

MINUTES OF THE 31st MEETING OF THE RE-CONSTITUTED EXPERT APPRAISAL COMMITTEE (EAC) ON ENVIRONMENTAL IMPACT ASSESSMENT (EIA) OF THERMAL POWER PROJECTS HELD DURING 25th July, 2019.

The 31th Meeting of the re-constituted EAC (Thermal Power) was held on 25th July, 2019 in the Ministry of Environment, Forest & Climate Change at Teesta Meeting Hall, First Floor, Vayu Wing, Indira Paryavaran Bhawan, Jorbagh 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. | Shri Suramya D. Vora | - | Member |
| 3. | Dr. N.P. Shukla | - | Member |
| 4. | Shri G.P. Kundargi | - | Member |
| 5. | Shri N. Mohan Karnat | - | Member |
| 6. | Dr. Jai Krishna Pandey | - | Member |
| 7. | Shri N.S. Mondal | - | Member (Rep. of CEA) |
| 8. | Dr. R.K. Giri | - | Member (Rep. of IMD) |
| 9. | Dr. S. Kerketta | - | Member Secretary, MoEF&CC |

Dr. Sharach Chandra Lele, Dr. Manjari Srivastava, Dr. S.K. Paliwal (Representative of CPCB) and Dr. S.K. Gupta (Representative of IIT Dhanbad) could not be present.

Item No.31.0: CONFIRMATION OF THE MINUTES OF THE 30th EAC MEETING.

The Minutes of the 30th EAC (Thermal Power) meeting held on 12.07.2019 were confirmed in presence of members present in the meeting.

Item No. 31.0: CONSIDERATION OF PROJECTS

(31.1) 1x660 MW Amarkantak Supercritical Thermal Power Project (Expansion) at the existing Amarkantak Thermal Power Station (Phase-I&II: 290 MW), Village Chachai, Anuppur District, Madhya Pradesh by M/s MP Power Generating Company Ltd.- reg. re-consideration of ToR. (F.No. J-13012/07/2019-IA. I(T) & Proposal no. IA/MP/THE/94619/2019)

(31.1.1) The Project Proponent submitted online application on 20.03.2019 for grant of ToR for proposed 660 MW Amarkantak Supercritical Project. The proposal has earlier been considered by the EAC in its meeting held on 26.04.2019 and the Committee sought the following information:

- i. Details of feasibility of undertaking the project only in the non-forest area. If not, the details of credible online application submitted for diversion of forest land under Forest (Conservation) Act, 1980, in line with the Ministry's Office Memorandum dated 31.03.2011.
- ii. Efforts shall be made not to construct new ash pond (165 acres). The details of capacity remain for the existing ash pond including the time period to fill the same.
- iii. The details of dismantling of the existing units. The details of ambient air quality, stack emissions and effluent discharges of the existing plant are to be submitted.
- iv. The details of preparedness to achieve new emission standards notification dated 07.12.2015.

- v. The project layout map indicating existing plant, proposed project, development of 33% greenbelt area around the periphery of the project area including ash ponds.

(31.1.2) Project Proponent has submitted the additional information vide their letter dated 5.7.2019. The Project Proponent along with EIA Consultants M/s Ramky Enviro Consultants Pvt. Ltd. have made the presentation and submitted the following information:

- i. The ash generation from 210 MW in the next 15 years is 16,42,500 m³. The expected ash generation from proposed 660 MW Power Project is 56,75,807 m³. The total ash generation would be 73, 18,307 m³. The available volume in the existing ash pond of 65 acres is 9,00,000 m³ and the additional volume created by raising dyke height to 5 m is 14,00,000 m³. Accordingly, the area of 111 acres with additional 54 acres (total 165 acres) is proposed for the 660 MW Power Project.
- ii. Online application for diversion of forest land of 7.086 ha (17.509 acres) under Forest (Conservation) Act, 1980 has been submitted on 19.06.2019. The proposed forest land is already coming within the boundary wall of power house premises. There is no alternative to use other land in place of this forest land and the acquisition of forest land is necessary.
- iii. The power plants under Phase-I and II have been decommissioned as per the table below:

Phase	Unit No.	Capacity (MW)	Commissioning year	De-commissioning date
Ph-I	1	30	1965	01.04.2009
	2	20	1965	01.04.2009
Ph-II	3	120	1977-78	13.01.2015
	4	120	1977-78	01.05.2014
Total		290		

- iv. Dismantling of 2 units (30 MW and 20 MW) has been completed. Further, dismantling of remaining two units (2x120 MW) is in progress as per Construction and Demolition Waste Management Rules, 2016 and is expected to be completed by April, 2020.
- v. The Particulate Matter (PM₁₀ and PM_{2.5}) in the ambient air quality near the plant premises is exceeding the standards during winter months.
- vi. The Particulate Matter in the flue gas is below 50 mg/Nm³, the Sulphur Dioxide is in the order of 1180-1410 mg/Nm³ and Oxides of Nitrogen is 400-510 mg/Nm³. The Sulphur Dioxide is exceeding the standard of 600 mg/Nm³ and remaining parameters are within the new emission standards for power plants.

Parameter	Values (mg/Nm ³)	Standard (mg/Nm ³) for plants installed between 2003-16
PM	20-44	50
SO ₂	1180-1410	600
NO _x	400-510	300
Mercury (Hg)	0.0025-0.0045	0.03
The operating plant of 210 MW commissioned on 09.09.2009		

- vii. However, CPCB vide Order dated 11.12.2017 issued an extension to install FGD to meet SO₂ norms by March, 2021 and Low NO_x burners/OFA to meet NO_x

