MINUTES OF THE 16TH MEETING OF THE RE-CONSTITUTED EXPERT APPRAISAL COMMITTEE (EAC) ON ENVIRONMENTAL IMPACT ASSESSMENT (EIA) OF THERMAL POWER PROJECTS HELD ON 18TH NOVEMBER, 2021

The 16th Meeting of the re-constituted EAC (Thermal Power) organized by the Ministry of Environment, Forest & Climate Change, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi was held on 18th November, 2021 through video conference under the Chairmanship of Shri Gururaj P. Kundargi. The list of Members participated in the meeting is at **Annexure**.

Agenda Item No.16.1: Confirmation of the Minutes of the 15th EAC meeting

The Minutes of the 15th EAC (Thermal Power) meeting held on 27th September, 2021 were confirmed in the meeting.

Agenda Item No. 16.2

Expansion of RDF based Waste to Energy Power Plant from 19.8 MW to 48 MW in an area of 31.5 Acres out of total area of 351.12 Acres located at Integrated Municipal Solid Waste Management Project (IMSWMP) Sy. No. 173, Jawaharnagar Village, Kapra Mandal, Medchal District, Telangana by M/s Hyderabad MSW Energy Solutions Private Limited – Environmental Clearance – reg.

[Proposal No. IA/TG/THE/236074/2021; F. No. J-13012/02/2021-IA.I (T)]

16.2.1 The proposal is for Environmental Clearance to Expansion of RDF based Waste to Energy Power Plant from 19.8 MW to 48 MW in an area of 31.5 Acres out of total area of 351.12 Acres located at Integrated Municipal Solid Waste Management Project (IMSWMP) Sy. No. 173, Jawaharnagar Village, Kapra Mandal, Medchal District, Telangana by M/s Hyderabad MSW Energy Solutions Private Limited.

16.2.2 The details of the project submitted by project proponent and ascertained from the document submitted are mentioned below:

(i) Hyderabad MSW Energy Solutions Private Limited (HMESPL), a subsidiary of Ramky Enviro Engineers Limited (REEL) has authenticated by GHMC for development of Waste to Energy Plant.

(ii) The Hyderabad city is governed by Greater Hyderabad Municipal Corporation (GHMC) and handles all the domestic municipal solid waste generated which is on the range of 5500 to 6500 TPD.

(iii) SEIAA, Andhra Pradesh vide its letter dated 20.6.2012 accorded Environmental

Clearance (EC) for Integrated Municipal Solid Waste Management Project along with MSW based Power Plant with capacity of 48 MW. However, SEIAA vide their letter dated 3.10.2013 withdrawn the 48MW MSW based Power Plant from the EC. Subsequently, SEIAA on 25.10.2013 issued amendment of EC for inclusion of 19.8 MW instead of 48 MW MSW based Power Plant.

(iv) Initially, 2x24 MW was approved capacity under EC granted in June 2012, only 19.8 MW project was implemented because of the restriction on account of Biotech Park at Turkapally Village. The government of Telangana has issued a Government Order dated 5th December 2020 directing for capacity from 19.8 to 48 MW and GHMC has directed PP to take necessary steps for obtaining the approval of MOEF&CC for the expansion of capacity. Therefore, 19.8 MW plant is in operation since 2020.

(v) The site is located at 17° 31' 10.49" N latitude and 78° 35' 07.52" E longitude in Jawaharnagar Village, Kapra Mandal, Medchal District, Telangana State. The area allocated for proposed project is 31.5 acres out of total area old 351.12 acres.

(vi) The Terms of Reference was accorded by MoEF&CC vide its letter no. No. J-13012/02/2021-IA. I (T) dated 13.09.2021 to Expansion of RDF based Waste to Energy Power Plant from 19.8 MW to 48 MW in an area of 31.5 Acres out of total area of 351.12 Acres located at Integrated Municipal Solid Waste Management Project (IMSWMP) Sy. No. 173, Jawaharnagar Village, Kapra Mandal, Medchal District, Telangana by M/s Hyderabad MSW Energy Solutions Private Limited.

