

MINUTES OF THE 17TH MEETING OF THE RE-CONSTITUTED EXPERT APPRAISAL COMMITTEE (EAC) ON ENVIRONMENTAL IMPACT ASSESSMENT (EIA) OF THERMAL POWER PROJECTS

The 17th Meeting of the re-constituted EAC (Thermal Power) was held on 25th May, 2018 in the Ministry of Environment, Forest & Climate Change at Brahmaputra Meeting Hall, Vayu Wing, First Floor, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi under the Chairmanship of Dr. Navin Chandra. The following members were present:

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| 1. | Dr. Navin Chandra | - | Chairman |
| 2. | Dr. Narmada Prasad Shukla | - | Member |
| 3. | Shri N. Mohan Karnat | - | Member |
| 4. | Shri Suramya Dolarray Vora | - | Member |
| 5. | Shri Gururaj P. Kundargi | - | Member |
| 6. | Shri N. S. Mondal | - | Member (Representative of CEA) |
| 7. | Dr. S. Kerketta | - | Member Secretary |

Dr. Sharachchandra Lele, Dr. Jai Krishna Pandey, Dr. Manjari Srivastava, Professor S. K. Sinha (Representative of ISM/IIT Dhanbad), Dr. R. K. Giri (Representative of IMD) and Dr. S. K. Paliwal (Representative of CPCB) could not be present.

Item No.17.0: CONFIRMATION OF THE MINUTES OF THE 16th EAC MEETING.

The Minutes of the 16th EAC (Thermal Power) meeting held on 19.04.2018 were confirmed in presence of members.

Item No. 17.0: CONSIDERATION OF PROJECTS

17.1 1050 MW (2 x 525 MW) Combined Cycle Power Project at Villages Kattupalli and Kalanji, Ponneri Taluk, Thiruvallur District, Tamil Nadu by M/s Chennai Power Generation Limited-reg. ToR. (F.No. J-13012/08/2018-IA. I(T) & Proposal No: IA/TN/THE/74895/2018)

- (17.1.1) Project Proponent (PP) submitted online application vide dated 11.5.2018 for grant of ToR for 1050 MW Combined Cycle Power Project at Tamil Nadu. PP vide letter dated 18.5.2018 requested for postponing the project to EAC meeting to be held in June, 2018. PP cited the reason that they are in the process of circulating the documents to members of EAC and feared that it may not reach to some of the members in time.
- (17.1.2) Committee noted that PP requested for postponement of the proposal to next EAC meeting. Committee also took note that Project Proponent has not submitted alternate site analysis. Since, the proposed project site is surrounded by Ennore Creek and Bay of Bengal which are CRZ areas, alternate sites are to be examined. PP should also ensure whether safe distance from CRZ boundary is maintained and mangroves are not disturbed, if any. PP has to apply for obtaining CRZ recommendations under CRZ Notification, 2011 as the foreshore facilities are required for laying water pipelines, etc. Further, there are many power plants operating within 10 km radius of the proposed site and the Ennore creek is already under severe anthropogenic pressure due to the several industrial establishments along the creek which have reclaimed intertidal areas, mangroves, mudflats, salt pans, etc., Project Proponent may examine alternate sites.
- (17.1.3) **After deliberations, EAC opined that the proposal may be returned with a suggestion that PP should submit the revised proposal by quoting the file number along with alternate site analysis and application for CRZ recommendations from TNSCZMA.**

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**17.2 2x300 MW Coal Based TPP at villages Bhengari, Nawpara, Katangih and Khokhrama, Ghargoda Tehsil, Raigarh District, Chhattisgarh by M/s TRN Energy Pvt. Ltd.- reg. amendment in EC.
(F.No. J-13012/44/2009-IA.II (T) & Proposal No: IA/CG/THE/20427/2011)**

(17.2.1) Project Proponent applied for amendment in EC on 14.3.2018 for transportation of coal by road. The proposal was earlier placed before EAC in its 16th meeting held on 19.4.2018. As the Project Proponent did not attend the meeting, EAC has deferred the project. The proposal has been again placed in the present meeting. However, Project Proponent did not attend the meeting for the second time.

(17.2.2) **As the proposal is listed twice before EAC and there is no communication received from the PP, Committee recommended for returning the proposal with a suggestion that they may submit the proposal afresh as and when PP is ready so that the proposal can be delisted from the pendency list of the Ministry.**

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**(17.3) 483 MW Multi Fuel (Imported Coal, HFO & CSO) based Captive Thermal Power Plants within premises of existing Refinery at Village Vadinar, Khambalia Taluk, Jamnagar District, Gujarat by M/s Vadinar Power Company Ltd. -reg. extension of validity of EC.
F.No. J-13012/130/2008-IA.II (T) & Proposal No: IA/GJ/THE/10367/2008**

(17.3.1) Project Proponent submitted online application on 24.4.2018 for extending the validity of EC dated 21.9.2011.

(17.3.2) Project Proponent (PP) made the presentation and *inter alia* submitted the following information:

- i. Environmental Clearance for 483 MW Multi Fuel (Imported Coal, HFO & CSO) based Captive Power Plant within the premises of Refinery of M/s Essar Oil Ltd., Jamnagar District, Gujarat has been issued vide Ministry's letter dated 21.9.2011 in favour of M/s Vadinar Power Company Ltd.
- ii. Initially, Ministry vide letter No.J-11011/320/2006-IA.I(I) dated 20.7.2007 issued Environmental Clearance for expansion of refinery plant having capacity from 9 MTPA to 60 MTPA along with 780 MW Captive Power Plant in favour of M/s Essar Oil Ltd.
- iii. Further, the EC dated 20.7.2007 has been bifurcated and re-issued for the refinery expansion (9 MTPA to 60 MTPA) in the name of M/s Essar Oil Ltd. and 780 MW Captive Power Plant in the name of M/s Vadinar Power Co. Ltd vide Ministry's letters dated 16.9.2008 which is an administrative arrangement. The validity of EC dated 16.9.2008 for refinery portion was extended for five years, i.e. till 15.9.2018 vide Ministry's letter dated 7.3.2014.
- iv. Presently, only 21 MTPA refinery has been made operational and the expansion of refinery from 21 MTPA to 60 MTPA could not be achieved due to financial constraints.
- v. Out of 780 MW, Units of 77 MW and 220 MW have been made operational. Subsequently, an application has been submitted to Ministry for changing the fuel of 483 MW from Gas/liquid fuel to multi fuels (Coal, HFO & CSO). Ministry advised to obtain fresh EC as the proposal involves switching from Gas/liquid based fuel to multi fuels. Accordingly, fresh appraisal was carried out and Environmental Clearance for 483 MW Multi Fuel (Imported Coal, HFO & CSO) based Captive Power Plant has been issued on 21.9.2011.
- vi. At present, out of 780 MW, 600 MW (77 MW Gas/liquid+ 220 MW Gas/liquid+ 303 MW Coal based) Captive Power Plant is under operation which caters to the refinery with

capacity of 21 MTPA. Remaining 180 MW could not be implemented as the refinery was not expanded from 21 MTPA to 60 MTPA.

- vii. Essar Oil Group faced financial crisis since 2013/14 due to which Essar Group decided to sell its equity stake in Essar Oil in early 2014. In view of this, the implementation of the Phase-II refinery and petrochemical project were slow down. As a result of which power plant got held up.
- viii. Rosneft OJSC (Russian Oil Major) and Trafigura (World's Biggest Commodity Trading Company and UCP, a Russian Pvt. Equity Funds) acquired 98% shareholding of Essar Group in Essar Oil which was the biggest FDI deal with US\$ 12.9 billion in the Indian Corporate history.
- ix. Essar Oil's new shareholders Rosneft, Trafigura and UCP are planning to develop India as their refining hub for Asia-Pacific Region, in addition to increasing Essar Oil's current refining capacity. It is expected that pending capacity expansion (21 MTPA to 60 MTPA) of the refinery and petrochemical complex can be commissioned in near future.
- x. To suffice the refinery expansion requirement of steam and power, it is necessary to expand Captive Power Plant up to 780 MW by utilising balance 180 MW.
- xi. The EC dated 21.9.2011 for 483 MW CPP is valid for five years, i.e. till 20.9.2016. As the Ministry increased the validity of EC from 05 years to 07 years vide amendment notification dated 14.9.2016 and the EC dated 21.9.2011 was valid on the date of issue of notification, the validity of the said EC is automaticall extended till 20.9.2018 (seven years' validity).
- xii. As the said notification dated 14.9.2016 also has the provision of extension of validity of EC for further period of three years (7 years+3 years), PP requested to extend the validity of EC for further period of three years, i.e. till 20.9.2021 so that remaining portion of the project (180 MW CPP) can be executed at the earliest.
- xiii. For the 180 MW CPP, 03 nos. of Boilers of 75 TPH and 02 nos. of turbines of 90 MW to be installed. Sea water of 38.5 MLD for cooling water, boiler & STG auxiliaries is required. Coal consumption of 3 MTPA (85% PLF) is required. Ash generation due to 180 MW CPP will be about 205-230 MT/day. Four flyash silos will be installed each having capacity of 750 MT. Two stacks having 220 m height each are to be installed. Additional man power of 250 personnel will be engaged during construction. The estimated project cost for 180 MW is Rs.2,000 Crores. The timeline to complete the project activity from Zero date is three years.
- xiv. Emissions for the existing power plant is in the range of 56-62 ppm (CCA limit: 230 ppm) for SO₂, 56-58 ppm (CCA limit: 160 ppm) for NO_x, 44-46 mg/Nm³ for PM (CCA limit: 50 mg/Nm³).

(17.3.3) Committee noted that the validity of EC dated 21.9.2011 was originally for five years. However, as per the EIA amendment notification dated 14.9.2016, the validity has been increased to seven years. PP presumed that the validity of the EC dated 21.9.2011 is valid for seven years as it was valid on the date of said notification. Further, PP has not applied for extension of validity of EC before expiry of five years' validity. As EIA amendment notification extended the validity to seven years and facilitates for extending further period of three years, PP took the opportunity to get the EC validity extended for further period of three years. Committee further noted that 303 MW Power Plant has been commissioned in December, 2012. Further, remaining balance power project of 180 MW could not be developed since the PP had the sufficient power to cater to 21 MTPA and further expansion of refinery has not done. PP has informed that application for obtaining ToR/EC for expanding refinery capacity from 21 MTPA to 60 MTPA will be submitted to Industry-2 Sector separately as the existing EC for refinery is getting expired on 15.9.2018. The balance power of 180 MW will cater to the refinery expansion which will come up in near future after obtaining fresh EC. Committee noted

that the 98% of the share of the company assets has been purchased by three companies (Roseneft, Trafigura and UCP) and the ownership has been changed from promoters of Essar Group to owners of three companies. Committee sought the recommendations of Standing Committee of National Board for Wildlife as stipulated in the specific conditions of the EC. PP informed that CCF Jamnagar vide letter dated 22.2.2017 stated that recommendations of SC-NBWL are not required as the proposed project is located at a distance of 8 km from the Eco-sensitive zone of Jamnagar Marine National Sanctuary. Similarly, a condition regarding implementation of comprehensive conservation plan for protection of Marine National Park prepared and vetted by the Competent Authority shall be done before construction work of the plant is initiated. However, PP informed that the condition is not applicable as per the letter of CCF, Jamnagar vide dated 22.2.2017.

(17.3.4) Committee after detailed deliberations, recommended for extending the validity of Environmental Clearance dated 21.9.2011 for further period of three years, w.e.f 20.9.2018 till 20.9.2021 for implementing and commissioning of balance 180 MW Captive Power Project subject to following additional conditions:

- i. Revised emission standards as per the Ministry's notification dated 07.12.2015 and subsequent amendments notified from time to time shall be complied. In case, plant is ready for commissioning and not meeting revised emission norms, operations shall be stopped unless there is an extension given through a specific direction by MoEFCC/CPCB or amendment in notification is issued.
- ii. In case STP are located within 50 km from the project site then the treated water shall be used in the plant.
- iii. Local indigenous species shall be planted as a part of greenbelt development plan in consultation with local Social forestry department.

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**(17.4) 2x250 MW (Phase-II) Thermal Power Plant at Village Tamnar, District Raigarh, Chhattisgarh by M/s Jindal Power Ltd. – reg. amendment in EC.
(F.No. J-13011/8/2006-IA.II(T) & Proposal No. IA/CG/THE/10253/2006)**

(17.4.1) Project Proponent vide online application dated 28.03.2017 requested for amendment in EC dated 8.6.2006. Environment Clearance for setting up of 2x250 MW (Stage-II) Thermal Power Plant at Village Tamnar, Dist. Raigarh, Chhattisgarh has been accorded on 8.6.2006. Specific Condition No. 3(iii) stipulates that “no additional land for ash pond shall be acquired during Phase-II of the project. The height of the existing ash dyke shall be limited to 10 m”. Project Proponent has proposed to raise the height of the ash dyke from 10 m to 18 m to avoid the acquisition of additional land for disposal of unutilised ash from the power plant. Ash dyke is proposed to be raised in two stages of 4 m each. The present elevation of RL 278 m will be raised to RL of 286 m. Total ash pond area is 198 ha. Ash pond No.1 consists of 118.14 ha of area and ash pond No.2 consists of 79.86 ha of area.

(17.4.2) The details of the various power plants using the same ashdyke which has led to filling up of the ashpond are as below:

- i. Project Proponent has initially obtained ECs for 4x250 MW for which 198 ha of ash pond has been proposed is under use now for which PP has requested for increase of height of ashdyke from 10 m to 18 m. The details of ECs are as follows:

EC	Project Configuration	Coal Quantity	Ash quantity	Disposal
EC dated 24.9.1997	2x250 MW (Phase-I)	~2.5 MTPA	1 MTPA (@40 MTPA)	198 ha of ash dyke is permitted.
EC dated 8.6.2006	2x250 MW (Phase-II)	2.5 MTPA Domestic coal from SECL	1 MTPA (@40%)	No additional ash pond was permitted. Ash dyke permitted for Phase-I shall be used.
Total ash generation			2 MTPA	

- ii. Further, Project Proponent obtained ECs for 4x600 MW for which 239 ha ashdyke has been proposed. However, the said ashdyke could not be constructed due to land acquisition and litigations. The details of ECs for 4x600 MW are as follows:

EC	Project Configuration	Coal Quantity	Ash quantity	Disposal
EC dated 18.3.2011	2x600 MW (Phase-I)	~4.8 MTPA (SECL mines)	1.632 MTPA (@34%)	239 Ha near village
EC dated 8.6.2006	2x600 MW (Phase-II)	4.8 MTPA Domestic coal from SECL	1.632 MTPA (assuming ash content is @34%)	Dolesara to be used for ashdyke construction. However, it did not come up due to issues pertaining to land acquisition and litigations.
Total ash generation			3.264 MTPA	

- iii. Due to delay in acquisition of land for ash dyke (239 ha Dolesara/Roadapalli), PP has obtained permission to use existing ash dyke (198 ha) of 4x250 MW for three years (i.e. till 9.01.2017) for 4x600 MW Units as well vide Ministry's letter dated 10.01.2014. PP further obtained extension of the said permission for further period of two years (i.e. till 09.01.2019) vide Ministry's letter dated 26.04.2017. Project Proponent has been disposing ash generated from 4x250 MW and 4x600 MW units in the ash pond of 198 ha which was originally designed for only 4x250 MW.
- iv. The dimensions/volume of the said ash pond are as below:

Area	Height of Ash dyke	Volume availability for ash disposal
198 ha	10 m	17.8 Million Tons
198 ha	04 m	7.2 Million Tons

- v. Project Proponent first obtained the extension/permission for using existing ash pond in the 4x600 MW project proposal (on 26.04.2017, EAC recommended on

28.12.2016). Thereafter, PP applied on 28.03.2017 and EAC recommended with some additional conditions on 26.04.2017 for raising the height of ash dyke in the 4x250 MW project. PP mentioned that raising the height will avoid land acquisition for disposal of unutilized ash. It was found during RO site visit (dated 23.11.2017) that the ash from all units is disposed in the same ashpond as PP could not establish another ashpond for 4x600 MW.

- vi. If all the power plants (4x250 MW and 4x600 MW) operate at full load, there would be ash generation of 5.3 MTPA (~15,000 TPD). The existing ash pond (198 ha) is about to get exhausted because the ash pond which was designed for 4x600 MW could not be constructed. Even if the height of dyke is raised from 10 m to 18 m as requested by PP, the ashdyke will exhaust in further period of three years.
- vii. Further, the issues pertaining to the stability if the height of the dyke is increased by 4 m /8 m which need to be assessed. PP shall find an alternate mode of disposal (utilization in cement, construction, bricks/another ashpond/backfilling in mines). PP has not proposed any firm alternate proposal as on date.

(17.4.3) The proposal was earlier considered by the EAC in its 5th meeting held on 26.4.2017. EAC recommended for increasing of the height of the dyke by 4 m subject to additional conditions. Further, RO certified compliance report has been placed before EAC in its 9th meeting held on 30.8.2017. Committee after detailed deliberations, re-iterated the recommendations made in its meeting held on 26.4.2017 for increasing the height of ash dyke by 4 m subject to additional conditions.

(17.4.4) Ministry while examining the proposal found that the recommendation of increasing the height of ash dyke by 4 m will cater to the ash generated for 15 months only. Further, there is no ash utilisation by Project Proponent. A long term solution shall be prepared as to how the ash utilisation/disposal is to be done during the balance life of power plants. Committee opined that let the PP submit a long term solution for ash utilisation/disposal programme by mail to the Member Secretary which shall be circulated to the EAC members for their comments. The same was submitted by the PP to the Member Secretary on 25.05.2018 and the Member Secretary circulated the same to the EAC members for comments.

(17.4.5) Based on the submission of PP as to how the ash utilisation/disposal is to be done during the balance life of power plants, the PP constantly exploring innovative and new ways to utilize the ash generated at 4x250 MW and 4x600 MW TPP, so as to ensure its utilization on long term basis. In line with provisions in Ash Utilization Notification of Ministry, ash can be used in backfilling of open cast mines and stowing of underground mines. This is the only main avenue in the area due to non-availability of railway network and cement plants. Prior to de-allocation of mines from PP, the PP was utilizing fly ash along with overburden for backfilling of the coal mines at Gare Pelma IV/2 & IV/3 which is at a distance of 10 km from the power plant in Raigarh under strict supervision / guidelines of Director General of Mines safety ("DGMS"). Till the Gare Pelma IV/2 & IV/3 were with PP, the ash utilization was more than the stipulated requirements. Due to the above reason, the PP could manage to dump unutilised ash of stage II also in the ash pond of stage I for a period of 4 years.

However, pursuant to cancellation of allocated mines and assigning the custody of the mine to SECL by Ministry of Coal, backfilling of Fly ash has since been discontinued by SECL from 01.04.2015. However, after intervention of Chhattisgarh Environment Conservation Board and long persuasion and follow up at different levels, an MoU has

been signed between SECL and PP on 07.04.2018 for back filling of fly ash in Gare Pelma IV/2 & IV/3 Open Cast coal Mines. PP has already started actions to award the contract/s for transportation of ash to the mine and its disposal in line with Ash Utilization Notification.

