MINUTES OF THE 56th MEETING OF RE-CONSTITUTED EXPERT APPRAISAL COMMITTEE ON ENVIRONMENTAL IMPACT ASSESSMENT OF THERMAL POWER AND COAL MINE PROJECTS

The 56th Meeting of the reconstituted Expert Appraisal Committee (Thermal) was held during **September 3-4, 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.	Shri J.S. Kamyotra	-	Member
9.	Dr. Saroj	-	Member Secretary

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: 03.09.2012.

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

The minutes of the 54th Meeting held during August 6-7, 2012 were confirmed with minor grammatical and factual figures changes suggested

ITEM NO. 2.0 CONSIDERATION OF PROJECTS

2.1 4x60 MW Captive Imported Coal Based Thermal Power Plant and 1.0 MTPA Cement Grinding Unit and 1.0 MTPA Coal Washery of M/s Jaiprakash Associates Ltd. at village Churk, in Robertganj Taluk, in Sonebhadra Distt., in Uttar Pradesh - reg. reconsideration of Environmental Clearance.

The proposal was earlier considered in 8th meeting of the EAC meeting held during October 18-19, 2010 for consideration for environmental clearance, *wherein the Committee noted that from records available that the project proponent have not declared the existence of the wildlife sanctuary while submitting the proposal for seeking recommendation of terms of reference. The*

Committee observed that, had the then Committee known of the facts regarding wildlife sanctuary, the recommendation for TOR would not have been made. The Committee viewed the suppression of information very seriously and decided the proposal may be referred to the Wildlife Division in the Ministry for its views and only after submission of the clearance from the Wildlife Division / Standing Committee of the National Board of Wildlife (as the case may be) the project proponent may re-submit for re-consideration after compliance of the following:

i) Point wise compliance of TORs prescribed shall be submitted;
ii) Revised Form-I shall be submitted along with a map duly vetted by the concerned Office of the Chief Wildlife Warden, indication location (nearest boundary) of the wildlife sanctuary from project site.
iii) A detailed primary survey of fauna and flora in the study area shall be carried out and submitted along with the authenticated list from the Competent Authority;
iv) A wildlife conservation plan prepared in consultation with the concerned Office of the Chief Wildlife Warden and duly vetted by the said office. The plan shall consists of an in-built monitoring mechanism;
v) Separate year marked financial budget for implementation shall be indicated in the wildlife plan and implementation shall begin before the proposal is submitted for re-consideration.
vi) Ambient air quality data shall be re-assessed and cumulative impact of ambient air quality predictions accounting all possible sources of emissions shall be re-done using appropriate wind rose diagram;
vii) CSR action plan with time bound implementation schedule and budgetary allocation activity wise shall be submitted;
viii) Action plan for time bound implementation on issues raised in public hearing and others shall be prepared and submitted along with firm commitment;

The Committee had also observed that the project proponent cannot feign ignorance of the location of the wildlife sanctuary as clarified by them and viewed the lapse very seriously. The Committee further expressed that the project proponent seem to be making a perfunctory approach in dealing with the process of seeking environmental clearance, rendering the whole process of appraisal based on information submitted by them redundant in case of an oversight. The Committee therefore decided that the Ministry may like to seek written clarification from the project proponent and the consultant i.e. M/s Vimta Labs Ltd., on the matter. *The Committee also decided that the above information / documents shall be submitted along with an undertaking in a notorised stamp paper of appropriate amount and duly signed by the Head of the Organisation or an officer of appropriate superiority (authorized to sign). Accordingly the proposal was deferred for reconsideration at a later stage. The Committee also decided that since the above may take some time the proposal may be de-listed from the pending list for the time being.*

On submission of the above clarification the matter was again placed before the Committee. The project proponent gave a presentation and provided the following information:

The proposal is for setting up of 4x60 MW Captive Imported Coal Based Thermal Power Plant and 1.0 MTPA Cement Grinding Unit and 1.0 MTPA Coal Washery at village Churk, in Robertganj Taluk, in Sonebhadra Distt., in Uttar Pradesh. The power plant will be captive to Cement Grinding Unit and Coal Washery. Land requirement will be 150 acres which is available within the old Cement Plant, which is not in operation from 1991. The co-ordinates of the plant site are within Latitude 24°38'08" to 24°38'29" N and Longitude 83°05'541" E to 83°06'18" E. Washery rejects will be used as fuel for the power plant. Requirement of washery reject will be 2.0 MTPA. Quantity of Fly ash and bottom ash to be generated will be 2880 TPD and 720 TPD respectively. Air cooled condenser will be used for condensate cooling. Water requirement will be 5513 cum/day which will be met from Hardhanrol Dam on Ghaggar River. Allocation of 4.5 cusec of water has been obtained. Kaimur Wildlife Sanctuary is located at a distance of 1.5 Km from the site. Public hearing was conducted on 02.06.2010. Cost of the project will be Rs. 1178.0Crores.

The Committee noted that the project proponent has neither domestic coal nor documents to substantiate tie up of long term imported coal from Indonesia from where it is stated to be now proposed to be procured for the CPP as an interim arrangement until domestic coal is available. On the issue of washery, the project proponent could not give a satisfactory answer as to the source of coal for which the washery is being proposed. The Committee expressed its reservation as to how a washery rejects based CPP can be run on imported coal and felt that the project proponent even at this stage either appears to be unclear of coal source and therefore desired a detailed clarification on the above from the project proponent.

The Committee observed that incase the proposal is to be considered based on imported local, the associated issues such as port handling capacity in the identified port in India and transportation for imported coal from the Port to plant site by rail including railway wagon availability etc. need to be looked into and accordingly the revised Form-I, EIA/EMP Report or its addendum shall be submitted.

It was also decided that the information in writing on taking over the old cement plant from U.P Govt. and the chronology of events shall be placed on record.

The Committee on perusal of records available observed that the Wildlife Division of the Ministry had written letters to: (i) The Principal Secretary, Forest Deptt., Govt. of U.P; (ii) The PCCF, Govt. of U.P; and (iii) The Chairman, UPPCB, wherein a copy of the Site Visit Report undertaken by the Wildlife

Institute of India (WII) was enclosed. The aforesaid letter had informed that the proposal forwarded by the Govt. of U.P was placed in the 21st and 24th meeting of the Standing Committee of the National Board of Wildlife (NBWL) and it was decided that a site visit will be undertaken by WII to assess impact of the project on biodiversity of Kaimur Wildlife Sanctuary. That based on the decision, the site visit was undertaken and it was reported that the project proponent had gone ahead with the construction activities and had completed 50-60% of the construction work without mandatory environmental clearance and approval of the SC of NBWL. That the letter of the Ministry has sought that action taken report on the issues be submitted to the Ministry.

The Committee also perused the Minutes of the 25th Meeting of the Standing Committee of the National Board of Wildlife held on 13.06.2012 and the extracts of the minutes of the Standing Committee of NBWL was read out for information of members. It was noted that the Standing Committee of the NBWL did not find merit for consideration and had referred the proposal to the Impact Assessment Division of the Ministry to take necessary action in view of the reported violations.

The Committee deliberated at length and desired that the project proponent should submit the detailed information as referred above and accordingly the proposal was deferred.

2.2 4000 MW (6x660 MW) Coal based Ultra Mega Power Project of M/s Orissa Integerated Power Ltd. near Bhedabahal village in Sundergarh Tehsil of District Sundergarh, in Odisha - reg. Environmental Clearance.

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

The proposal is for setting up of 4000 MW Imported Coal based Ultra Mega Power Project near Bhedabahal village in Sundergarh Tehsil of District Sundergarh, in Odisha. Land requirement will be 3245 acres, out of which main the plant area will be in an area of 1311 acres; ash disposal area & ash utilization facilities 1006 acres; and area for Township 144 acres. About 2423.89 acres of the total area is a single crop agriculture land; 309.65 acres consists of settlements; 68.88 acres is forest land; 199.05 acres is Gochar land; and 244.49 acres is others land which includes road, Pathar Chattan, Nallah/Pond & Barren land. About 785 acres of land is within 700m corridor from river bank which will be used for resettlement, afforestation, Gochar land etc. Land for MGR, Railway link and pipeline will be separately acquired. The co-ordinates of the site are located within Latitude 22^{0}02'12" N to 22^{0}04'31" N and Longitude 83^{0}59'42"E to 84^{0}01'58" E. Coal requirement will be 19-20 MPTA at 85% PLF. Coal will be obtained from Captive coal blocks of

Meenakshi, Meenakshi B and Dip side Meenakshi, Orissa which have been allocated by Ministry of Coal vide letter dated 13.09.2006. These coal blocks are located about 40 kms from the proposed UMPP site. Ash and sulphur contents in coal will be 40% and 0.5% respectively. Water requirement of 122 cusecs will be sourced from Hirakud reservoir through a pipeline at a distance of about 40 km from project site. Natural draft cooling system will be installed. There are no national parks, wildlife sanctuaries, heritage sites, tiger/biosphere reserves etc. within 10 km of the project site. Public Hearing was held on 30.07.2010. Cost of the project will be Rs.16,000.00 Crores.