(vii) Salient features of the project site are as follows:

Topographical Map No	**E44M6, E44M7, E44M10 and E44M11**
Elevation	555 to 580 m Above MSL
Water Requirement	600 KLD (Existing 300 KLD & Proposed 300 KLD). Source: Hyderabad Metropolitan Water Supply and Sewerage Board (HMWS&SB)
Power Requirement	3600 kVA (Source: TSSPDCL)
Manpower requirement	Direct – 300, Indirect – 150
Wastewater Generation	105 KLD (Reused for Bottom ash quenching) Facility will adopt zero liquid discharge
Nearest Railway Station	Cherlapally Railway Station – 6.5 km (S)

Nearest Airport	Hakimpet Air force station – 6.2 km (NW) Begumpet Airport – 12.9 km (SW) Rajiv Gandhi International Airport – 35.4 km (SSW)
Nearest Highway	SH 1 – 6.6 km W, NH 44 – 10.8 km (W)
Nearest Town/City	Secunderabad – 12.6 km (SW)
Nearest Habitation	Adjacent to West and South direction
Nearest Reserved Forests	Nagaram RF – 0.2 km (E), Tumkunta – 2.5 km (NW), Upparpalli RF – 3.3 km (N), Dharmaram RF – 5.1 km (NE), Yadgiripalli RF – 5.3 km (NE), Chengicharla RF – 7.5 km (SE), Kisaragutta RF – 7.8 km (E), Ponnal RF – 7.8 km (NE), Shahmirpet RF – 8.3 km (NW), Keshavpur RF – 9.1 km (NE), Narapalli RF – 9.5 km (SE), and Majidpur RF – 9.9 km (N).
Nearest Water bodies	Kapra Cheruvu - 4.5 km (SW), Erimulli Vagu – 5 km (SE), Miriyalaguda Cheruvu – 7.2 km (SW), Shamirpet Cheruvu – 8.9 km (N)
Seismicity	Seismic zone II – low damage risk zone – Intensity VI

(viii) GHMC has already obtained Environmental Clearance in the year 2012 for establishing IMSWMP for processing MSW of 5500 TPD (based on year 2011 population) in phased manner which included waste to energy power plant of 2 x 24 MW. MSW is expected to increase @ of 5% per annum reaching the project capacity up to 6500 TPD by year 2021 and 13000 TPD by year 2031 based on the growth and population increase during project life of 20 years.

(ix) The components and treatment plant capacities obtained under EC are RDF plant – 2 x 1200 TPD (2400 TPD), Compost Plant – 3 x 680 TPD (2040 TPD), Power Plant – 2 x 24 MW (48 MW), Bio-Methanization – 10 x 50 TPD (500 TPD) & Recycling Complex – 600 TPD (Plastic, paper, metal, rubber, glass, etc.), processing of construction and demolition waste – 800 TPD, Landfill with leachate collection and treatment system – 735 TPD.

(x) In course of operation of the existing plant of 19.8 MW, the generation potential has been

found to be peak upto 24 MW. Hence, the application is being made for augmenting the present capacity of 19.8 MW to 24 MW without any additional use of water, fuel and without causing any additional impact of any kind and to construct another 24 MW WTE module adjacent to the present operating plant.

(xi) The proposed expansion of RDF based power plant consists of two numbers of steam generators capable to burn 600 TPD of segregated MSW in each boiler, with super heater steam outlet parameters of 45 kg/cm^2, 400°C to 410°C and two 24 MW extraction cum condensing turbo generator.

(xii) Air cooled condenser (ACC) is identified as the condensing equipment. Steam required for the ejector and gland sealing is about 350 kg/h at 10.0 kg/cm2, is taken from live steam line through pressure reducing & de-super heating station (PRDS).