- (17.4.6) Fly ash is being used in manufacturing of fly ash based building products like bricks, blocks, tiles, etc. which results in saving of fertile top soil. Fly ash based bricks/blocks/tiles are as good as clay based conventional building products. The PP has installed brick plants nearby to the existing plant having of capacity of 1,50,000 bricks per day. Also, PP has signed agreements with Fly ash brick manufacturing units for supplying of ash to brick plants with a total approx. capacity of 1,80,000 Nos. bricks per day in the vicinity of the power plant. Further, PP has developed a Fly Ash Technology Park. The details of the same are given below:

Fly ash Technology park (FATP)

Sl No	Name of the brick plant	Capacity Per Day
01	JPL	15,000
02	JPL Ancillary unit (Kumar Industries)	20,000
03	JPL Ancillary unit (Jatin sao)	24,000
04	JPL Ancillary unit(Devangan)	25,000
05	JPL Ancillary unit (Bhanu shahu)	24,000
06	JPL Ancillary unit (Bansal I)	20,000
07	JPL Ancillary unit (Bansal II)	20,000
	Total	1,48,000

- (17.4.7) Fly ash is being currently used by Cement Industries as a pozzolanic material for manufacturing of Portland Pozzolana Cement (PPC). It saves both precious lime stone and coal. The utilization of fly ash in manufacturing of cement is highly value added use. PP informed that discussion is on with cement manufacturers for supplying of fly ash. However, the cement plants are located at more than 200 km from the Power Plant and there is no rail connectivity to transport ash to these cements plants from the TPP. Furthermore, the roads are also not capable of handling the transportation of fly ash of such huge quantity. The rail connectivity is under progress and it will be completed within next 2 to 3 years. Accordingly, PP is planning to start supplying fly ash to nearby cement plant from 2020 onwards.
- (17.4.8)** Other Avenues including road widening: Ash from the power plant is also being utilized for development of land for sericulture, Road construction, low lying area filling, etc. Further, State Government is in process of awarding the contracts for widening of roads in and around the project. All the above avenues will open further avenues to utilize ash from the power plant of JPL.
- (17.4.9)** Ash Utilization: Under the prevailing scenario, our power station will operate at about 35-65% generation for next 10 years as we have Long Term PPA for 800 MW only and Short Term & Medium Term PPAs are in the range of 400-700 MW only. Based upon the same the ash generation and utilization plan of 4x 250 MW and 4x 600 MW for next 10 years are given in next page:

Action plan for fly ash utilization for 4x250 MW & 4x600 MW TPP						
Plant/Unit	Year	Avg. Generation (%)	Coal Consumption MT	Ash Generation in MT (Approx.)	Total Fly ash Utilization in various modes in Tones	% of fly ash Utilization
4x250 MW TPP	2018-19	45%	2759400	1103760	1105000	100.11
	2019-20		2759400	1103760	1105000	100.11
	2020-21	50%	3066000	1226400	1227280	100.07
	2021-22		3066000	1226400	1227280	100.07
	2022-23	55%	3372600	1349040	1349808	100.06
	2023-24		3372600	1349040	1351808	100.21
	2024-25	60%	3679200	1471680	1474336	100.18
	2025-26		3679200	1471680	1474336	100.18
	2026-27	65%	3985800	1594320	1594864	100.03
	2027-28		3985800	1594320	1598864	100.29
4x600 MW TPP	2018-19	35%	5150880	1751299	1557000	88.91
	2019-20		5150880	1751299	1604000	91.59
	2020-21	40%	5886720	2001485	2012000	100.53
	2021-22		5886720	2001485	2011000	100.48
	2022-23	45%	6622560	2251670	2255000	100.15
	2023-24		6622560	2251670	2270000	100.81
	2024-25	50%	7358400	2501856	2520000	100.73
	2025-26		7358400	2501856	2510000	100.33
	2026-27	55%	8094240	2752042	2760000	100.29
	2027-28		8094240	2752042	2755000	100.11

(17.4.10) Ash disposal: In line with EC amendment of 4x600 MW TPP, the existing dyke of 4x250 MW is being used for disposing unutilized ash for 4x600 MW as well. Further, the Ministry has granted approval vide letter dated 26.04.2017 for change in location of new ash dyke of 4x600 MW TPP from Rodapali to near Dolesara village. The process of acquisition of land has been completed in August, 2017. JPL has already deposited the amount of Rs. 57.36 Cr. to CSIDC as an advance premium. It will take 3-4 months for lease allotment and possession of land from CSIDC. The ash dyke construction is expected to start in 1st week of December, 2018 and ash disposal will commence in March, 2019. Till the ash pond for 4x600 MW is available, the unutilised ash from 4x600 MW shall be disposed in the ash dyke of 4x250 MW. On long term basis this new ash dyke will be utilized for disposing bottom ash and unutilized fly ash, if any from 4x600 MW. Once the ash dyke of 4x600 MW is operational, if required, permission from Ministry will be sought to further raise the ash dyke of 4x250 MW to manage disposal of bottom ash and unutilized fly ash, if any from 4x250 MW.

(17.4.5) Project Proponent during EAC meeting submitted that presently, the plants are running at 50% PLF. Accordingly, the ash pond will serve for a period of three years if the height is raised by 4 m. Meanwhile, the ash pond of 239 ha at Dolesara village originally planned for 4x600 MW Power plant will be commenced by April, 2019. Further, 100% ash will be utilised from this year onwards. The ashdyke is used only as contingent to accommodate unutilised ash.

(17.4.6) Committee noted that status of construction activities of Ash pond at Dolesara village is not known. However, as per the PP, the ash pond of 239 ha at Dolesara village originally planned for 4x600 MW Power plant will be commenced by April, 2019. Further, PP stated that 100% flyash utilisation will be achieved this year onwards. However, details of quantity-wise utilisation pattern has not been made available. Further, structural stability and safety report for increasing the ashdyke height of 4 m. EAC also deliberated on the RO compliance report. EAC noted that the greenbelt development is poor as reported by RO. PP has not used indigenous species. Alstonia, Gulmohar, Teak, etc have been planted. Further, PP has planted saplings in November and December, 2017. Committee suggested that plantation has to be done before the onset/during monsoon for better survival rate.

(17.4.7) **EAC after detailed deliberations, recommended that as the PP has submitted a long term utilization of fly ash, the committee opined that it is a satisfactory reply and recommended to agree for increasing ash dyke by 4 m, as recommended earlier in the EAC meeting held on**

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(17.5) ANY OTHER ITEM WITH THE PERMISSION OF THE CHAIR.

**(17.5.1) 2400 MW Thermal Power Plant (TPP) of Vedanta Limited at village Brundamal, District Jharsuguda, Odisha by M/s Sterlite Energy Limited- reg. Amendment in Environment Clearance.
(File No.: J.13011/3/2007-IA.II(T) & Online No.: IA/OR/THE/11812/2007)**

(17.5.1.1) The Project Proponent (PP) submitted online application on 30.11.2017 for amendment in the EC dated 7.12.2007 for expansion/addition of ash ponds.

- i. The M/s Vedanta Limited (earlier M/s Sterlite Energy Limited) has the following sites at Jharsuguda:
 - a. 2400 MW Thermal Power Plant
 - b. 1.6 MTPA Aluminium Smelter along with Captive Power Plant of 9x135 MW
- ii. Presently, Vedanta Limited is operating 2400 MW Thermal Power Plant (TPP) and 9x135 MW Captive Power Plant. Total ash generation from both the plant is 26809 TPD approx. Details of daily ash production from CPP and TPP are as below:

S.No.	Power Plant	Bottom Ash (TPD)	Fly Ash (TPD)
1.	Thermal Power Plant	3,340	13,360
2.	Captive Power Plant	2,022	8,087

- iii. Project Proponent has proposed for expansion/ addition of ash ponds. Accordingly, Vedanta Limited has proposed 4 locations for expansion/ addition of ash ponds, with details as below:
 - a. Expansion of Katikela Ash Pond: 128.55 acre; Vedanta Limited (existing Ash pond).
 - b. Siriapali Ash Pond: 206.22 acres: EC was obtained for 230 acres of ash pond for 2400 MW TPP project vide F. No. J13011/3/2007-IA.II(T) dated 7th Dec. 2007; however, ash pond was not constructed.
 - c. Kumadapali Ash Pond: 188.89 acre: The Kumudapali site is also the part of 2400 MW TPP EC.
 - d. Gudigaon Ash Pond: 576.33 acre: This ash pond is also the part of EC for Expansion of Aluminium Smelter by 13.5 LTPA capacity with 675 MW Captive Power Plant vide letter No. J-13011/10/2006-IA(T) dated 14.03.2007; however, ash pond was not constructed

(17.5.1.2) The proposal was earlier considered in the 14th meeting of EAC (Thermal Power) held on 12.1.2018 and **recommended for a site visit by a Sub-committee of EAC having 5-member committee to verify the following details:**

- i. Location of existing ash ponds, available volume and condition of the ash ponds. Whether the existing ash pond locations are approved under various Environmental Clearances issued time to time.
- ii. Location of proposed ash ponds, sensitivity surrounding these locations such as villages, water bodies, forests and wildlife corridors. Feasibility of these locations considering the environmental and social sensitivities.
- iii. Existing utilisation pattern and feasibility of various utilisation options such as cement manufacturing, brick manufacturing, road construction, filling in abandoned mines.
- iv. Viability of using flyash in the mine void located in the vicinity of the project area as a part of concurrent backfilling along with the Over burden materials.
- v. Action plan for remedial measures of the breached dyke including rehandling of the spilled ash at the downstream.
- vi. Point-wise reply of the Public Representation.

(17.5.1.3) The Sub-committee comprising of following Members visited the site on 21.4.2018:

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| 1. | Dr. Navin Chandra | Chairman |
| 2. | Shri S.D. Vora | Member |
| 3. | Dr. S. Lele | Member |
| 4. | Prof. Om Prakash | Member |
| 5. | Dr. A. K. Gupta, Scientist 'D' | Rep. of RO, MoEF&CC, Bhubaneswar |
| 6. | Dr. S. Kerketta | MoEF & CC & Member Secretary, EAC |

(17.5.1.4) The following are the salient observations and recommendations of the sub-committee during the visit. Further, the detailed site visit report is appended as **Annexure-A3**.

- i. **Proposed Siriapalli Ash pond site:** While granting EC vide letter dated 7.12.2007, an area of 230 acres was approved having locations near to Siriapali village, which has not been used for disposal of fly ash. Subsequently, this location was de-linked vide letter dated 12.05.2008 by the Ministry and allocated to dumped at new site i.e. near Sripura village, which has also not been used to dump fly ash. **In view of this and not notifying the elephant corridor as yet, the Sub-committee opined that an area of 230 acres as approved by the Ministry vide letter dated 7.12.2018 near to Siriapali village may be allowed as 198.52 acres of land has already been acquired by the PP till date.**
- ii. **Proposed Kumudapalli ash pond site:** This proposed ash pond has not been used till date for disposal of fly ash during the visit of the Sub-Committee, the location of the Kumudapali is found that a state Highway is passing including a seasonal nallah, tributary to Bhedan River passing along the proposed boundary. Now, land acquisition is in process. **Considering the above, the Sub-committee opined that even though an area of 40.32 acres of land has been acquired out of the total 188.90 acres, recommendation of this Kumudapali site for disposal of fly ash may not be allowed at present.**
- iii. **Proposed Gudigaon Ash pond site:** While granting EC for expansion of Aluminium Smelter (2.5 to 16 LTPA) and Captive Power Plant (675 MW to 1350 MW (10x135 MW)) to M/s Vedanta Limited vide Ministry letter No. J-13011/29/2007-IA II(I) dated

- 11.06.2008, an area 191.92 ha near Village Gudigaon was permitted as ashpond. **Therefore, the Sub-Committee opined that as the Ministry has already identified an area of 191.92 ha at Gudigaon, further permission to use this land is not required.** However, a long-term scheme be prepared by the PP for 100% utilization of fly ash as per the Fly Ash Notification and amendments thereof.
- iv. **Proposed Katikela Ash pond site:** The proposed Katikela ash pond (Lagoon-4) is adjacent to the existing Katikela ash pond (Lagoon-1, 2 & 3) site which is under use by Project Proponent and close to the Bhedan River. **Sub-committee recommended that there should not be any construction within 500 m distance from the HFL of the Bheden river and the vacant land may be used for raising plantation instead of dumping of fly ash.**
 - v. **Kurebaga Existing Ash Pond:** Kurebaga existing ash pond has 3 ponds. It was found that the Pond Nos.1 & 2 are not in operation and have been closed, plantation raised therein. Pond No. 3 is found to be in operation and as per the submission of PP, the total ash pond area is 143 acres. The PP informed that the State Pollution Control Board, Odisha has granted Consent to Establish (CTE) vide letter No. 13283/Ind-II-NOC/5285 dated 12.08.2010, which was valid for a period of five years from the date of issue of this letter provided commencement of production of the project, has not taken place in the meantime to dump fly ash at Kurebaga. **As the Ministry has granted the EC, permission to dump fly ash at Kurebaga should have been taken from the Ministry instead obtaining CTE and mere informing in writing to the Ministry are not sufficient. It is non-compliance of EC conditions, therefore, the Sub-committee opined that let the Ministry initiate appropriate action against the PP under the provisions of Environment (Protection) Act, 1986 and EIA Notification, 2006 and amendments thereof.**
 - vi. **Katikela Existing Ash Pond:** There are 3 lagoons. The Sub-Committee observed that Lagoon-2 got breached due to heavy rains during August, 2017. It requires immediate restoration and necessary engineering measure before the onset of the coming monsoon so that no fly ash is flown into the Bheden River. During the site visit, dumping of fly ash was not taking place in this lagoon. Lagoon Nos. 1 and 3 are now being used for disposal of fly ash through High Concentration Slurry Disposal (HCSD) technique. The PP informed that vide letter No. 12167/Ind-II-NOC/5285 dated 23.07.2011, the State Pollution Control Board, Odisha has granted CTE for construction of permanent Ash Pond at Katikela, Jharsuguda over an area of 192 acres which was valid for a period of five years, which means construction shall commence within a period of 5 years from the date of issue of this letter. The PP further informed that within five years of granting CTE, construction of ash ponds at both the locations were started in synchronization with the main plants. The PP has also intimated the Ministry vide letter No. SEL/MoEF/SEA 301/2008-02 dated 08.03.2008 that an area of 100 acres at Katikela has proposed for disposal fly ash from 2400 MW Thermal Power Plant. **Further, as the Ministry has granted the EC, permission to dump fly ash at Katikela should have been taken from the Ministry instead of obtaining CTE and mere informing in writing to the Ministry are not sufficient. It is non-compliance of EC conditions, therefore, the Sub-committee opined that let the Ministry initiate appropriate action against the PP under the provisions of Environment (Protection) Act, 1986 and EIA Notification, 2006 and amendments thereof.** The PP has prepared report on restoration and future utilization of scheme for Lagoon-2, Katikela Ash pond through Tata Consulting Engineers (TCE). Based on the recommendation of TCE for Restoration Scheme of Lagoon-2, the **PP may immediately initiate work before the onset of the monsoon so that no wash off will let into the nearby river.**

- vii. **Ash utilisation Pattern:** Utilization status of fly ash revealed that 16 to 100% of fly ash generation has been used for land filling of low lying areas of the proposed project during the years. PP informed that viability of using fly ash in the mine void located in the vicinity of the project area as a part of concurrent backfilling along with the Over burden materials, seems very remote. Therefore, the Sub-committee opined that the **PP should change the existing utilization pattern and relook feasibility of various utilization options such as cement manufacturing, brick manufacturing, road construction, filling in abandoned mines, etc. other than filling of low lying land.**
- viii. **Amendments in Environmental Clearance regarding transfer/ change in name of the company:** ECs have been issued in the name of M/s Sterlite Energy Ltd. and Vedanta Aluminium Ltd. And, now Vedanta Ltd has submitted present application. **Though, all the companies are subsidiaries/sister companies of Vedanta Ltd., necessary amendments should be taken for all the ECs.**
- ix. **Legal issues pertaining to Forest Land as part of Kurebaga Ashpond area:**
- a. O.A. No.151/2016/EZ has been filed before the NGT, Eastern Zone, Kolkata Bench as Project Proponent used 246.74 acres of forest land in Khata No. 108 illegally for its ash pond in Burrkhamunda village in Jharsuguda district without approval from the Central Govt. under Forest (Conservation) Act, 1980 (in short, FC Act). The Hon'ble Tribunal pronounced a judgment on 13.11.2017. The matter is related to use of 48.68 acres of Gram Jungal (Village Forest) in Plot No.188, Khata No. 108 at Kurebaga wherein the PP has used this piece of land for filling up with fly ash. The NGT in the order dated 13.11.2017 mentioned that 'The Respondent No. 1 (Project Proponent) has also stated that after the filling of Plot No. 188 and completion of plantation work, no work is undertaken by them and the plot in question is a free land from any form of encroachment' and dismissed the OA by directing 'Applicants are at liberty to approach the appropriate forum to redress their grievance'.
 - b. RO, MoEF&CC, Bhubaneswar while submitting the affidavit in the O.A. no.151/2016 stated '*Principal Secretary, Forest & Environment Department, Govt. of Odisha, Respondent No. 2, has been requested to furnish an inspection report on the allegation of the petitioner's regarding use of forestland by Vedanta Ltd for non-forest purpose without approval from the competent authority under Section 2 of the Forest (Conservation) Act, 1980 and the report is awaited. MoEF & CC would further stated that so far as the records available with the answering Respondent, no such proposal has been received with respect to the diversion of 246.74 acres of forest land and no such permission has been granted under the Forest (Conservation) Act, 1980.*
 - c. The matter is closed now and further, the PP informed that no applicants have approached the appropriate forum to redress their grievance in this regards.
 - d. The PP informed that the low-lying area was filled up with fly ash by the PP and closed after raising plantation of 30,000 plants. As the land in question is Gramya jungle, therefore the State Government of Odisha and the State Forest Department may take separate call as per the prevailing rules and guidelines.
- x. Point-wise reply of the public representations is available in the site visit report.
- (17.5.1.5) EAC deliberated the site visit report of the sub-committee and in-principle agreed with the recommendations of the sub-committee. **EAC made the following recommendations:**
- i. Action for non-compliances/violations for disposing ash in the ponds which were not part of the EC granted earlier be initiated by the Ministry. Simultaneously, the PP shall apply for amendment of EC for further dumpings of fly ash in Katikela and Kurebaga Ash Pond Areas.

- ii. ECs have been issued in the name of M/s Sterlite Energy Ltd. and Vedanta Aluminium Ltd. And, now Vedanta Ltd has submitted present application. Though, all the companies are subsidiaries/sister companies of Vedanta Ltd., necessary amendments should be taken for all the ECs.
- iii. The remediation plan to be implemented on priority before onset of monsoon by PP at the Katikela ash pond since it was breached into the Bhedan river.
- iv. The area proposed for Katikela expansion (Lagoon-4) to be kept only for greenbelt development. No ash disposal shall be done in that area.

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(17.5.2) 1x800 MW Pit Head Ultra Super Critical TPP at Umred Coal Mine area village Heoti, Tehsil Umrer, District Nagpur, Maharashtra by M/s Maharashtra State Power Generation Company Limited. -reg. ToR.

(F.No: J-13012/07/2018 & Proposal No: IA/MH/THE/73481/2018)

(17.5.2.1) The PP has submitted online application on 13.3.2018 for grant of ToR. The power project 1x800 MW Coal based Super-critical Thermal Power Project is proposed on the reclaimed area of Umrer Opencast Mine which operated by M/s Wester Coalfields Ltd. The proposal for grant of ToR was considered in the 16th meeting of EAC (Thermal Power) held on 19.4.2018 and the Committee recommended for site visit by the sub-committee.