The Committee noted that in accordance with the existing policy decision taken by the Ministry vide O.M dated November 01, 2010 and its amendment dated April 19, 2012, the status of EC and FC of the linked coal block of this UMPP as on date is required to be known. A letter from the Secretary, Power, Govt. of India addressed to the Secretary, MoEF was also read for information of the members. The Committee decided that in pursuance to the existing policy decision taken by the Ministry, the proposal can only be taken up once the Ministry takes a decision on the contents of the aforementioned letter of the Secretary, Power.

The Committee however decided to peruse through the presentation made by the project proponent.

It was noted that land requirement appeared to be very large and need to be optimized strictly in accordance with the norms issued by CEA from time to time. Accordingly it was decided that area for ash dyke shall not exceed 600 acres initially and under any circumstances shall not exceed the norms prescribed by CEA from time to time. It was decided therefore that the project proponent shall submit revised layout and revise its documents strictly in consonance with revised land requirement suggested, clearly indicating location of power plant components and others such as greenbelt, coal stock area, ash dyke location with elevations, MGR route etc. Coal stock area which is located near the river shall also be re-located.

The Committee also decided that any community land such as Gouchar land, community pond etc., if falling in the plant site shall be avoided and if in case the same is unavoidable due to its sheer location, equal area of community land either Gouchar or pond shall be first developed for handing over to the community and details submitted. It was also noted that a nallah runs inside the plant site and diversion of the same shall be carried out such that natural drainage pattern is not affected.

The Committee therefore decided that details of nallah diversion and detailed hydrological study (surface hydrology) of the study area shall be submitted to inter-alia includes details on water availability for the UMPP throughout the year.

The Committee also observed that AAQ Data and others collected were prior to issue of TOR. The project proponent stated that it was submitted during the presentation for TOR before the Committee and the Committee had agreed considering that appropriate season data need to be collected but the same was not reflected in the minutes of the meeting.

On further perusal of the AAQ data, the Committee observed that there were minor deficiencies which could be an inadvertent or clerical error. It was however, decided that full one season data (between November to January, 2012) shall be collected and AAQ assessment and impacts analysis carried out. It was also decided that additionally data for two seasons as reported to be already available with the project proponent shall be used for assessment of predicted impact on AAQ and details submitted.

On the issue of social impact assessment, the Committee observed that the information submitted was grossly inadequate and the project proponent did not appear to be seriously concerned. It was therefore decided that for a project of such a magnitude, a social impact assessment study shall be carried out by a reputed institute in the field such as Tata Institute of Social Science; XLRI, Jamshepur; IRMA, Anand etc. It was accordingly decided that CSR shall be revised and formulated based on need based assessment in the study area and activities proposed be explicitly spelt out along with financial allocation based on the SIA study got carried out as stated above.

The Committee also discussed the issues raised in the public hearing and the responses provided by the project proponent. The Committee noted that the minutes of the public hearing indicated major problems on the issue of likely impact due to ash and social unrest. The PAPs being in quite a large number and the response of the project proponent that compensation will be as per R&R Policy of Govt. of Orissa, 2006, is debatable since NPRR Policy of Govt. of India had been issued in 2007, and anything below the bench mark set by the NPRR Policy of Govt. of India would certainly not be acceptable. The major issues raised in the public hearing were regarding compensation; dust generation; local employment; health care facilities; afforestation programme etc. which need to be addressed suitably.

The Committee further noted that about 50% of the people in the area comprises of SC/STs and issues of tribal rights need clearly to be identified and implementation Action Plan drawn. It was also observed that the project site may comprise of scheduled area (tribal area) and acquisition and compliance of tribal rights etc. is a factor the project proponent clearly needs to furnish details of its total compliance which is a Constitutional provision.

The Committee finally decided that the following shall be complied/followed:

i) Project proponent to optimize the land requirement strictly in accordance with the norms issued by CEA, area for ash dyke not to exceed 600 acres, to submit revised layout and revise documents strictly in consonance with revised land requirement suggested, clearly indicating location of power plant and other components such as greenbelt, coal stock area, ash dyke location with elevations, MGR route etc. Coal stock area which was earlier, located near the river to be re-located and indicated in the revise layout.

ii) Community land such as Gouchar land, community pond etc. if falling in the project area shall be avoided and if in case the same is unavoidable due to their location, an equivalent area of community land, Gouchar or community pond shall be first developed in the vicinity for handing over to the community and details submitted.

iii) Details of diversion of nallah running in the proposed plant site shall be submitted. It shall be ensured that the natural drainage pattern is not affected.

iv) Details of hydrological study (surface hydrology) of the study area shall be carried out and submitted. The study shall include details on water availability for the UMPP for the full year including details during lean season.

v) The project proponent shall explore possibility of attaining COC 6 to 7 instead of 5.

vi) One full one season data (between November to January, 2012) shall be collected and AAQ assessment and impacts analysis carried out. Additionally data for two seasons as reported to be already available with the project proponent shall be used for assessment of predicted impact on AAQ and details submitted.

vii) Cumulative impact assessment over 10 Km radius shall be carried out considering all existing and likely sources of emissions from other industries, TPPs including any other activities. The cumulative impact assessment shall include assessment of impact due to withdrawal of water for UMPP and other industrial use from the same source, on the downstream ecology of the river. Information of other competing sources of water shall also be submitted

viii) Social impact assessment study shall be carried out by a reputed institute in the field such as Tata Institute of Social Science; XLRI, Jamshepur; IRMA, Anand etc. Accordingly CSR shall be revised and formulated based on need based assessment in the study area and activities proposed be explicitly spelt out along with financial allocation based on the SIA study.

ix) Identify tribal rights involved and implementation action plan shall also be drawn. Accordingly tribal land acquisition and compliance of tribal rights details thereof and its compliance which is a Constitutional provision shall be furnished.

x) To submit revised EIA/EMP or its addendum after incorporation of the above points both in hard and soft copy along with revised Form-I and

other requisite documents as mentioned in the Ministry's Circular no. J-11013/19/2012-IA-II(I), dated March 20, 2012.

In view of the above missing essential gaps of information the Committee strongly felt decided that the proposal was too pre-mature for consideration of grant of environmental clearance. The Committee also decided that the project proponent shall revert with point-wise TOR compliance along with the compliance to the above mentioned specific issues with requisite maps and relevant documents for re-consideration. The proposal was accordingly deferred.

2.3 Expansion of Cogeneration Power Plant from 10 MW to 29.8 MW of M/s Vitthal Sahakari Sakhar Karkhana Ltd. at village Venunagar, Post- Gursale, Taluka Pandharpurin District Solapur, in Maharashtra - 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 MITCON Consultancy & Engineering Services Ltd., Pune and provided the following information:

The proposal is for expansion of Cogeneration Power Plant from 10 MW to 29.8 MW at village Venunagar, Post- Gursale, Taluka Pandharpur in District Solapur, in Maharashtra. Land requirement will be 6 acres which is under possession. No additional land for expansion will be involved. The co-ordinates of the site are located in between Latitude $17^0$43'59.88" N to $17^0$44'34.81" N and Longitude $75^0$18'52.75"E to $75^0$19'40.48"E. During season i.e. for 160 days bagasse required for 29.8 MW is 269633MT and during off-season i.e. for 122 days bagasse required for 10 MW is 62773 MT. During off season only 10 MW would be operating. Water requirement is 0.186 MCM during season and 0.164 MCM during off-season which will be sourced from Bhima River through a pipeline at a distance of 1.5 km from the project site. No coal will be used. Boiler will be only Bagasse fired. There are no National Parks, Wildlife Sanctuaries, and Tiger/Biosphere Reserves etc. within 10 km of the site.

The project proponent informed that AAQ has been collected for the period March-May, 2012 and requested that the same data may be allowed for EIA/EMP and that exemption from Public Hearing.

The Committee deliberated the issue and declined both the requests. The Committee therefore categorically directed that the project proponent to collect fresh AAQ appropriate three season data as part of EIA study. The Project Proponents were also informed that they cannot be exempted from Public Hearing since the existing unit had also not undergone the process of Public Hearing as per the EIA Notification, 2006.

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) Composition of fuels and its ratio (as applicable) to be explicitly stated.
ii) Status of compliance to the conditions stipulated in the earlier environmental clearances accorded for existing units shall be submitted /presented as applicable.
iii) Status of development of green belt shall also be submitted along with photographic details.

2.4 Expansion of Cogeneration Power Plant from 30.5 MW to 38 MW of M/s Vitthal Rao Shinde Sahakari Sakhar Karkhana Ltd. at village Pimpalner in Tehsil Madha, in District Solapur, in Maharashtra - reg. TOR.