- emissions by 2022. ESP up-gradation is not required as Particulate Matter is already within the stipulated norms.
- viii. The specifications of FGD have been submitted by M/s Fitcher and are under scrutiny. The tenders will be floated in August, 2019. The commissioning of FGD is expected by March, 2022.
 - ix. Primary control measures to control for NO_x by way of modification in boiler is proposed to be implemented through OEM. The same has to be commissioned by March, 2021. Action for installation of Selective Non Catalytic Reduction (SNCR) to control NO_x emissions shall be taken after receipt of recommendations of the pilot project being implemented by NTPC as there is no proven technology for high ash content coal.
 - x. In the proposed unit of 660 MW, the project cost is estimated by including FGD and SCR.
 - xi. In the plant area of 212.70 acres (145 acres for plant and 67.7 acres for ash pond) and 24.1 acres of greenbelt has been developed. In addition greenbelt in area of 21 acres along the road and 62.3 acres in the colony has been developed.
- (31.1.2) Committee noted that the greenbelt around the existing ash pond has not been developed. The greenbelt within the plant area of 24.1 acres does not fulfill up to 33% of the total area. The existing ash pond has available volume of 9 Lakh m³ and raising dyke height will provide another volume of 14 Lakh m³. Project Proponent has designed another ash pond in an area of 165 acres for catering to the ash disposal of both plants (existing and proposed) considering the zero percent ash utilisation. The ash pond as per the Fly Ash Notification is only to be allowed as emergency ash pond. Accordingly, Committee is of the opinion that additional ash pond should not be permitted. Further, as informed, the forest land proposed for diversion is already within the plant boundary. Project Proponent has to obtain NOC under the Forest Rights Act whether any rights of Forest Tribes and dwellers are affected. Committee further observed that ambient air quality in the plant area is exceeding the standards. As the Particulate emissions from the flue stack are within the standards, the contribution of dust may be due to fugitive emissions from the coal handling area, ash handling area and road transportation.
- (31.1.3) **Committee after detailed deliberations, recommended for grant of following ToRs in addition to the standard ToRs:**
- i. No additional ash pond is allowed. Only existing ash pond is to be used as an emergency ash pond for the proposed project.
 - ii. A copy of Environmental Clearance obtained for 210 MW plant and certified compliance report from the MoEF&CC, Regional Office for the operating 210 MW Power Plant.
 - iii. Regional office while conducting site visit for examining the compliance shall also ascertain the cause for high Particulate emissions and suggest mitigative measures. Project Proponent shall submit an action plan for reduction in Particulate Matter in the ambient air.
 - iv. No Objection Certificate under Forest Rights Act and whether rights of forest tribes and other forest dwellers are affected due to proposed plant.
 - v. Tree enumeration is to be carried out for forest land and non-forest land separately to ascertain number of trees to be cut for proposed project.
 - vi. Status of Stage-I Forest Clearance for diversion of 7.086 ha Reserve forest.
 - vii. Status of implementation of FGD for the existing unit and implementation of NO_x control measures to comply with the emission norms dated 7.12.2015.

- viii. The action plan to achieve 33% greenbelt area for the total plant area excluding the greenbelt in the colony.
- ix. The details of flyash utilisation for the existing plant and action plan to achieve 100% flyash utilisation.
- x. List of industries and mines within 10 and 40 km radius of the proposed project and estimation of cumulative environmental impacts is to be carried out.
- xi. Requirement of water consumption at each process shall be assessed and possible reduction and conservation measures shall be adopted by achieving higher COC and switching over to high Concentrated Slurry Disposal, setting up Ash Water Re-circulating System, upgrading ETP for achieving zero liquid discharge, etc. Action plan in this regard for both existing and proposed project shall be submitted.
- xii. Action plan to achieve specific water consumption of 3.5 m³/MWh for operating plant and 3.0 m³/MWh for proposed project as per the Ministry's Notification dated 07.12.2015 shall be submitted.
- xiii. The details of land (status whether revenue/private, agriculture/barren/forest) and acquisition for the proposed infrastructure to set up additional pumps and lay pipelines to carry water from Suthna Reservoir and Sone River shall be submitted.
- xiv. The water sustainability studies shall be conducted to assess the availability of water in-stream and downstream users after drawing water for proposed project.
- xv. Assessment of water quality and aquatic fauna for adjacent Chachai lake is to be conducted. The time bound action plan along with financial allocations for lake rejuvenation and promotion of tourism as part of CSR activities shall be submitted.

(31.2) 4x270 MW (1080 MW) Coal based Bhadradi Thermal Power Station (BTPS) at Villages Ramanujavaram, Eddulabayyaram & Seethampuram, Mandals Manuguru & Pinapaka, District Bhadradi Kothagudem (Erstwhile Khammam dist.), Telangana by M/s Telangana State Power Generation Corporation (TSGENCO) Ltd. – reg. permission for coal transportation by road.

(F.No. J-13012/02/2015-IA.I(T) & Proposal no. IA/TG/THE/105598/2019)

(31.2.1) Project Proponent submitted online application on 16.05.2019 for temporary permission to transport coal by road for a period of three years.

(31.2.2) The proposal for transportation of coal by road has earlier been considered by the EAC in its meeting held on 28.05.2019 and the committee sought following information:

- i. Revised Traffic Impact Assessment report incorporating details of roads, traffic sufficiency and load bearing capacity, details of modelling parameters and results, details of villages, habitations and forests and impact of proposed traffic on them.
- ii. The progress report containing milestones for completing all activities of railway siding/line with timelines

(31.2.3) Project Proponent has submitted the revised Traffic Impact Assessment report along with the detailed progress report. Project Proponent has also appointed new EIA consultants M/s Vimta Labs Ltd. by replacing earlier consultants M/s B.S. Envitech Pvt. Ltd. Project Proponent along with M/s Vimta Labs Ltd. have made the presentation *inter-alia*, submitted the following information:

- i. The road distance from Mallepalli Opencast Mine and PL Opencast Mine-4 to the power plant is as below:

Sl. No.	Route	Stretches	Length and Width of the road	Type and Owner
1.	PK Mine OC-4 to Bhadradri TPP	Mine Loading point to Check Post	1.2 km & 16 m	WBM & SCCL
2.		Check Post to State Highway Junction	4.2 km & 7 m (plus berms of 2m each side)	Bituminous & SCCL
3.		State Highway Junction to Bhadradri TPP	10.20 km & 7 m (plus earthen berms of 1.5 m each)	Bituminous & SH-12 by State R&B Dept.
Total length of Route-1		15.6 km		
4.	Mallepalli OCP to Bhadradri TPP (14.1 km)	Mine Loading point to Check Post	0.3 km & 18 m	WBM & SCCL
5.		Check Post to State Highway Junction	3.7 km & 10 m (plus berms of 2m each side)	Bituminous & SCCL
6.		State Highway Junction to Bhadradri TPP	10.10 km & 7 m (plus berms of 1.5 m each)	Bituminous & SH-12 by State R&B Dept. (Common stretch as mentioned at Sl.No.3)
Total length of Route-2		14.1 km		

- ii. Total coal requirement for thermal power plant is 13,129 Tonnes/day. Total number of trucks estimated to be plied on the road is 655 trucks (to and from 1310 trucks; 55 trucks per hour) with 20-ton capacity.
- iii. 50% of the coal is brought from PK OC-4 mine and remaining 50% is brought from Mallepalli OC Mine.
- iv. Traffic impact assessment has been carried out. The adequacy of the roads as per the design, existing traffic and the proposed incremental traffic are compared against the design traffic. The details are as below:

Stretch	Existing Traffic (PCU)	Proposed Traffic (PCU)	Total traffic (PCU)	Design traffic (PCU)	Percentage Utilisation
PK OC-4 Mine to State High Junction Point	7,003	1,965	8,968	15,000	47%
Mallepalli OC Mine to State High Junction Point	6,994	1,965	8,959	17,250	41%
State High Junction Point to	6,196	3,930	10,126	15,000	67%

Bhadradri TPP					
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- v. The existing roads are capable of taking the proposed additional traffic. State R&B department vide letter dated 08.07.2019 also certified that State Highway (SH-12) can take additional traffic with minimum axle number should not be less than three.
- vi. The baseline ambient air quality at Mallepalli OCM has been collected and incremental air quality concentrations due to proposed traffic have been estimated by AERMOD dispersion modelling software. The results are as below:

Parameter	Maximum Baseline ($\mu\text{g}/\text{m}^3$)	Maximum GLC ($\mu\text{g}/\text{m}^3$)	Resultant Concentration ($\mu\text{g}/\text{m}^3$)	NAAQS 2009 ($\mu\text{g}/\text{m}^3$)
PM	51.6	0.3	51.9	100
NOx	22.6	22.2	44.8	80
CO	441	11.6	452.6	2000
HC	<1.0	1.0	1.0	-

- vii. The maximum incremental concentrations of major pollutants CO and NOx due to the additional traffic load would be about $11.6 \mu\text{g}/\text{m}^3$ and $22.2 \mu\text{g}/\text{m}^3$ respectively likely to occur at 10 m from the centre of the road. The CO and NOx concentrations are likely to be very low when compared with the NAAQ standards for CO ($2000 \mu\text{g}/\text{m}^3$) and the model results are predicted considering the worst case scenario i.e stable atmospheric conditions which normally occurs in the early hours. However, the predicted GLC's will be less during daytime.
- viii. The following villages are falling within 100 m on each side of the road. The ambient air quality predicted in the villages due to proposed incremental traffic is as below:

Name of the Stretch	Name of the Habitation	Population	Baseline ($\mu\text{g}/\text{m}^3$)	Predicted GLCs ($\mu\text{g}/\text{m}^3$)	Resultant ($\mu\text{g}/\text{m}^3$)
Manugur to BTPS (SH-12)	Thirumalapuram/ Vijayanagaram	915	45.1	0.010	45.110
	Ramanujavaram	1,565	48.4	0.005	48.41
	Sambaigudem	1,355	43.0	0.005	43.01
	Dammakkapeta	511	39.6	0.050	39.65
	Chikkudugunta	777	43.0	0.004	43.04
PK Mines OC-4 to SH-12	Ippalasingaram	966	51.2	0.050	51.25
Mallepalli OC to SH-12	Raju peta	1,689	41.4	0.07	41.47
NAAQS standard for Particulate Matter is $100 \mu\text{g}/\text{m}^3$					

- ix. The following environmental management plan will be implemented to minimise the environmental impact due to additional traffic.
- a. The coal loaded trucks will be completely covered to prevent air borne dust.
 - b. During loading and unloading of the coal into the trucks, the drop height of coal will be minimized to the lowest possible height to prevent fugitive emissions.
 - c. Water sprinkling will be done on top layer of coal to prevent fugitive dust emissions during coal transportation.
 - d. Trucks with valid Pollution Control Certificate (PCU) will only be employed.
 - e. High raised pedestrian crossing in front of the main employee's gate for the safety.
 - f. Amber blinker lights will be used at the gate to caution vehicles which are moving out. Sign boards will be installed to this effect.
 - g. High mast light at the entrance will be installed.
 - h. Necessary number of speed breakers as per IRC, along with adequate road signs shall be implemented for the Tirumalapuram, Ramanujavaram, Sambayagudem and Dhamakkapalle.
 - i. The median opening will be made available one in front of the main gate and another one in front of the material handling gate (two gates).
 - j. Security guards will be provided at gates round the clock.
 - k. Restrict speed of the vehicle and unauthorised vehicles on unpaved roads to avoid accidents.
 - l. Unpaved roads will be provided with gravel or similar materials upto sufficient depth to reduce dust.
- x. The chronology of various activities carried out till date for the construction of railway line from Manuguru railway station to BTPS is given below:

Sr.No	Description	Date
1	Purchase order placed on M/s. RITES Limited for preparation of Detailed Project Report for an amount of Rs.150 Crores	03.12.2014
2	Environmental Clearance for BTPS project granted by MoEF&&CC	15.03.2017
3	Submission of feasibility report to M/s. South Central Railways by M/s. RITES Limited	December, 2017
4	Requisition for acquisition/alienation of Patta/Assigned land to 107.09 Acres submitted to Sub-collector/Bhadrachalam.	11.04.2018
5	Forest Clearance application submitted to Forests Dept. for diversion 64.10 acres (25.8435 ha) of forest land for construction of railway line	23.07.2018
6	M/s. South Central Railways accorded in-principle approval for feasibility report.	05.11.2018
7	PCCF, Hyderabad requested CCF, Kothagudem to identify CA land to the extent of 26.00 ha	17.12.2018
8	DPR submitted to M/s. South Central Railways	January,2019

Sr.No	Description	Date
9	In-principle approval of DPR was accorded by M/s. South Central Railways	15.03.2019

xi. As it is programmed to synchronize the Unit-1 by end of July 2019 and other 3 units in a phased manner by end of December, 2019, transportation of coal by road is required to start the operations. The railway line is scheduled to complete by November, 2021. The PERT chart in this regard has been prepared and submitted.

(31.2.4) Committee noted that 21 km railway line should strictly be completed by project proponent as per the PERT chart submitted by them. Further, there is a Village Rajupet along the road from Mallepalli Opencast Mine to State Highway Junction which requires special attention as the houses are adjacent to the road. Committee noted that a speed breakers are to be constructed before and after the village for restricting the speed and further, security guards are to be deployed for preventing accidents. Further, committee is of the opinion that Project Proponent should provide some recreational and playground for children of Rajupet Village.

(31.2.5) Committee after detailed deliberations, recommended for transporting coal by road for 13,000 Tonnes/day for a period of three years subject to the following additional conditions:

- i. The PERT chart submitted for laying railwayline shall be strictly followed and implemented.
- ii. Avenue plantation shall be carried out along the road with help of Social Forestry Department.
- iii. A play ground and recreation centre shall be constructed for the children of Rajupet Village as part of CSR activities.
- iv. A security guard shall be deployed round the clock at Rajupet village as the residential houses are adjacent to the road, so as to prevent accidents. Speed shall be restricted at the said village so that
- v. Water sprinklers shall be installed to wash tyres of the truck at the loading point/before it enters Bituminous road from the loading point with help of M/s SCCL as the loading area belongs to mine operator viz. M/s SCCL who shall fully co-operate for the compliance of this condition.
- vi. Road repair works shall also be undertaken in the private roads from mines to State High Junction with help of M/s SCCL wherever necessary. M/s SCCL shall fully co-operate for the compliance of this condition.
- vii. In-principle (Stage-I) Forest Clearance for diversion of 25.8435 ha forest land shall be submitted.

(31.3) 1080 MW Expansion Lignite based Thermal Power Project at Village-Bhadresh, District-Barmer, Rajasthan by M/s JSW Energy (Barmer) Ltd.-reg. ToR.

(F.No. J-13011/58/2006-IA.II(T) & Proposal no. IA/RJ/THE/110058/2019)

(31.3.1) Project Proponent has submitted the online application on 10.7.2019 for grant of Environmental Clearance for expansion project of 2x540 MW Supercritical Power Project.