(17.5.2.2) The site has been visited by the sub-committee during 20th-21st May, 2018. Detailed report is appended as **Annexure-A4**. Sub-committee noted that the proposed power project is located on the Over burden (OB) dumps which has height more than 47 meters and has age of 3-25 years. Lot of vegetation and green cover is grown on these dumps. It was informed that there are about 2,70,750 trees have been planted by M/s WCL on these OB dumps in an area of 108.3 Ha (271 acres) which is part of the proposed power plant area. Cutting of trees, excavation of OB dumps, re-handling of the material, identification of new site for disposal of excavated OB, levelling, grading & compacting of power project site is a huge activity which is to be incorporated in the modified mine closure plan. Further, the volume of overburden to be handled and time required for the preparing the site is to be estimated. Further, the Umrer mine is in operation and has reserves of 11 MTPA which will last up to 3 years. Whether, the power project site preparation activities will start simultaneously with mine operations or will start along with closure activities after exhausting the coal reserves is to be clearly indicated. A firm plan along with demarcation of facilities and specific site preparation activities shall be prepared in consultation with WCL.

(17.5.2.3) Sub-committee made the following recommendations:

- i. Clear demarcation of land (facility-wise which includes colony) required for proposed power plant shall be carried out. Kml file showing boundaries of mine and power project shall be submitted.
- ii. Detailed topographical and physical survey is to be done manually and by drones wherever physical survey is not possible for the identification of land for the proposed power plant.
- iii. Estimation of volume of OB dumps to be excavated, removed and identification of area for disposal within the mine shall be done.
- iv. Physical enumeration of trees girth-wise to be cut in the proposed power project area to be done.
- v. Compensatory afforestation plan shall be prepared.
- vi. Cost estimation of the OB re-handling and tree cutting shall be done. Economic viability of the site preparation activities shall be carried out which includes OB removal, re-handling, levelling, grading, compacting, pile foundation activities, etc in

comparison with acquiring the new land. A feasibility study is to be conducted incorporating all aspects of site preparation.

- vii. Site preparation activities shall be incorporated in the mine closure plan and the modified mine closure plan shall be approved by the Competent Authority with separate budget allocation along with the timelines for implementation as per the Mines and Minerals (Development and Regulation) Act, 1957 and its subsequent amendments, Mineral Conservation Development Rules, 1988 and subsequent amendments and MMDR Rules and extant rules applicable to coal mining.
 - viii. Location of ash pond for disposal of unutilized ash shall be done in such a way that it does not interfere with groundwater table as well as Amb river.
 - ix. Raw water reservoir may be appropriately relocated as it is proposed at the workshop and Coal handling plant of Makar Dhokda mines.
 - x. Modified mine closure plan (duly approved by Competent Authority) shall be prepared and executed by either M/s WCL or M/s Mahagenco after entering into the Memorandum of Understanding (MoU) for bearing the cost and execution of activities suitable for power project.
 - xi. All other administrative formalities may be completed as per the prevailing acts and Project Proponent may obtain 500 acres from the mine lease area.
 - xii. Alternate site analysis (at least three sites) shall be carried out and report be submitted.
 - xiii. Project Proponent may approach Ministry after completing the above mentioned recommendations along with the concrete plan.
- (17.5.2.4) EAC deliberated the report of the sub-committee and agreed with the recommendations of the sub-committee. EAC noted that the proposal is at preliminary stage as mining operations are still going on and the specific plan for re-appropriation of dumps, location of facilities, site preparation of activities is still in conceptual stage. Further, EAC noted that minimum distance of 500 m from Amb river shall be maintained while considering the location of facilities for the power project. **The proposal may be considered after submission details as recommended by the sub-committee. Accordingly, the proposal is kept in abeyance.**

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(17.5.3) 2x660 MW Super-critical Technology Coal Based Thermal Power Plant near, Kohadhar, Bhagdeva & Mai Kalam Villages, Meja Taluk, Allahabad Dist. in Uttar Pradesh by M/s Meja Urja Nigam private Ltd. - reg. extension of validity of EC. (File No: J-13012/03/2008-IA.II (T)& Online No.: IA/UP/THE/52631/2011)

- (17.5.3.1) Project Proponent submitted online application on 13.11.2017 for extension of validity of Environment Clearance dated 10.1.2011 for further period of two years (beyond seven years). EC for 2x660 MW power project has been issued vide Ministry's letter dated 10.01.2011 which was valid for five years, i.e. till 09.01.2016. As per EIA amendment notification, the validity of the EC has been made as seven years. Accordingly, the validity of the said EC is till 09.01.2018. The project was scheduled to commission in August, 2016. However, the project could not be commissioned due to various reasons including that mainly related to acquisition of land and issues thereof etc. The project is in advance stage of completion and commissioning and Unit-I is expected in the first quarter of year 2018 and that for Unit-II in December, 2018. PP requested
- (17.5.3.2) The proposal was earlier considered by the EAC (Thermal Power) in its 13th meeting held on 28.11.2017. Committee after deliberations, recommended for **grant of extension of validity of EC for one year, i.e. till 9.1.2019. Further**, sub-committee shall make a site visit to assess the following:

- i. Implementation of R & R activities and plantation.
- ii. Rejuvenation of vacant land falling between the River Ganga and the Power plant.
- iii. Any other matter in the interest of the Environment, if any.

(17.5.3.3) Sub-committee comprising of following members conducted the site visit on 20.5.2018:

- | | |
|-----------------------------|--------------------|
| 1. Dr. Navin Chandra | : Chairman |
| 2. Dr. J.K. Pandey | : Member |
| 3. Prof. S.K. Sinha | : Member |
| 4. Prof. Manjari Srivastava | : Member |
| 5. Dr. S. Kerketta | : Member Secretary |

(17.5.3.4) The following are the salient observations and recommendations of the site visit report. Further, completed report is appended as **Annexure-A5**:

i. Implementation of R & R activities and plantation:

- a. A total of 36 families, who were engaged in the Stone Crusher plants, have been shifted and settled in Jharaiya village, adjacent to the Power Plant. All the families were staying in the Govt. Revenue land, where 2x660 MW Super-critical Technology Coal Based Thermal Power Plant has been constructed. As discussed with the Officials of the project, the displaced families have accepted onetime cash compensation and as per the land assigned in the village, construction of their houses have been done by the Project Oustees themselves.
- b. Overhead water tank has been constructed near to Jharaiya village which caters also to other nearby villages.
- c. The Officials of the project informed that training linked to the employment has been given to the displaced families. But, on enquiry, it is found that unemployed youths have received training but, still wondering for their employment. **The Sub-committee opined that the project should give priority to provide employment to these families based on their skills.** An initiative to bring in inclusive growth may be taken up by making a survey matching their inherent skills *vis-a-vis* their need and scope of intervention of NTPC in order to leverage the opportunity of the business-societal ecosystems present there-in. **In this regard, a time-bound action plan along with commitment of implementation shall be made by the PP and be submitted to the Ministry towards capacity building of the neighbouring stake holders.** Efforts should also be made to provide few more employment for the displaced families so as to ensure at least one employment (depending on their skill) for each of 36 displaced families to ensure their sustained livelihood.

ii. Rejuvenation of vacant land falling between the River Ganga and the Power plant:

- a. While granting ToR to the proposed project, as per the Condition No (i), “..... **Conformity of the site with the prescribed guidelines in terms of distance HFL of the river, highways may also be shown**” has been stipulated.
- b. In this regard, the sub-committee opined that the **PP shall prepare a map indicating the location of the Thermal Power Plant from 500 m distance from HFL of the Tons river duly overlaying with the Toposheet. It should be authenticated by the Concerned Authority.** The vacant land available between the power plant and the HFL be rejuvenated by taking appropriate measures (both engineering and biological).
- c. Construction of Pumped House seems to be within 500 m from HFL of Ganga River. Therefore, **a map be prepared indicating the location of the Pump House from 500 m distance from HFL of the Ganga river duly overlaying with the Toposheet. It should also be authenticated by the Concerned Authority.**

- d. **Rejuvenation of vacant land falling between the River Ganga and the Power plant has not yet been taken up. An appropriate commitment be made by the PP for its implementation.**
- e. **In view of the water withdrawal from River Ganga for the power plant, its impact on the aquatic life/riverine system may be studied and assessed together with mitigative measures to contain impact within its carrying capacity.**
- iii. **Any other matter in the interest of the Environment, if any:**
 - a. Some standing trees are present in the proposed ash pond areas. The PP should put in necessary efforts to transplant those trees elsewhere.

(17.5.3.4) EAC deliberated the site visit report of the sub-committee and agreed with the recommendations. **Accordingly, project proposal is deferred till satisfactory submission of action plan and details as sought by sub-committee.**

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**(17.5.4) Coal Fired Thermal Power Project Extension Stage-II (2x250 MW) at Parichha, District Jhansi, Uttar Pradesh by M/s Uttar Pradesh Rajya Vidyut Nigam Limited-reg. amendment in EC.
(F.No. J-13011/47/2006-IA.II(T) & Proposal No. IA/UP/THE/11776/2006)**

(17.5.4.1) Project Proponent submitted online application on 05.02.2018 for amendment in validity of Environment Clearance dated 21.5.2007. Environment Clearance to the project 'Coal fired Thermal Power Plant Extension Phase-II (2x250 MW)' was issued by the Ministry vide letter dated 21.05.2007. In the said Environment Clearance at para 2, it was mentioned that 'The land requirement is estimated to as 47 ha which is already available within the premises of the existing power plant'. **Project Proponent has requested for increasing the project area by purchasing additional land of 229.564 ha at Villages Gulara and Maheba for construction of new Ash Dyke.**

(17.5.4.2) The proposal has been earlier considered by the EAC (Thermal) in its 15th meeting held on 28.2.2018. Committee deferred the proposal and recommended for a site visit to be conducted by the sub-committee.

(17.5.4.3) Sub-committee comprising of following members visited the project site on 19.5.2018:

1. Dr. Navin Chandra : Chairman
2. Dr. J.K. Pandey : Member
3. Prof. S.K. Sinha : Member
4. Prof. Manjari Srivastava : Member
5. Dr. Susheel Kumar, Scientist "C" : Member & representative of RO, MoEF&CC, Lucknow
6. Dr. S. Kerketta : Member Secretary

(17.5.4.4) Sub-committee made the following observations during the site visit:

- i. The details of COD achieved are as provided below:

Sl. No.	Stage	Unit No. & Installed Capacity	COD achieved	Remarks
1.	Stage-I	I, 110 MW	01.10.1985	No power generation since March, 2017.
		II, 110 MW	Dec., 1985	In operation
2.	Stage-II	III, 210 MW	24.11.2006	In operation
		IV, 210 MW	01.12.2007	In operation
3.	Stage-III	V, 250 MW	17.07.2012	In operation
		VI, 250 MW	18.04.2013	In operation

- ii. The existing ash ponds are located adjacent to the Betwa river. Proposed ash pond is located at more than 500 m HFL from the Betwa river and also 500 m away from the NH-24.
- iii. The area of the existing ash ponds is around 100 ha and is being used since 1985. The PP pleaded that as ash utilization programme couldnot be done as per the provisions of the Fly Ash Utilization Notification, capacity of existing ash pond is getting exhausted early.
- iv. Status of existing capacity of the Ash Dyke:

a. For 2x210 MW Ash dyke (Quantity in lakhs m³)

	Compartment "A"		Compartment "B"		Remarks
	Generation	Filled	Generation	Filled	
Mother Dyke	10.90	10.90	8.87	8.87	No space is available for disposal of fly ash. It is closed now.
1 st Raising	8.80	8.80	7.49	7.49	
2 nd Raising	7.28	7.28	6.35	6.35	
Total	26.98	26.98	22.71	22.71	

b. For 2x110 MW Ash dyke (Quantity in lakhs m³)

	Compartment "A"		Compartment "B"		Remarks
	Generation	Filled	Generation	Filled	
Mother Dyke	12.50	12.50	12.50	12.50	Space for 12.91 lakh m ³ is available for disposal of fly ash which will be exhausted by Oct., 2019.
1 st Raising	11.25	11.25	11.25	11.25	
2 nd Raising	10.41	Not done	9.16	7.66	
Total	34.16	23.75	32.71	31.41	

- v. The PP has got MoU from the local cement manufacturers but the utilization of fly ash couldnot be achieved.
- vi. Now, the annual flyash generation is approximately 20 Million Tons and Bottom ash is 4.5 Million Tons.
- vii. Percentage of ash utilisation in the last five years has gone down to approx. 50%.
- viii. However, during visit of the Sub-committee, it has been informed that the locations of the above proposed areas have been changed to a new location so as to leave 500 m distance from the HFL of the Betwa river.
- ix. Now, 98 ha area is proposed at new location i.e. Maheba village, 4.5 km away from the plant including 62 ha of area for construction of Ash Pipe Corridor and associate structure like AWRS, Pump house, etc and additional area for development of green belt.

(17.5.4.5) The recommendation of the sub-committee are as below. Detailed report is appended as **Annexure-A6**.

- i. Revised Form-I to be submitted as there is change in the proposed location of the ash dyke.
- ii. EC compliance report of the existing project to be submitted.
- iii. Utilisation of flyash has not been achieved as per the Fly Ash Utilization Notification. Utilization status of fly ash revealed that 41% to >100% of fly ash generation has been used. However, the Sub-committee opined that the PP should explore the possibilities of improving utilization pattern by relooking into the feasibility of various utilization options such as cement manufacturing, brick manufacturing, road construction, filling in abandoned mines, etc.

- iv. 98 ha area is proposed at new location i.e. Maheba village, 4.5 km away from the plant including 62 ha of area for construction of Ash Pipe Corridor and associate structure like AWRS, Pump house, etc. and additional area for development of green belt. **The land is found to be 100% agricultural land and now two crops are being practiced by the farmers.**
 - v. **It has been found that 187 families are losing land for the proposed construction of Ash Dyke.** The PP informed that at least one person is engaged in the plant belonging to the families of those whose land is acquired. However, on enquiry from these families present during the visit, it has been noted that very few have been employed in the plant. The submission made by the PP is not correct in this regards.
 - vi. As per the EC conditions, no additional land should be acquired for any activity of the project otherwise. However, **as the proposed land for construction of Ash dyke is agriculture land, it has been opined that let the PP locate two alternatives, primarily the land so selected should be other than agricultural land.** Then the proposal may be placed before the EAC for Thermal Sector to arrive at a logical decision as the present proposal is 100% agricultural land and cannot be parted for disposal of fly ash so as to create a barren land.
- (17.5.4.6) EAC deliberated the site visit report submitted by the sub-committee and agreed with the recommendations made therein. **Accordingly, the proposal is deferred till the information is submitted as per the recommendations of the sub-committee.**

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

Terms of Reference (TOR):

- i) The proposed project shall be given a unique name in consonance with the name submitted to other Government Departments etc. for its better identification and reference.
- ii) Vision document specifying prospective long term plan of the project shall be formulated and submitted.
- iii) Latest compliance report duly certified by the Regional Office of MoEF& CC for the conditions stipulated in the environmental and CRZ clearances of the previous phase(s) for the expansion projects shall be submitted.
- iv) The project proponent needs to identify minimum three potential sites based on environmental, ecological and economic considerations, and choose one appropriate site having minimum impacts on ecology and environment. A detailed comparison of the sites in this regard shall be submitted.
- v) Executive summary of the project indicating relevant details along with recent photographs of the proposed site (s) shall be provided. Response to the issues raised during Public Hearing and the written representations (if any), along with a time bound Action Plan and budgetary allocations to address the same, shall be provided in a tabular form, against each action proposed.
- vi) Harnessing solar power within the premises of the plant particularly at available roof tops and other available areas shall be formulated and for expansion projects, status of implementation shall also be submitted.
- vii) The geographical coordinates (WGS 84) of the proposed site (plant boundary), including location of ash pond along with topo sheet (1:50,000 scale) and IRS satellite map of the area, shall be submitted. Elevation of plant site and ash pond with respect to HFL of water body/nallah/River and high tide level from the sea shall be specified, if the site is located in proximity to them.
- viii) Layout plan indicating break-up of plant area, ash pond, green belt, infrastructure, roads etc. shall be provided.
- ix) Land requirement for the project shall be optimized and in any case not more than what has been specified by CEA from time to time. Item wise break up of land requirement shall be provided.
- x) Present land use (including land class/kism) as per the revenue records and State Govt. records of the proposed site shall be furnished. Information on land to be acquired including coal transportation system, laying of pipeline, ROW, transmission lines etc. shall be specifically submitted. Status of land acquisition and litigation, if any, should be provided.
- xi) If the project involves forest land, details of application, including date of application, area applied for, and application registration number, for diversion under FCA and its status should be provided along with copies of relevant documents.
- xii) The land acquisition and R&R scheme with a time bound Action Plan should be formulated and addressed in the EIA report.
- xiii) Satellite imagery and authenticated topo sheet indicating drainage, cropping pattern, water bodies (wetland, river system, stream, nallahs, ponds etc.), location of nearest habitations (villages), creeks, mangroves, rivers, reservoirs etc. in the study area shall be provided.
- xiv) Location of any National Park, Sanctuary, Elephant/Tiger Reserve (existing as well as proposed), migratory routes / wildlife corridor, if any, within 10 km of the project site shall be specified and marked on the map duly authenticated by the Chief Wildlife Warden of the State or an officer authorized by him.

- xv) Topography of the study area supported by toposheet on 1:50,000 scale of Survey of India, along with a large scale map preferably of 1:25,000 scale and the specific information whether the site requires any filling shall be provided. In that case, details of filling, quantity of required fill material; its source, transportation etc. shall be submitted.
- xvi) A detailed study on land use pattern in the study area shall be carried out including identification of common property resources (such as grazing and community land, water resources etc.) available and Action Plan for its protection and management shall be formulated. If acquisition of grazing land is involved, it shall be ensured that an equal area of grazing land be acquired and developed and detailed plan submitted.
- xvii) A mineralogical map of the proposed site (including soil type) and information (if available) that the site is not located on potentially mineable mineral deposit shall be submitted.
- xviii) Details of fly ash utilization plan as per the latest fly ash Utilization Notification of GOI along with firm agreements / MoU with contracting parties including other usages etc. shall be submitted. The plan shall also include disposal method / mechanism of bottom ash.
- xix) The water requirement shall be optimized (by adopting measures such as dry fly ash and dry bottom ash disposal system, air cooled condenser, concept of zero discharge) and in any case not more than that stipulated by CEA from time to time, to be submitted along with details of source of water and water balance diagram. Details of water balance calculated shall take into account reuse and re-circulation of effluents.
- xx) Water body/Nallah (if any) passing across the site should not be disturbed as far as possible. In case any Nallah / drain is proposed to be diverted, it shall be ensured that the diversion does not disturb the natural drainage pattern of the area. Details of proposed diversion shall be furnished duly approved by the concerned Department of the State.
- xxi) It shall also be ensured that a minimum of 500 m distance of plant boundary is kept from the HFL of river system / streams etc. and the boundary of site should also be located 500 m away from railway track and National Highways.
- xxii) Hydro-geological study of the area shall be carried out through an institute/ organization of repute to assess the impact on ground and surface water regimes. Specific mitigation measures shall be spelt out and time bound Action Plan for its implementation shall be submitted.
- xxiii) Detailed Studies on the impacts of the ecology including fisheries of the River/Estuary/Sea due to the proposed withdrawal of water / discharge of treated wastewater into the River/Sea etc shall be carried out and submitted along with the EIA Report. In case of requirement of marine impact assessment study, the location of intake and outfall shall be clearly specified along with depth of water drawl and discharge into open sea.
- xxiv) Source of water and its sustainability even in lean season shall be provided along with details of ecological impacts arising out of withdrawal of water and taking into account inter-state shares (if any). Information on other competing sources downstream of the proposed project and commitment regarding availability of requisite quantity of water from the Competent Authority shall be provided along with letter / document stating firm allocation of water.
- xxv) Detailed plan for rainwater harvesting and its proposed utilization in the plant shall be furnished.
- xxvi) Feasibility of near zero discharge concept shall be critically examined and its details submitted.
- xxvii) Optimization of Cycles of Concentration (COC) along with other water conservation measures in the project shall be specified.