The proposal was considered for determination of 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 Vasantdada Sugar Institute, Maharashtra and provided the following information:

The proposal is for expansion of Cogeneration Power Plant from 30.5 MW to 38 MW at village Pimpalner in Tehsil Madha, in District Solapur, in Maharashtra. Land requirement will be 3 acres which is under possession. The co-ordinates of the site are located at Latitude $18^0$02'57.70" N and Longitude $75^0$15'11.75"E to $75^0$19'40.48"E. Bagasse requirement will be 187200MT. Water requirement for expansion is 61 cum/day which will be sourced from Ujjani Dam/MIDC. Public Hearing for the Sugar Plant was already carried out on 12.03.2012 and it was already mentioned in the Public Hearing that 40 TPH Boilers (2 Nos) are being replaced with 150 TPH boiler with ESP and 85 m stack. The expansion does not involve any additional pollution load. There are no National Parks, Wildlife Sanctuaries, and Tiger/Biosphere Reserves etc. within 10 km of the site.

The project proponent informed that Public Hearing has already been carried out of the Sugar Plant on 12.03.2012 and was already mentioned during the Public Hearing that 40 TPH Boilers (2 Nos) were being replaced with 150 TPH boiler with ESP and 85 m stack and accordingly requested exemption.

The Committee deliberated the issue and decided that since Public Hearing had already been carried out and that too recently and the project being primarily bagasse based with no coal to be used, the exemption can be allowed by categorizing it as 'B2' category.

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) Composition of fuels and its ratio (as applicable) shall be explicitly stated.
ii) Status of compliance to the conditions stipulated in the earlier environmental clearances accorded for sugar plant shall be submitted/presented as applicable.
iii) Status of development of green belt shall also be submitted along with photographic details.

2.5 240 MW (2x60 MW + 1x120 MW) Thermal Power Plant of M/s Divyansh Powergen Pvt. Ltd. at village Era Aning, District South Garo Hills, in Meghalaya - 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.

2.6 Expansion by addition of 2x300 MW Surat Lignite Power Project (SLPP) Phase-III, (Unit Nos. 5&6) of M/s Gujarat Industries Power Company Ltd. at P.O. Nani Naroli, Taluka Mangrol, in District Surat, in Gujarat - reg. TOR re-consideration.

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 & M/s NEERI, Nagpur and provided the following information:

The proposal is for expansion by addition of 2x300 MW Surat Lignite Power Project (SLPP) Phase-III, (Unit Nos. 5&6) at P.O. Nani Naroli, Taluka Mangrol, in District Surat, in Gujarat**.** SLPP Phase-I (Unit1 &2) 2x125 MW was accorded environmental clearance in 26.06.1996 and commissioned in Feb, 2000.SLPP Phase-II (Unit 3 & 4) 2x125 MW was accorded environmental clearance in 10.11.2003 and commissioned in April, 2010. Land requirement will be 370acreswhich is under possession. The co-ordinates of the site are located in between Latitude $21^0$24'08.653" N to $21^0$24'31.903" N and Longitude $73^0$06'37.834"E to $73^0$07'19.025"E. Lignite) requirement will be 3.75 MTPA which will be sourced from captive mine, which is located at about 3 kms for Phase-I and phase-II and about 15 Kms for the expansion project (Phase-III), which will be in the mine end. Lignite will be transported by closed conveyor belt. Water requirement of 50016m^3/day will be sourced from Tapi River through a pipeline at a distance of 18 km from the project site. There are no

National Parks, Wildlife Sanctuaries, and Tiger/Biosphere Reserves etc. within 10 km of the site.

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) Special precaution for transport of lignite and storage shall be spelt out and details submitted.
ii) Status of compliance to the conditions stipulated in the earlier environmental clearances accorded for Phase-I & Phase-II shall be submitted/presented as applicable.
iii) Status of development of green belt shall also be submitted along with photographic details.

2.7 Expansion by addition of 1x800 MW Imported Coal Based Tuticorin Thermal Power Project of M/s TANGEDCO at village Mullakado, in District Tuticorin, in Tamil Nadu - 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 and provided the following information:

The proposal is for expansion by addition of 1x800 MW Imported Coal Based Tuticorin Thermal Power Project at village Mullakado, in District Tuticorin, in Tamil Nadu. The existing plant (5x210 MW) comprises of (i) 2x210 MW Stage-I; (ii) 1x210 MW Stage-II; and (iii) 2x210 MW Stage-III. These plants were commissioned during 1979 to 1991. Land requirement will be 27acreswhich is under possession. The co-ordinates of the site are located in between Latitude $8^0$45'43" N to $8^0$45'50" N and Longitude $78^0$10'17"E to $78^0$10'27"E. No additional ash disposal is proposed for expansion project. Imported coal requirement will be 2.8 MTPA at 85% PLF. Demineralised water requirement of 1750 m^3/hr and the total water requirement for the condenser and auxiliary cooling is 12,500 m^3/hr will be sourced from sea water through a pipeline at a distance of 3 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 existing plants is very old and must be operating with very poor operational efficiency and high pollution loads. The Committee therefore decided that the project proponent shall carry out life cycle assessment of the old plants and submit a detailed report to the Ministry to inter-alia include plan of action for phasing out of these old units.

The Committee also noted that the old plants are prima facie in CRZ area and some portion of the proposed expansion also almost touches the CRZ line, which is totally unacceptable. The Committee also noted that a Biosphere Reserve is located at about 9 Kms from the site.

The Committee after considered deliberations decided that the proposed expansion cannot be permitted and the project proponent shall identify alternative acceptable sites for consideration as a green field power project. The proposal was accordingly dropped.

2.8 Change in configuration from 1x600 MW to 1x660 MW and change in source of fuel for Ennore Thermal Power Station of M/s TANGEDCO at village Ernavur, Taluk Ambathur, District Thiruvallur, in Tamil Nadu - reg. Amendment in EC.

M/s TANGEDCO was accorded environmental clearance for its 1x600 MW Ennore Thermal Power Station at village Ernavur, Taluk Ambathur, District Thiruvallur, in Tamil Nadu on 03.06.2009.

M/s TANGEDCO informed the Ministry that they were proposing to switchover to a better environmental friendly 1x660 MW Super-critical Technology instead of 1x600 MW Sub-Critical Technology in order to produce more power with less consumption of fuel.

The request of M/s TANGEDCO was placed before the Committee for its views.

M/s TANGEDCO made a presentation and provided the following information:

Environmental Clearance was issued based on blended coal requirement of 2.46 MTPA at i.e. 70:30 ratio (Domestic Coal (1.96 MTPA): Imported Coal (0.5 MTPA). The entire domestic coal requirement would be met from Mandakani B Block which is still under development. Hence it is proposed to utilize 100% imported coal for this project for which MMTC/GOI has issued consent to supply 100% imported coal i.e. 2.00 MTPA for the proposed project, vide their letter dated 09.02.2012. Ash and sulphur contents in imported coal will be 8% and 0.6% respectively as against blended coal (domestic 70%: Imported 30%) 44% AND 0.4%.Coal consumption for blended coal will be 363 t/hr/unit. Subsequently the change in fuel source will translate into lesser pollution load. SO_2 emission for blended coal will be 1210 gm/sec/flue as against imported coal's 895.91 gm/sec/flue. NO_x emission will be 256.85 gm/sec/flue for blended coal and for imported coal it will be 563.05 gm/sec/flue.

The Committee deliberated the data presented and decided that Super-Critical Technology can give a larger output of electricity with lesser consumption of fuel and therefore the request could be agreed. The Committee also observed that the Govt. of India Policy is also to opt for more efficient technology and therefore the

request could be favorably considered. The Committee, therefore, recommended that the Ministry may do further needful in the matter with necessary stipulations as may be further required.

2.9 2x500 MW (Stage-IV) Vindhyachal Super Thermal Power Plant of M/s NTPC Ltd. at village Waidhan, in Waidhan Taluk, in Singrauli Distt., in Madhya Pradesh - reg. Change in source of Fuel.

M/s NTPC Ltd. were accorded environmental clearance for its 2x500 MW (Stage-IV) Vindhyachal Super Thermal Power Plant at village Waidhan, in Waidhan Taluk, in Singrauli Distt., in Madhya Pradesh on 05.02.2009.

M/s NTPC Ltd. informed the Ministry that for Stage-IV (2x500 MW,) one unit is already commissioned and other unit is under an advanced stage of commissioning. It was also stated that the coal linkage for Stage –IV was from Pakri Barwadih Coal Mine but now desires to change the source from the said mine to the coal mine from M/s Northern Coalfields Ltd. which is nearer to their project site as compared to Pakri Barwadih Coal Mine.

The matter was placed before the Committee. M/s NTPC Ltd. made a presentation before the Committee and provided the following information:

The Vindhyachal thermal power station comprises of: (i) Stage-I 6x210 MW; (ii) Stage-II 2x500 MW; (iii) Stage-III 2x500 MW; (iv) Stage-IV 2x500 MW; and (v) Stage-V 2x500 MW. The coal quality from M/s NCL (GCV: 3700 kcal/kg and Sulphur Content: 0.3%) is better than the coal quality from Pakri Barwadih Coal Block NCL (GCV: 3900 kcal/kg and Sulphur Content: 0.38%) and the change in source of fuel will only be better in terms of environmental integrity.