(31.3.2) Project Proponent along with EIA consultants M/s EQMS Pvt. Ltd. made the presentation and inter-alia submitted the following information:

- i. The proposed project of 2x540 MW supercritical Lignite based Thermal Power Project will be set up in the premises of existing 8x135 MW Power Plant which is under operation in Barmer District of Rajasthan.
- ii. The environmental clearance for 8x125 MW Lignite based Thermal Power Project at Barmer, Rajasthan has been accorded vide Ministry's letter dated 20.07.2007.
- iii. The total area available in the possession of project proponent is 1,186 acres out of which 223 acres will be used for proposed expansion project.
- iv. Nearest Railway Station is Barmer which 25 km by road. There is no forest land involved in the project. There are no protected areas, eco-sensitive areas/zones and other protected areas under Wildlife (Protection) Act, 1972, archaeological sites, defence installations within 10 km radius of the project. The project site falls within the Zone-III (Moderate risk zone) of Seismicity.
- v. Lignite requirement for the proposed project is 7.0 Million Tonnes per annum. The Lignite will be transported by belt conveyor from the State owned Lignite mines. The Calorific value, Sulphur and ash contents of the Lignite is 2,900 kcal/kg, 2% and 20%, respectively.
- vi. Water requirement for the existing project is 3,570 m³/h (35 Cusecs) whereas the requirement for proposed project is 1,100 m³/h(10.8 Cusecs). The agreement with Govt. of Rajasthan to draw 80 Cusecs from Indira Gandhi Nahar Pariyojana had already been made.

(31.3.3) Committee noted that the existing Environmental Clearance has been accorded by the Ministry for 8 units of 125 MW, whereas Project Proponent has established 8 units of 135 MW which needs an amendment from the Ministry. A detailed justification is required in this regard. Further, Committee noted that the Project Feasibility Report has not been uploaded online at PARIVESH which needs to be uploaded. Further, the details of the compliance of revised emission norms w.r.t existing power plant are to be known. Whether there is any extension by CPCB is given to comply with the new emission standards. Further, committee sought to know whether 223 acres has been identified after leaving 33% greenbelt of the total project area. Further, Member Secretary briefed that there is already an expansion project has been proposed at the same location by another subsidiary of of M/s JSW Steel Ltd. called M/s Rajwest Power Ltd. The ToR has been issued and the EIA report has been submitted by M/s Rajwest Power Ltd. to the Ministry which is pending for some additional information. Committee is of the opinion that if one application is already under consideration, then either project proponent has to withdraw the present application for pursuing the earlier application or vice-versa.

(31.3.4) Committee after deliberations, **deferred the proposal and sought for the following information for further consideration:**

- i. Another application for grant of EC at the same location has been proposed for which final EIA report has been submitted to the Ministry. Details and status of the said proposal be submitted. If it is proposed to withdraw the application, a letter is to be submitted that only one project will be set up either the earlier one or proposed one.
- ii. Details of the Board of Directors of the company shall be submitted.
- iii. Project Feasibility Report is to be uploaded online at PARIVESH. A copy of the agreement for water drawl of 80 cusecs from Indira Gandhi Nahar Pariyojana is to be submitted.

- iv. The details of area, volume availability, co-ordinates of the existing ash pond. Whether there is any requirement of additional ash pond.
- v. The details of emissions from the flue gases of the operating power plant. The details and status of compliance of the new emission norms dated 07.12.2015.
- vi. Justification to establish 8x135 MW as against the approved capacity of 8x125 MW in the Environmental Clearance dated 20.07.2007.
- vii. The dates of commissioning (COD) of operating units viz. 8x135 MW.
- viii. Location and distance of source of Lignite from project.
- ix. Whether setting up of additional infrastructure such as conveyor belt is required from mines for transporting Lignite and pipelines from water intake point for transporting water. Details of land acquisition in this regard, if any.
- x. Availability of land for proposed project after compliance of 33% greenbelt of the total project area.
- xi. A map showing water pipelines from intake point/canal, belt conveyors from mines, ash pond, greenbelt, existing plant and proposed plant shall be submitted along with co-ordinates and dimensions, shall be submitted.
- xii. Details regarding whether zero liquid discharge is followed or any effluent from power plant is discharged into nearby water body.

(31.4) 2x300 MW (Phase-I) Coal Based Thermal Power Plant at Villages Ghanmukh (Bijora), Tehsil Mahagaon, Yavatmal District, Maharashtra by M/s Jinbhuvish Power Generations Pvt Ltd.- reg. extension of validity of EC.

(F.No.J-13012/158/2010-IA.II(T)&Proposal no. IA/MH/THE/108493/2019)

- (31.4.1) Project Proponent has submitted online application on 22.06.2019 for extension of validity of EC for a period of 5 years. The environmental clearance was issued on 30.07.2012 and valid for five years, i.e till 29.7.2017. By virtue of EIA amendment Notification dated 14.09.2016 increasing the validity of EC from 5 years to 7 years, the said EC validity is automatically increased to seven years, i.e. till 29.07.2019.
- (31.4.2) Project Proponent attended the meeting. However, no presentation has been made to the Committee. Senior officers of the Company were not present during the meeting. Further, project proponent could not explain the progress of the project achieved till date and reasons for delay. Further, the EIA Notification provides for extension of maximum three years, whereas project proponent sought extension of five years. Further, the water allocation made in 8.4.2011 may have expired by now due to new water demands in the river basin which needs to be certified by the State Irrigation/Water Resources Department. **Accordingly, Committee deferred the project and PP shall submit the following information for reconsideration:**
- i. The physical and financial progress of the project till date. Details of balance activities to be implemented along with timelines in the form of PERT chart.
 - ii. Details of land acquisition for the power plant and railway siding.
 - iii. Details of whether any BTG and BOP has been awarded. If yes, copy of award along with details of advance made to the EPC contractor.
 - iv. Detailed justification to complete the remaining project in the three years instead of five years.
 - v. A copy of present Board of Directors of the Company shall be submitted.
 - vi. A copy of fresh water and coal linkages secured for the project.

- vii. Revised estimation of project cost including the FGD and NO_x control measures to meet new emission norms notified dated 07.12.2015.
- viii. Details of location, area and co-ordinates of ash pond.
- ix. Revised Water balance diagram in compliance with the specific water consumption of 3 m³/MWh as per the Ministry's Notification dated 07.12.2015.

(31.5) Disposal of fly ash generated from Talcher Super Thermal Power Station (Stage-I:2x500 MW & Stage-II: 4x500 MW) into abandoned mine voids of Jagannath OPC of Mahanadi Coalfields Limited in Talcher, Dist. Angul, Odisha by M/s NTPC Limited- reg. permission for disposal of ash in to abandoned mines.

(F.No.J-13011/14/94-IA.II (T) pt & Proposal no.IA/OR/THE/109654/2019)

(31.5.1) Project Proponent has submitted online application on 01.07.2019 for amendment in EC for permission for disposal of ash in to abandoned mines.