- xxviii) Plan for recirculation of ash pond water and its implementation shall be submitted.
- xxix) Detailed plan for conducting monitoring of water quality regularly with proper maintenance of records shall be formulated. Detail of methodology and identification of monitoring points (between the plant and drainage in the direction of flow of surface / ground water) shall be submitted. It shall be ensured that parameter to be monitored also include heavy metals. A provision for long-term monitoring of ground water table using Piezometer shall be incorporated in EIA, particularly from the study area.
- xxx) Socio-economic study of the study area comprising of 10 km from the plant site shall be carried out through a reputed institute / agency which shall consist of detail assessment of the impact on livelihood of the local communities.
- xxxi) Action Plan for identification of local employable youth for training in skills, relevant to the project, for eventual employment in the project itself shall be formulated and numbers specified during construction & operation phases of the Project.
- xxxii) If the area has tribal population it shall be ensured that the rights of tribals are well protected. The project proponent shall accordingly identify tribal issues under various provisions of the law of the land.
- xxxiii) A detailed CSR plan along with activities wise break up of financial commitment shall be prepared. CSR component shall be identified considering need based assessment study and Public Hearing issues. Sustainable income generating measures which can help in upliftment of affected section of society, which is consistent with the traditional skills of the people shall be identified. Separate budget for community development activities and income generating programmes shall be specified.
- xxxiv) While formulating CSR schemes it shall be ensured that an in-built monitoring mechanism for the schemes identified are in place and mechanism for conducting annual social audit from the nearest government institute of repute in the region shall be prepared. The project proponent shall also provide Action Plan for the status of implementation of the scheme from time to time and dovetail the same with any Govt. scheme(s). CSR details done in the past should be clearly spelt out in case of expansion projects.
- xxxv) R&R plan, as applicable, shall be formulated wherein mechanism for protecting the rights and livelihood of the people in the region who are likely to be impacted, is taken into consideration. R&R plan shall be formulated after a detailed census of population based on socio economic surveys who were dependant on land falling in the project, as well as, population who were dependant on land not owned by them.
- xxxvi) Assessment of occupational health and endemic diseases of environmental origin in the study area shall be carried out and Action Plan to mitigate the same shall be prepared.
- xxxvii) Occupational health and safety measures for the workers including identification of work related health hazards shall be formulated. The company shall engage full time qualified doctors who are trained in occupational health. Health monitoring of the workers shall be conducted at periodic intervals and health records maintained. Awareness programme for workers due to likely adverse impact on their health due to working in non-conducive environment shall be carried out and precautionary measures like use of personal equipments etc. shall be provided. Review of impact of various health measures undertaken at intervals of two to three years shall be conducted with an excellent follow up plan of action wherever required.
- xxxviii) One complete season site specific meteorological and AAQ data (except monsoon season) as per latest MoEF Notification shall be collected and the dates of monitoring shall be recorded. The parameters to be covered for AAQ shall include PM₁₀, PM_{2.5}, SO₂, NO_x, CO and Hg. The location of the monitoring stations should be so decided so as to take into consideration of the upwind direction, pre-dominant downwind

direction, other dominant directions, habitation and sensitive receptors. There should be at least one monitoring station each in the upwind and in the pre-dominant downwind direction at a location where maximum ground level concentration is likely to occur.

- xxxix) In case of expansion project, air quality monitoring data of 104 observations a year for relevant parameters at air quality monitoring stations as identified/stipulated shall be submitted to assess for compliance of AAQ Standards (annual average as well as 24 hrs).
- xl) A list of industries existing and proposed in the study area shall be furnished.
- xli) Cumulative impacts of all sources of emissions including handling and transportation of existing and proposed projects on the environment of the area shall be assessed in detail. Details of the Model used and the input data used for modeling shall also be provided. The air quality contours should be plotted on a location map showing the location of project site, habitation nearby, sensitive receptors, if any. The windrose and isopleths should also be shown on the location map. The cumulative study should also include impacts on water, soil and socio-economics.
- xl ii) Radio activity and heavy metal contents of coal to be sourced shall be examined and submitted along with laboratory reports.
- xl iii) Fuel analysis shall be provided. Details of auxiliary fuel, if any, including its quantity, quality, storage etc should also be furnished.
- xl iv) Quantity of fuel required, its source and characteristics and documentary evidence to substantiate confirmed fuel linkage shall be furnished. The Ministry's Notification dated 02.01.2014 regarding ash content in coal shall be complied. For the expansion projects, the compliance of the existing units to the said Notification shall also be submitted
- xl v) Details of transportation of fuel from the source (including port handling) to the proposed plant and its impact on ambient AAQ shall be suitably assessed and submitted. If transportation entails a long distance it shall be ensured that rail transportation to the site shall be first assessed. Wagon loading at source shall preferably be through silo/conveyor belt.
- xl vi) For proposals based on imported coal, inland transportation and port handling and rail movement shall be examined and details furnished. The approval of the Port and Rail Authorities shall be submitted.
- xl vii) Details regarding infrastructure facilities such as sanitation, fuel, restrooms, medical facilities, safety during construction phase etc. to be provided to the labour force during construction as well as to the casual workers including truck drivers during operation phase should be adequately catered for and details furnished.
- xl viii) EMP to mitigate the adverse impacts due to the project along with item - wise cost of its implementation in a time bound manner shall be specified.
- xl ix) A Disaster Management Plan (DMP) along with risk assessment study including fire and explosion issues due to storage and use of fuel should be carried out. It should take into account the maximum inventory of storage at site at any point of time. The risk contours should be plotted on the plant layout map clearly showing which of the proposed activities would be affected in case of an accident taking place. Based on the same, proposed safeguard measures should be provided. Measures to guard against fire hazards should also be invariably provided. Mock drills shall be suitably carried out from time to time to check the efficiency of the plans drawn.
- l) The DMP so formulated shall include measures against likely Fires/Tsunami/Cyclones/Storm Surges/Earthquakes etc, as applicable. It shall be ensured that DMP consists of both On-site and Off-site plans, complete with details of containing likely disaster and shall specifically mention personnel identified for the

task. Smaller version of the plan for different possible disasters shall be prepared both in English and local languages and circulated widely.

- li) Detailed scheme for raising green belt of native species of appropriate width (50 to 100 m) and consisting of at least 3 tiers around plant boundary with tree density of 2000 to 2500 trees per ha with a good survival rate of around 80% shall be submitted. Photographic evidence must be created and submitted periodically including NRSA reports in case of expansion projects. A shrub layer beneath tree layer would serve as an effective sieve for dust and sink for CO₂ and other gaseous pollutants and hence a stratified green belt should be developed.
- lii) Over and above the green belt, as carbon sink, plan for additional plantation shall be drawn by identifying blocks of degraded forests, in close consultation with the District Forests Department. In pursuance to this the project proponent shall formulate time bound Action Plans along with financial allocation and shall submit status of implementation to the Ministry every six months.
- liii) Corporate Environment Policy

- a. Does the company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be detailed in the EIA report.
- b. Does the Environment Policy prescribe for standard operating process / procedures to bring into focus any infringement / deviation / violation of the environmental or forest norms / conditions? If so, it may be detailed in the EIA.
- c. What is the hierarchical system or Administrative order of the company to deal with the environmental issues and for ensuring compliance with the environmental clearance conditions. Details of this system may be given.
- d. Does the company has compliance management system in place wherein compliance status along with compliances / violations of environmental norms are reported to the CMD and the Board of Directors of the company and / or shareholders or stakeholders at large? This reporting mechanism should be detailed in the EIA report.

All the above details should be adequately brought out in the EIA report and in the presentation to the Committee.

- liv) Details of litigation pending or otherwise with respect to project in any Court, Tribunal etc. shall invariably be furnished.

Specific Conditions related to Thermal Power Projects:

- (i) Vision document specifying prospective plan for the site shall be formulated and submitted to the Regional Office of the Ministry within **six months**.
- (ii) Harnessing solar power within the premises of the plant particularly at available roof tops shall be carried out and status of implementation including actual generation of solar power shall be submitted along with half yearly monitoring report.
- (iii) A long term study of radio activity and heavy metals contents on coal to be used shall be carried out through a reputed institute and results thereof analyzed every two year and reported along with monitoring reports. 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.
- (iv) Online continuous monitoring system for stack emission, ambient air and effluent shall be installed.
- (v) High Efficiency Electrostatic Precipitators (ESPs) shall be installed to ensure that particulate emission does not exceed 30 mg/Nm³ or as would be notified by the Ministry, whichever is stringent. 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 along with an environment friendly sludge disposal system.
- (vi) 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.
- (vii) Monitoring of surface water quantity and quality shall also be regularly conducted and records maintained. The monitored data shall be submitted to the Ministry regularly. Further, monitoring points shall be located between the plant and drainage in the direction of flow of ground water and records maintained. Monitoring for heavy metals in ground water shall also be undertaken and results/findings submitted along with half yearly monitoring report.
- (viii) A well designed rain water harvesting system shall be put in place within six months, which shall comprise of rain water collection from the built up and open area in the plant premises and detailed record kept of the quantity of water harvested every year and its use.
- (ix) 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.
- (x) Additional soil for leveling of the proposed site shall be generated within the sites (to the extent possible) so that natural drainage system of the area is protected and improved.
- (xi) Fly ash shall be collected in dry form and storage facility (silos) shall be provided. Mercury and other heavy metals (As, Hg, Cr, Pb etc.) shall be monitored in the bottom ash. No ash shall be disposed off in low lying area.
- (xii) No mine void filling will be undertaken as an option for ash utilization without adequate lining of mine with suitable media such that no leachate shall take place at any point of time. In case, the option of mine void filling is to be adopted, prior detailed study of soil characteristics of the mine area shall be undertaken from an institute of repute and adequate clay lining shall be ascertained by the State Pollution Control Board and implementation done in close co-ordination with the State Pollution Control Board.

- (xiii) Fugitive emission of fly ash (dry or wet) shall be controlled such that no agricultural or non-agricultural land is affected. Damage to any land shall be mitigated and suitable compensation provided in consultation with the local Panchayat.
- (xiv) Green Belt consisting of three tiers of plantations of native species all around plant and at least 50 m width shall be raised. Wherever 50 m width is not feasible a 20 m width shall be raised and adequate justification shall be submitted to the Ministry. Tree density shall not be less than 2500 per ha with survival rate not less than 80 %.
- (xv) Green belt shall also be developed around the Ash Pond over and above the Green Belt around the plant boundary.
- (xvi) The project proponent shall formulate a well laid Corporate Environment Policy and identify and designate responsible officers at all levels of its hierarchy for ensuring adherence to the policy and compliance with the conditions stipulated in this clearance letter and other applicable environmental laws and regulations.
- (xvii) CSR schemes identified based on need based assessment shall be implemented in consultation with the village Panchayat and the District Administration starting from the development of project itself. As part of CSR prior identification of local employable youth and eventual employment in the project after imparting relevant training shall be also undertaken. Company shall provide separate budget for community development activities and income generating programmes.
- (xviii) For proper and periodic monitoring of CSR activities, a CSR committee or a Social Audit committee or a suitable credible external agency shall be appointed. CSR activities shall also be evaluated by an independent external agency. This evaluation shall be both concurrent and final.

Site visit report of 2x660 MW Super-critical Technology Coal Based Thermal Power Plant near, Kohadhar, Bhagdeva & Mai Kalam Villages, Meja Taluk, Allahabad Dist. in Uttar Pradesh by M/s Meja Urja Nigam private Ltd.

Background:

During 13th meeting of the EAC for Thermal Power Project held on 28.11.2017 at Ministry of Environment, Forest and Climate Change, New Delhi, it was decided by the EAC that a Sub-committee consisting of five Member committee could be constituted, which shall visit the project site of the proposed **2x660 MW Super-critical Technology Coal Based Thermal Power Plant near, Kohadhar, Bhagdeva & Mai Kalam villages, Meja Taluk, Allahabad District in Uttar Pradesh by M/s Meja Urja Nigam private Ltd.** The Sub-committee would verify the following:

- i. Implementation of R & R activities and plantation.
- ii. Rejuvenation of vacant land falling between the River Ganga and the Power plant.
- iii. Any other matter in the interest of the Environment, if any.

Besides, an officer of the central Regional Office, Ministry of Environment, Forest and Climate Change, Lucknow would also be requested to be part of the Sub-committee. Based on the site visit, this Sub-committee shall submit a report on the viability of extension of validity of EC beyond the period given. The Sub-committee consists of the following Members:

- | | |
|-----------------------------|--------------------|
| 1. Dr. Navin Chandra | : Chairman |
| 2. Dr. J.K. Pandey | : Member |
| 3. Prof. S.K. Sinha | : Member |
| 4. Prof. Manjari Srivastava | : Member |
| 5. Dr. S. Kerketta | : Member Secretary |

The Sub-committee was duly approved by the Competent Authority vide Ministry's Office Order No. J-13012/03/2008-IA.II (T) pt., dated 08.01.2018. The Sub-committee visited the project site on 20.05.2018. Representative from Regional Office, Ministry of Env., Forest & Climate Change could not be present due to pre-occupation. During visit, Plant area, Plantation Areas, R & R Site, Pump House, etc were visited. The following officials and other senior officers were present from the project site:

- | | |
|----------------------------|--------------------------------|
| 1. Shri Ramesh Samuel | : CEO |
| 2. Shri Kanchan Nath | : G.M. (O & M) |
| 3. Shri CA Nagesh | : G.M. (Projects) |
| 4. Shri B. Chaterjee | : G.M. (Maintenance) |
| 5. Shri Ramesh Kher | : G.M. (Project- FT) |
| 6. Shri S.K. Jha | : G.M. (Commissioning) |
| 7. Shri Y.M. Basavaraju | : G.M. (Tech. Services) |
| 8. Shri Debulal Mandal | : G.M. (Fuel Management) |
| 9. Mr. Javed Sultan Ansari | : G.M. (Contracts & Materials) |

Discussion was held with the PP and inter-alia, informed the Sub-committee the following:

- i. Environmental Clearance for the establishing 2x660 MW Super-Critical Technology Coal based Meja Thermal Power Plant near Kohadar, Bhagdeva & Mai Kalam Villages, Taluk

Meja, Distt. Allahabad, Uttar Pradesh has been issued vide Ministry's letter dated 10.1.2011. Coal requirement for the proposed project is 7.34 MTPA at 90% PLF and the same shall be brought from SECL (Dipika Mines) and the Coal requirement is 22,828 TPD at 100% PLF. The Coal would be brought from a distance from more than 500 km away.

- ii. The rail laying outside the plant boundary is almost completed. The expected date of completion is July, 2018. Siding of 24 km has been delayed due to land acquisition issues. The railway siding is a 24 km long track taking off from Meja road and Unchdih railway stations of North Central Railways upto plant premises.
- iii. Unit-1 (1x660 MW) has already achieved its full load on 31.03.2018. To start the trial operations, synchronisation and commissioning of the unit, it is proposed to bring 2 Lakh tonnes of coal over a period of one year from SECL to Naini Railway Yard on Allahabad-Mughalsarai section through Railways and from Naini railway yard to the project by road through trucks/dumpers/tippers. Therefore, the EC has been amended on 21.07.2017 for transportation of coal of 2 lakhs MT by road for one year.
- iv. Two rakes per week will be required to be evacuated on an average through road transportation. A rake capacity is approximately 3480 Tonnes which will be transported through road in a single day. This will require a total of 348 trucks per day (to and fro, with capacity of 20 Ton truck). However, transportation of coal through road will take place only for two days in a week.
- v. Plantation along the road side consists of closely planted mature trees.
- vi. Six monthly EC compliance report has been submitted by PP.
- vii. Green Belt Development Plan:

The following have been taken up till date -

- To raise 1,99,000 trees through Social Forestry Division, Forest Department, UP in September, 2015
- About 1,62,000 saplings have been planted so far.
- Balance 37,000 saplings are to be planted in the next monsoon.
- Survival is ~80%.
- Besides, plantation has also been carried out in the vacant areas of the project area.

[1]
SEP

- viii. Infrastructure Work (Till date)

Sl. No.	Heads	Nature of Work	Cost (Rs. in lakhs)
1.	Drinking water	Overhead Tanks and Distribution System Hand Pumps, Wells, Ponds & Check Dams	330.30
2.	Road-1	Approach and Internal Roads to villages	570.80
3.	Education	Construction of classrooms and workshop building	208.76
4.	Road-2	Approach Road (Service lane to Belan canal)	3200.00
5.	Misc.	Rain Sheds, Individual toilets, Community Centers and need based works	142.60
Total			4452.40

- ix. Capacity Buildings:

Infrastructure development activities have been taken up at Government ITI, Naini to provide on the job training to the unemployed youths of PAP in various trades like Electrician, Fitter, Instrument Mechanic, Machinist & Welder, Dress Making, Basic Cosmetology, Fashion Technology, etc. A total of 355 students have been benefitted till date.

x. Welfare Activities

- Organization of Medical health checks up camps, Cataract operation camps, veterinary vaccination camps, etc.
- Providing furniture, school bags, etc. to Physically Challenged persons mainly to the School Children.
- Promotion of sports and culture to local youths. ^[1]_{SEP}
- Distribution of blankets & mosquito nets to the villagers.
- ^[1]_{SEP} Distribution of water filters. ^[1]_{SEP}
- Distribution of sports kits.
- A Mobile Ambulance fully equipped with advance life support systems has been proposed and shall be made available shortly.

Observation of the Sub-committee:

i. Implementation of R & R activities and plantation.

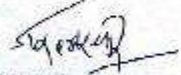
The site was visited by the Sub-committee and following are the observation:

- A total of 36 families, who were engaged in the Stone Crusher plants, have been shifted and settled in Jharaiya village, adjacent to the Power Plant. All the families were staying in the Govt. Revenue land, where **2x660 MW Super-critical Technology Coal Based Thermal Power Plant** has been constructed. As discussed with the Officials of the project, the displaced families have accepted one time cash compensation and as per the land assigned in the village, construction of their houses have been done by the Project Oustees themselves.
- Overhead water tank has been constructed near to Jharaiya village which caters also to other nearby villages.
- The Officials of the project informed that training linked to the employment has been given to the displaced families. But, on enquiry, it is found that unemployed youths have received training but, still wondering for their employment. The Sub-committee opined that the project should give priority to provide employment to these families based on their skills. An initiative to bring in inclusive growth may be taken up by making a survey matching their inherent skills *vis a vis* their need and scope of intervention of NTPC in order to leverage the opportunity of the business-societal ecosystems present there-in. In this regard, a time-bound action plan along with commitment of implementation shall be made by the PP and be submitted to the Ministry towards capacity building of the neighbouring stake holders. Efforts should also be made to provide few more employment for the displaced families so as to ensure atleast one employment (depending on their skill) for each of 36 displaced families to ensure their sustained livelihood.

ii. Rejuvenation of vacant land falling between the River Ganga and the Power plant.

- While granting ToR to the proposed project, as per the Condition No (i), “..... ***Conformity of the site with the prescribed guidelines in terms of distance HFL of the river, highways may also be shown***” has been stipulated.