The Committee deliberated the issue and decided that the request can be agreed and the Ministry may carry out the necessary amendment as required in the environmental clearance.

2.10 2x500 MW (Stage-III) Rihand Super Thermal Power Plant of M/s NTPC Ltd. at village Bijpur, District Sonebhadra, in Uttar Pradesh - reg. Change in source of Fuel.

M/s NTPC Ltd. were accorded environmental clearance for its 2x500 MW (Stage-III) Rihand Super Thermal Power Plant at village Bijpur, District Sonebhadra, in Uttar Pradeshon05.02.2009.

M/s NTPC Ltd. informed that for Stage-III (2x500 MW) one unit has already been commissioned in May, 2012 and other unit is scheduled for commissioning in January, 2013. It was also stated that the coal Linkage for

stage –III unit-1 (500 MW) was from M/s NCL and for Unit-2 coal linkage was earlier proposed from Pakri Barwadih Coal Mine. That they now desire to change the source of coal for unit-2 from Pakri Barwadih Coal Mine to coal linkage obtained from M/s Northern Coalfields Ltd.

The matter was placed before the Committee. M/s NTPC Ltd. made a presentation before the Committee and provided the following information:

The coal quality from M/s NCL (GCV: 3700 kcal/kg and Sulphur Content: 0.3%) is better than the coal quality from Pakri Barwadih Coal Block NCL (GCV: 3900 kcal/kg and Sulphur Content: 0.38%) and the change in source of fuel will only be better in terms of environmental integrity.

The Committee deliberated the issue and decided that the request can be agreed and the Ministry may carry out the necessary amendment as may be required in the environmental clearance.

2.11 2x660 MW (Stage-II) Barh Super Thermal Power Plant of M/s NTPC Ltd. at District Patna, in Bihar - reg. Amendment in EC.

M/s NTPC Ltd. was accorded environmental clearance for its 2x660 MW (Stage-II) Barh Super Thermal Power Plant at District Patna, in Bihar on 05.02.2007.

M/s NTPC Ltd. informed that while issuing Environmental Clearance letter for Stage –II, inadvertently got mentioned that coal linkage is from Amrapali Coal Block of North Karanpura Coalfield Ltd. whereas M/s NTPC Ltd. had mentioned that coal linkage is from Chhatti Bariyatu & Kerendari Coal mines of North Karanpura Coalfield Ltd.

M/s NTPC Ltd. has therefore requested for change in source of fuel from Amrapali Coal Block of North Karanpura Coalfield Ltd. to Chhatti Bariyatu & Kerendari Coal mines of North Karanpura Coalfield Ltd.

The Committee deliberated the issue and decided that the request can be agreed and the Ministry may carry out the necessary amendment as required in the environmental clearance.

2.12 Dumping of Flyash generated from 410 MW TPP of M/s Bhushan Steel Ltd. into mine void of Jagannath OPC of M/s Mahanadi Coalfields Ltd., in Talcher Coalfields, Distt. Angul, Orissa - reg.

2.13 Dumping of Flyash generated from 460MW Talcher TPS of M/s NTPC Ltd. into mine voids of South Balonda OPC of M/s Mahanadi Coalfields Ltd., in Talcher Coalfields, Distt. Angul, Orissa.

The above two were considered in sequel as the issues were same and the area where proposed fly ash was requested to be dumped was also in the same coalfields.

The issues were discussed in the 47th Meeting of the EAC (Coal), wherein it was decided that issue would be further deliberated by the EAC (Thermal Power) as the environmental clearance was granted by MOEF on the basis of the recommendation by EAC (Thermal Power) on the expansion of the Thermal Power Project of M/s Bhushan Steel Ltd and hence, the matter of generation and dumping of flyash from the expansion of their Thermal Power Project required further consideration by the same Committee. The EAC (Coal) had also decided that similar cases of M/s NTPC and M/s NALCO would also be considered by EAC (Thermal Power) in the context of ECs recommended by that EAC (Thermal Power) for their power projects generating the flyash. Similar cases of flyash dumping received henceforth of power projects granted EC would also be taken up by EAC (Thermal Power).

The extracts of the aforementioned 47th meeting of EAC (Coal Mining) is extracted as under:

"The proposal is for dumping flyash generated from their 410 MW TPP of M/s Bhushan Steel Ltd in the decoaled abandoned coal mine voids of Jagannath OCP of M/s Mahanadi Coalfields Ltd. Both M/s Bhushan Steel Ltd and M/s Mahanadi Coalfields Ltd. made a joint presentation. It was informed that the proposal is for utilisation of fly ash generated from 410 MW TPP (2x150 + 1x33+ 1x77 MW) of M/s Bhushan Steel Ltd into abandoned coal mine void of Jagannath of M/s Mahanadi Coalfields Ltd., in Talcher Coalfields, Dist. Angul, Orissa. The ash generation is about 3234T/month. The ash is proposed to be filled in quarry No IV of Jagannath OCP of MCL. The proposal was considered in EAC (T&C) meetings held on 3rd-4th January 2012 and on 21st-22nd February 2012. It was recalled that in the meetings, M/s Bhushan Steel Ltd had informed that it has carried out physical analysis, chemical analysis and leaching studies, Hydrogeological studies of Jagannath OCP by using remote sensing and GIS techniques. M/s Bhushan Steel informed that the flyash is alkaline in nature and not acidic. It was informed that the Institute of Minerals and Materials Technology, Bhubaneswar also carried out leachability analysis and submitted its report on 14.10.2011. It was informed that the ground water level varies from 3.89-8.56m bgl during pre-monsoon and 1.85 to 5.26m bgl post monsoon. The aquifers depth ranges from 100m to 120m bgl. It was informed that the levels of heavy/toxic metal content in the leachates of ash proposed to be dumped in quarry No. IV of Jagannath OCP of MCL, Talcher are well within limits of potable water standards. It was informed that the underneath geological strata is impervious due to alternate beds of sands and shale with intercalation of clay. It was informed that the reports of these detailed studies have been submitted to

SPCB, Orissa. It was further informed that BARC has been given work for determining long-term heavy metal toxicity studies on aquifer life system. The proponent had also informed that TPP operations are being curtailed due to paucity of land for dumping of flyash.

The matter had been brought before the EAC (T&C) for further consideration in view of the studies carried out by M/s Bhushan Steel Ltd. as presented to the EAC in the meetings earlier.

The EAC (T&C) discussed the matter with reference to the MOEF Notification dated 03.11.2009 on Flyash Utilisation, the relevant extracts of which are reproduced below:

(7) "No agency, person or organisation shall within a radius of hundred kilometres of a coal or lignite based thermal power plant undertake or approve or allow reclamation and compaction of low lying areas with soil, only flyash shall be used for compaction and reclamation and they shall also ensure that such reclamation and compaction is done in accordance with the specifications and guidelines laid down by the authorities mentioned in sub-para (1) of para (3).

(8) (i) No person or agency shall within fifty kilometres (by road) from coal or lignite based thermal power plants, undertake or approve stowing of mine using at least 25% of flyash on weight to weight basis, of the total stowing materials used and this shall be done under the guidance of the Director General of Mines safety (DGMS);

Provided that such thermal power stations shall facilitate the availability of required quality and quantity of flyash as may be decided by the expert committee referred in sub-paragraph (10) for this purpose.

(ii) No person or agency shall within fifty kilometres (by road) from coal or lignite based thermal power plants, undertake or approve without using at least 25% of flyash on volume to volume basis of the total materials used for external dump of overburden and same percentage in upper benches of backfilling of opencast mines and this shall be done under the guidance of the Director General of Mine Safety (DGMS).

Provided that such thermal power stations shall facilitate the availability of required quality and quantity of flyash as may be decided by the expert committee referred in sub-paragraph (10) for this purpose."

The EAC observed that the dumping of flyash into mine voids vide the aforesaid provisions appears to be for operating mines only and the approval of DGMS is from safety angle alone to ensure that the dumps do not collapse due to problems of instability. The matter of environmental hazards of leaching and long-term impacts of flyash dumping on environment which are very important have not been brought out through Guidelines or Technical Guidance Manual on the use of flyash under the MOEF Notification dated 03.11.2009. The Committee further observed that insofar as dumping of flyash of M/s Bhushan Steel Ltd is concerned, it is planned to dump 100% of flyash slurry (without mixing with OB) into abandoned decoaled mine voids of Jagannath Opencast Coalmine, which are not operational. The Committee also noted that long-term studies on the impacts of this large-scale dumping of flyash have not been carried out. The Committee's attention was drawn to a news item of Indian Express dated 24.04.2012 of a study conducted by Department of Geology, University of Delhi, which has observed high levels of heavy metal Arsenic (5 times beyond WHO safety limits) in the groundwater due to dumping of flyash generated from Thermal Power Stations of Delhi in the flood plains of River Yamuna in Delhi, during their operation. The Committee reiterated that M/s Bhushan Steel Ltd has not explored other options of utilisation of flyash, such as use of flyash for clinker production in cement plants. The Committee stated that flyash is also being exported to other countries and this option has also not been explored by the company. The Committee observed that the proponent has opted for the easiest method of disposal without fully examining the negative externalities and the likely long-term health hazards.