(xiii) The power generation will be at 11 kV level. After meeting the power plant internal consumption, the remaining power will be stepped up by a step-up transformer and exported to the TSTRANSCO grid

(xiv) The complete plant instrumentation and control system for power plant shall be based on distributed controlled system (DCS) philosophy, covering the total functioning requirements of measuring, monitoring, alarming and controlling, logging, sequence interlocks and equipment protection etc.

(xv) **Land requirement:** The land required for proposed project is 31.5 acres which is within the total Integrated Municipal Solid Waste Management Project area of 351.12 Acres. No additional land to be acquired and there is no displacement involved

(xvi) **Water requirement:** The process water requirement for the proposed expansion project is 300 KLD and the total water requirement for the 2 x 24 MW waste to energy power plant is 600 KLD.

The facility has connection 600 KLD from Hyderabad Metro Water Supply and Sewerage Board (HMWS&SB). The wastewater of 105 KLD will be generated which are rejects of the RO plant, DM plant and Auxiliary cooling tower blowdown. Collected in the neutralization pit, after the neutralization, this water will be used for Bottom Ash quenching. Thus facility will achieve the zero liquid discharge. The ash generated from waste to energy power plant will sent to secured landfill within the site.

(xvii) **Power requirement:** The total power required for operations is 3600 kVA and the source is from In House/ TSSPDCL. Once the power plant will be fully operational the power requirement will be met from the same plant and excess will be interconnected to TSSPDCL substation at Malkaram.

(xviii) **Baseline environmental status:** Field studies were conducted for collecting the existing baseline environment for Air, Water, Noise, Soil, Ecology & Biodiversity and Socio-economic conditions. A study area of 10 km radius from the project site is identified to establish the present environmental conditions for the above environmental components. The field data generation is undertaken during the winter season (December, 2020 to February, 2021).

The secondary metrological data is collected from the nearest IMD station at Hyderabad and primary data at site with the help of automatic weather station. The pre dominant wind direction recorded from East to West and Southeast to Northwest direction. Calm conditions prevailed for 27.71% of the total time. ^{Average} wind speed observed for the winter season is 2.44 m/sec.

Ambient air quality: Ambient Air Quality Monitoring (AAQM) stations were installed at 10 different locations with due consideration to the above mentioned points. The 98th percentile of particulate matter <2.5 µm are in the range of 27.6 to 40.2 µg/m^3, whereas the 98th percentile of particulate matter <10 µm are in the range of 48.9 to 61.1 µg/m^3. The 98th percentile of sulphur dioxide and oxides of nitrogen are in the range of 13.2 to 20.5 µg/m^3 and 20.1 to 36.4 µg/m^3 respectively. The 98th percentile of Ammonia is in the range of 22.5 µg/m^3 to 125 µg/m^3. The 98th percentile of Ozone is in the range of <20 µg/m^3 to 20.2 µg/m^3 and that of carbon monoxide is 440 µg/m^3 to 850 µg/m^3. The Hg concentration levels are recorded below detectable levels (less than 0.001 µg/m^3). The above observed air pollutants are all within the standard limits as per NAAQ standards, 2009.

Water quality: A total of 10 ground water and 5 surface water samples were collected from the study area and some important physical & chemical parameters including heavy metals were considered for depicting the baseline status of the study area.

The ground water is collected mainly from bore wells used by the villagers for domestic purposes. The surface water collected from lakes located within the study area. The pH of ground water is observed from 7.1 to 8.2 and in surface water it is from 7.2 to 8.1. TDS level of ground water is from 640 to 1655 mg/l, whereas in surface water the levels are 745 to 1480 mg/l. The chloride concentration in ground water is between 78 to 352 mg/l, whereas the surface water has a chloride value of 215 to 323 mg/l. The hardness observed in ground water is from 329 to 981 mg/l and in surface water the hardness observed from 322 to 768 mg/l. Fluoride concentrations observed in ground water is in the range of less than 1 to 1.3 mg/l and in surface water the fluoride content observed in the range of less than 1 mg/l.