- In this regards, the sub-committee opined that the PP shall prepare a map indicating the location of the Thermal Power Plant from 500 m distance from HFL of the Tons river duly overlaying with the Topposheet. It should be authenticated by the Concerned Authority. The vacant land available between the power plant and the HFL be rejuvenated by taking appropriate measures (both engineering and biological).
 - Construction of Pumped House seems to be within 500 m from HFL of Ganga River. Therefore, a map be prepared indicating the location of the Pump House from 500 m distance from HFL of the Ganga river duly overlaying with the Topposheet. It should also be authenticated by the Concerned Authority.
 - Rejuvenation of vacant land falling between the River Ganga and the Power plant has not yet been taken up. An appropriate commitment be made by the PP for its implementation.
 - In view of the water withdrawal from River Ganga for the power plant, its impact on the aquatic life/riverine system may be studied and assessed together with mitigative measures to contain impact within its carrying capacity
- i. Any other matter in the interest of the Environment, if any.
- Some standing trees are present in the proposed ash pond areas. The PP should put in necessary efforts to transplant those trees elsewhere.
 - Few photographs of the site are annexed as Annexure-I.


(S Kerketta)


(JK Pandey)


(Manjari Srivastava)

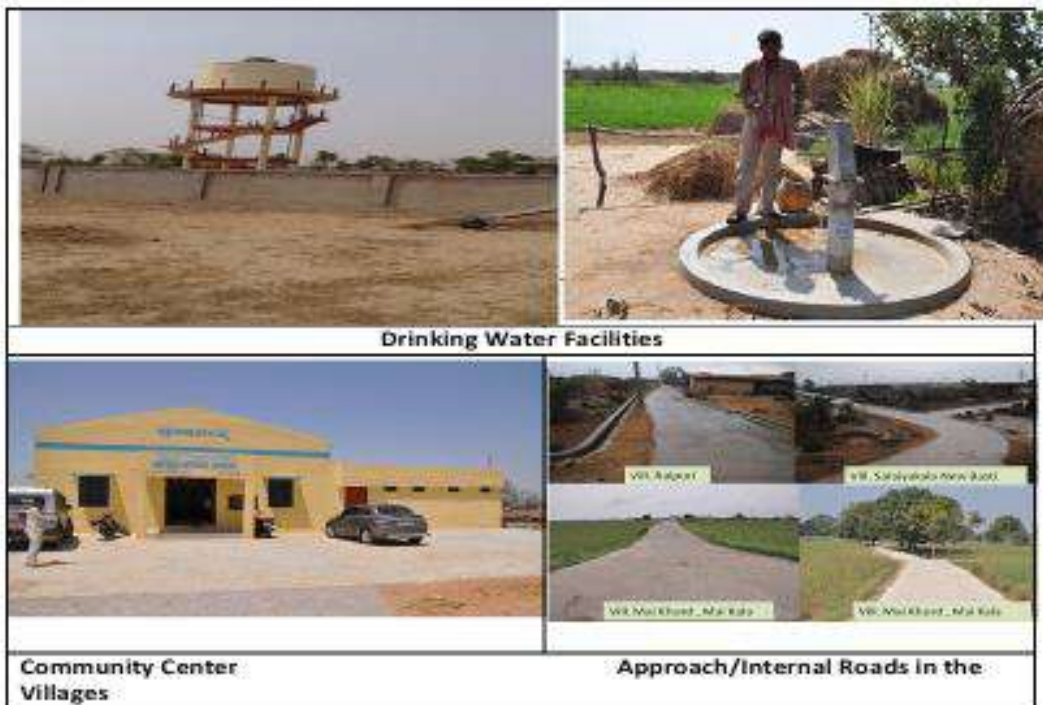

(SK Singh)

- sd -
(Navin Chandra)

Plant Details



Community Development Activities



Plantation on Road sides



Site visit report of Coal Fired Thermal Power Project Extension Stage-II (2x250 MW) at Parichha, District Jhansi, Uttar Pradesh by M/s Uttar Pradesh Rajya Vidyut Nigam Limited

Background:

During 15th meeting of the EAC for Thermal Power Project held on 28.2.2018 at Ministry of Environment, Forest and Climate Change, New Delhi, it was decided by the EAC that a Sub-committee consisting of five Member committee could be constituted, which shall visit the project site of the proposed Coal Fired Thermal Power Project Extension Stage-II (2x250 MW) at Parichha, District Jhansi, Uttar Pradesh by M/s Uttar Pradesh Rajya Vidyut Nigam Limited-reg. amendment in EC. The Sub-committee would visit the project site and give opinion of the viability of new plant and also acquisition of land for dumping of fly ash.

Besides, an officer of the central Regional Office, Ministry of Environment, Forest and Climate Change, Lucknow would also be requested to be part of the Sub-committee. Based on the site visit, this Sub-committee shall submit a report on the viability of extension of validity of EC beyond the period given. The Sub-committee consists of the following Members:

- | | | | |
|----|--------------------------|---|------------------|
| 1. | Dr. Navin Chandra | : | Chairman |
| 2. | Dr. J.K. Pandey | : | Member |
| 3. | Prof. S.K. Sinha | : | Member |
| 4. | Prof. Manjari Srivastava | : | Member |
| 5. | Dr. S. Kerketta | : | Member Secretary |

The Sub-committee was duly approved by the Competent Authority vide Ministry's Office Order No. J-13011/47/2006-IA.II (T) dated 16.03.2018. The Sub-committee visited the project site on 19.05.2018. Dr. Susheel Kumar, Scientist "C", Regional Office, Ministry of Env., Forest & Climate Change, Lucknow was present during the site visit. The following officials and other senior officers were present from the project site:

- | | | | |
|----|----------------------|---|------------------------|
| 1. | Shri G.P. Verma | : | Chief Engineer |
| 2. | ShriSangram Prasad | : | Chief Engineer (O & M) |
| 3. | Shri R.P. Saxena | : | Chief Engineer (E & S) |
| 4. | Shri R.C. Srivastava | : | S.E. (HQ) |
| 5. | Shri Vivek Kumar | : | S.E. (ECCC) |
| 6. | Shri Radhey Mohan | : | S.E. (MPEC) |
| 7. | Shri R.K. Dagore | : | S.E. (R & M) |

The Project Proponent gave a power point presentation and inter-alia, informed the Sub-committee the following:

- i. Environment Clearance to the project 'Coal fired Thermal Power Plant Extension Phase-II (2x210 MW)' was issued by the Ministry vide letter dated 08.06.2004. Similarly, environment clearance to the project 'Coal fired Thermal Power Plant Extension Phase-II (2x250 MW)' was issued by the Ministry vide letter dated 21.05.2007.
- ii. In the said Environment Clearanceat para 2, it was mentioned that *"The land requirement is estimated to be 47 ha which is already available within the premise of the existing power plant. The land will be used for the power block, however, the other infrastructure facilities will be shared from the existing units."*Therefore, while granting

both the environmental clearance letters, ***it has been mentioned that no additional land shall be acquired for any activity of the project.***

iii. The details of COD achieved are as provided below:

Sl. No.	Unit & Installed Capacity	No.	COD achieved	Remarks
1.	I, 110 MW		01.10.1985	No power generation since March, 2017.
2.	II, 110 MW		Dec., 1985	In operation
3.	III, 210 MW		24.11.2006	In operation
4.	IV, 210 MW		01.12.2007	In operation
5.	V, 250 MW		17.07.2012	In operation
6.	VI, 250 MW		18.04.2013	In operation

- iv. It is stated that the land available with the Project Proponent is on the verge of exhaustion.
- v. The existing ash ponds are located adjacent to the Betwa river. Proposed ash pond is located at more than 500 m HFL from the Betwa river and also 500 m away from the NH-24.
- vi. The area of the existing ash ponds is around 100 ha and is being used since 1985. The PP pleaded that as ash utilization programme couldnot be done as per the provisions of the Fly Ash Utilization Notification, capacity of existing ash pond is getting exhausted early.
- vii. Status of existing capacity of the Ash Dyke:

a. For 2x210 MW Ash dyke (Quantity in lakhs m³)

	Compartment "A"		Compartment "B"		Remarks
	Generation	Filled	Generation	Filled	No space is available for disposal of fly ash.
Mother Dyke	10.90	10.90	8.87	8.87	
1 st Raising	8.80	8.80	7.49	7.49	
2 nd Raising	7.28	7.28	6.35	6.35	
Total	26.98	26.98	22.71	22.71	

b. For 2x110 MW Ash dyke (Quantity in lakhs m³)

	Compartment "A"		Compartment "B"		Remarks
	Generation	Filled	Generation	Filled	Space for 12.91 lakh m ³ is available for disposal of fly ash which will be exhausted by Oct., 2019
Mother Dyke	12.50	12.50	12.50	12.50	
1 st Raising	11.25	11.25	11.25	11.25	
2 nd Raising	10.41	Not done	9.16	7.66	
Total	34.16	23.75	32.71	31.41	

- viii. The PP has got MoU from the local cement manufacturers but the utilization of fly ash couldnot be achieved.
- xi. Now, the annual flyash generation is approximately 20 Million Tons and Bottom ash is 4.5 Million Tons.

Ash utilization programme:

The details of ash utilization programme from 2005-06 and onwards are as provided in next page:

Ash utilization programme (from 2005-06 to 2017-18)

Sl. No.	Year	Quantity* Generated	Quantity* Utilized	%
1.	2005-06	2.18	4.10#	>100
2.	2006-07	5.22	4.90	93.90
3.	2007-08	4.50	3.09	68.67
4.	2008-09	7.57	6.24	82.48
5.	2009-10	10.65	9.41	88.32
6.	2010-11	9.16	4.52	49.31
7.	2011-12	8.52	4.34	50.94
8.	2012-13	11.38	7.03	61.80
9.	2013-14	17.47	10.30	58.98
10.	2014-15	20.43	8.56	41.92
11.	2015-16	23.15	11.68	50.47
12.	2016-17	20.84	9.74	46.78
13.	2017-18	17.98	10.33	57.49

*Quantity in lakhs ton. #Includes from the previous years.

- x. In view of the above, the Project Proponent has requested amendment of EC for increasing the project area by purchasing additional land of 229.56 ha at Maheba-Gulara villages for construction of new Ash Dyke. However, during visit of the Sub-committee, it has been informed that the locations of the above proposed areas have been changed to a new location so as to leave 500 m distance from the HFL of the Betwa river.
- xi. Now, 98 ha area is proposed at new location i.e. Maheba village, 4.5 km away from the plant including 62 ha of area for construction of Ash Pipe Corridor and associate structure like AWRS, Pump house, etc and additional area for development of green belt.

Observation of the Sub-committee:

1. Revised Form-I to be submitted as there is change in the proposed location of the ash dyke.
2. EC compliance report of the existing project to be submitted.
3. Utilisation of flyash has not been achieved as per the Fly Ash Utilization Notification. Utilization status of fly ash revealed that 41 to >100% of fly ash generation has been used. However, the Sub-committee opined that the PP should explore the possibilities of improving utilization pattern by relooking into the feasibility of various utilization options such as cement manufacturing, brick manufacturing, road construction, filling in abandoned mines, etc.
4. 98 ha area is proposed at new location i.e. Maheba village, 4.5 km away from the plant including 62 ha of area for construction of Ash Pipe Corridor and associate structure like AWRS, Pump house, etc and additional area for development of green belt. The land is found to be 100% agricultural land and now two crops are being practiced by the farmers.
5. It has been found that 187 families are losing land for the proposed construction of Ash Dyke. The PP informed that at least one person is engaged in the plant belonging to the families of those whose land is acquired. However, on enquiry from these families present during the visit, it has been noted that very few have been employed in the plant. The submission made by the PP is not correct in this regards.
6. As per the EC conditions, no additional land should be acquired for any activity of the project otherwise. However, as the proposed land

for construction of Ash dyke is agriculture land, it has been opined that let the PP locate two alternatives, primarily the land so selected should be other than agricultural land. Then the proposal may be placed before the SAC for Thermal Sector to arrive at a logical decision as the present proposal is 100% agricultural land and cannot be parted for disposal of fly ash so as to create a barren land.

7. Some site visit photographs are annexed as Annexure-I

—sd—
(Shivsel Kumar)

[Signature]
-17/12/98
(S Kerketta)

[Signature]
(Manjari Srivastava)

[Signature]
(JK Pandey)

[Signature]
(SR Sinha)

[Signature]
(Navin Chandra)

Some Photographs



100 acres agricultural land at Meheba village, 4.5 km away from plant site



The Team and interview with Land losers



Land losers from Meheba village

Site visit of Sub-committee of EAC for Thermal Power Projects 2400 MW Thermal Power Plant (TPP) of Vedanta Limited at village Brundamal, District Jharsuguda, Odisha

Background:

During 14th meeting of the EAC for Thermal Power Project held on 12.01.2018 at Ministry of Environment, Forest and Climate Change, New Delhi, it was decided by the EAC that a Sub-committee consisting of five Member committee could be constituted, which shall visit the project site of the proposed expansion of Fly ash Pond at Bhurkhamunda/ Brundamal, Jharsuguda, Odisha by M/s Vedanta Private Limited. The Sub-committee would verify the following:

- i. Location of existing ash ponds, available volume and condition of the ash ponds. Whether the existing ash pond locations are approved under various Environmental Clearances issued time to time.
- ii. Location of proposed ash ponds, sensitivity surrounding these locations such as villages, water bodies, forests and wildlife corridors. Feasibility of these locations considering the environmental and social sensitivities.
- iii. Existing utilization pattern and feasibility of various utilization options such as cement manufacturing, brick manufacturing, road construction, filling in abandoned mines.
- iv. Viability of using fly ash in the mine void located in the vicinity of the project area as a part of concurrent backfilling along with the Over burden materials.
- v. Action plan for remedial measures of the breached dyke including re-handling of the spilled ash at the downstream.
- vi. Point-wise reply of the Public Representation.

Besides, an officer of the Eastern regional Office, Ministry of Environment, Forest and Climate Change, Bhubaneswar would also be requested to be part of the Sub-committee. Based on the site visit, this Sub-committee shall submit a report on the viability of the allocation of the land for disposal of fly ash. The Sub-committee consists of the following Members:

1.	Dr. Navin Chandra	Chairman
2.	Shri S.D. Vora	Member
3.	Dr. S. Lele	Member
4.	Prof. Om Prakash	Member
5.	Dr. S. Kerketta	MoEF & CC & Member Secretary, EAC

The Sub-committee was duly approved by the Competent Authority vide Ministry's Office Order No. J-13011/03/2007/IA.II (T) dated 22.02.2018. The Sub-committee visited the project site on 21.04.2018. Dr. A.K. Gupta, Scientist "D", Eastern Regional Office, Ministry of Environment, Forest and Climate Change was present during the site visit of the Sub-committee.

The following officials and other senior officers were present from the project site:

1.	Shri Abhijit Pati	CEO
2.	Dr. A.S.P. Mishra	Head, Environment
3.	Shri J.K. Mohanty	Head, Power Plant
4.	Shri N.K. Sharma	Head, Land

- | | | |
|----|-----------------|------------------------|
| 5. | Shri U.K. Nayak | Head, Ash Pond Project |
| 6. | Shri C.S. Sahoo | Head, External Affairs |

The Project Proponent gave a power point presentation and inter-alia, informed the Sub-committee the following:

- iv. The Project proponent is now operating 4x600 MW (2400 MW) Thermal Power Plants and 9x135 MW (1215 MW) CCP for 1.6 MTPA Aluminium Smelter plant.
- v. COD achieved by CPP and IPP:

1215 MW CPP	Unit-1	Unit-2	Unit-3	Unit-4	Unit-5	Unit-6	Unit-7	Unit-8	Unit-9
COD	11.04.2009	11.11.2008	03.07.2008	11.09.2008	05.01.2009	29.01.2010	20.06.2009	07.07.2009	28.02.2010
2400 MW TPP	Unit-1	Unit-2	Unit-3	Unit-4					
COD	30.03.2011	09.11.2010	19.08.2011	26.04.2012					

- vi. The total ash generation from both the plant is 26,809 TPD approx. Disposal of ash (fly ash + bottom ash) is now being done at Kurebaga ash pond area (located inside the plant boundary) and Katikela ash pond area (located outside the plant boundary). Details of daily ash generation from both TPP and CPP are provided below:

S.No.	Units	Bottom Ash (TPD)	Fly Ash (TPD)
1.	TPP	3,340	13,360
2.	CPP	2,022	8,087
Total		5,362	21,447

- vii. EC for 4x600 MW TPP at Jharsuguda was accorded to the erstwhile M/s Sterlite Energy Ltd. vide Ministry's letter No. J-13011/3/2007-IA.II (T) dated 7.12.2007, which includes 230 acres of ash pond area near Siriapali village. Subsequently, amendment to the EC dated 7.12.2007 has been made vide letter dated 12.5.2008 to M/s Sterlite Energy Ltd. for shifting of ash pond from Siriapali village to new site i.e. at Sripura village in an area of 757.3 acres of land including addition of 3x660 MW power plant, but it was not implemented as yet.
- viii. EC was accorded for setting up of 5x135 MW CPP to cater to the need of 2.5 LTPA Aluminium Smelter Plant vide letter No. J-13011/10/2006-IA (T) dated 14.03.2007. The total land involved including for the Aluminium Smelter Plant is 1136 acres (459.92 ha) of which, a total of 577.78 acres (233.92 ha) of land is required for the Power Plant.
- ix. Then vide Ministry letter No. J-13011/29/2007-IA II(I) dated 11.06.2008, EC was accorded for expansion of Aluminium Smelter (2.5 to 16 LTPA) and Captive Power Plant (675 MW to 1350 MW (10x135 MW)) to M/s Vedanta Limited (erstwhile Vedanta

Aluminium Limited). One unit of 135 MW CPP could not be implemented till now. The approval was granted for 315 ha plant area, besides ash pond area of 191.92 ha, near Gudigaon village.

- x. As an interim arrangement of disposal of ash at present is done at Katikela (143 acres) and Kurebaga (192 acres). As the disposal of ash shall continue for another 6 months, M/s Vedanta Limited has proposed for expansion/addition of more ash pond areas. The details are as provided below:
- Expansion of Katikela Ash Pond: addition of 128.55 acres land at the existing ash pond. Katikela village is located nearby towards north side. Bheden river flows towards south. Katikela RF exists.
 - Siriapali Ash Pond: 206.22 acres; EC was obtained for 230 acres of ash pond for 2400 MW TPP project, however, ash pond was not constructed. Tarkimal village is located towards north and Siriapali village is located towards North-Eastern side. Siriapali RF located towards south.
 - Kumadapali Ash Pond: 188.89 acre; Kumudapali site is also the part of 2400 MW TPP EC.
 - Gudigaon Ash Pond: 576.33 acre; this ash pond is also the part of EC for Expansion of Aluminium Smelter by 13.5 LTPA capacity with 675 MW Captive Power Plant, however, this ash pond was also not constructed.