The Committee after discussions decided the following:

(i) The studies got carried out by M/s Bhushan Steel Ltd should be forwarded to ITRC, Lucknow for their detailed analysis and comments.

(ii) The concerns of EAC on the long-terms impacts of flyash dumping into mine voids should also be referred to the Expert Committee under Ministry of Coal vide para (10) of the Flyash Notification dated 03.11.2009 seeking their response on the overall environmental issues of dumping of flyash in mine voids".

The Committee noted that the recommendations made in the 47th Meeting has not been fulfilled by the project proponents and hence does not have merits for consideration in its present form. The Committee also decided that the project proponents at Item No. 12 and 13 above may be provided copies of the sub-group's visit report to M/s NALCO site at Angul and seek para-wise comments. It was also decided that the study by BARC for M/s NTPC can be submitted to EAC for further deliberation. Accordingly the matter was dropped.

2.14 Modernisation of ash disposal system in 1200MW CPP of M/s NALCO by adopting lean slurry disposal method in abandoned coal

mines void of M/s Mahanadi Coalfields Ltd., Bharatpur (South), Talcher Coal Field, in Distt. Angul, Orissa.

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.

DATE: 04.09.2012

2.15 Expansion by addition of 3x660 MW Sasan Ultra Mega Power Project of M/s Sasan Power Ltd. at District Singrauli 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 GIS Enabled Environment & Neo-Graphic Centre (GreenC), Ghaziabad and provided following information:

The proposal is for expansion by addition of 3x660 MW Sasan Ultra Mega Power Project Plant at village Sasan, in Waidhan Taluk, at District Singrauli in Madhya Pradesh**.** No additional land and water will be required for expansion project. The expansion will be accommodated within existing area i.e. 3723 acres. The co-ordinates of the site are at Latitude $23^0$56'54" N to $23^0$59'35" N and Longitude $82^0$36' 42" E to $82^0$38'11" E. Coal requirement will be 8.7 MTPA at 85 PLF. Blended coal is 70:30 (Domestic Coal 6.1 MTPA: Imported Coal 2.6 MTPA) ratio. Ash and sulphur contents in blended coal will be 31% and 0.38% respectively. While domestic coal has 40% of ash content, 0.5% of Sulphur content and 3000 kcal/kg whereas imported coal has 1.3% of ash , 0.05 to 0.1% of Sulphur and 5500kcal/kg. Water requirement will be 47 cusec which will be obtained from the Govind Ballabh Pant Sagar reservoir through a pipeline at a distance of 22.5 km from project site. Induced draft cooling system will be installed. Tri-flue single Stack of 275 m of height will be installed. There are no National parks, Wildlife sanctuaries, Tiger/Biosphere reserves etc. within 10 km of the site. Public Hearing was held on 14.11.2011. Cost of the project is Rs. 9805.64 Crores

The project proponent also informed that all units of 6x660 MW Sasan UMPP are under active stage of implementation and also presented status progress of construction at site.

The Committee also noted that AAQ data collected is for the period December 2010 to February, 2011, whereas TOR was issued only on 23.05.2011. The project proponent informed that AAQ data collection had been an ongoing process and it was informed earlier when the present expansion case was taken up for TOR in the 19th Meeting held during March 7-8, 2011 and also in

the 22nd meeting held during April 4-5, 2011, the Committee perused the AAQ data collected and agreed that the same can be acceptable.

The Committee also noted that there were many missing gaps of information including compliance to the TOR point-wise. As an example the project proponent have not answered the details sought in TOR point (iii) described as "*The project proponent shall have an integrated EIA study conducted by an institute of repute and assessment of baseline data and impact predicted shall be done a macro level. The project proponent shall also refer to the World Bank study earlier carried out for the area wherein it was reported to have capacity of assimilating only about 18000 MW, which has now far exceeded. Justification accordingly shall be provided*".

Similarly the Committee also noted that primary information sought at TOR points (xi), (xiv), (xix), (xx), (xxi), (xxii), (xxvii), (xxviii), (xxxvi) etc. were answered perfunctorily with no details cited. On the issue of water availability study required to have been carried out, the Committee decided that the hydrology and source sustainability study purportedly carried out by IIT, Roorkee for the area shall be submitted. The committee felt that the said study was carried out long before even the UMPP was given environmental clearance and hence the acceptability and relevance of such an old study with the requirement for the proposed expansion needs clarification and further deliberation.

The Committee also agreed that the impact due to withdrawal of such a large quantity of water by the UMPP and its expansion by addition of 3x660 MW from the same source (or maybe different source) and other power plants or industries would be enormously large and the cumulative impact on the competing recipients cannot be ignored, even though no additional water was envisaged for the proposed expansion. *The Committee therefore decided that the project proponent needs to also come out with details of such a cumulative impact assessment (based on secondary data) due to water drawn for the power project and other developmental projects (power or industrial) from the same source.*

The Committee observed that the area is not too far off from critically polluted area of Singrauli and therefore decided that Action Plan for mitigation formulated for Singrauli region need to be seen and as abundant precaution need to be integrated with the proposed activity for the power project.

The Committee also observed that for such a large power project it would be advisable that ancillary units are encouraged to be set up in and around the region, which can also generate a lot of employment potential. Subsequently, since the human health related issues would also be large, it is imperative that baseline data of endemic diseases are identified so that appropriate long term preventive measures can be formulated.

The Committee also noted that the predicted SO_2 emission based on baseline AAQ collected during December, 2010 to February, 2011 is very high and is almost touching the AAQ standards. *The Committee therefore decided that prediction based on other seasons is a necessity in the present case and the project proponent shall accordingly carry out the exercise based on collected data (as reported to have been carried out as an ongoing process) and submit results.*

On the issue of firm coal allotment, the Committee observed that the project proponent have come premature without established source of firm coal availability required for the proposed expansion. It was reported that 30% imported coal will be used and the remaining 70% shall comprise of domestic coal and washery rejects from expanded capacities of coal washeries. *The Committee therefore decided that a clear coal/washery reject source and established coal quantity availability with appropriate documentation shall be first submitted. It was also decided that in case washery reject is proposed, the details of coal washery, its environmental clearance status etc. shall also be submitted (including copy of EC letter) along with a copy of firm imported coal agreement.*

It was also decided that the issue of port handling of imported coal and railway wagon availability need to be spelt out in black and white and documents from Port Authority and Railways shall be submitted to substantiate the claims made.

The Committee also discussed the issues raised in the Public Hearing and the responses provided by the project proponent. The major issues raised were regarding radio activity from ash and coal; increase in air, water and noise pollution; impact on livelihood of villagers; impact on aquatic life on Rihand Reservoir; land fertile and not barren as mentioned in EIA; forests area near project site and hence impact on wildlife; demand for civic amenities like roads, drinking water, electricity; educational facilities etc.; proper compensation for PAPs; Singaruli already an identified critically polluted area why such a plant should come up; afforestation to be done in large scale etc.

The Committee noted that the issues raised have been more or less addressed but few issues need detailed deliberation such as impact on Rihand Reservoir and radio activity from coal and fly ash. *The Committee therefore decided that not only for the expansion but also for the UMPP the project proponent needs to carry out a long term study of radio activity and heavy metals contents on coal to be used through a reputed institute. Thereafter mechanism for an in-built continuous monitoring for radio activity and heavy metals in coal and fly ash (including bottom ash) shall be put in place and in and around the existing ash pond area shall be carried out by reputed institutes like IIT, Roorkee and accordingly formulate mechanism for carrying out the above.*

The Committee finally decided that the proposal in its present form is premature for recommendation of environmental clearance and decided that after incorporating the issues cited in the above mentioned paras, either in the EIA/EMP report or submit addendum EIA/EMP and shall come back with point-wise TOR compliance. Accordingly the proposal was deferred. It was also decided that since the above will take some time the proposal can be de-listed from the pending list.