(31.5.2) Project Proponent has made the presentation inter-alia submitted the following information:

- i. At present, Talcher TPS, Stage-I & II (460 MW) generates 1.2 Million Tons of ash per annum (3,300 Tons/day) out of which more than 95% is being disposed off in mine voids through lean concentration slurry disposal method through pipeline. Daily requirement of water is 18,000 KL/day which is 12500 KL/day is met from recirculating ash water, treated effluent and sewage and remaining 5,500 KL/day is being sourced from Brahmani River through 6 km pipeline.
- ii. Ministry has granted ToRs for conducting various studies for disposal of ash in abandoned mines of Quarry No.4 and 7 of Jagannath Mines of M/s Mahanadi Coalfields Ltd.
- iii. The detailed studies including Leachate studies have been awarded to M/s CMPDI, Ranchi and is scheduled to complete by April, 2020.
- iv. Some of the ToRs specified to the project are not applicable as no Overburden is proposed to be mixed with the flyash.
- v. Studies pertaining to impact on flora & fauna, aquatic life for the Jagannath mine has been awarded to M/s National Botanical Research Institute, Lucknow.
- vi. Similar studies have already been conducted for South Balanda mines since 2012.
- vii. Radio Tracer study is under process for award. Ash utilisation study has been awarded to M/s Sycom Project Consultant (P) Ltd.
- viii. Recently, in EAC meeting held on 12.07.2019 recommended for permission to dispose ash in mines inline with the Fly ash notification with the compliance of CPCB guidelines. The present project also will comply to the CPCB guidelines along with EAC recommendations.

(31.5.3) Committee noted that the recommendations made on 12.07.2019 have been finalised and submitted to the Ministry. The Member Secretary has informed that the recommendations are under consideration by the Ministry for approval. With regard to the present project, the Ministry/EAC stipulated certain studies which are yet to be concluded. In absence of such studies, the EAC may not be able to provide a clear recommendation. However, in light of EAC recommendations made on 12.07.2019, after approval of these guidelines by the Ministry, Project Proponent can directly start disposing the ash without approaching the

EAC/Ministry for individual proposals. **At present, the EAC defers the project for submission of studies specified in the ToRs.**

**(31.6) 2x800 MW (Stage-I) Gadarwara Super Thermal Power Project near Villages Gangai, Umaraiya, Mehrakheda, Chorbarheta, Dongergaon and Kudari, Gadarwara Tehsil, Narsinghpur District, Madhya Pradesh by M/s NTPC Ltd.- reg. permission for road transportation.
F.No. J-13012/125/2009-IA.II(T)&Proposal No.IA/MP/THE/109345/2019**

(31.6.1) Project Proponent vide online application dated 28.06.2019 for extension of temporary permission issued for transportation of 10,500 Tonnes/day coal by road for a period of one year (till June, 2020) owing to delays in construction of 16 km railway line from Gadarwara rail head to the power plant.

(31.6.2) The following Clearances/permissions have been issued to Gadarwara Power Project by the Ministry.

- i. Environmental Clearance for 2x800 MW (Stage-I) Gadarwara Super Thermal Power Project vide Ministry's letter dated 22.03.2013.
- ii. An amendment for change in coal source from Talaipalli Coal Block to Pakri Barwadih Coal block and a temporary permission till December, 2018 for transportation of 8 MTPA Coal by road has been issued for length of 15 km from Gadarwara Railway Station to the power plant, owing to delay in implementing MGR vide Ministry's letter dated 01.09.2017.
- iii. An amendment for change in coal source from Pakri Barwadih to NCL, WCL and SECL mines and extension of temporary permission for six months (till 30.06.2019) to transport 10,000 Tonnes/day coal by road from Gadarwara Railway station to Power Plant for a length of 11.3 km vide Ministry's letter dated 07.02.2019.

(31.6.3) Project Proponent along with consultants M/s Min Mec Consultancy Pvt. Ltd. have made the presentation and inter-alia submitted the following information:

- i. NTPC Ltd. constructed two coal sidings in North and South of Itarsi-Jabalpur Railway Line at Gadarwara rail head as permitted by Indian Railways. The siding was commissioned in 2018 and since then unloaded coal at siding is being transported to NTPC's Gadarwara STPP (2X800 MW) by means of existing road network. The road which is being used for coal transportation is 11.94, say, 12 km long, via Sudras village.
- ii. Unit-1 (800 MW) was commissioned in June, 2019 and is under commercial operation. Unit-2 (800 MW) is expected to be commissioned in November, 2019.
- iii. Dedicated railway line and MGR is under advanced stage of construction and will take some more time to complete.
- iv. The lead line (railway line) is likely to be ready by October, 2019 and thereafter, necessary clearance from Commissioner, Railway Safety shall be obtained. However, the lead line will not cater to the full coal requirement of Units-1 & 2.
- v. The complete work of rail-on-rail line of MGR system shall be completed by June, 2020.
- vi. Till full capacity of MGR system is operational, the coal transportation by 12 km from Gadarwara siding is required.
- vii. The status of lead line of 16 km is as follows:

Component	Scope	Executed till date	Balance Work
Bridges (No.)	21	21	0
RCC (m ³)	1,29,174	1,21,220	7,954
Earth work (m ³)	26,41,000	26,41,000	0
Track laying (km)	16	14.86	1.14
Time line for readiness of coal transportation for Unit#1	31.12.2019		

viii. The status of Rail-on-rail of 26 km is as follows:

Component	Scope	Executed till date	Balance Work
Bridges (No.)	8	0	8
RCC (m ³)	12,346	6,624	5,722
Earth work (m ³)	8,19,100	3,18,100	5,01,000
Track laying (km)	26	0	26
Readiness for coal transportation for Unit#2	30.06.2020		

ix. The details of 12 km road proposed for coal transportation is as follows:

Total length (km)	11.94 km
No. of Villages along the route	2 (Gadarwara population-48,279, Megarmuha population-479)
Road passing through urban area	Nil
Road passing through rural area	11.94 km
Black Topped road	9.03 km
Concrete road	2.91 km
Road passing through forests	Nil

x. The width wise breakup of road is as given below:

Lane Category	Length
Single Lane (<5.5 m)	0.19 km
Intermediate Lane (5.5 m-7m)	Nil
Two Lane (7-10 m)	11.75 km
Multi-lane (>10 m)	Nil
Total Length	11.94 km

xi. It is proposed to transport 10,000 Tonnes/day coal by 30 Ton dumpers. Total number of to and fro trips would be 700.

xii. The traffic sufficiency assessment has been carried out by measuring existing traffic and estimating the proposed traffic. The details are as below:

Width of the road	Design Volume in PCU/day	Existing traffic	Incremental traffic	Total traffic	Percentage Utilisation	Remarks
3.4 m	2,000	11,617	2,100	13,717	685%	The road is nearly 200 m at the

						Gadarwara area.
7-7.5 m	15,000	11,617	2,100	13,717	91%	

- xiii. The narrow stretch was proposed to be widened to 7 m but due to legal issues, the widening of this stretch is pending.
- xiv. Baseline ambient air quality has been collected from two locations and the values are as below:

Location	Distance from the Road	Air quality concentrations ($\mu\text{g}/\text{m}^3$)			
		PM ₁₀	PM _{2.5}	SO _x	NO _x
Rajendar Babu Ward near railway siding	37	82.3	47.1	7.4	9.6
Megarmuha Village	20	68.1	39.1	6.6	10.5

