prescribed TOR for its 5x800 MW Super-Critical Coal Based Vadarevu TPP at village Kanuparthi, Naguluppalapadu Mandal, Prakasam Distt., in Andhra Pradesh on 07.10.2010.

M/s APGENCO Ltd. requested the Ministry for extension of validity of TOR. M/s APGENCO Ltd. informed that marine EIA studies by NIO, Visakhapatnam, Hydrogeology studies by NIH, Kakinada, CSR and R&R studies on impact on fishing community are getting delayed as a result of which the EIA for the project could not be finalized. M/s APGENCO Ltd. has therefore sought extension of validity period of TOR.

The matter was placed before the Committee for its views.

*The Committee noted that the request can be agreed and extension of one more year can be given. It was also decided that in doing so the Ministry may ensure that TOR conditions which were not stipulated earlier but pertinent now may be incorporated.*

**2.12 1980 MW Coal Based Power plant of M/s J R Power Gen Pvt. Ltd. at village Baija, in Kishorenagar Tehsil, in Angul Distt., in Odisha-reg. Extension of validity of TOR.**

M/s J R Power Gen Pvt. Ltd. was prescribed TOR for its 1980 MW coal based Power plant at village Baija, in Kishorenagar Tehsil, in Angul Distt., in Odisha on 07.10.2010.

M/s J R Power Gen Pvt. Ltd. has requested the Ministry for extension of validity of TOR for one more year. M/s J R Power Gen Pvt. Ltd. informed that draft EIA report is completed for conduct of public hearing and Stage-I forest clearance for the linked coal block i.e. Naini Coal Block is in process, which will take time and is a pre-requisite for obtaining EC for the power plant.

The matter was placed before the Committee for its views.

*The Committee noted that the proposed power project is in an identified critically polluted area where moratorium in existence has recently been lifted. The Committee therefore decided that while their present request can be agreed, the project proponent shall ensure that the EIA /EMP Report takes into account the action plan formulated by the State Pollution Control Board for the area and integrate with the project.*

*The Committee therefore decided that while extending one more year for the validity period of the TOR, the Ministry may ensure that the above factor is accounted and complied with by the project proponent. It was also decided that*

*TOR conditions which were not stipulated earlier but pertinent now may be incorporated.*

**2.13 2x660 MW Coal based Thermal Power Plant of M/s Banas Thermal Power Pvt. Ltd. near Sjhra village, Vijayraghavgarh Tehsil, Katni Distt., in Madhya Pradesh- reg. Extension of validity of TOR.**

M/s Banas Thermal Power Pvt. Ltd. was prescribed TOR for its 2x660 MW Coal based Thermal Power Plant near Sjhra village, Vijayraghavgarh Tehsil, Katni Distt., in Madhya Pradesh on 12.10.2010.

M/s Banas Thermal Power Pvt. Ltd. requested the Ministry for extension of validity of TOR by one more year. M/s Banas Thermal Power Pvt. Ltd. informed that due to delay in approval of coal linkage for the project by Ministry of Coal the completed of draft EIA is getting delayed.

The matter was placed before the Committee for its views.

*The Committee noted that coal availability scenario in the country is a matter of concern and considering that for the 12<sup>th</sup> Plan Projects the MoP and MoC are yet to carry out the exercise for coal allocation, the request can be agreed. Accordingly the Committee recommended for extension of validity of TOR for a period of one year. It was also decided that in doing so the Ministry may ensure that TOR conditions which were not stipulated earlier but pertinent now may be incorporated.*

**2.14 2x685 MW Super Critical Imported coal based TPP of M/s GMR Chhattisgarh Energy Ltd. at villages Raikheda, Gaitara and Chicholi, in Tilda Block, in Raipur Distt., in Chhattisgarh- reg. change in layout and issue of ESP, Ash Pond and Water reservoir.**

M/s GMR Chhattisgarh Energy Ltd. was accorded environmental clearance for its 2x685 MW Super Critical Imported coal based TPP at villages Raikheda, Gaitara and Chicholi, in Tilda Block, in Raipur Distt., in Chhattisgarh on 09.05.2011.