2.16 27 MW Co-generation Power Plant of M/s Jamkhandi Sugars Ltd. at village Nad KD, Taluk Indi, District Bijapur, in Karnataka - 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 Bhagwati Ana Labs, Hyderabad and provided the following information:

The proposal is for setting up of Bagasse Based Co-Generation Power Plant of capacity 27 MW. While the application for enhancement of Sugar Plant from 2500 TCD to 3500 TCD along with 27 MW Co-Generation Plant was considered by the Industry Committee for TOR in its 36th Meeting held during June 11-12, 2012, it was decided that Co-Generation Plant be referred to the Thermal Power Committee. EC for 2500 TCD was accorded by SEIAA on 29.012.2009. Land requirement will be 98.04 acres which include sugar plant. The co-ordinates of the site are located at Latitude 17^{0}07'12.08" N and Longitude 76^{0}07'03.20"E. Bagasse requirement will be 1085 TPD. Water requirement will be 3000 KLD and will be sourced from Bhima River through pipeline over a distance of 9 Km from the site. No coal will be used for the plant. The Co-Generation plant will run for 9 months. No woody biomass will be used. There are no National Parks, Wildlife Sanctuaries, and Tiger/Biosphere Reserves etc. within 10 km of the site.

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) Composition of fuels and its ratio (as applicable) shall be explicitly stated.
ii) Status of compliance to the conditions stipulated in the environmental clearances accorded for sugar plant shall be submitted as applicable.
iii) Status of development of green belt shall also be submitted along with photographic details.

2.17 Expansion by addition of 8.52 MW D.G. Sets of M/s Luxmi Township Ltd. at Mouza, Gourcharan, Tehsil Siliguri, District Darjeeling, in West Bengal - reg. TOR.

The proposal of M/s Luxmi Township Ltd. is for installation of DG Sets of varying capacities ranging from 40 KVA to 2030 KVA as backup power for their township, which comprises of housing area, commercial complex, hospital and club.

The project proponent informed that they are compelled to approach the Ministry for determination of terms of reference for undertaking EIA/EMP study as per the provisions of EIA Notification, 2006, in accordance with the direction of the West Bengal Pollution Control Board, even though their understanding is that DG Sets does come under the purview of the provisions of prior requirement of obtaining EC under EIA notification, 2006.

The project proponent provided the following information:

The DG sets will be installed in Uttorayan Township being developed by the project proponent. The township is located at about 6.5 Kms from Mahananda wildlife sanctuary and 9.5 kms from Indo-Bangla border. That since the present installation was less than 5 MW, it was not required to obtain environmental clearance. However with the proposed capacities the need has been expressed by the WBPCB. The township has already DG Sets of capacities 2x320KVA; 1x63KVA; 1x40KVA; 1x125KVA (all in housing area); 1x2030KVA; 1x1450KVA;1x500 KVA (at commercial complex); 1x630KVA; and 2x380KVA (in hospital). It is now proposed to add 5x2030KVA; and 1x500 KVA.

The Committee noted that diesel is a subsidized commodity for a specific purpose and power plants on diesel is not an acceptable proposition except for emergency services installations like hospitals and for requirement for lifts (elevators) in high rise apartments. The Committee however observed that whether the proposal falls within the ambit of EIA notification or not is not in their domain and the Ministry may take its view. The Committee therefore declined to recommend TOR and decided that the matter may be taken up at the Ministry first whether; installation of DG Sets attracts the provisions of EIA Notification 2006 or otherwise. Accordingly the proposal was dropped.

2.18.1 (165+20) 185MW CFBC Imported Coal Based Thermal Power Plant of M/s Bhushan Energy Ltd. at Meramandali, District Dhenkanal, in Orissa – reg. TOR reconsideration.

The proposal was earlier considered in 28th meeting of EAC (T) held during July 4-5, 2011 for determination of terms of reference for undertaking EIA/EMP study. In 28th meeting, the Committee had noted that the project proponent did not submit compliance to the conditions stipulated in the environmental

clearances of its previous phase for both Steel and Power plants, which is reported to be very poor. The Committee therefore decided that the Ministry may obtain status of compliance from its Regional Office and the State Pollution Control Board before the case could be considered. Accordingly the proposal was deferred for reconsideration at a later stage.

The proposal was again placed in 54th meeting of EAC held during June 25-26, 2012.The Committee had in the said 54th meeting noted that another proposal of the same project proponent and in the same integrated steel plant complex was earlier considered for addition of 256 MW Captive TPP, wherein an existing plant of 110 MW was reported to be in operation. The Committee therefore observed that the present proposal being considered as 'B' category may be inappropriate as total capacity for TPP will exceed 500 MW.

The Committee had also observed that the total plant including proposal for expansion within or around the steel plant complex need to be viewed in totality as the TPPs have common facilities. It was further noted that total power plant capacity will be about 750 MW after expansion. The Committee also noted that composition of fuel was not clear and the project proponent needed to spell out the same in totality.

The Committee noted that there are prima facie a lot of missing information and the present proposal cannot be considered in isolation. The Committee therefore decided that comprehensive information of the steel plant (including present and future expansion proposal), the captive thermal power plants in existence and the proposed expansions of the TPPs need all to be first furnished along with compliance status of environmental clearances (steel and power plants) as earlier mentioned in the 28th meeting by the Regional Office of the Ministry before the proposal can be considered.

In view of the missing gaps of information the Committee decided that a consolidated proposal shall be made by the project proponent afresh and the matter can be taken up on receipt of the information of the above mentioned issues. Accordingly the proposal was deferred.

The matter was again taken up and the project proponent provided the following information:

The proposal is a 'B' Category but as it falls in Odapada Block which is notified as critically polluted area and hence the proposal is being considered in the Centre. The moratorium has since been lifted on 31.03.2011. The existing plant is 2x150 MW, which is in operation within the premises of M/s Bhusan Energy Ltd. The proposal is for expansion by addition of 185 MW CFBC Boiler Captive Thermal Power Plant at village Meramandali, District Dhenkanal in Orissa. Two numbers of 425 TPH CFBC Boilers will be installed to run 165 MW Steam Turbine Generator. Excess steam will be utilized in adjacent power plant

to generate additional 20 MW. Land requirement will be 335 acres. The co-ordinates of the plant site are at Latitude $20^0$47'42.0" N and Longitude $85^0$15'11.5"E. Stack height shall be 275 m as overall units after expansion along with other group company i.e. M/s Bhusan Steel Ltd. in the same complex will be about 896 MW. The present proposal and the other proposal of another group company viz. M/s Bhusan Steel Ltd. has common facility. Imported coal requirement will be 1.9 MTPA. Imported coal will be used for the proposed expansion. Water requirement will be about 616 m^3/hr, which will be sourced from the Brahmani River through a pipeline from the existing intake well. The pipeline already exists inside the plant. Jharhabandh and Ninidha R.F are located at 608 kms and 9.2 kms respectively from the site. The existing Steel Plant is of 3.1 MTPA capacity. There are two existing ash ponds. There are no National parks, Wildlife Sanctuaries, Tiger/Biosphere reserves etc. within 10 km of the site.

The Committee noted that as per earlier presentation and papers circulated, the fuel was coal middling and char which will be sourced from M/s Bhushan Steel Ltd.

The Committee also noted that the area is already an identified polluted area and expansion may at best be permitted provided that 100% fly ash utilisation of existing is ensured and authenticated by the Competent Authority while application of environmental clearance is submitted.

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) Status of compliance to the conditions stipulated in the environmental clearances accorded for earlier power plants and Steel Plant shall be submitted separately.
ii) 100% fly ash utilisation of existing power plants authenticated by the Competent Authority shall be submitted along with the application of environmental clearance.
iii) Action Plan for mitigation formulated for critically polluted area (if any) shall be identified and integrated with the proposed activity for the power project.
iv) Status of development of green belt shall be submitted along with photographic details.

2.18.2 (175+3x27) 256 MW CFBC Imported Coal Based Thermal Power Plant of M/s Bhushan Steel Ltd. at Meramandali, District Dhenkanal in Orissa - reg. TOR reconsideration.

The proposal was earlier considered in 28th meeting of EAC (T) held during July 4-5, 2011 for determination of terms of reference for undertaking EIA/EMP study. The Committee had in the said meeting noted that the project proponent have not submitted compliance to the conditions stipulated in the environmental clearances of its previous phase for both Steel and Power plants, which is reported to be very poor. The Committee therefore decided that the Ministry may obtain status of compliance from its Regional Office and the State Pollution Control Board before the case could be considered. Accordingly the proposal was deferred for reconsideration at a later stage.

The matter was again taken up and the project proponent provided the following information:

The proposal is a 'B' Category but as it falls in Odapada Block which is notified as critically polluted area and hence the proposal is being considered in the Centre. The moratorium has since been lifted on 31.03.2011. The existing plant is 110 MW, which is in operation within the premises of Integrated Steel Plant of M/s Bhusan Energy Ltd at Dhenkanal District, in Orissa. The proposal is for expansion by addition of 256 MW (175 MW + 3x27 MW) Captive Thermal Power Plant at village Meramandali, District Dhenkanal in Orissa. Three numbers of 275 TPH CFBC Boilers will be installed to run 175 MW Steam Turbine Generator and 3 nos. The present proposal and the other proposal of another group company viz. M/s Bhusan Energy Ltd. has common facility. Turbo Blowers each having capacity of 27 MW for Blast Furnace Phase-II. Land requirement will be 250 acres. Stack height shall be 275 m as overall units after expansion along with other group company i.e M/s Bhusan Energy Ltd. in the same complex will be about 896 MW. Imported Coal requirements will be 1.80MTPA. Water requirement will be about 890 m^3/hr, which will be sourced from the Brahmani River through a pipeline. The pipeline is already inside the plant. from the existing intake well. The pipeline is already existing inside the plant. Jharhabandh and Ninidha R.F are located at 608 kms and 9.2 kms respectively from the site. The existing Steel Plant is of 3.1 MTPA capacity. There are two existing ash ponds. There are no National parks, Wildlife Sanctuaries, Tiger/Biosphere reserves etc. within 10 km of the site.