Observations of the Sub-Committee:

a. Siriapali Site:

- While granting EC vide letter dated 7.12.2007, an area of 230 acres was approved having locations near to Siriapali village, which has not been used for disposal of fly ash. As per the Project Proponent, land acquisition has already been completed. This land was earmarked for 2400 MW Coal based Power Project at Brundamal, Jharsuguda by M/s. Sterlite Energy Limited and amended on 12.05.2008. Wherein, it has been mentioned that the site at Sripura village shall only be used for disposal of fly ash for both the phases. Out of 790 acres available, the PP shall carved 753.3 acres of land as required for the ash pond such that *the land so carved out is far away as possible from the river bank and the earlier site for the ash pond which was closed to the Elephant Corridor, shall be abandoned and no activity relating to the power project in any form shall be taken on that site.*
- The proposed Siriapali village was visited by the Sub-Committee and found to be open land which is being used for doing agriculture by the villagers, scanty standing trees, a village road passing through Siriapali village, etc. The land has not been developed by the PP and is passing through a seasonal nallah tributary to Bheden River, which ultimately meets River Ib. However, the PP submits that as of now, as per the State Forest Department, Govt. of Odisha, the said proposed Elephant Corridor has not been notified as yet.
- While granting EC vide letter dated 7.12.2007, an area of 230 acres was approved having locations near to Siriapali village, which has not been used for disposal of fly ash. Subsequently, this location was de-linked vide letter dated 12.05.2008 by the Ministry and allocated to dumped at new site i.e. near Sripura village, which has also not been used to dump fly ash. **In view of this and not notifying the elephant corridor as yet, the Sub-committee opined that an area of 230 acres as approved by the Ministry vide letter dated 7.12.2018 near to Siriapali village may be allowed because till date, 198.52 acres of land has already been acquired by the PP.**

b. Kumudapali Site

This proposed ash pond has not been used till date for disposal of fly ash during the visit of the Sub-Committee, the location of the Kumudapali is found that a state Highway is passing including a seasonal nallah, tributary to Bhedan River passing along the proposed boundary. Now, land acquisition is in process. **Considering the above, the Sub-committee opined that even though an area of 40.32 acres of land has been acquired out of the total 188.90 acres, recommendation of this Kumudapali site for disposal of fly ash may be kept in abeyance at present.**

c. Gudigaon Site

The Location Gudigaon was found to be open agricultural land and scanty standing trees like Palm varieties. Besides, one transmission line is also passing through the proposed land. This site has also not been used by the PP for disposal of fly ash. Now the PP proposes that an area of 576.33 acres in the said village is identified and land acquisition is in progress. The PP proposes to utilize this proposed location to store fly ash.

While granting EC for expansion of Aluminium Smelter (2.5 to 16 LTPA) and Captive Power Plant (675 MW to 1350 MW (10x135 MW)) to M/s Vedanta Limited vide Ministry letter No. J-13011/29/2007-IA II(I) dated 11.06.2008, an area of 315 ha was indicated for construction of the plant, besides ash pond area of 191.92 ha, near Gudigaon village. Therefore, regarding permission of allocation of Gudigaon site, the Sub-Committee opined that as the Ministry has already identified an area of 191.92 ha at Gudigaon, further permission to use this land is not required. Till date, 183.24 acres of land has already been acquired. **However, a long-term scheme be prepared by the PP for 100% utilization of fly ash as per the Fly Ash Notification and amendments thereof.**

d. Katikela Existing Ash Pond

There are 3 lagoons and the details are as provided below:

Lagoon No.	Total Capacity (Lakh MT)	Available Capacity (Lakh MT)	Present Top RL (m)	Bottom RL (m)	Remarks
1	22.4	18.9	217.5	201	Strengthening and buttressing is in process (Available RL 227.5)
2	56.4	0	230	202	Pond got breached in August, 2017
3	23.0	10.0	214	204	Capacity raised will be after raising to RL 226

The Sub-Committee observed that Lagoon-2 was got breached due to heavy rains during August, 2017. It requires immediate restoration and necessary engineering measure before the onset of the coming monsoon so that no fly ash is flown into the

Bheden River. During the site visit, dumping of fly ash was not taking place in this lagoon.

Now, the PP proposes to increase the existing ash pond area (192 acres) by acquiring an additional land of 128.55 acres as a part of Lagoon-4. It has been informed that till date, an area of 84 acres has already been purchased, out of 128.55 acres. Lagoon Nos. 1 and 3 are now being used for disposal of fly ash through High Concentration Slurry Disposal (HCSD) technique. The PP informed that vide letter No. 12167/Ind-II-NOC/5285 dated 23.07.2011, the Odisha State Pollution Control Board has granted CTE for construction of permanent Ash Pond at Katikela, Jharsuguda over an area of 192 acres which was valid for a period of five years, which means construction shall commence within a period of 5 years from the date of issue of this letter. The PP further informed that within five years of granting CTE, construction of ash ponds at both the locations were started in synchronization with the main plants. The PP has also intimated the Ministry vide letter No. SEL/MoEF/SEA 301/2008-02 dated 08.03.2008 that an area of 100 acres at Katikela has proposed for disposal fly ash from 2400 MW Thermal Power Plant.

Now, an area of 77.64 acres has already been acquired and also in the process of acquiring more land, the Sub-committee opined that let additional land be acquired for development of Lagoon-4 for disposal of fly ash but, there should not be any construction within 500 m distance from the HFL of the Bheden river. The vacant land may be used for raising plantation instead of dumping of fly ash. **Further, as the Ministry has granted the EC, permission to dump fly ash at Katikela should have been taken from the Ministry instead with CTE and mere informing in writing to the Ministry are not sufficient.**

It is non-compliance of EC conditions, therefore, the Sub-committee opined that let the Ministry initiate appropriate action against the PP under the provisions of Environment (Protection) Act, 1986 and EIA Notification, 2006 and amendments thereof.

e. Kurebaga Existing Ash Pond

Kurebaga existing ash pond has 3 ponds, the details are as provided below:

Pond No.	Total Capacity (Lakh MT)	Available Capacity (Lakh MT)	Present Top RL (m)	Bottom RL (m)	Remarks
1&2	52.55	Nil	238	201	Starter dyke with 6 raisings completed and closed.
3	35.95	3.01	237	201	Starter dyke with 5 raisings completed and in operation

The Sub-Committee visited the site of these ponds during the visit the Pond Nos.1 & 2 were found to be not in operation and have been closed, plantation raised therein.

Pond No. 3 is found to be in operation and as per the submission of PP, the total ash pond area is 143 acres. The PP informed that the State Pollution Control Board has

granted CTE vide letter No. 13283/Ind-II-NOC/5285 dated 12.08.2010, which was valid for a period of five years from the date of issue of this letter provided commencement of production of the project, has not taken place in the meantime to dump fly ash at Kurebaga. **As the Ministry has granted the EC, permission to dump fly ash at Kurebaga should have been taken from the Ministry instead with CTE and mere informing in writing to the Ministry are not sufficient.**

It is non-compliance of EC conditions, therefore, the Sub-committee opined that let the Ministry initiate appropriate action against the PP under the provisions of Environment (Protection) Act, 1986 and EIA Notification, 2006 and amendments thereof.

f. Ash utilization programme:

The details of ash utilization programme from 2010-11 and onwards are as provided below:

a. Captive Power Plant (1215 MW)

Sl. No.	Year	Quantity Generated	Quantity Utilized	%
1.	2010-11	3,13,942	1,35,335	34.49
2.	2011-12	16,67,888	4,63,860	22.25
3.	2012-13	22,72,985	13,37,590	50.94
4.	2013-14	25,09,724	8,62,298	31.20
5.	2014-15	21,63,372	7,04,977	29.62
6.	2015-16	19,86,181	11,13,657	51.20
7.	2016-17	25,75,470	20,74,839	70.30
8.	2017-18	28,74,528	35,62,553	108.70

b. Independent Power Plant (2400 MW)

Sl. No.	Year	Quantity Generated	Quantity Utilized	%
1.	2010-11	20,03,738	11,75,595	46.94
2.	2011-12	26,59,058	22,55,994	68.50
3.	2012-13	27,18,063	31,60,458	100.00
4.	2013-14	25,75,239	26,16,462	92.72
5.	2014-15	22,56,020	3,91,742	16.13
6.	2015-16	26,03,143	14,28,071	51.10
7.	2016-17	28,18,340	2,14,345	70.28
8.	2017-18	20,05,469	29,81,752	114.19

Utilization status of fly ash revealed that 16 to 100% of fly ash generation has been used for land filling of low lying areas of the proposed project during the years. Therefore, the Sub-committee opined that the PP should change the existing utilization pattern and relook feasibility of various utilization options such as cement manufacturing, brick manufacturing, road construction, filling in abandoned mines, etc. other than filling of low lying land.

PP informed that viability of using fly ash in the mine void located in the vicinity of the project area as a part of concurrent backfilling along with the Over burden materials, seems very remote.

g. Some photographs are attached as **Annexure-I**.

h. **Some Other Issue**

Vide letter dated 23.8.2017, Eastern Regional Office, Bhubaneswar, MoEF&CC has written to the Ministry that the District Collector, Jharsuguda has accorded permission vide letter No. 5949 dated 21.07.2011 to M/s Vedanta Alumina Ltd. to dispose fly ash in the revenue forest land of 48.68 acres bearing plot No.188, Khata No. 108 near Kurebaga.

On perusal of the records and also the submission made by the project that non of the location approved for disposal of fly ash could not be made available for the plants, therefore, an interim arrangement for disposal of fly ash from 2400 MW TPP and 1215 MW CPP was made at two sites viz., Kurebaga and Katikela for filling up with fly ash. Besides, an area of 48.68 acre was allocated by the District Collector, Jharsuguda, Odisha vide letter No. 5949/Rev. dated 21.07.2011 at Kurebaga and relied upon the Ministry's S.O. No. 2804 (E) dated 03.11.2009 for filling up with fly ash which is encircled by existing 143 acres ash pond area at Kurebaga.

Further, vide O.A. No.151/2016/EZ before the NGT, Eastern Zone, Kolkata Bench, the Hon'ble Tribunal pronounced a panel judgment on 13.11.2017. The matter is related to use of 48.68 acres of Gram Jungal in Plot No.188, Khata No. 108 at Kurebaga wherein the PP has used this piece of land for filling up with fly ash.

On Perusal of the order of the Hon'ble Tribunal, it is reiterated that – “the State Pollution Control Board, Odisha in their reply affidavit in opposition has stated that the matter relating to forestland and approval thereof under Forest (Conservation) Act, 1980, does not come under their purview. However, the Respondent No. 1, i.e. M/s Vedant Limited has obtained necessary consent to operate valid till 31.3.2017 for operation of its Aluminium Smelter Plant and Captive Power Plant under Section 25 of the Water (Prevention and Control of Pollution) Act, 1974 and Section 21 of the Air (Prevention and Control of Pollution) Act, 1981. The State Pollution Control Board, in the additional affidavit filed on 27.4.2017 have categorically stated that no consent to operate has been granted to the Respondent No. 1 for dumping of fly ash over plot No. 188 in village Bhurkhamunda.

It is further stated in the affidavit that the Tehsildar, Jharsuguda booked an encroachment case bearing No.158/2013 against the Respondent No. 1 on the allegation made by the villagers for encroachment of Gramya Jungle in Mouza Burkhamunda, Khata No. 108 for an area of AC 108.29. However after field enquiry it was found that an area of Ac 48.68 in plot No.188 has been encroached by the industry and eviction order was passed. The industry has filed an appeal against the order of the Tehsildar and that matter is now sub-judice. [1] [2] [SEP]

The Divisional Forest Officer (DFO), Jharsuguda in the affidavit filed on behalf of the Respondents No. 2,4,5 & 6 would reveal that the Respondent No. 1 Industry dumped fly ash at Kurebaga Ash Pond spread over an area of 143.00 acres and the ash pond encircles a patch of Gramya Jungle of Ac 48.68 in Plot No. 188 in which the industry encroached and amalgamated with their ash pond on the plea that the Collector, Jharsuguda permitted for filling the low lying area in plot No. 188 without resorting to Forest diversion Proposal. Later the industry has been permitted by the State Pollution Control Board, Odisha to dispose of fly ash in ash ponds at Katikela over an area of Ac 192.00 and filling of low lying area at Bhagipali near Banjari gate and near Urja setu.

The MoEF & CC, the respondent No. 3 have dealt with the provisions of Forest (Conservation) Act, 1980 in their affidavit and would state that Principal Secretary, Forest & Environment Department, Govt. of Odisha, Respondent No. 2, has been requested to furnish an inspection report on the allegation of the petitioner's regarding use of forestland by Vedanta Ltd for non-forest purpose without approval from the competent authority under Section 2 of the Forest (Conservation) Act, 1980 and the report is awaited. MoEF & CC would further stated that so far as the records available with the answering Respondent, no such proposal has been received with respect to the diversion of 246.74 acres of forest land and no such permission has been granted under the Forest (Conservation) Act, 1980.

After hearing the Applicants and the respondents, perusing the pleadings carefully and examining the documents annexed to the affidavits of the parties, we now frame the following questions to find out the answers:

1. Whether the application is barred by limitation in terms of Section 14(3) of the NGT Act?
2. Whether the application is not maintainable because of res-judicata?
3. Whether the Plot No. 188 in Khata 108 of 48.68 acres area is a recorded forestland?
4. Whether the permission granted by the District Magistrate and Collector, Jharsuguda to the Vedanta Ltd. to fill up the low-lying area in Plot No. 188 stated above with fly ash and subsequent plantation over it without the approval of the Union Government is a violation of the Forest (Conservation) Act, 1980?

Since at the time of filing the OA, there was no subsisting cause of action, the answer to question No. 1 is 'yes' i.e., the application is barred by limitation. Therefore, it is not now necessary to traverse to the other questions for their answers. It is made clear that we have not decided the matter on merit. The Applicants are at liberty to approach the appropriate forum to redress their grievance."

The matter is closed now and further, the PP informed that no applicants have approached the appropriate forum to redress their grievance in this regards.

- i. The Sub-committee noted that ECs have been issued in the name of M/s Sterlite Energy Ltd. and Vedanta Aluminium Ltd. And, now Vedanta Ltd has submitted

present application. Though, all the companies are subsidiaries/alter companies of Vedanta Ltd., necessary amendments should be taken for all the ECs.

1. Regarding allocation of Gwarya Jungle no. 43, 44 area by Jt. District Collector, Jharkhand for filling up with fly ash by the PP. The PP submitted that the low-lying area was filled up with fly ash by the PP and closed after taking plantation of 20,000 plants. As the land in question is Gwarya jungle and has been allowed by the District Collector, Jharkhand, the Sub-committee advised that let the concerned authority of State Govt. initiate necessary action against the District Collector as per the prevailing rules and regulations.

2. Further plan for remedial measures for the fly ash dump including re-landfilling of the fly ash at the downstream.

The PP has prepared report on restoration and nature utilization of scheme for Lagoon-2, Kankana Ash pond through Tata Consulting Engineers (TCE) Based on the recommendation of TCE for Restoration Scheme of Lagoon-2, the PP may immediately initiate work before the onset of the coming monsoon so that no wash-off will let into the near by river.

1. Point-wise reply of the Public Representation:

Attached as Annexure-1

-sd-
(A K GUPTA)

Shanker
(S K SHANKER)
21/5/2018

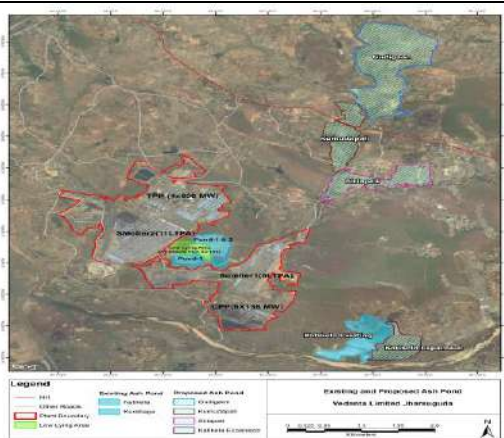
P. Chell
(OM PRAKASH)
21/5/2018

S. D. Vora
(S D VORA)
16/5/18

(S LEL)

-sd-
(NAVIN CHANDRA)

Photographs of the site visit of the Sub-committee.

	
Top view of Vedant Limited, Jharsuguda	Existing Ash Pond Areas
	
Gudigaon Ash Pond area	Sub-committee with PP
	
Kurebaga Ash Pond Area	Katikela Ash Pond Area


vedanta

transforming elements

VL/MoEF/001/2018-003

April 12, 2018

Member Secretary
 Impact Assessment Division (Thermal)
 Ministry of Environment, Forests & Climate Change
 Indira Paryayaran Bhawan
 Tor Road
 New Delhi - 110003

Sub.: Response to the comments given by Conservation Act Trust (CAT), Mumbai regarding
 the amendment of EC of 2400 MW Thermal Power Plant of Vedanta Limited,
 Jharsuguda

Ref: Comments raised by CAT, Mumbai dated 11th January 2018

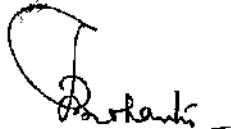
Dear Sir,

This has reference to the above mentioned subject and cited references.

We are herewith submit our response to the comments raised by CAT, Mumbai dated 11.01.2018 (Annexure-1).

Thanking You

Yours faithfully,
 For Vedanta Limited


 Jayakrushna Mohanty
 Head- Power & Regulatory

Vedanta Limited (Formerly known as Sesa Sterlite Ltd.)

Aluminium & Power

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 Andheri (East), Mumbai 400093, Maharashtra, India.

CIN: L13209GA1965PLC000344

Annexure-1

S N.	Comment	Response
1.	The proposed project is for construction of three new ash ponds in villages namely Siriapali (230 acres), Kumadapali (189 acres), and Gudigaon (576 acres). In addition, the proposal also involves the expansion of the existing ash pond located in Katikela village (128.55 acres). From the perusal of the documents, it is understood that these ash ponds will cater for the fly ash and bottom ash generated from 2400 MW Coal based TPP and 9x135 mw captive power plant.	As per CEA guideline, the land required for Ash disposal area is 903.75 acres (@ 0.25 acres per MW x 2400 MW + 0.25 acres per MW x 1215 MW). <i>Existing:</i> The plant has ash ponds at two locations (i) Kurebaga (143 acre) and (ii) Katikela (192 acre) totaling 335 acre. The Kurebaga ash pond is almost exhausted and Katikela ash pond can accommodate for six month.
2.	As per the CEA Report "Review of land requirement for thermal power stations" dated September 2010, pit, head/ load center station using indigenous coal with the configuration of 3x660 MW (1980MW) require ash disposal area of 495 acres and 5x660 MW (3300MW) require ash disposal area of 825 acres.	Proposed: The plant has proposed four new ash ponds (i) Katikela expansion -128.55 acre, (ii) Siriapali- 206.22 acre, (iii) Kumudapali-188.89 acre (iv) Gudigaon -576.33 acre. The total land identified for these ash ponds is 1099.99 acres.
3.	It is not clear why the land requirement for the ash disposal is more than the land requirement given in the CEA report of September 2010.	Considering the environmental setting and adequate safe distances around the ash ponds, the effective area available for proposed ash ponds is 909.93 acre. As the capacity of the existing ash ponds are almost exhausted, the plant proposes to construct four additional ash ponds with total effective disposal area of 909.93 acres.
4.	The Fly ash notification S.O. 2804 (E) dated 03 rd November 2009 states that all the coal and, or lignite based thermal power stations and, or expansions units in operation before the date of this notification have to achieve the target of 100 % fly ash utilization in five years from the date of this notification.	The 9x135 MW CCP plant had achieved 100% utilization of fly ash in 5 th years of operation of plant (2012-13) although the average fly ash utilization in next 5 years (2013-14 to 2017-18) was 69.76%.
5.	The same notification also states that, the utilized fly ash in relation to the target during a year, if any, shall be utilized within next two years in addition to the targets stipulated for those years and the balance utilized fly ash accumulated during first five years shall be progressively over next five years in addition to 100 % utilization of current generation of fly ash.	In 2017-18 plant has achieved 114% ash utilization. The 4x600 MW TPP was fully commissioned in 2012; and ash utilization in 2017-18 was 108.7%
6.	New coal and, or lignite based thermal power stations and, or expansion units commissioned after this notification have to achieve the target of 100% fly ash utilization in four years from the date of commissioning.	It may be noted that average ash utilization of the plant during this period is more than the average utilization at the country and state level.
7.	The unutilized fly ash in relation to the target during a year, if any, shall be utilized within next two years in addition to the targets stipulated for these years and the balance utilized fly ash accumulated during first four years shall be utilized progressively over next five years in addition to 100% utilization of current generation of fly ash.	<i>Ash Utilization Details (2017-18):</i> The details is provided in <i>Annexure-A</i> . <i>Ash Utilization Plan</i> Both the power plants of Vedanta Limited, (VL), Jharsuguda strives for utilizing 100% of its fly ash generation and has planned to utilize it across various avenues, like manufacture of