M/s GMR Chhattisgarh Energy Ltd. requested the Ministry for amendment in environmental clearance by allowing a slight rearrangement of Ash Pond and Water Reservoir area without changing any other layout. This is required due to the non-uniformity of land. M/s GMR Chhattisgarh Energy Ltd. also requested for allowing installation of ESP alone instead of ESP along with Bag filter as mentioned in environmental clearance letter at specific condition no. (v). Project Proponent informed that efficiency of ESP alone will meet particulate emission limit of 50 mg/Nm<sup>3</sup>.

The request of M/s GMR Chhattisgarh Energy Ltd. was placed before the Committee for its views.

The Ministry informed the Committee that as a matter of principle / policy the environmental quality standard irrespective of the technology adopted needs to be abided.

CEA member was of the opinion that there are no scientific, cost benefit analysis data to support any requirement of ESP along with Bag Filter for meeting the particulate emission of 50 mg/Nm<sup>3</sup>. That hardcore operational data on ESP followed by Bag Filter is not available.

The Committee was also informed that while for some time in the past owing to certain individual project proposal voluntarily suggesting for ESP followed by Bag Filter, the Committee had indeed recommended for ESP and Bag Filter but this has since been done away with as many members had felt the irrelevance of the same.

*The Committee therefore decided that a consensus amongst members of the EAC may be arrived at with data furnished by the project proponent for conceding to their request.*

*Regarding changes in ash pond location the Committee felt that detail information such as topographical features of the new area now proposed to be acquired in lieu of the earlier area is unavailable, which is pertinent for conceding to the request. The Committee therefore decided that the matter can be taken up in the next meeting and the project proponent may provide details accordingly.*

**2.15 3x400 MW (Phase-II) Combined Cycle Power Plant of M/s GMR Rajahmundry Energy Ltd. (GREL) at village Vemagiri, East Godavari Distt., In Andhra Pradesh- reg. Extension of validity of TOR.**

M/s GMR Rajahmundry Energy Ltd. was prescribed TOR for its 3x400 MW (Phase-II) Combined Cycle Power Plant at village Vemagiri, East Godavari Distt., In Andhra Pradesh on 12.10.2010.

M/s GMR Rajahmundry Energy Ltd. requested the Ministry for extension of validity of TOR. Project Proponent informed that requisite studies have been done and draft EIA report is also completed. That however, due to uncertainty in gas availability the work for project is getting delayed.

The matter was placed before the Committee for its views.

*The Committee noted that gas scenario in the country is still fluid and very volatile and considering the Memorandum issued by Ministry of Power w.r.t. gas based power projects, the request can be agreed. The Committee also noted that the issue of gas allocation is in public domain and the project proponent cannot be faulted for the delay caused due to uncertainty of gas availability. Accordingly the Committee recommended for extension of validity of TOR for a period of one year. It was also decided that in doing so the Ministry may ensure that TOR conditions which were not stipulated earlier but pertinent now may be incorporated.*

**2.16 Conversion of 4x50 MW Liquid Fuel Based Power Plant to Gas based Power Plant and expansion by addition of 120 MW gas based Combined Cycle Power Plant of M/s GMR Power Corpn. Ltd. at village Basin bridge, Pullianthope Taluk, Chennai Distt., in Tamil Nadu - reg. Extension of validity of TOR.**

M/s GMR Power Corpn. Ltd. was prescribed TOR for its 3x400 MW (Phase-II) Combined Cycle Power Plant at village Vemagiri, East Godavari Distt., In Andhra Pradesh on 12.10.2010.

M/s GMR Power Corpn. Ltd. requested the Ministry for extension of validity of TOR. Project Proponent informed that all kind of studies has been done and draft EIA report is also completed. However, due to uncertainty in gas availability the work for project got delayed.

The matter was placed before the Committee for its views. The matter was placed before the Committee for its views.