Traffic study The traffic study was carried out at near site road to Bandlaguda road and site road to Dammaiguda & Balajinagar Junction road. The highest peak was observed

was 611 PCU/hr during 9 to 10 am at near site road to Bandlaguda road, 1155 PCU/hr during 10 to 11 am at site road to Dammaiguda & Balajinagar Junction road. It was observed that the existing level of service of site road to Bandlaguda road is "good" and site road to Dammaiguda & Balajinagar Junction road is "fair/average".

Soil quality: For studying the soil types and soil characteristics, 10 sampling locations were selected to assess the existing soil conditions representing various land use conditions and geological features. The important physical, chemical parameter concentrations were determined from all the samples. The pH values in the study area are varying from 6.8 to 7.4, the electrical conductivity is varying from 107 to 195 µs/cm, the organic carbon is varying from 0.56 to 1.12%, the available nitrogen is varying from 110 to 322 kg/ha, the available phosphorus is varying from 2.4 to 9.7 kg/ha and the available potassium is varying between 128 to 420 kg/ha.

Biological environment: The proposed WTE power plant site which is a part of built-up (19.8 MW plant) with the existing new developed plantation and vacant land area having small shrubs and grasses. Only shrubs and grasses will be cleared during the development of the site. The IMSWMP facility is having a green cover meeting guidelines with various kinds of native and pollution controlling species.

There are no National Parks / Wildlife Sanctuary / Forests / Tiger reserve / Wetlands / Biosphere Reserve/ Tiger Reserves and Elephant corridor etc. within 10 km radius from project site. There are scattered patches of reserved forests falls within the buffer zone of the 10 km radius. The reserve forests (RF) include Nagaram RF (nearest RF), Dharmaram RF, Tummakunta RF, Shamirpet RF, Nallagutta RF, Ponnal RF, Kesavpur RF, Kisaragutta RF etc. These forest patches are degraded due to anthropogenic pressure. These are mainly dominated with thorny bushes (open scrub, rocky knob). A few blocks of Eucalyptus plantations, industrial greenbelts, block and avenue plantations, a few public parks and gardens in residential colonies contribute the floristic diversity.

There are no chances of occurrence of any rare or endangered or threatened (RET) species within the core or buffer area. Among the Mammals, only Squirrels, Mongoose, Rats and Bandicoots were seen frequently during the survey. Monkeys were also rare. Among the reptiles, Lizards, Garden lizards and Rat snake were seen during the survey. Other reptiles were very rare. The amphibians were also rare. There were no resident birds other than Crows, Parrots, Doves, and Weaver birds, Swifts, Quails and Mynas. Among the faunal species, no Schedule-I species were observed as per the Indian Wildlife Protection Act (IWPA) -1972. There are no perennial water bodies such as rivers and reservoirs. Pools, ponds, drains, village water tanks and paddy fields are the common aquatic and semi aquatic ecosystems found in the area.

Socio-economic environment: The Socio-Economic study covers villages in the 10 km

radiusfrom the periphery of the project site at Jawaharnagar Village in Kapra Mandal of Medchal - Malkajgiri District, Telangana State. The study area covers a total of 42 habitations including wards of Greater Hyderabad Municipal Corporation, Secunderabad Cantonment Board, out growth areas and census towns in Rangareddy, Hyderabad Districts of Telangana state. The field area is primary rural society in composition, covering major villages and few scattered habitations.

(xix) The proposed mitigation measures to control air, water, noise pollution are as follow:

Air:

- Bag filter with an efficiency of more than 99% to limit PM in outlet to less 50 mg/Nm3.
- To minimize the SO2 and NOx emissions a semidry flue gas cleaning system consist of spray reactor with lime slurry and activated carbon is used.
- The chimney is selected considering sulphur dioxide emissions and to meet central pollution control board norms. The height of chimney has been selected as 60 m for the power plant.
- To control NOx emission from the power plant boiler over fire air system and low NOx burners is used.
- Semi dry type gas cleaning system is envisaged for this plant. The acid gas emissions are controlled by dozing lime slurry into the gas steam.
- The furnace and the flue gas residence time (minimum 2 seconds with a minimum flue gas temperature of 850°C) in the furnace are designed such that, the dioxins and furans emissions are reduced.
- The flue gas is further treated with activated carbon which ensures the PCDD/ PCDF are limited to less than 0.1 ng/TEQ/Nm^3 of flue gas.
- Semi-dry type gas cleaning system with lime dozing is envisaged for reduction of acid gases and activated carbon injection is envisaged for reducing the dioxins/ furans and heavy metal emissions.
- The RDF storage has been envisaged in a completely closed shed in the tipping / storage area. This measure will reduce the dust nuisance in the power plant area. Also the forced draught fan takes suction from the storage pit there by maintaining slightly negative pressure in the RDF storage pit. This will eliminate odour in the RDF storage pit area
- As RDF will be stored in a covered shed, no bird menace is expected. Arrangement will be made for suitable spray on the RDF to overcome the nuisance of bird menace, mosquito and fly nuisance and odour.
- Internal roads are concreted / asphalted to reduce fugitive emissions
- Greenbelt will be provided around the power plant, along the internal roads and along the plant boundary and wherever required.

Water:

- The wastewater generated from rejects of the RO plant, DM plant and Auxiliary cooling tower blow down will be collected in the neutralization pit, after the neutralization this water will be used for Bottom ash quenching.
- The leachate generated from the RDF storage bunker will be treated through Mechanical Vapour Recompression (MVR) technology. The permeate/condensate from the MVR will be used for Flue gas Cleaning, lime and dust suppression.
- The domestic waste water will be sent to septic tank followed by soak pit through biotoilets.
- There will be no wastewater discharge to any nearby water body and adopts the zero wastewater discharge concept.

Noise:

- Noise level specification of various equipments as per the Occupational Safety and Health Association (OSHA) standards.
- Providing suitable enclosures (adequate insulation) to minimize the impact of high noise generating sources.
- Employees will be provided with PPE like ear plugs, helmets, safety shoes etc.
- Development of greenbelt all along the boundary, open spaces and along the roads within the project site.

Findings of Epidemiological Study

(xx) The epidemiology study in the 0-5 km project study area villages observed that there has been a wide spread prevalence of several seasonal diseases in summer and during rainy season. Alongside, the study also revealed in line with the NFHS 2019-20 data that there has been an increasing trend in life-style based health problems like hypertension / blood pressure, Diabetes, in the study villages. The data collected from households, aforementioned PHCs and anganwadis in the project area have illustrated that some case of acute diarrhea, acute respiratory illness, pneumonia, malaria, amoebiasis, accidental injuries have been commonly reported and treated in the government and private hospitals. The epidemiology study also noted that distribution of health services in the project area is not uniform. The private health care is more used and spread over the Hyderabad city, but the project area is dependent on public health care system as the private health facilities is fewer. Thus, these areas need government health care to address the health needs of the people with more facilities. The disease profile shows often resurgence of infectious and communicable diseases in the city. TB, Diphtheria, Malaria are major causes of morbidity. The rise of COVID-19 in 2020 further emphasizes that most of these diseases are preventable. The very high numbers of diarrhea and enteric fever cases, especially among children clearly points to the poor public health facilities in slum colonies, dwellings of the lower groups in the project area. The Women in the slums are in poor health with high numbers reporting anemia linked problems, RTI and UTI. The data from both the UHCs & PHCs shows that family planning by pushing contraception seems to be a major agenda, besides immunization and vaccination. In conclusion, this study argues

that many diseases like dengue chikungunya make no class, caste, area, gender distinction thereby suggesting that a collapse of public health and poor environment can lead to both old and new epidemics like COVID 19.

Lastly, the epidemiological study conducted in the radius of 0-5kms radius of proposed project site, has revealed that there is no evidence of long lasting disease profile among the population in the proposed project area. Changes in life style & food habits has accounted for the increase in Diabetes and Hypertension among the residents. Hence, the prevalence of illnesses are not correlated to the existence of MSW treatment facility.