As in the earlier proposal, the Committee noted that the area is already an identified polluted area and expansion may at best be permitted provided that 100% fly ash utilisation of existing is ensured and authenticated by the Competent Authority while application of environmental clearance is submitted.

The Committee also noted that as per earlier presentation and papers circulated, the fuel was coal middling and char which will be sourced from M/s Bhushan Steel Ltd.

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) Status of compliance to the conditions stipulated in the environmental clearances accorded for earlier power plants and Steel Plant shall be submitted separately.
ii) 100% fly ash utilisation of existing power plants authenticated by the Competent Authority shall be submitted along with the application of environmental clearance.
iii) Action Plan for mitigation formulated for critically polluted area (if any) shall be identified and integrated with the proposed activity for the power project.
iv) Status of development of green belt shall be submitted along with photographic details.

2.19 135 MW Thermal Power Project of M/s Jayaswal Neco Ltd. at village Moitra, District Hazaribagh, Jharkhand - reg. Extension of validity of EC.

M/s Jayaswal Neco Ltd. was accorded environmental clearance for its 135 MW TPP on 14.08.2007. However, the project could not be taken up as coal for the power project is linked to Moitra Washery, which has not been able to progress as the Moitra Coal Project got delayed.

M/s Jayaswal Neco Ltd. therefore requested for extension of validity of environmental clearance in accordance with the provisions of EIA Notification, 2006.

The matter was placed before the Committee for its views.

The Committee noted that the request can be agreed as development of linked coal project delay cannot be attributed to the project proponent. *However the project proponent shall first submit the status and details of the coal project (coal block and its allocation letter specifying end user's name) to the Ministry and the Ministry may accordingly carry out the needful. The Committee also decided that while doing so the Ministry may ensure that conditions which were not stipulated earlier but pertinent now may be incorporated.*

2.20 2x500 MW Tuticorin Thermal Power Project of M/s Neyveli Lignite Corporation Ltd. at District Tuticorin, in Tamil Nadu - reg. Extension of Validity of EC.

M/s Neyveli Lignite Corpn. Ltd. was accorded environmental clearance for its 2x500 MW Tuticorin TPP on 13.06.2007. Construction of the project is in full swing and is expected to be completed in a year or so.

M/s Neyveli Lignite Corpn. Ltd. therefore requested for extension of validity of environmental clearance in accordance with the provisions of EIA Notification, 2006.

The matter was placed before the Committee for its views.

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.*

2.21 2x400 MW Gas based Power plant of M/s GMR Hosur Energy Ltd. at village Maruthandapalli, District Krishnagiri, in Tamil Nadu - reg. Extension of validity of TOR.

M/s GMR Hosur Energy Ltd. was prescribed TOR for its 2x400 MW Gas Based TPP on 12.10.2010. However, the due to uncertainty in gas availability the work for project related studies got delayed.

M/s GMR Hosur Energy Ltd therefore requested for extension of validity of TOR. M/s GMR Hosur Energy Ltd also informed that the Dabhol-Bangalore-Kochi Gas pipeline running close to the proposed power project site is under construction by M/s GAIL and it envisaged to develop1x400 MW as peaking power plant.

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. Accordingly the Committee decided that the Ministry may do the needful.

2.22 3x660 MW Coal Based Power Plant of M/s GMR Bundelkhand Energy Pvt. Ltd. at villages Bijor, Devarikalrav and Bamnav, District Tikamagarh, in Madhya Pradesh - reg. Extension of validity of TOR.

M/s GMR Bundlekhand Energy Ltd. was prescribed TOR for its 3x660 MW Coal Based TPP on 08.09.2010. However, the due to uncertainty in coal availability the work for project related studies are reported to be got delayed.

M/s GMR Bundlekhand Energy Ltd. therefore requested for extension of validity of TOR. M/s GMR Bundlekhand Energy Ltd also informed that the about 200 acres of land has already been acquired and 171 acres of govt. land has been allocated by the Madhya Pradesh Govt. Water allocation has been accorded and an amount of Rs 1.56 Crores has already been deposited to the WRD, Govt. of M.P.

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 12th 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 decided that the Ministry may do the needful.

2.23 2x800 MW Coal Based Lara Super Thermal Power Plant of M/s NTPC Ltd. in District Raigarh, in Chhattisgarh- reg. EC reconsideration.

The proposal was earlier placed in the 50th Meeting of the Committee held during June 25-26, 2012 for consideration for environmental clearance. The Committee in the said 50th Meeting noted that the land requirement for ash pond is too large considering that fly ash need to be utilized 100% from 4th year of operation of the plant in accordance with the Fly Ash Notification. It was therefore decided that land area for Fly Ash Pond shall not exceed 400 acres. Accordingly land requirement should be optimized further from 1870 acres keeping into consideration further reduction in reservoir and township areas. It was also noted that the proposal involves forest area of about 375 acres of which about 135 acres will be in Stage-I. It was observed that copy of application for forest diversion for Stage-I need to be submitted.

The Committee had also desired that the information regarding the HFL of Mahanadi and MSL of the site. That area drainage study needs to be undertaken for the project.

In view of the above, the Committee in the 50th meeting decided to seek following additional information for reconsideration and the proposal was deferred for re-consideration at a later stage:

i) Revised EIA/EMP report after incorporating cumulative impacts of all likely sources of emissions from TPPs, Industries over an area of 15 Kms radius;
ii) Revised layout plan after optimizing the land requirement. Optimization of land requirement due to reduction in ash pond, water reservoir and township areas.

iii) Geological map shall be provided and location of proposed TPP superimposed;
iv) Details of water availability for 12 months and drainage area study shall be submitted. The study shall include details of competing sources of water from Mahanadi downstream of the proposed power plant;
v) Copy of application for Stage-I Forest clearance shall be submitted;
vi) R&R plan and CSR action plan proposed shall be clearly spelt out and committed expenditure activity-wise along with schedule of implementation shall be submitted;
vii) Compliance to point wise TOR provision (as applicable) shall be furnished; and
viii) Submit soft copies of Form-I, Feasibility report, EIA/EMP report and its addendum (if any), Public Hearing proceedings, MoU/FSA for fuel etc.(if not already done).

On submission of clarification to the above, the matter was again taken up.

The project proponent made a presentation along with its consultant M/s Mantec Consultants (P) Ltd., New Delhi and provided following information:

The proposal is for setting up of 2x800 MW (Stage-I) Coal Based Lara Super Thermal Power Plant at villages Armuda, Chhapora, Bodajharia, Devalpura, Mahloi, Riyapalli, Lara, Jhilgitar and kandagarh, in Taluk Pussore, in Raigarh Distt., in Chhattisgarh. Land requirement for Stage-I (2x800 MW) will be 1205 acres which includes 135 acres of forest land. Ultimate Land requirement for 5x800 MW will be 2395 acres. However due to irregular shape of land an area of 2857 acres has been acquired, out of which about 2334.18 acres is private land, 148.99 acres is govt. land; and 375 acres is revenue forest land. Additional land over and above CEA's recommendation will be used only for plantation. The co-ordinates of the site are located within Latitude $21^0$44'57" N to $21^0$146'19" N and Longitude $83^0$25'37" E to $83^0$27'56" E. Coal requirement will be 8.0 MTPA at 90% PLF and will be obtained from Talaipalli Coal Block. Environmental clearance for the coal block has been recommended and Stage-I forest clearance has been obtained both for coal block as well as for power plant site. Ash and sulphur contents in coal will be 40% and 0.5% respectively. High Concentration Slurry Disposal system for ash shall be adopted. About 2.56 MTPA of fly ash and 0.64 MTPA of bottom ash will be generated. Ash pond area will be 400 acres and co-ordinates of the ash pond site will be located within Latitude $21^0$43'07" N to $21^0$44'27" N and Longitude $83^0$27'37" E to $83^0$29'04" E. Bi-flue Stack of 275m will be provided. Closed cycle cooling system with cooling towers will be installed. Water requirement of 4830 m^3/hr for the Stage-I, will be sourced from the Mahanadi River through Saradih Barrage. Commitment for water availability of water for the project has been obtained from the State Govt. of Chhattisgarh vide letter dated 12.01.2011 and concurred by Central Water Commission has been issued vide its letter dated 21.01.2012. The project involves MGR system of rail transportation over a

distance of about 60 Kms. There are no National Parks, Wildlife Sanctuaries, Heritage Sites, Tiger/Biosphere reserves etc. within 10 km of the project site. An ancient rock painting is located on Kabra Hills which is at a distance of about 9 km from the project site. Gajmara & Jhargan Reserve Forests are located at the northeast direction of the project site at a distance of about 8 km. Public Hearing was held on 23.12.2011. Cost of the project will be Rs.9568.27 Crores.
The project proponent also informed the following:

That Talaipalli Coal Block has been accorded Environmental Clearance and forests clearance has been recommended by the FAC on 17.08.2012. That due to irregular shape of the boundaries of the land for the power project, a little additional land higher than the recommendation of CEA will only be used for plantation and for other civil structures of the plant. That an area of about 30 acres of forests land located within the proposed township shall not be used for construction and shall be retained as forests.