- xv. Air quality modelling has been carried out for predicting incremental concentrations due to proposed traffic including fugitive emissions:

Parameter	Baseline value	Incremental value	Resultant	Ambient Standards
PM ₁₀ ($\mu\text{g}/\text{m}^3$)	82.3	12.8	95.1	100
PM _{2.5} ($\mu\text{g}/\text{m}^3$)	47.1	3.1	50.2	60
SO ₂ ($\mu\text{g}/\text{m}^3$)	7.4	1.38	8.78	80
NO _x ($\mu\text{g}/\text{m}^3$)	10.5	21.23	31.73	80

- xvi. The following environmental management plan is proposed to be carried out to mitigate the pollution from incremental traffic.
- Plantation has been carried out along the route for dust and noise control on either side of road, wherever possible, and additional plantation contract have been issued this year also. In future also, where possible, plantation will be carried out
 - Maintenance/ protection of plantation/ saplings is being done & will be done in future also.
 - The dumpers used for transportation of coal are & would be covered with tarpaulin.
 - Dumpers with valid PUC certification using unadulterated diesel are & will be allowed to ply.
 - Vehicles having fitness certificate are & will be allowed to ply.
 - Continuous water sprinkling and fogging is and will be done in future also, at the siding. Sweeping is being and will be carried out in case of spills at siding.
 - Wind breaks have already been constructed along the boundary of the railway siding.
 - Contracts to local contractor have been and will be maintained to clean the road stretch passing through villages.
 - No honking along the settlements stretch, which are and would continue to be silent zones.

- j. All dumpers undergo and will continue to undergo preventive maintenance as per manufacturers schedule and their silencers will be maintained and operational at all times.
- k. Emergency contact numbers are available to all vehicle drivers and shall continue to be updated, as and when required.
- l. First aid kit is available at railway siding and medical facility is available at the power plant. In case of emergency, staff can be rapidly deployed from the nearest of the siding or plant to the emergency site with emergency kit.
- m. Ambulance facility is available at the power plant, which can be rapidly mobilised to any location on the 12 km transportation route during emergency.
- n. Installation of speed bumps near settlements needs to be done to ensure slow driving near settlements.
- o. Awareness to dumper drivers & local people through hoardings on roads regarding road safety needs to be carried out

(31.6.4) Committee noted that there is a narrow stretch of approximately 200 m with width of 3.4 m through which the proposed traffic is to be routed. Unless the road is widened, it is difficult to ply 700 trucks trips on the road. Further, the committee noted that this is the third time Project Proponent is applying for extension of road transportation. The existing permission has been granted since September, 2017. It has been nearly two years since the permission is granted. However, the railway line is not completed and the schedules have been postponed to June, 2020.

(31.6.5) Committee after detailed deliberations, **recommended for extension of temporary permission granted vide dated 07.02.2019 for transportation of 10,000 Tonnes/day coal by road by 30 Ton Dumpers from Gadarwara Rail Head to NTPC Plant via Sudras Village for a period of one year, i.e. till 30.06.2020** subject to the following additional conditions:

- i. The ambient air quality monitoring has to be carried out once in quarter in the villages along the road, loading and unloading points.
- ii. No further extension of road transportation will be allowed.
- iii. Continuous water sprinkling shall be carried out during dry season.
- iv. Traffic Marshal shall be deployed round the clock near narrow stretch of 3.4 m at Gadarwara area.

(31.7) Expansion from 2x600 MW to 2000 MW (2x600 + 1x800 MW) of Coal based Singareni Thermal Power Plant at Pegadapalli Village, Jaipur Mandal, Mancherial District in Telangana by M/s Singareni Collieries Company Ltd.- reg. re-consideration of Environment Clearance. F.No. J-13015/08/2015-IA.I (T) & Online no. IA/TG/THE/27094/2015

(31.7.1) The proposal for grant of Environmental Clearance has been submitted by the M/s SCCL on 03.11.2018. The proposal has been considered by the EAC (Thermal Power) on 30.11.2018 and the Committee recommended for a site visit by the sub-committee. The Sub-committee conducted the site visit during 30-31 May, 2019 and the report has been placed before the EAC in its meeting held on 26.06.2019. The EAC in its meeting held on 26.06.2019 sought the following additional information:

- i. The revised coal linkage documents for proposed coal requirement shall be submitted.
- ii. Action plan for not using groundwater from the infiltration galleries of Godavari River.
- iii. The plant layout showing demarcation of greenbelt along with width/length/area/co-ordinates and the action plan to develop greenbelt with timelines and financial allocations shall be submitted. Miyawaki system of greenbelt development needs to be developed in consultation with the Forest Department.
- iv. The proposed ash pond shall be restricted to 30 ha only. The proposed ash pond area of 59.44 ha shall be reduced to 30 ha. Accordingly, more open space shall be left between Pegadapalli and proposed Ash pond area. The open space shall be developed as greenbelt. The layout map showing existing ash pond (30 acres) and proposed ash pond (30 acres) shall be submitted.
- v. The Time bound action plan for implementing FGD and De-NO_x systems to meet the revised emission standards. The extension from the CPCB/Ministry to install pollution control equipment to meet revised emission norms.
- vi. Action plan for setting up dedicated environmental cell with qualified environmental engineers/science graduates, and experts from soil biology and chemistry.
- vii. Action plan for adoption of Pegadapalli Village for developing as a model village and provision of permanent jobs for Villagers.
- viii. Action plan for construction of rainwater harvesting structures.

(31.7.2) Project Proponent vide letter dated 16.07.2019 submitted the reply to the additional information. Project Proponent along with EIA consultants M/s Ramky Enviro Services Pvt. Ltd. made the presentation and inter-alia submitted the following information:

- i. Presently the coal supply to the existing 2x600MW STPP is from SCCL own mines under bridge linkage. It is proposed to supply coal from Naini Coal Block in Angul district in Odisha, which is allotted by Ministry of Coal (MoC) as a coal linkage project for supply of coal to proposed power project. This coal block is envisaged for coal production (2021-22) by the time 1x800MW STPP comes in to operation.
- ii. The total coal requirement of 8.8 MT for the existing 2x600 MW and the proposed 1x800 MW plant can be sourced from SCCL mines after meeting the FSA requirements, through Bridge linkage after obtaining necessary permission from MoC and MoEF&CC, if Naini Block couldn't be grounded on time/till Naini Block reaches rated production.
- iii. Telangana State Ground Water department permitted to draw 18 MGD of water (Letter No. 157/T/2008 dt.07.08.2008) through infiltration galleries from Godavari river. Accordingly, water drawal arrangement was made through infiltration galleries for uninterrupted water supply to the power plant during lean season.
- iv. It is mentioned that in File No. CLD-23014/4/2017-CLD of MoC, dated 19.09.2017, coal block allottees are exempted to provide linkage details for obtaining EC in accordance with MoEF F.No.J-13011/18/2014-IA.I(T) dated 15.03.2017.
- v. Recently, Government of Telangana State commissioned Kaleshawaram Lift Irrigation project, as part of which intermediate structure is constructed at Sundilla on the downstream of STPP water drawl point in the River Godavari.