(xxi) **Environmental management plan:** The mitigation measures are planned for construction and operation phases and the overall management plan helps to improve the supportive capacity of the receiving bodies. The EMP aims to control pollution at the source level to the possible extent with the available and affordable technology followed by the standard treatments before getting discharged. The recommended mitigation measures will synchronize the economic development of the study area with the environmental protection of the region.

The budget proposed for implementation of EMP measures in operation phase is Rs. 74.5 crores as capital cost and Rs. 7.5 crores /annum is for recurring cost. The company shall earmark funds of Rs. 462 Lakhs for social development and welfare measures in the surrounding villages towards development of education, healthcare and infrastructure facility.

(xxii) **Public hearing:** Public Hearing (PH) for Integrated Municipal Solid Waste Management Project along with 48 MW power project was conducted on 29.03.2012 as part of EC vide Order No. SEIAA/AP/RRD-111/2009 dated 20.06.2012. The press notification pertaining to the public hearing was published in "Eenadu" and "The Hindu" newspapers on 27.02.2012.

Further, based on recommendation of EAC, MoEF&CC issued TOR vide letter file no. J13012/02/2021-IA. I (T) dated 13.09.2021 with exemption from public consultation, under the provisions of EIA notification 2016 and subsequent amendments/circulars.

(xxiii) **Project benefits:** Around 300 people will get direct employment by the proposed project and around 150 people will get indirect employment.

The physical infrastructure and socio-economic status of the surrounding areas will be benefited as follows:

- Road transport facilities which improve accessibility
- Improvement in education, housing, and banking facilities
- Improvement in postal & communication services
- Recreation facilities

- Improvement in power supply, water supply and sanitation
- Improvement in economic conditions
- Proper training to the local people will be given to improve the employment potential within the plant
- Increase in revenue to the state in the form of taxes and duties from the development of local businesses
- Local markets with food and non-food commodities will be improved due to the increase inflow of human residents within the district.
- Waste to Energy facilities provide a safe, technologically advanced means of waste disposal that reduces greenhouse gases, generates clean energy and recycles metal.
- Waste to Energy facilities will save space
- In terms of CO_2 emissions, waste to energy saves one ton of CO_2 per ton of waste, when compared to landfills that do recover their landfill gases, it saves about half a ton of CO_2 per ton of waste.

As desired by the EAC the PP submitted the details about environment infrastructure for emission control in waste to energy plant, which are as follows:

(xxiv) **Emission Control in Waste to Energy Plant**

The WTE Plant at Hyderabad at Jawahar Nagar in Sy 173 is equipped with Semi Dry lime scrubber reactor followed by Bag filter in lieu of only an ESP in order to strengthen the PM control. The semi dry reactor scrubber is a reactor based on cyclone method where lime slurry is atomized into the flue gas stream to provide intimate contact to not only treat and neutralize the acid gases HCl and SOx, but also to suppress the dust content. It also helps to quench the hot flue gas and conditions it before the same is passed through a Bag filter.

16.2.3 The EAC during deliberations noted the following:

The proposal is for grant of Environmental Clearance to Expansion of RDF based Waste to Energy Power Plant from 19.8 MW to 48 MW in an area of 31.5 Acres out of total area of 351.12 Acres located at Integrated Municipal Solid Waste Management Project (IMSWMP) Sy. No. 173, Jawaharnagar Village, Kapra Mandal, Medchal District, Telangana by M/s Hyderabad MSW Energy Solutions Private Limited.

Earlier, SEIAA, Andhra Pradesh vide its letter dated 20.6.2012 accorded Environmental Clearance (EC) for Integrated Municipal Solid Waste Management Project along with MSW based Power Plant with capacity of 48 MW. However, SEIAA vide their letter dated 3.10.2013 withdrawn the 48MW MSW based Power Plant from the EC. Subsequently, SEIAA on 25.10.2013 issued amendment of EC for inclusion of 19.8 MW instead of 48 MW MSW based Power Plant.