Application for forests clearance for an area of 151.762 ha involved for 5x800 has been submitted to CCF, Raipur on 14.03.2012, which has been subsequently forwarded to MoEF and the proposal was considered by the FAC on 15.05.2012 and a site visit undertaken by DG (Forests) and Chairman, FAC on 28.06.2012. The proposal was subsequently re-considered on 17.08.2012 and has been recommended for forests clearance.

That the level of plant is at 203 m above MSL, while HFL of Mahanadi River at Hirakud Reservoir is 192.024 m above MSL. That a detailed area drainage study is also being carried out by Central Water and Power Research Station, Pune as abundant precaution. That cumulative impact assessment over 15 kms radius has been carried out and submitted for perusal of the Committee. That water for the project shall be supplied from Saradih Barrage being constructed on Mahanadi River. R&R Plan and CSR action plan has been prepared and submitted. The R&R plan has been recommended by the District Collector on 03.08.2012 for approval by the State Govt. It was also stated that all 9 villages in the periphery of the site will be adopted.

The Committee also discussed the issues raised in the Public Hearing and the responses provided by the project proponent. The major issues raised were regarding employment of PAPs; facilities to be given in lieu of employment; R&R plan and Resham plantation affected families; educational facilities; health care facilities; rehabilitation for landless farmers; schemes for disabled persons; public amenities such as ponds, toilet, pasture land, electricity etc; source of water; steps taken to control pollution; empowerment for women schemes; disposal of fly ash; 3 year old data given in EIA report; opening of ITI; excess land for the plant not to be allowed; transportation of coal not clarified in EIA report; whether rock painting at Kabra Pahad will be affected etc.

The Committee deliberated the point wise response provided by the project proponent. It was stated that Annuity Scheme is being proposed whether employment is given or not to PAPs besides self-employment schemes being developed. It was also stated that livelihood loss will be taken care and has been agreed in consultation with the District Collector. On the issue of development of technical skills, it was stated that existing ITI and NTPC school will be opened in the township which will be open for local population at same nominal fees charged for NTPC staff. Regarding control of pollution and fly ash disposal it was noted that adequate mitigative measures has been proposed and well reflected in EIA report. On the issue of Fly Ash the Committee decided that no mine void filling or filling up of low lying areas shall be undertaken.

The Committee observed that the project proponent need to identify each common property resource falling in the vicinity of the project area and ensure that if any common property resource (such as grazing land, pond etc.) is falling within the plant area and is unavoidable by its sheer location an equal area shall be first developed and handed over to the community in the vicinity of the project.

The Committee also observed that considering that huge area seem to be involved for ultimate capacity of the power project, the project proponent need to ensure that poor villagers (particularly landless farmers) are further not marginalized. Accordingly it was decided that identification of landless farmers shall be carried out from records of Revenue Department/District Agricultural Office collected and appropriate scheme for sustainable livelihood scheme shall be devised and audited report sent to the concerned Deptt. from time to time.

Based on the information and clarifications provided, the Committee *recommended environmental clearance for the project* subject to stipulation of the following specific conditions and submission of documents/requirements as mentioned above:

i) Harnessing solar power within the premises of the plant particularly at available roof tops shall be undertaken and status of implementation shall be submitted periodically to the Regional Office of the Ministry.

ii) Sulphur and ash contents in the coal to be used in the project shall not exceed 0.5 % and 34 % respectively at any given time. In case of variation of coal quality at any point of time, fresh reference shall be made to the Ministry for suitable amendments to environmental clearance condition wherever necessary.

iii) Bi Flue stack of 275 m height shall be provided with continuous online monitoring equipments for SO_x, NO_x and Particulate Matter ($PM_{2.5}$ & PM_{10}). Exit velocity of flue gases shall not be less than 22 m/sec. Mercury emissions from stack shall also be monitored on periodic basis.

iv) No water bodies including natural drainage system in the area shall be disturbed due to activities associated with the setting up / operation of the power plant.

v) COC of at least 5.0 shall be adopted.

vi) Space provision for installation of FGD shall be made.

vii) High Efficiency Electrostatic Precipitators (ESPs) shall be installed to ensure that particulate emission from the proposed plant does not exceed 50 mg/Nm^3.

viii) Adequate dust extraction system such as cyclones/ bag filters and water spray system in dusty areas such as in coal handling and ash handling points, transfer areas and other vulnerable dusty areas shall be provided.

ix) Utilisation of 100% Fly Ash generated shall be made from **4th** year of operation of the plant. Status of implementation shall be reported to the Regional Office of the Ministry from time to time.

x) No mine void filling or filling up of low lying areas with fly ash shall be undertaken.

xi) Fly ash shall be collected in dry form and storage facility (silos) shall be provided. Unutilized fly ash shall be disposed off in the ash pond in the form of slurry form. Mercury and other heavy metals (As, Hg, Cr, Pb etc.) will be monitored in the bottom ash and also in the effluents from the existing ash pond. No ash shall be disposed off in low lying area.

xii) Ash pond shall be lined with HDPE/LDPE lining or any other suitable impermeable media such that no leachate takes place at any point of time. Adequate safety measures shall also be implemented to protect the ash dyke from getting breached.

xiii) A long term study of radio activity and heavy metals contents on coal to be used shall be carried out through a reputed institute. Thereafter mechanism for an in-built continuous monitoring for radio activity and heavy metals in coal and fly ash (including bottom ash) shall be put in place.

xiv) Fugitive emissions shall be controlled to prevent impact on such that no agricultural/non-agricultural land. Impact to any land shall be mitigated and suitable compensation provided in consultation with the local Panchayat.

xv) Green Belt comprising of three tiers of plantations of native species around plant and at least 50 m width shall be raised. Tree density shall not less than 2500 per ha with survival rate not less than 80 %.

xvi) The project proponent shall also adequately contribute in the development of the neighbouring villages. Special package with implementation schedule for providing free potable drinking water supply in the nearby villages and schools shall be undertaken in a time bound manner.

xvii) Common property resource falling in the vicinity of the project area shall be identified and if any common property resource (such as grazing land, pond etc.) is falling within the plant area and is unavoidable by its sheer location an equal area shall be first developed and handed over to the community.

xviii) The project proponent need to ensure that poor villagers (particularly landless farmers) are further not marginalized. Accordingly identification of landless farmers shall be carried out from records of Revenue Department/District Agricultural Office collected and appropriate scheme for sustainable livelihood scheme shall be devised and audited report sent to the concerned Deptt. from time to time.

xix) The project proponent shall ensure compensation to the land oustees and also formulate scheme in consultation with the State Govt. for immediate implementation of sustainable welfare measures for marginalized landless farmers whose sustenance were indirectly dependent on the land now proposed for the power project and not owned by them.

xx) An amount of Rs. 38.0 Crore shall be earmarked to be spent during construction phase of the project as one time capital cost for CSR programme. Subsequently a recurring expenditure of Rs. 5.65 Crore per annum till the life of the plant shall be earmarked as recurring expenditure for CSR activities. Details of the activities to be undertaken shall be submitted to the Ministry within one month along with road map for implementation. A copy of R&R Plan submitted to the State Govt. and also need to be submitted to the MOEF within one month.

xxi) CSR scheme shall be identified based on need based assessment in and around the villages within 5.0 km of the site and in constant consultation with the village Panchayat and the District Administration. As part of CSR prior identification of local employable youth and eventual employment in the project after imparting relevant training shall also be undertaken.

xxii) It shall be ensured that in-built monitoring mechanism for the schemes identified is in place and annual social audit shall be got done from the nearest Government institute of repute in the region. The project proponent shall also submit the status of implementation of the scheme from time to time.

3.0 Any Other Item with the permission of the Chair.

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

It was also decided that the next meeting will be held during October 8-9, 2012.

ANNEXURE- A1

Terms of Reference (TOR) :

i) Vision document specifying prospective long term plan of the site, if any, shall be formulated and submitted.

ii) 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_2, NO_x, Hg and O_3 (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.

ANNEXURE- A2

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.