*The Committee noted that coal availability scenario in the country is a matter of concern and considering that for the 12<sup>th</sup> Plan Projects the MoP and MoC are still yet to carry out the exercise for coal allocation, the request can be agreed. Accordingly the Committee recommended for extension of validity of TOR for a period of one year. It was also decided that in doing so the Ministry may ensure that TOR conditions which were not stipulated earlier but pertinent now may be incorporated.*

**2.17 Expansion by addition of 2x660 MW (Phase-III) Super Critical coal based TPP of M/s Meenakshi Energy Pvt. Ltd. at village Thammnapatnam, Chilakur Mandal Taluk, in SPSR Nellore Distt., in Andhra Pradesh- reg. Extension of validity of TOR.**

M/s Meenakshi Energy Pvt. Ltd. was prescribed TOR for its expansion by addition of 2x660 MW (Phase-III) Super Critical coal based at village

Thammnapatnam, Chilakur Mandal Taluk, in SPSR Nellore Distt., in Andhra Pradesh on 09.12.2010.

M/s Meenakshi Energy Pvt. Ltd. requested the Ministry for extension of validity of TOR for one more year as there is a delay and uncertainty of coal linkage for the project.

The matter was placed before the Committee for its views.

*The Committee noted that coal availability scenario in the country is a matter of concern and considering that for the 12<sup>th</sup> Plan Projects the MoP and Mo Care still yet to carry out the exercise for coal allocation, the request can be agreed. Accordingly the Committee recommended for extension of validity of TOR for a period of one year. It was also decided that in doing so the Ministry may ensure that TOR conditions which were not stipulated earlier but pertinent now may be incorporated.*

**2.18 3x660 MW super critical coal Based Tiruldih PP of M/s Tata Power Company Ltd. at Ichagarh Tehsil, in Saraikela Kharswan District, in Jharkhand - reg. Extension of validity of TOR and change in one of the villages**

M/s Tata Power Company Ltd. was issued TOR for its 3x660 MW Coal Based TPP to be located at Ichagarh Tehsil, in Saraikela Kharswan Distt., in Jharkhand on 09.09.2010.

M/s Tata Power Company Ltd. had informed that the public hearing earlier scheduled on 18.03.2012 had to be postponed due to issues regarding High Court verdict w.r.t. Chhota Nagpur Tenancy Act. That about 40 % of land has been acquired but now it has been seen that acquisition of some areas falling in Sirkadih will be difficult and hence proposed to acquire part of land from Gundaldih village instead. That the other three villages viz. Chara, Porka and Kuda will remain the same. That land will now be optimized to 1000 acres.

M/s Tata Power Company Ltd. had also informed that they intend to now change one unit of 660MW as a Captive Power Plant (CPP) and will be implemented by a joint venture company (M/s Industrial Energy Ltd.) between M/s Tata Power Co. Ltd. and M/s Tata Steel Ltd.

In view of the above M/s Tata Power Company Ltd. have now sought extension of validity of TOR.

The matter was deliberated by the Committee in its 58<sup>th</sup> Meeting held during October 8-9, 2012, wherein the Committee noted that the land use and features of the new area is not available for perusal of the Committee. It was

observed that even though said area is reportedly contiguous to the other area for the TPP site, the details need to be submitted.

*The Committee had also observed that in accordance with the new policy directives for IPP, the project proponent need to submit compliance and the issue of change of one unit as CPP need to be deliberated in the context of EIA notification 2006.*

The Committee had also noted that on the issue of Tubed Coal Block details may be submitted.

The Committee in the said 58<sup>th</sup> Meeting felt that the request for consideration is premature based on the present form of information available. The Committee therefore decided that the matter can be re-considered only after details on coal block and others as stated above are submitted. Accordingly the matter was deferred.

The matter was again placed before the Committee.

M/s Tata Power Co. Ltd. also informed that they have now dropped the request for change of one unit as CPP. It was therefore decided that the deliberation now shall be restricted to change in one village for the project site and extension of validity period of TOR.

*Regarding extension for validity period for TOR, the Committee noted that coal availability scenario in the country is a matter of concern and considering that for the 12<sup>th</sup> Plan Projects the MoP and MoC are still yet to carry out the exercise for coal allocation, the request can be agreed. On the issue of Tubed Coal Block it was decided that the matter is pending with the Ministry of Coal and hence may be inappropriate to deliberate on the issue. Accordingly the Committee recommended for extension of validity of TOR for a period of one year.*