- vi. As Sundilla Project is completed, water ponding will be available at STPP water drawl point, which will facilitate continuous availability of surface water. Hence, no ground water will be extracted for use in operation of the power plant even during the lean season.
- vii. Total project area covering existing Stage-1 (2x600MW) and the proposed Stage-II (1x800MW) is 428.28 ha and 33% project area to be brought under green belt is 141.33 ha. Budget of Rs.5.95 Crores has been earmarked for the greenbelt development. Total greenbelt in an area of 202.46 ha will be developed in the plant premises.
- viii. Additionally, an area of 50 ha of degraded Reserve forest is identified for plantation and obtaining the necessary approvals from Telengana State Forest Department is in final stage.
- ix. Miyawaki system of greenbelt development will be taken up, wherever feasible, in consultation with the Forest Department.
- x. As suggested by the sub- committee, SCCL will utilize 30 ha of land for the ash dyke of proposed 1x800 MW unit and the balance open land of 29.44 ha between Pegadapalli and ash pond will be developed as greenbelt.
- xi. CPCB advised SCCL again vide letter No. B-33014/07/2017-18/IPC-II/TPP/14853, dated 07.01.2019 for installation of FGD by December 2019 for Stage-1 (2x600MW).
- xii. SCCL has already initiated action for installation of FGD system for 2x600MW, STPP and DPR was prepared by NTPC. The SCCL Board recommended the Detailed Project Report (DPR) to Government of Telangana and the same was approved, vide letter No.499/PR.A1/2019, dated 14.06.2019.
- xiii. Pre-award consultancy services were issued to M/s NTPC for installation of FGD for 2x600MW,STPP, vide PO No.8900000996, dated 18.06.2019. The installation of FGD for the existing 2x600 MW STPP is scheduled to be completed before December, 2022.
- xiv. SCCL has a well established Environment Department headed by General Manager (Environment) assisted by a team of officers to monitor the compliance of EC conditions and assist in environment management in the mines/units.
- xv. On the similar lines, an environment cell has been constituted at STPP with the team of officers having suitable qualifications for effective environmental management.
- xvi. SCCL had provided employment to 724 persons with various agencies to land losers of existing plant and surrounding villagers.
- xvii. SCCL provided a capital CSR budget of Rs.22.10 Crores for welfare of the surrounding villages. CSR works are being taken up with the approval of District Collector through Government Departments.
- xviii. 5 Nos. of Rainwater Harvesting Structures (RWHS) are proposed to be taken up. The STPP premises is of black cotton soil and the water table at most of the locations is at shallow depth ranging only from 0.58m to 4.18m in various seasons.

(31.7.3) Committee noted that prior coal linkage is required for granting Environmental Clearance for power project as per the Ministry's guidelines. However, Project Proponent cited Ministry of Coal guidelines dated 19.09.2017 and Ministry's guidelines dated 15.03.2017 for exemption of coal linkages. The committee is of the opinion that the such exemption has been provided by the Ministry for Ultra Mega Power Projects. However, the Committee suggested Member Secretary to examine the relevant circulars cited by the Project Proponent and ascertain the applicable guidelines to the present project. Further, Project Proponent

mentioned that the project area consists of black cotton soil and the water table at most of the locations is at shallow depth ranging only from 0.58m to 4.18m in various seasons. On perusal of the Hydro Geological Report, the ground water depths are mentioned as 1.0-14.91m during pre-monsoon period and 0.50-11.70m during post-monsoon period. The ground water depths mentioned by the project proponent in the additional information and the ground water depths mentioned in the Hydrogeological Report are at variance which needs to be verified. Further, Committee noted that project proponent is now citing the depths of the groundwater. It should have been brought to the notice of the Ministry before stipulating the condition on Rainwater Harvesting. As the Rainwater Harvesting Structures have not been established, it becomes the non-compliance of the existing EC conditions. Further, Committee noted that the Hydro-geological report has been prepared by the Project Proponent itself which is not acceptable as per the Ministry's guidelines. Committee further noted that the CPCB in the latest letter in July, 2019 has not granted any extension to install FGD by December, 2022. As per the CPCB Orders, the FGD is to be installed by December, 2019. Recently, CPCB has denied the further extension. However, no award of contracts is done till date which may take several months from now and the progress has been very slow. Further, commissioning of FGD will take 32 from the zero date. Further, committee noted that Budget of Rs.5.95 Crores for developing greenbelt in an area of 141.33 ha is very less. The experts from the Forestry in the EAC shall assess the adequacy of the budget for plantation, protection and maintenance for 7-8 years. Committee further noted that the Environmental Cell for the power plant as proposed is constituted mainly with Mining Engineers and none from Environmental Science/Engineering which requires an action plan to implement EMP.

(31.7.4) Committee after deliberations based on the data submitted by the PP, deferred the proposal of grant of Environmental Clearance and sought for the following information:

- i. Data on groundwater table collected during last 5 years (pre and post monsoon) in the project and surrounding areas.
- ii. A copy of the CGWB design report for constructing rainwater harvesting structures. The time bound action plan for its implementation.
- iii. Hydrogeological Report to be revised based on the Ministry's Guidelines.
- iv. Concurrence of the District Collector, Adilabad and necessary clearance from State PCB be submitted regarding water drawal of 2 TMC/annum (34 MGD) from Pranahita River.
- v. Copy of Ministry of Coal guidelines for exemption of coal linkage for grant of environmental clearance.
- vi. The timelines for implementation of FGD with specific target dates for each activity. A PERT chart to commission FGD shall be submitted.
- vii. Details of budget along with the breakup of activities for implementation of Rs. 5.95 Crores for developing greenbelt in an area of 141.33 ha.
- viii. Action plan to create Environmental Management Cell with the professionals from the Environmental Sciences and Engineering, soil/plant biology.

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.
- xxxii) 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.
- xxxiii) 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.
- xxxiiii) 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.
- xxxv) 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.
- xxxvi) 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.
- xxxvii) 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.
- xxxviii) 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-conductive 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.
- xlii) Radio activity and heavy metal contents of coal to be sourced shall be examined and submitted along with laboratory reports.
- xliii) Fuel analysis shall be provided. Details of auxiliary fuel, if any, including its quantity, quality, storage etc should also be furnished.
- xliv) 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
- xlvi) 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.
- xlvi) 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.
- xlvi) 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.

- xlvi) 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.
- xlix) 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 2,000 to 2,500 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.