		cement, bricks, road construction, low lying area filling and other construction activities.																																																																																								
8.	The "year wise break up of fly ash generation (both fly ash and bottom ash) and utilization for all the power plants provided in the application till date since commissioning" is provided as annexure -I "information sought by MoEF& CC. The Percentage utilization of fly ash has not been given by the project proponent. <table><tr><th colspan="4">Fly ash generation and utilization for 9x135 MW CPP</th></tr><tr><th>Year</th><th>Total ash generated (MT)</th><th>Total ash utilized (MT)</th><th>% Ash Utilized</th></tr><tr><td>2008-09</td><td>487712</td><td>347897</td><td>71.33</td></tr><tr><td>2009-10</td><td>1775641</td><td>1065985</td><td>60.03</td></tr><tr><td>2010-11</td><td>2504673</td><td>1175595</td><td>46.94</td></tr><tr><td>2011-12</td><td>3293380</td><td>2255994</td><td>68.50</td></tr><tr><td>2012-13</td><td>3160458</td><td>3160458</td><td>100.00</td></tr><tr><td>2013-14</td><td>2821873</td><td>2616462</td><td>92.72</td></tr><tr><td>2014-15</td><td>2429000</td><td>391742</td><td>16.13</td></tr><tr><td>2015-16</td><td>2794790</td><td>1428071</td><td>51.10</td></tr><tr><td>2016-17</td><td>3049734</td><td>2143441</td><td>70.28</td></tr><tr><td>2017-18</td><td>1200089</td><td>743068</td><td>61.92</td></tr></table> <table><tr><th colspan="4">Fly ash generation and utilization for 2400 MW Coal Power Plant</th></tr><tr><th>Year</th><th>Total ash generated (MT)</th><th>Total ash utilized (MT)</th><th>% Ash Utilized</th></tr><tr><td>2010-11</td><td>392428</td><td>135335</td><td>34.49</td></tr><tr><td>2011-12</td><td>2084860</td><td>463860</td><td>22.25</td></tr><tr><td>2012-13</td><td>2625563</td><td>1337590</td><td>50.94</td></tr><tr><td>2013-14</td><td>2763637</td><td>862298</td><td>31.20</td></tr><tr><td>2014-15</td><td>2380133</td><td>704977</td><td>29.62</td></tr><tr><td>2015-16</td><td>2175265</td><td>1113657</td><td>51.20</td></tr><tr><td>2016-17</td><td>2951580</td><td>2074839</td><td>70.30</td></tr><tr><td>2017-18</td><td>1678488</td><td>999656</td><td>59.56</td></tr></table>	Fly ash generation and utilization for 9x135 MW CPP				Year	Total ash generated (MT)	Total ash utilized (MT)	% Ash Utilized	2008-09	487712	347897	71.33	2009-10	1775641	1065985	60.03	2010-11	2504673	1175595	46.94	2011-12	3293380	2255994	68.50	2012-13	3160458	3160458	100.00	2013-14	2821873	2616462	92.72	2014-15	2429000	391742	16.13	2015-16	2794790	1428071	51.10	2016-17	3049734	2143441	70.28	2017-18	1200089	743068	61.92	Fly ash generation and utilization for 2400 MW Coal Power Plant				Year	Total ash generated (MT)	Total ash utilized (MT)	% Ash Utilized	2010-11	392428	135335	34.49	2011-12	2084860	463860	22.25	2012-13	2625563	1337590	50.94	2013-14	2763637	862298	31.20	2014-15	2380133	704977	29.62	2015-16	2175265	1113657	51.20	2016-17	2951580	2074839	70.30	2017-18	1678488	999656	59.56	The ash generation (fly ash and bottom ash), utilization of fly ash and percentage is given in Annexure-B.
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9.	From the fly ash utilization status submitted by the project proponent, it is clear that the project proponent has not complied with the fly ash notification dated 03rd November 2009.	Refer: Point No. 4, 5, 6 & 7 response.																																																																																								
10.	If the project proponent had utilized the 100% fly ash generated from 2400MW Coal based TPP and 9x135 MW Captive Power Plant, then there is no need for the expansion of ash pond.	Refer Point No 1, 2 & 3 response This power plant is situated in the eastern part of Odisha, it does not have much avenues for utilization of ash- like cement, bricks, and infrastructure development. Further, this locality has many power plants generating fly ash, which again reduces ash utilization avenues. Pond ash is suitable for various utilization purpose and availability of pond ash will increase the utilization volume. Otherwise, the utilization would only be restricted to the discharge capacity of silo. Hence, for better																																																																																								

		ash utilization, provision of ash ponds would be required as an intermediate storage.
11.	As per the Office Memorandum of Orissa, Pollution Control Board dated 23.07.2011 for consideration of consent to Establish the ash pond at Katikela was valid for 5 years. The special condition no.1 of the said Office Memorandum clearly states that, "The unit shall inform the MoEF, Govt. of India with respect to inclusion of the ash pond facilities at Katikela and Kurebaga for 4x600 MW power plant as the same was not a part of the original proposal for which environmental clearance has already been obtained and shall take additional environmental protection measures required if any as advised by the MoEF, Govt. of India."	For construction of ash pond VL had received Consent to Establish (CTE) from OSPCB vide letter No. 12167/Ind-II-NOC-5285 dated 23.07.2011 and obtained CTO. As per the condition of the CTE, VL had informed MoEF&CC about Katikela Ash Pond vide letter No. SEL/MoEF/SEA-306/2011-004 dated July 25, 2011.
12.	From the available documents, it is not clear whether the permission for construction of ash pond was granted by Ministry of Environment and Forest.	
13.	We request the EAC to ensure that the project proponent is complying with the notification dated 7 th December 2015 for the existing units.	VL has complied with the water consumption and PM emissions as per the notification. VL has conducted a feasibility study for implementing the FGD and expression of interest (EOI) has been floated for suitable vendor.
14.	As per the Elephant Census Report 2017 for Odisha, 77.73% of Elephant Population was recorded in 3 Elephant Reserves, i.e. Mayurbhanj, Mahanadi, and Sambalpur. Jharsuguda Wildlife Division in Jharsuguda District where the proposed project falls is part of Sambalpur Forest Division.	VL will comply with the conditions from MoEF&CC.
15.	Total 53 elephants were recorded in the Jharsuguda division during the Elephant Census of 2017.	
16.	The Form -1 submitted for the proposed project at a point no. 1.9 states that "The over ground ash slurry pipeline will be constructed. However, in case of the road crossing and stream crossing underground ash slurry pipeline will be constructed. The approximate depth of the underground pipeline will be 1.0 m bgl." The project proponent is only mentioning about the road crossing and stream crossing. It fails to mention the Elephant Crossing areas. The construction of over ground ash slurry pipeline will have a severe impact on the movement of elephants in the area. In the event the construction of the pipeline is considered by the Committee, we request the committee to direct the project proponent to construct underground ash slurry pipeline to protect Elephant corridor.	
17.	The Monitoring Report of MoEF dated 24 th May 2010 states that "The Center for Ecological Science (CES), IISc Bangalore provided Elephant Action Plan for strengthening the Sambalpur South Forest Division through habitat improvement corridor development, mitigation management and research programmes on habitat and elephant movement with a financial budget of Rs.13.8 Crores for a period of ten years. If the report is approved by the Ministry, the project should allocate the funds required to take up the necessary measures recommended in the report." It is not clear whether such funds were made available for the strengthening the Sambalpur South Forest Division and corridor development.	As the region has many industries around, the study proposed that the expenses to be borne by all the industries in the region collectively. VL will comply the advice of MoEF&CC in this matter.

18.	We urge the committee to consider above points and not to grant amendment in Environmental Clearance to the proposed expansion of ash ponds. Instead, the project proponent should be directed to comply with fly ash notification and to utilize 100% fly ash including the balanced unutilized fly ash.	VL is operating an aluminum smelter and power plant in Jharsuguda and providing employment to more than 10,000 people (direct and contractual) and also adds to further indirect employment generation. The proposed ash ponds are required for the continuous operation of the plant.
19.	All the illegal facilities constructed by the destruction of the elephant corridors should be restored to their original state.	No illegal facilities have been constructed by destroying any elephant corridor.
20.	Strict action should be initiated against the Project Proponent for noncompliance of Fly Ash Notification dated 03 rd November 2009 (amended time to time) by the Ministry of Environment and Forest and for not following land requirement guidelines as specified by the Central Electricity Authority.	Ash utilization status is given in Point No. 4, 5, 6 & 7. The plant has achieved more than 100% utilization in 2017-18. Refer Point No. 1, 2 & 3- for land requirement vis-a-vis CEA guidelines.

Annexure-A

Ash utilization 2017-18

S.NO.	Ash Utilization in various avenues	1215 MW CPP (Lakh MT)	2400 MW TPP (Lakh MT)	Total (Lakh MT)
1	Brick Manufacturing	1.29	0.84	2.13
2	Cement Industries	1.55	0	1.55
3	Utilization in embankment /dyke raising	12.22	16.38	28.60
4	Road making	4.37	5.65	10.02
5	Land filling	10.38	13.76	24.14
6	Total utilization	29.82	36.63	66.45
7	% utilization	114.19	108.70	111.10

Annexure-B

Ash Year wise break up of fly ash generation (both fly ash and bottom ash) and utilization for all the power plants provided in the application till date since commissioning

1. 1215 MW CPP:

Sl. No.	Year	Quantity of fly ash generated (MT)	Quantity of bottom ash generated (MT)	Total Ash generated (MT)	Utilization of Fly Ash Utilized (MT)	Percentage of Fly ash utilization
1	2008-09	390170	97542	487712	347897	71.33
2	2009-10	1533696	241945	1775641	1065985	60.03
3	2010-11	2003738	500935	2504673	1175595	46.94
4	2011-12	2659058	634322	3293380	2255994	68.50
5	2012-13	2718063	442395	3160458	3160458	100.00
6	2013-14	2575239	246634	2821873	2616462	92.72
7	2014-15	2256020	172980	2429000	391742	16.13
8	2015-16	2603143	191647	2794790	1428071	51.10
9	2016-17	2818340	231394	3049734	2143441	70.28
10	2017-18	2166447	444779	2611226	2981752.4	114.19

2. 2400 MW TPP

Sl. No.	Year	Quantity of fly ash generated (MT)	Quantity of bottom ash generated (MT)	Total Ash generated (MT)	Utilization of Fly Ash Utilized (MT)	Percentage of Fly ash utilization
1	2010-11	313942	78486	392428	135335	34.49
2	2011-12	1667888	416972	2084860	463860	22.25
3	2012-13	2272985	352578	2625563	1337590	50.94
4	2013-14	2509724	253913	2763637	862298	31.20
5	2014-15	2163372	216761	2380133	704977	29.62
6	2015-16	1986181	189084	2175265	1113657	51.20
7	2016-17	2575470	376110	2951580	2074839	70.30
8	2017-18	2874528	494929	3369457	3662552.97	108.70

Site Visit Report of Sub-committee (EAC) on ‘1x800 MW Pit Head Ultra Super Critical TPP at Umred Coal Mine area village Heoti, Tehsil Umrer, District Nagpur, Maharashtra by M/s Maharashtra State Power Generation Company Limited (MAHAGENCO)’ during 20th -21st May, 2018.

1.0 Introduction:

M/s Maharashtra State Power Generation Company Limited (MAHAGENCO) proposed 1x800 MW Coal based Ultra Super Critical Power Plant on Umred Opencast Mine which is operated by M/s Western Coalfields Limited (M/s WCL, a subsidiary of M/s Coal India Limited).

The proposed site is located in Umred coal mine of WCL, near Village Heoti in Umrer Tehsil, Nagpur Dist., Maharashtra. As submitted by Project Proponent (M/s MAHAGENCO), the proposed site is mined area which was back filled over a period 30 years. There is no village/habitations located inside the proposed site area. The land terrain with variations of upto 30 meters is seen in the proposed area. The available areas measure approximately 475 acres and the exact availability of area and the contour shall be ascertained by topographic survey. The identified site will be taken on long lease from WCL and no land acquisition is required for the main power plant facilities including ash pond. The township will also be located adjacent to the existing WCL township area. However right of way needs to be established for conveying the treated waste water from NMC and river water from Goshikurd dam to proposed power plant.

The proposal for Terms of Reference (ToR) has been considered in the 16th meeting of EAC (Thermal Power) held on 19.4.2018. EAC during its meeting held on 19.4.2018 observed the following points:

- i. The proposed site is located on the abandoned mine/backfilled mine.
- ii. The Umred mine has to be closed as per the mine closure plan and proposed project activity (Power Project) is to be incorporated in the mine closure plan.
- iii. The stability of the backfilled area for withstanding the proposed activity shall be ascertained.
- iv. The unutilised ash will be disposed in the mine void as the mine is not completed backfilled and reclaimed.
- v. Project Proponent has to furnish the alternate sites.

EAC after deliberations recommended for a site visit to address the above mentioned points. Accordingly, Ministry vide Office Order dated 7.5.2018 (**Annexure-A**) constituted the sub-committee comprising of following members:

- | | | | |
|------|--|---|------------------|
| i. | Prof. Om Prakash, ISM/IIT Dhanbad | - | Chairman |
| ii. | Shri G.P. Kundargi | - | Member |
| iii. | Shri Mohan Karnat | - | Member |
| iv. | Shri N. S. Mondal (Representative of CEA) | - | Member |
| v. | Representative of RO, MoEF&CC not below the rank of Joint Director | - | Member |
| vi. | Dr. S. Kerketta, Director, MoEF&CC, New Delhi. | - | Member Secretary |

Sub-committee conducted the visit and discussions during 20th -21st May, 2018. As the Professor Om Prakash, ISM/IIT Dhanbad was not available during the visit, Shri G.P. Kundargi has been made as Chairman of the sub-committee. Further, Shri Suresh Kumar Adapa, Scientist 'D' has been nominated by the Regional Office (WCZ), MoEF&CC, Nagpur. Shri N. Subrahmanyam has been nominated by Dr. S. Kerketta as Member Secretary of the sub-committee.

The representatives of M/s MAHAGENCO and M/s WCL were present during the visit and the attendance sheet is enclosed as **Annexure-B** and **Annexure-C** respectively for both the companies. It is noteworthy to mention that the maximum temperature at the Umrer mine site during the visit on 20.5.2018 has crossed 46°C.

1.2 Details of Proposed Power Project:

The proposed power project is comprising of 1x800 MW Ultra Super critical Coal based Thermal Power Plant. The project requires about 500 acres of land. The annual coal requirement considering the worst coal GCV of 3000 Kcal/kg is 4.17 Million tonnes per annum at 85% PLF. Coal from the Umred coal mines of WCL will be the source for the proposed power plant. Dinesh and Makar Dhokda-I mines are very close (within 5 km) to the proposed project site and Gokul mine is at a distance of about 35 km from the project location. Accordingly, coal may be obtained from any one of these mines as these mines have sufficient coal reserves.

Presently Nagpur municipality corporation (NMC) is supplying 130 MLD of treated waste water to MAHAGENCO STP at Bhadaewadi, which is used for CW cooling, ash handling coal washeries etc., for Power generation at Koradi Thermal power station. NMC is augmenting the existing 100 MLD STP at Bhandewadi to 200 MLD capacity, the augmentation work is likely to be completed by Dec 2018. Availability of 28 MCM per annum is confirmed by NMC through a consent letter. As an alternative, Mahagenco has taken a consent for about 28 million cubic meter from Chief Engineer Irrigation Goshikhurd project for use of river water for the proposed plant.

1.3 Environmental Sensitivity:

Muniya Reserved Forest is at 6.0 km (SW), Bhivapur Reserved Forest is at 7.0 km (NW) and Chichla Reserve Forest is at 10 Km (S). Karhandla Wildlife Sanctuary and Ranbori Reserve Forest is at 10.30 Km (E) from the proposed project location. Makar Dhokda dam & reservoir and Pandherbodi dam & reservoir is at a distance of 5.3 km and 4 km respectively from the project site. Amb river is flowing along the southern periphery of the Umrer mine and subsequently flows towards western side. The river is passing through the proposed power project site. Several villages and Umred town is at a distance of 2.3 Km West from the proposed project site.

1.4 Details of Umrer Mine:

The power project is proposed in approximately in 475-500 acres of the Umrer Opencast Coal Mine. The Umrer coal mine operations started in 1964 and currently running at the production capacity of 3.5 MTPA coal. The balance life of the mine is about 3 years to exhaust the balance reserves of 11 MTPA. M/s WCL obtained Environmental Clearance vide letter dated 20.5.2005 for expanding the production capacity from 2.34 MTPA to 3.5 MTPA in the total lease area of 944.65 ha. M/s WCL

informed that they are in the process of increasing the production from 3.5 MTPA to 4.9 MTPA for faster rate of production. The deepest point of the mine is about 140 m below ground level. Amb river (water body) is having width of 80-120 m with flowing at periphery of the mine boundary. Approximately 500 m of the river has been concrete lined by the M/s Western Coalfields Limited. Further, there are two working mines adjacent to Umrer OCP, viz. Makar Dhokda-I (Makar Dhokda-II is closed) and Dinesh (Makar Dhokda-III). M/s WCL vide letter dated 17.2.2017 (**Annexure-D**) in-principally agreed for providing the 500 acres (200 Ha) of land which is part of Umrer and Makhar Dhokda-I mines.

1.5 Details of Groundwater Aquifers and levels in the Mine area:

The confined / semi-confined aquifer occurring at greater depth in Kamthis and Barakars is mostly tapped by shallow / deep tube wells. The tube wells located in the project area tapping the semi-confined aquifer in Kamthi and Upper Barakar formations down to a depth of about 100 m have registered better yield ranging from 3 to 5 LPS. It to emphasis that Lower Barakars overlapped directly by Kamthis is a better environment due to direct recharge / infiltration from the potential Kamthi Formation. The shallow tube wells drilled in Talchirs have registered very poor yield and they are not sustaining for regular long pumping. The apparent aquifer parameters evaluated by CMPDI in Umrer OCM by compressor/zone tests in naked boreholes have been considered. In general, the tubewells/borewells in Gondwanas, Basalts & Metamorphic registered poor yield ranging from negligible to 2.5 LPS.

Table 1: Type of aquifers in the study area

Sl. No.	Type of aquifer	Depth range (m)	Core zone	Buffer zone
1.	Unconfined	0 - 25	Soil /Lametas	Alluvium and Weathered Basalts, Lametas, Talchirs and Metamorphics
2.	Semiconfined/ confined	Beyond 25	Kamthi and Barakars	Secondary porus structures in Basalts, Lametas, Talchirs and Metamorphics

The buffer zone is mostly covered by consolidated formations viz. Basalts, Metamorphics, which possess very poor/negligible primary porosity and low infiltration factor. To collect the representative groundwater levels in the study area, CMPDI, RI-IV has established a monitoring network with 29 dug wells (hydrograph stations) spread over the buffer zone (10 km radius from Umrer OC Expn mine). Water level monitoring in these hydrograph stations is being done as per MoEF & CC guidelines (four times in a year) since May'03. The range of water levels (2017), measured from the area in and around Umrer OC Expn are given below.