*Regarding change in one village, the Committee noted that earlier the power project was proposed in areas comprising of villages Chara, Porka, Kuda and Sirkadih, in Saraikela Kharswan and CHP was proposed at Sirkadih. It has now been learnt that the area in Sirkadih had been already been acquired for Subarnarekha Project. It has been therefore now decided to shift to Gundaldih which is contiguous to the other areas of the proposed site, in lieu of Sirkadih. The other three villages remain same.*

*The Committee observed that from the Toposheet made available the new area seem suitable for location of a thermal power plant in terms of its environmental sensitivity. The Committee however felt that since the social impact and PAPs of the new area is unavailable, the project proponent shall ensure that a detailed Social Impact Assessment (SIA) in particular of population whose sustenance are dependent on the land (both new areas as well as others falling in the project*

*area) and not owned by them shall be undertaken (if not already done) by an institute such as Tata Institute of Social Science. It was also decided that the SIA shall also incorporate health survey and disease pattern in the area and measures suggested for redressal.*

*The Committee finally decided that the request for change in village can be agreed and also recommended for extension of validity of TOR for a period of one year and accordingly the Ministry may carry out the needful.*

## **2.19 Discussion on report of Independent Fact Finding Team on UMP of M/s Coastal Gujarat Power Ltd. at Mundra in Gujarat – reg.**

The report of the Independent Fact Finding Team on UMP of M/s Coastal Gujarat Power Ltd. at Mundra in Gujarat circulated in advance to the members for their perusal was earlier placed before the Committee in the 58<sup>th</sup> Meeting held during October 8-9, 2012.

In the said 58<sup>th</sup> Meeting the Committee was also informed that the Ministry have sent a copy to the Regional Office of the Ministry and requested that a site inspection be carried out and submit a report. That the Ministry have also sought comments of the M/s Coastal Gujarat Power Ltd. which has been received but observed to be only a general comment with no specific rebuttal of the findings of the aforementioned report or explanation on the issues raised.

The Committee had decided that in the absence of a point-wise clarification from M/s Coastal Gujarat Power Ltd. the discussion would be incomplete. Accordingly the matter was deferred.

The matter was again placed in the agenda in anticipation that M/s Coastal Gujarat Power Ltd. would provide their response.

The Committee was informed that M/s Coastal Gujarat Power Ltd. has still not replied to the Ministry's letter. It was therefore decided that the matter be dropped for the time being for further deliberation.

## **2.20 2x600 MW Sub Critical TPP of M/s Chettinad Power Corpn. Pvt. Ltd. at Tharangambadi Taluk, Nagapattinam District, Tamil Nadu-reg. review of Environmental Clearance in accordance with the Order of the NGT.**

M/s Chettinad Power Corpn. Ltd. was accorded environmental clearance for its 2x600 MW Sub Critical TPP of M/s Chettinad Power Corpn. Pvt. Ltd. at Tharangambadi Taluk, Nagapattinam District, Tamil Nadu on 20.01.2011.

The environmental clearance accorded for the above mentioned power project was challenged in the National Green Tribunal (NGT) by an NGO viz. Coastal Action Network and others on the ground amongst others that the EIA Report has major violations of TOR issued for the project, inconsistency in draft EIA report and final EIA report, site of the TPP, public hearing procedure etc.

The NGT vide its order dated 30.05.2012 had suspended the environmental clearance accorded for the project and have given directions to be followed by the project proponent and the Ministry of Environment & Forests / Expert Appraisal Committee (Thermal Power).

In compliance to the order of the NGT, the project proponent submitted revised EIA/EMP and Marine EIA Study report to the Ministry which was subsequently uploaded in the Ministry's website on 07.09.2012. The project proponent has also reported that they have given wide publicity giving 30 days' time inviting comments / objections.

The matter was accordingly placed earlier before the Committee for its review of environmental clearance of the power project in the 58<sup>th</sup> Meeting held during October 8-9, 2012.

The Committee in the said 58<sup>th</sup> Meeting read out the Order of the NGT and the operative part of the judgment was flagged point-wise for analysis of the fulfillment required to be carried out by the project proponent for the purpose to review the environmental clearance.

M/s Chettinad Power Corpn. Ltd. also made a presentation in the 58<sup>th</sup> Meeting and had informed that they have given copies of the revised EIA/EMP and Marine EIA Study reports to the NGO and the appellants in the NGT.