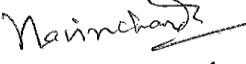
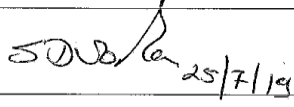
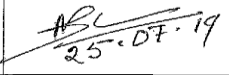
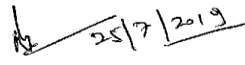
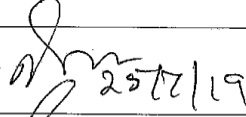
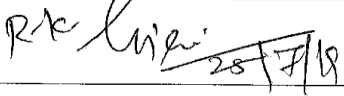
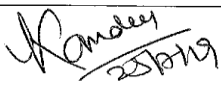
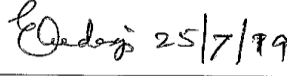

Attendance Sheet

LIST OF MEMBERS (Attendance Sheet)

31st EXPERT APPRAISAL COMMITTEE MEETING (Thermal)

DATE & TIME : 25th July 2019, 10:30 AM

VENUE : Teesta Hall, Vayu Wing, First Floor, Indira Paryavaran Bhawan, New Delhi

Sr.No.	Name of Member	Signature
1.	Dr. Navin Chandra Chairman	
2.	Shri Suramya D. Vora, IFS (Retd.) Member	
3.	Dr. Narmada Prasad Shukla Member	
4.	Sh. N. Mohan Karnat, IFS Member	
5.	Dr. Sharachchandra Lele Member	Abs.
6.	Sh. N.S. Mondal, CEA Member	
7.	Dr. R.K. Giri, IMD Member	
8.	Dr. S.K. Paliwal, CPCB Member	- Abs -
9.	Prof. S.K. Gupta (ISM/ IIT Dhanbad) Member	- Abs -
10.	Dr. Jai Krishna Pandey Member	
11.	Dr. Manjari Srivastava Member	- Abs -
12.	Dr. Gururaj P Kundargi Member	
13.	Dr. S. Kerketta Member Secretary, MoEFCC	

Approval of Minutes by the Chairman-EAC

8/9/2019

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Subject: Re: Revised draft MoM of 31st EAC Meeting (Thermal Sector) held on 25.07.2019 - reg.
To: Dr S Kerketta <s.kerketta66@gov.in>

Date: 08/09/19 10:52 AM
From: navin chandra <navinchandrarrl@yahoo.com>
Reply-To: navin chandra <navinchandrarrl@yahoo.com>

09/08/2019,

Dear Dr. Kerketta Ji,

I have gone through the revised minutes of the meeting of the EAC (Thermal) held on 25/07/2019. The Minutes are in order and may be uploaded on the website of the Ministry of MoEF&CC.

With warm regards,

(NAVIN CHANDRA)

Dr. Navin Chandra,
Chairman, Coal Mining & Thermal Power,
MoEF&CC, GOI, New Delhi.
Ex-Director General MPCST, Bhopal,
Ex-Vice Chancellor, SSSUTM, Sehore (MP)
(Retd.) Director (Actg.), CSIR-AMPRI, Bhopal
Member, RC, CSIR-AMPRI, Bhopal.
Phone (Res.) 91-755-2454600
navinchandrarrl@yahoo.com, navinchandraampri@gmail.com

AGENDA OF 31st MEETING OF THE RE-CONSTITUTED EXPERT APPRAISAL COMMITTEE ON THERMAL POWER PROJECTS

DATE : 25th July, 2019

TIME : 10.30 A.M. ONWARDS

VENUE : INDUS MEETING HALL, GROUND FLOOR, JAL WING, IPB, JORBAGH ROAD, NEW DELHI-110003.

ITEM	
Item No. 30.0	CONFIRMATION OF MINUTES OF 29th EAC (THERMAL) MEETING
Item No.	CONSIDERATION OF PROJECTS
31.1	1x660 MW Supercritical Thermal Power Plant existing Amarkantak Thermal Power Station (Phase-I&II: 290 MW), Village Chachai, Anuppur District, Madhya Pradesh by M/s MP Power Generating Company Ltd.- reg. re-consideration of ToR. (NABET accredited consultants also to be engaged at this stage) F.No. J-13012/07/2019-IA. I(T)&Proposal no.IA/MP/THE/94619/2019.
31.2	4x270 MW (1080 MW) Coal based Bhadradi Thermal Power Station (BTPS) at Villages Ramanujavaram, Eddulabayyaram & Seetharampuram, Mandals Manuguru & Pinapaka, District Bhadradi Kothagudem (Erstwhile Khammam dist.), Telangana by M/s Telangana State Power Generation Corporation (TSGENCO) Ltd. – reg. permission for coal transportation by road. F.No. J-13012/02/2015-IA.I (T) & Proposal no. IA/TG/THE/105598/2019.
31.3	1080 MW Expansion Lignite based Thermal Power Plants at Village-Bhadresh, District-Barmer, Rajasthan by M/s JSW Energy (Barmer) Ltd.-reg. ToR. (NABET accredited consultants also to be engaged at this stage) F.No. J-13011/58/2006-IA.II(T)& Proposal no. IA/RJ/THE/110058/2019.
31.4	2x300 MW (Phase-I) Coal Based Thermal Power Plant at Villages Ghanmukh (Bijora), Tehsil Mahagaon, Yavatmal District, Maharashtra by M/s Jinbhuvish Power Generations Pvt Ltd.- reg. extension of validity of EC. F.No.J-13012/158/2010-IA.II (T)& Proposal no. IA/MH/THE/108493/2019.
31.5	Disposal of fly ash generated from Talcher Super Thermal Power Station (Stage-I:2x500 MW & Stage-II: 4x500 MW) into abandoned mine voids of Jagannath OPC of Mahanadi Coalfields Limited in Talcher, Dist. Angul, Odisha by M/s NTPC Limited- reg.permission for disposal of ash in to abandoned mines. F.No.J-13011/14/94-IA.II (T) pt& Proposal no.IA/OR/THE/109654/2019.
31.6	2x800 MW (Stage-I) Gadarwara Super Thermal Power Project near Villages Gangai, Umaraiya, Mehrakheda, Chorbarheta, Dongergaon and Kudari, Gadarwara Tehsil, Narsinghpur District, Madhya Pradesh by M/s NTPC Ltd.- reg. permission for road transportation. F.No. J-13012/125/2009-IA.II(T)& Proposal no. IA/MP/THE/109345/2019.
31.7	Expansion from 2x600 MW to 2000 MW (2x600 + 1x800 MW) of Coal based Singareni Thermal Power Plant at Pegadapalli Village, Jaipur Mandal, Mancherial District in Telangana by M/s Singareni Collieries Company Ltd.-reg. re-consideration of Environment Clearance. F.No. J-13015/08/2015-IA.I (T) & Online no. IA/TG/THE/27094/2015.
31.8	ANY OTHER ITEM WITH THE PERMISSION OF THE CHAIR.

Note: If project documents are not submitted to Committee Members on time along with brief summary/basic information as per pro-forma, it will be the Committee's discretion to consider the project. Project proponents shall bring shape file (.kml file) containing project boundaries & facilities and shall be saved on computer in the meeting hall. Project Proponents are required to bring hard copy (A0/A1 size) and soft copy (pdf) of a map showing project facilities superimposed on Survey of India Toposheet. Proponents shall submit the attendance form duly filled to the Member Secretary before starting the presentation.