Table 2: Range of water level (Year-2017) in Core and Buffer Zone of Umrer Opencast Mine

Pre monsoon period	Core Zone (within 3 km)	5.35 m to 7.20 m
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May-June (2017)	Buffer zone (within 10 km)	2.20 m to 10.40 m
Post monsoon period Oct-Nov (2017)	Core Zone	3.35 m to 3.80 m
	Buffer zone	1.00 m to 10.20 m

Table 3: Water Level Fluctuation in Core and Buffer Zone of Umrer Opencast Mine

Core zone				Buffer zone			
Period	Min	Max	Average	Period	Min	Max	Average
2011	0.85	3.80	2.23	2011	1.05	6.80	2.94
2012	1.50	4.10	2.76	2012	0.90	7.75	4.25
2013	1.13	4.49	2.47	2013	1.15	7.96	4.33
2014	0.95	2.80	1.66	2014	0.05	4.80	2.63
2015	0.33	1.20	0.62	2015	0.00	7.77	2.30
2016	1.59	2.16	1.36	2016	0.15	7.90	3.55
2017	2.00	2.10	3.40	2017	0.37	7.76	3.21

1.6 Details of Proposed Layout in the Umrer Mine Area:

As per the proposed project layout of the power plant, there are two major overburden dumps falling within the power project area of 500 acres. Details are as follows:

Table 4: Details of Overburden Dumps within the proposed power plant area

Details	Dump no. 1	Dump no. 5
Active years	1964 to 1995	1997 to 2015
Height (max)	47.3 m from GL	49.0 m form GL

Further as informed, there are about 2,70,750 trees have been planted by M/s WCL on these OB dumps in an area of 108.3 Ha (271 acres) which is part of the proposed power plant area. The Boiler Turbine Generator (BTG) area has been planned on these OB dumps which needs to be removed and levelled. Further, some of these OB dumps are stabilized and 25 years old. Green cover and vegetation is grown on these OB dumps with the survival rate of approximately 80%. Sub-committee expressed that if these dumps are cleared, the greenbelt cover developed over many years has to be denuded.

Sub-committee felt that considering the swelling factor and the age of the dumps varying in the range of 3-25 years, large amount of overburden is generated which is to be re-handled and re-stabilised. The details of volume and quantity of overburden to be removed for the purpose of leveling and grading for proposed power plant facilities are not available at the stage. Number of trees to be cut within the proposed power plant area are to be estimated. Details of disposal and re-handling of overburden after removal from the dump site are also to be made available.

The area proposed for water reservoir is falling in the Coal Handling Plant and workshop of Makar Dhokada operating mines which is not presently suitable for water reservoir. M/s Mahagenco representatives during the visit mentioned that it can be

shifted to the Umrer mine area as per the feasibility. Further the project area should be selected in a such a way that there should not be impact on nearby mines or vice versa such as impact of blasting activities on the proposed project.

Proposed ashpond area is partly mined pit and partly overburden dump. Further, sub-committee noted that if the ash is disposed in the proposed mine pit area, there is a chance of flyash moving into the adjacent deepest pit which connected to the proposed area. During the discussions, representatives of M/s Mahagenco mentioned that if the proposed area for ash disposal is not suitable, the lowest pit of the mine may be used for flyash disposal. However, the deepest section of the mine has intersected the groundwater table. If the flyash is disposed in there, there is a chance of leaching of heavy metals and transportation to the groundwater. Sub-committee observed that there should be arrangement of multilayer with soil/overburden and liner before planning to dispose flyash in the mine area.

The proposed area for other facilities such as Cooling tower, Balance of Operations (BOP) is part of over burden dumps which are to be re-handled. The plan for excavating, re-handling and disposing the overburden is not available at the instance.

Re-diverted Amb river having width of 80-120 m is part of the proposed power plant area. During the visit, it was informed that the said water body will not be disturbed. Sub-committee expressed that the ashpond area proposed should be away from the river so that any ash, incase of breach will not flow into the river. At present, the proposed ash pond area and the Amb river are separated by the overburden dump. In case the OB dump is stabilised, the location of ash pond should ensure minimum distance (at least 500 m) as per guidelines. Further, the proposed power project site shall be located at a safe distance from the existing colony/township of M/s WCL. Some photographs of the Umrer mine site can be seen at **Annexure-F**.

1.7 Mine Closure Plan:

Mine Closure Plan has been prepared by M/s WCL for the total mine lease area of 944.65 Ha. The closure plan includes dismantling of structures, permanent fencing of mine void and other dangerous areas, grading of highwall slopes, Overburden dump reclamation, landscaping, plantation, air and water quality monitoring, skill development activities for project affected people, etc. with budget of Rs. 79.65 Crores deposited in the escrow fund account. Implementation of closure activities has been planned for three years. Closure activities will commence after completing mining activities. As the balance life of mine is about 3 years, the total time required for closing the mine will be around 6 years. Final and concrete mine closure plan will be submitted to MoEF&CC six months before the actual start of closure activities. As informed by WCL representatives, mine closure activities completed as per the approved closure plan and obtain the certificate from The Coal Controller under Ministry of Coal, Kolkata that all the activities are completed as per the closure plan. Thereafter, escrow corpus fund is released to WCL. Subsequently, the lease will be surrendered to Ministry of Coal which in turn will hand over to the Government of Maharashtra. Activities mentioned in the Mine Closure Plan along with the timelines is enclosed as **Annexure-E**.

Sub-committee noted that mine closure plan which was prepared by WCL does not include the activities required for accommodating the proposed power project in 500 acres such as estimation of volume of overburden to be removed, excavation of OB dumps, re-handling and disposal of the excavated material, tree enumeration and cutting of green cover, levelling, grading and compaction of the site, loss of carbon in terms already grown trees over OB dumps and the estimation of cost for these activities. It has been informed by the WCL authorities that there is an approximate volume of 35 million m³ of overburden is lying in the both the OB dumps within the proposed power project area. Further, sub-committee noted that excavation of OB dump is a mining activity which requires Environmental Clearance or amendment in existing Environmental Clearance from the MoEF&CC. As M/s Mahagenco is not mining operator, M/s WCL may have to incorporate necessary changes in the mine closure plan in agreement with M/s Mahagenco after obtaining statutory permissions from respective authorities. M/s Mahagenco officials also mentioned during the discussions that the identified area of 500 acres is inactive and mining operations are going on other end of the mine boundary which is away from the proposed area. Accordingly, Mahagenco representatives mentioned that they may request Ministry of Coal/DGMS/WCL/ State Government to separate the 500 acres of the lease area from the mine so that site preparation activities for power project can be initiated during the operation of mine.

2.0 Alternate Site Analysis:

Sub-committee noted that the proposal is good as the degraded land is used which otherwise has to use the virgin land of 500 acres in either agricultural or forest area. However as per the recommendations of EAC, sub-committee sought for details of alternate sites. However, details of alternate site analysis could not be made available during the visit and discussions.

3.0 Recommendations of the Committee:

- i. Clear demarcation of land (facility-wise which includes colony) required for proposed power plant shall be carried out. Kml file showing boundaries of mine and power project shall be submitted.
- ii. Detailed topographical and physical survey is to be done manually and by drones wherever physical survey is not possible for the identification of land for the proposed power plant.
- iii. Estimation of volume of OB dumps to be excavated, removed and identification of area for disposal within the mine shall be done.
- iv. Physical enumeration of trees girth-wise to be cut in the proposed power project area to be done.
- v. Compensatory afforestation plan shall be prepared and incorporated in the modified mine closure plan.
- vi. Cost estimation of the OB re-handling and tree cutting shall be done. Economic viability of the site preparation activities shall be carried out which includes OB removal, re-handling, levelling, grading, compacting, pile foundation activities, etc in comparison with acquiring the new land. A

feasibility study is to be conducted incorporating all aspects of site preparation.

- vii. Site preparation activities shall be incorporated in the mine closure plan and the modified mine closure plan shall be approved by the Competent Authority with separate budget allocation along with the timelines for implementation as per the Mines and Minerals (Development and Regulation) Act, 1957 and its subsequent amendments, Mineral Conservation Development Rules, 1988 and subsequent amendments and MMDR Rules and extant rules applicable to coal mining.
- viii. Location of ash pond for disposal of unutilized ash shall be done in such a way that it does not interfere with groundwater table as well as Amb river.
- ix. Raw water reservoir may be appropriately relocated as it is proposed at the workshop and Coal handling plant of Makar Dhokda mines.
- x. Modified mine closure plan (duly approved by Competent Authority) shall be prepared and executed by either M/s WCL or M/s Mahagenco after entering into the Memorandum of Understanding (MoU) for bearing the cost and execution of activities suitable for power project.
- xi. All other administrative formalities may be completed as per the prevailing acts and Project Proponent may obtain 500 acres from the mine lease area.
- xii. Alternate site analysis (at least three sites) shall be carried out and report be submitted.
- xiii. Project Proponent may approach Ministry after fulfilling the above mentioned recommendations along with the concrete plan.**



N. Mohan Karnat
(Member)



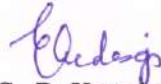
N. S. Mondal
(Member)



Suresh Kumar Adapa
(Member)



N. Subrahmanyam
(Member)



G. P. Kundargi
(Chairman)



No. J-13012/07/2018-IA.I (T)
Government of India
Ministry of Environment, Forest and Climate Change

3rd Floor, Vayu Block,
Indira Paryavaran Bhawan,
Jor Bagh Road, Aliganj,
New Delhi-110003

Dated: 7.5.2018

OFFICE ORDER

Sub: 1x800 MW Pit Head Ultra Super Critical TPP at Umred Coal Mine area village Heoti, Tehsil Umrer, District Nagpur, Maharashtra by M/s Maharashtra State Power Generation Company Limited. -reg. Site Visit.

This has reference to the online application no. **IA/MH/THE/73481/2018** dated 13.3.2018 submitted by **M/s Maharashtra State Power Generation Company Limited** and meeting of 16th Expert Appraisal Committee (Thermal Power) held on 19.4.2018 for grant of Terms of Reference for the above mentioned Project.

2. The EAC (Thermal) in its 16th Meeting held on 19.4.2018 recommended that a site visit to be carried out by sub-committee as the power project (1x800 MW) is proposed on the abandoned/backfilled Umred coal mine and sensitivity involved w.r.t the said coal mine.

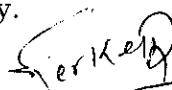
3. In acceptance of the recommendations of the EAC (Thermal) in its meeting held on 19.4.2018, the Ministry hereby constitutes a sub-committee comprising of following members which would make site inspection and submit a report on findings with respect the concerned project of **M/s Maharashtra State Power Generation Company Limited.**

- | | | | |
|------|--|---|------------------|
| i. | Prof. Om Prakash, ISM/IIT Dhanbad | - | Chairman |
| ii. | Shri G.P. Kundargi | - | Member |
| iii. | Shri Mohan Karnat | - | Member |
| iv. | Shri N. S. Mondal (Representative of CEA) | - | Member |
| v. | Representative of RO, MoEF&CC not below the rank of Joint Director | - | Member |
| vi. | Dr. S. Kerketta, Director, MoEF&CC, New Delhi. | - | Member Secretary |

4. The Sub-committee shall make a site inspection in **May, 2018** and submit the report within 15 days to the Ministry for further consideration.

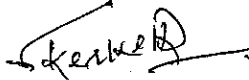
5. TA/DA of the Sub-committee nominated by the Ministry for undertaking site visit shall be met by the Ministry of Environment, Forest and Climate Change as per rules.

This issues with the approval of the Competent Authority.


(Dr. S. Kerketta)
Director, IA.I

Copy to:-

1. Prof. Om Prakash, ISM/IIT Dhanbad/ Shri G.P. Kundargi/ Shri Mohan Karnat / Shri N. S. Mondal.
2. The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, Delhi-110032.
3. The Additional Principal Conservator of Forests (APCCF), Regional Office (WCZ), Ground Floor, East Wing, New Secretariat Building Civil Lines, Nagpur-440001.- **with a request to nominate a Scientist not below the rank of Joint Director as a member of the Sub-committee for conducting site visit.**
4. The Additional Principal Secretary, Environment Department, Govt. of Maharashtra, Mantralaya, Madam Cama Road, Hutatma Rajguru Square, Nariman Point, Mumbai - 400032.
5. The Member Secretary, Maharashtra Pollution Control Board, Kalpataru Point, 3rd and 4th floor, Opp. CineMax Theatre, Sion (E), Mumbai-400 022.
6. The District Collector, Nagpur District, Ravindra Nath Tagore Marg, Civil Lines, Nagpur, Maharashtra 440001.
7. The Chief General Manager, Maharashtra State Power Generation Co. Ltd., HDIL Towers, 4th Floor, A-Wing, Prof. A. K. Marg, Bandra (E), Mumbai-400051.
8. The Chairman-cum-Managing Director, Western Coalfields Limited, Coal Estate, Civil lines, Nagpur, Maharashtra-440 001.
9. Guard file/Monitoring file.
10. Website of MoEF&CC.


(Dr. S. Kerketta)
Director, IA.I

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EB 2017

Under Jurisdictions of Nagpur Court Only



WESTERN COAL FIELDS
LIMITED
UMRER AREA

Office of the Area General Manager
UMRER AREA
PO: Umrer Project
Dist: NAGPUR(MS). Pin- 41204
Ph: (07116)247666(PBX) Fax-247374

Ref: No: WCL/AGM/UA/SO(P&P)/ 226

Date:- 17.02.2017

To,

The Chief Engineer (Civil)-II,
MSPGCL (Koradi).

Subject: Information regarding availability of land and water for proposed coal based 1x800MW pit head Thermal power Project in Umrer WCL area Umrer Distt Nagpur

Ref: Your letter no: CE(C)-II /KPD/Tech /00254 Dated 06.02.2017

Dear Sir,

In pursuance of the direction of Hon'ble Minister Govt of Maharashtra and Chairman cum Managing Director, WCL we have identified about 200 Ha (apx 500 acre) within Umrer area. The identified land is part of mining area of Umrer OCP and Makardhokra-I OCP. However, in some part mining activities are going on and can be spared after one to two years period.

Subsequently, the land were shown to a team of MSPGCL Koradi under your leadership visited at Umrer on 9th Feb 2017. A copy of plan showing surface topography also hand over for your ready reference.

During visit, following discussions were made:

- The required land will be hand over after legal formalities and payment of land value as per present norms .
- The field survey and handling of over burden on solid ground (if required) will be part of MSPGCL activities.
- About water requirement, we are already facing crisis of drinking water after diversion of Amb River. Hence WCL are not in position to spare required water for Thermal Power project from WCL side. However it can be lift from nearby reservoir with due formalities from state Govt.
- About 2 to 3 Ha solid land also available along the Umrer-Nagpur Road which can be spare for colony of MSPGCL.

Hence, principally we are agree with the proposal and provide the land after MOU.

DOEE wahan
AE
Ranje
MB

Yours faithfully

Area General Manager
Umrer Area.

CC: 1.TS to CMD WCL for kind information

Sl.No.	Main Activities	Time Frame	HALF YEARS											
			1	2	3	4	5	6						
1	Preparation of Survey and Disposal Report	1 month												
2	Slope Stability study for high walls and internal backfilled dumps	1 month												
3	Disposal of (P&M), including CHP, W/S and siding	2.5 years												
4	Dismantling of Industrial structure, if needed	2 years												
5	Grading & dozing of highwalls for OC	2 years												
6	Fencing of Quarry	2 years												
7	Clearing of Coal Stock and infrastructural Area	2 years												
8	Disposal / Dismantling of Residential colony, if needed	2.5 years												
9	Plantation & landscaping on backfilled area.	3 years												
10	Plantation over cleaned land of infrastructure.	From 2nd years												
11	Environmental Monitoring	3 year												
12	Any project specific activities													

NOTE: - The progressive mine closure will be done as per the provisions made out in the project report and as per the situation/requirement that may arise in course of execution of the Project Report.

Annexure- F: Photographs of the Umrer Site



1. Location Map of Proposed Umrer Power Project at Umrer and Makar Dhokda-I & II Mines



2. Waterbody within the proposed Power Plant area

Annexure- F: Photographs of the Umrer Site



3. Overburden dumps within the proposed power plant area

Annexure- F: Photographs of the Umrer Site



4. Water body and bund spearating both the mines (Umrer and Makar Dhokda)

Annexure- F: Photographs of the Umrer Site



5. Overburden dump1 within the proposed power project area

Annexure- F: Photographs of the Umrer Site



6. Overburden dump2 within proposed power project area

Annexure- F: Photographs of the Umrer Site



7. Another Over Burden active Dump near proposed flyash storage

Annexure- F: Photographs of the Umrer Site



8. Another dump and pit neary proposed flyash disposal area

Annexure- F: Photographs of the Umrer Site



9. Proposed water reserovir area falls in the Coal handling plant and workshop of Makar Dhokda Mine

Annexure- F: Photographs of the Umrer Site



10. Lined Amb river at the periphery of Umrer Mine.



11. Members visiting the site

Subject: **Re: Draft MoM of 17th EAC for Thermal Power Plants held on 25.05.2018** Date: 05/31/18 04:00 AM
To: Dr S Kerketta <s.kerketta66@gov.in> From: navin chandra <navinchandrarrl@yahoo.com>

OK

Dr. Navin Chandra,
Director General
M P Council of Science and Technology (MPCST),
Vigyan Bhawan, Nehru Nagar, Bhopal - 462003 (M.P.) India
Phone : 91-755- 2671800 (Office)
e-mail : dg@mpcost.nic.in
navinchandrarrl@yahoo.com, navinchandraampri@gmail.com

On Thursday, 31 May, 2018, 4:27:00 PM IST, Dr S Kerketta <s.kerketta66@gov.in> wrote:

Sir,

Shall I send the site visit reports for signature of the members?

regards,

On 05/31/18 04:22 PM, **navin chandra** <navinchandrarrl@yahoo.com> wrote:

31/05/2018

Dear Dr. Kerketta,

I have gone through the Minutes of the 17th EAC Meeting of Thermal Power sector sent by you. The minutes are in order and you may take necessary action for uploading the minutes on the web site of MOEF&CC.

Regards,

(NAVIN CHANDRA)

Dr. Navin Chandra,
Director General
M P Council of Science and Technology (MPCST),
Vigyan Bhawan, Nehru Nagar, Bhopal - 462003 (M.P.) India
Phone : 91-755- 2671800 (Office)
e-mail : dg@mpcost.nic.in
navinchandrarrl@yahoo.com, navinchandraampri@gmail.com

On Thursday, 31 May, 2018, 12:40:06 PM IST, Dr S Kerketta <s.kerketta66@gov.in> wrote:

LIST OF MEMBERS (Attendance Sheet)

17th EXPERT APPRAISAL COMMITTEE MEETING (Thermal)

DATE & TIME : 25th May 2018, 10:00 AM

VENUE : Brahmaputra Meeting Hall, Vayu Wing, Indira Paryavaran Bhawan, New Delhi

Sr.No.	Name of Member	Signature
1.	Dr. Navin Chandra Chairman	Navinchandra 25/05/18
2.	Dr. Narmada Prasad Shukla Member	NPS 25.05.18
3.	Sh. N. Mohan Karnat, IFS Member	NM 25 May 2018
4.	Dr. Sharachchandra Lele Member	Absent
5.	Sh. N.S. Mondal, Member	NSM 25/5/2018
6.	Dr. R.K. Giri, Member	Absent
7.	Dr. S.K. Paliwal, Member	Absent
8.	Prof. D.C. Panigrahi/ Prof. S.K. Sinha/ Prof. Om Prakash, Member	Absent
9.	Dr. Jai Krishna Pandey, Member	Absent
10.	Dr. Manjari Srivastava, Member	Absent
11.	Dr. Gururaj P Kundargi, Member	Gururaj 25/5/18
12.	Shri Suramya Dolarray Vora, IFS (Retd.) Member	SDVB 25/5/18
13.	Dr. S. Kerketta Member Secretary, MoEFCC	S.Kerketta 25/5/2018
14.	Sh. N. Subrahmanyam Scientist - C, IA-1, MoEFCC (Representative of Member Secretary)	N. Subrahmanyam 25/5/18