The Committee in the 58<sup>th</sup> meeting had noted that the project proponent does not seem to have effectively dealt with some of the observations of the order of the NGT particularly with regard to Olive Ridley Turtle issue as mentioned at page no. 15, 16 and 17 of the Order. It was also observed that the documents now made available does not seem to indicate any data (primary or secondary) on Olive Ridley Turtle having been dealt with at length. *It was also noted that the project proponent have not explained satisfactorily the issue flagged by the NGT on fly ash and archaeological importance site as mentioned at page 16 of the order. The Committee had also decided that the project proponent shall submit a detail report on the issue on Olive Ridley Turtle including data collected by them during the nesting season and vetted by the Competent Authority. That the project proponent shall also submit a long term plan for sustainable preservation of Olive Ridley Turtle and implementation thereof by a competent institute in the area.*

*In view of the inadequacy of information, the Committee had decided that the project proponent shall submit para-wise response /remarks/ information of the order of the NGT. It was also decided that the response shall be submitted in the form of an affidavit duly signed by the Competent Authority in the organization and notarized. It was further also decided that the response/ remarks/ information shall be accompanied by a Board Resolution certifying that the signatory of the affidavit providing response/remarks/information submitted is authorized to sign. Accordingly, the matter was deferred.*

On receipt of the response / affidavit as stated above, the matter was placed again.

The Committee was informed of a letter received from NGO viz. Coastal Action Network, wherein it was informed of the non-availability of revised EIA report by M/s Chettinad Power Corpn. Pvt. Ltd. and seeking time for enabling them to give their response to the revised EIA report.

The Committee advised M/s Chettinad Power Corpn Pvt. Ltd. to provide a copy of the revised EIA report to the appellant immediately. It was decided that objections from the appellant be awaited but in the meantime the process may continue and the proponent be heard while also following substantial and procedural due process.

M/s Chettinad Power Corpn. Pvt. Ltd. informed that as a proactive measure they had appointed CAS in Marine Biology, Annamalai University for carrying out a study on Olive Ridley Turtle nesting based on primary and secondary data and conservative measures have been recommended. That they have also obtained a report on conservative measures from Central Marine Fisheries Research Institute, Chennai related to power projects. That a copy of the study report has been submitted to Wild Life Warden / District Forest Officer, Nagapattinam for their perusal and implementation of mitigative measures throughout the project period.

M/s Chettinad Power Corpn. Pvt. Ltd. made a presentation point-wise on the directions of the NGT Order.

On the issue of inconsistency in the draft EIA report and final EIA report, M/s Chettinad Power Corpn. Pvt. Ltd. informed that the following corrective action has been taken:

- i) Data regarding the survey numbers documents and details of conveyance through which lands were purchased from private owners have been included in the revised report;
- ii) Socio-economic study conducted have been used for preparing draft EIA report and the final EIA report have been prepared after incorporating

- public views and detailed action plan and budget has been specified, which is reflected in the EC letter at condition no. (xxxiv);
- iii) Study on marine ecology was carried out prior to public hearing and data incorporated in the separate marine EIA report submitted along with Executive Summary to TNPCB before Public Hearing vide its letter dated 9.4.2010. The availability of EIA reports was also intimated through newspaper advertisement to all public dated 20.4.2010. The report contains Environment Management Plan along with budget.
  - iv) The equipment necessary to test particulate matter (less than 2.5 microns) pollution was not readily available due to recent inclusion of PM 2.5 in the Notification (18<sup>th</sup> Nov-2009). Therefore, the draft EIA report did not contain details of the same. Subsequently, test were conducted during April-May 2010 and the results were included in its final EIA report and presented to EAC meeting.
  - v) Mercury was not listed as a pollutant in the national ambient air quality standards earlier. However, Clause (xix) of the TOR included it. The project proponent later conducted the required tests and included in the final EIA report and presented to EAC meeting;
  - vi) Since the project proponent had gone for 100% imported coal, upon receipt of the data on heavy metals received from the supplier, the same has been incorporated in the final EIA report and presented to EAC before grant of EC. That the project proponent submits that it would be using 100% imported coal to operate its plant. *The project proponent submits that the ash content would be 8.8% and sulphur content would be 0.8% for imported coal.* These values have been set out in the draft and final EIA reports submitted to the EAC. *Therefore, it is requested before this EAC, EC may be appropriately modified to reflect this coal quality and usage pattern and consequent ash modeling.*
  - vii) NOC received for Danesburgh Castle and the same has been submitted. The Town Gate Way of Tranquebar is situated at a distance of about 2.0 KMs from the project site. Letter dated 2.11.2012 was issued by Competent Authority under the AMASR Act, 2010 that since the construction site falls beyond the regulated area, no NOC is required for the Thermal power project;
  - viii) 13218 cubic metres/hr of water would be the intake from sea. That out of this, 1430 cubic metres/hr would be sent to the desalination plant and 11788 cubic metres/hr would be sent to the cooling tower. That from the desalination plant, 470 cubic metres/hr would be extracted as permeate water (treated high quality water) and used in the plant and 960 cubic metres/hr would be SWRO rejects which would be ultimately sent out to sea. That of the 11788 cubic metres/hr sent to the cooling tower, 9180 cubic metres/hr would be blow down after evaporation loss of 2608 cubic metres/hr. Final outfall in to the sea would be 960 (SWRO) + 9180 (Cooling Tower Blow down) i.e. about 10140 cubic metres/hr, which would comprise of the SWRO rejects from the desalination plant and the blow down from the cooling tower. Out of the 470 cum/hr (permeate from RO),

100 cubic meters/hr would be used for ash slurry system both for Bottom and Fly ash. That about 960 cum/hr of SWRO reject will be discharged into the sea. That the Ash slurry water and Ash handling system water will not be discharged into the sea and will be collected in the ash pond.

- ix) Ash pond/dyke shall be constructed with HDPE ash liners to accommodate the bottom ash slurry generated by the plant periodically. Initial Ash pond height shall be considered 6.0 m with 1.0 m free board, which is good for 8.4 years for imported coal and subsequently dyke height will be increased to accommodate remaining period of ash generation suitably to avoid over flow of ash water. Therefore, the possibility of the ash pond overflowing or the bottom ash leaching into the earth and polluting the ground water does not arise.
- x) Permeate water generated by its temporary desalination plant will be used for construction requirements. Therefore ground water will not be used for the construction of the project plant.
- xi) Study on marine ecology was carried out prior to public hearing and data incorporated in the separate marine EIA report submitted along with Executive Summary to TNPCB before Public Hearing vide its letter dated 9.4.2010. The availability of EIA reports was also intimated through newspaper advertisement to all public dated 20.4.2010. The Marine EIA report was made available to EAC (Thermal) for appraisal before grant of EC.
- xii) The Process to be adopted for Cooling water discharge is based on the standard design and is designed to bring down the temperature of CW to 33°C inside the cooling tower according to ambient conditions. The initial inlet temperature of the hot water from the plant entering the cooling tower is 43°C and as the design wet bulb temperature at the project site is 28°C, the inlet temperature of 43°C will be brought down to 33°C. Further CT Blow down water disposal to sea shall be through guard pond. Hence the difference between the outlet temperature of water from guard pond will be within 5 Deg C of receiving sea water temperature.
- xiii) Slurry will be self settling and also self limiting so that in the ash dyke ash will deposit and dry by itself to form a hard surface. Hence there will not be any discharge from the ash dyke.
- xiv) High concentrate slurry, water content will be very less about 35-40% and there will not be pounding of the water in ash dyke. HDPE Ash liners will be provided to ash dyke to prevent leaching of contaminants to groundwater. Hence, the impact on the ground water quality will be insignificant.
- xv) Power plant of M/s Chettinad Power Corporation Pvt. Ltd. is situated more than 5 KMs from the adjoining power plants and it is not coming under cluster of proposed project site as compared with other proposed power plants and thus individual coal jetty for proposed plant operation has been envisaged and the same has been addressed in our EIA report at chapter 5, clause No.5.3, Based on the above facts MoEF/ GOI awarded EC for

Captive Coal Jetty and allied facilities Vide Lr. No.F No.11-147/2010-IA – III dated 02.06.2011

A presentation was also made by Centre of Advance Study in Marine Biology, Annamalai University on Olive Ridley Turtle issue based on the study carried out by them in the region and provided the following information:

Olive Ridley's make use of many different nesting sites around the world, varying in size and population. Three major populations recognized are the Indian Ocean; Eastern Pacific Ocean; and Western Atlantic Ocean. The site where most eggs are laid is probably the one in Orissa (India) where as many as 3,98,000 eggs are laid.

Major threats to the survival of the Olive Ridley Turtle are:

- large-scale poaching of adult turtles for meat, shells and leather;
- drowning of sea turtles in shrimp nets, loglines, and gillnets;
- development and destruction of nesting beaches;
- ocean pollution; and
- commercial exploitation of sea turtle eggs.

That they are omnivores and threat to species survival is large. For an Olive Ridley Turtle it can be incredibly difficult to distinguish between a jellyfish and a plastic bag. Many Olive Ridley turtles have died because as they tried to eat plastic thinking them as a jellyfish or other normal turtle food. It was also informed that there are seven species of Olive Ridley Turtle found worldwide and in the Indian coastal waters 5 species are observed.

In India these five species of turtles are legally protected under Schedule- I of the Indian Wildlife Protection Act (1972). Olive Ridley species is listed as endangered by the IUCN.

*Data on Olive Ridley Nesting around 10 km on either side of the proposed Power Plant by M/S. Chettinad Power Co. Ltd, Tranquebar, Nagapattinam District during the year 2009 -2010, 2010-2011 and 2011-2012 was also presented. The data indicated that only seven nests were observed in 2009-2010; six nests were observed in 2010-2011; and seven nests were observed in 2011-2012.*

It was also informed that a female lays about 120 to 140 eggs in a pit and the incubation period for the eggs to hatch out is about 40 to 60 days.

In Nagapattinam District Nest Predation / Exploitation percentage was 100%. That out of this 100% exploitation, about 82.5% of the eggs were exploited humans and 17.5% by dogs and other predatory animals.

M/s Chettinad Power Corpn. Pvt. Ltd. also informed that secondary data available on Olive Ridley Turtle Nesting along Nagapattinam Coastal District are as follows:

- i) 2003 -2005 : 7.5 to 15 nests /km  
(Source: S. Bhupathy et al 2008)
- ii) 2005 to 2009 : 452 and 5100 eggs /year /120 km  
(Source: *Thirunavukarasu Velusamy and R. Sundararaju. 2009*)
- iii) 2009 – 2012 : 5 to 7 nests / 20km  
(Source: *Faculty of Marine sciences - Annamalai University*)

That in comparison the Olive Ridley Turtle Nesting in the Gahirmatha Coast, in Odisha is tremendously large as under:

- i) *Olive ridley Turtle - laid Eggs - 2,51,000 (2011)*
- ii) *Turtles Nested in two days - 55,000 at Rushikulya rookery in 2012*

Turtles nested in a single week - 6,00,000

The project proponent also presented an in-situ conservation method involving prime stakeholders like Forest Department, NGOs, Community Based organizations (CBOs) and Local fisherman. It was stated that the main intention is for providing safety measures against natural predators like Birds and Dogs and Poaching by human beings to ensure safe hatching by providing optimum environment. It was proposed to have day and night watch and deployment of night vision camera.

Further ex- situ conservation method proposed was presented. The suggested method of maximizing a species chance of is by relocating part of the population to a less threatened location. Hatcheries are the greatest option amongst the conservation tools and are an appropriate method for the project region. For the hatchery techniques, standard methods are proposed to be adapted. An amount of Rs 2.15 Crores is reported to be earmarked for in-situ and ex-situ conservation measures.

The project proponent also proposed Marine Environmental monitoring in and around M/s Chettinad Power Corporation Pvt. Ltd. Thermal Power plant and separate budget of about Rs 3.93 Crores is stated to be earmarked for the purpose.

The Committee noted the submissions made by M/s Chettinad Power Corporation Pvt. Ltd. and decided that they shall submit evidence on record of documents having been served to Coastal Action Network. It was further decided that the matter can be taken up in the next meeting after giving a last opportunity to the appellant /Coastal Action Network) for its response.

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

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**Terms of Reference (TOR) :**

- i) 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.
- xlviiii) 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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