MoEF&CC vide its letter no. No. J-13012/02/2021-IA. I (T) dated 13.09.2021 granted Standard ToR with exemption from public consultation to the proposed project with the Additional ToRs for preparing EIA/EMP report.

Regional Office, MoEF&CC Hyderabad visited the site on 23.09.2021 and issued Certified compliance report on 26.10.2021. RO, MoEF&CC has reported that One General Condition regarding advertisement of Environmental Clearance granted earlier, was partially complied. Further it was noted that the ash generated from waste to energy power plant will sent to secured landfill within the site.

16.2.4 *The EAC after detailed deliberation on the details submitted by the project proponent and presentation made during the meeting,* ***recommended*** *the proposal for grant of Environmental Clearance subject to compliance of applicable Standard EC conditions along with following specific environmental safeguard conditions:*

i. *Green belt with Miyawaki plantation (Three row plantation) along the plant boundary shall be developed with more than 90% survival rate of the plant species. It would be ensured that total 33% area of total project cover area is under green cover. An action plan in this regard to be submitted before Regional Office of the Ministry within 3 months.*
ii. *Epidemiological Study among population within 5 km radius of project cover area shall be carried out on regular interval (Once in two year) through independent agency. Necessary measures shall be taken as per findings of study in consultation with district administration. Detailed plan shall be prepared and implemented in stipulated time to mitigate problem of malnutrition (6.67% current level) in project surrounding area as observed by the project proponent during Epidemiological Study. Action taken report shall be submitted to the Regional Office of the Ministry.*
iii. *24X7 online monitoring system for ambient air quality shall be established with its connectivity with SPCB and CPCB server. Stack monitoring shall be done through 24X7 online monitoring system. The emission Standards for Municipal Solid Waste based Thermal Power Plants as per Municipal Solid Waste Rules, 2016 dated 8.4.2016 (S.O. 1357 (E)) shall be complied (Refer Part C of Schedule II of Municipal Solid Waste Rules, 2016 dated 8.4.2016 (S.O. 1357 (E)).*
iv. *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.*
v. *EC shall be published in at least two newspapers widely circulated, one shall be in the vernacular language of the locality concerned.*
vi. *Environment Audit of plant shall be done annually and report shall be submitted to Regional office of the Ministry.*

vii. *Project proponent shall explore the use of treated sewage water from the Sewage Treatment Plant of Municipality / local bodies/ similar organization located within 50km radius of the proposed power project to minimize the water drawl from surface water bodies.*

viii. *A detailed action plan regarding leachate handling shall be prepared and implemented in consultation with SPCB and the same shall be submitted to the Regional Office of the Ministry. Zero liquid discharge shall be adopted. Leachate shall be treated and reused. No treated leachate shall be discharged in any circumstances. Characteristics of Leachate and the treated leachate shall be monitored once in quarter and records shall be maintained.*

ix. *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.*

x. *Fly ash handling shall be done strictly as per extent rules/regulations of the Ministry/CPCB issued from time to time.*

xi. *Monitoring of surface water quantity and Ground Water 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.*

xii. *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.*

xiii. *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.*

xiv. *In view of CER 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 CER 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.*

xv. *CER activities will be carried out as per OM No. 22-65/2017-IA.II dated 30th September, 2020 along with the detailed scheduled of implementation with appropriate budgeting.*

xvi. *Public grievance redressal system shall be established under supervision of project head. The functioning of the system shall be reviewed every month.*

xvii. *A vision document comprising prospective plan for implementation of various CER activities, plantation programme outside the project cover area, rejuvenation and conservation of water bodies within 5km radius of the project cover area, creation of sacred groves etc. shall be*

prepared and submitted to the Regional Office of the Ministry within 6 months. Implementation status of the same shall be reported to the Regional office in 6 monthly compliance report.

xviii. *Implementation of EMP and compliance of EC conditions, E (P) Act, 1986, Rules and MoEF&CC Notifications issued time to time shall be achieved by a full-time qualified Environment Officer having Post Graduate qualification in environmental Science/Environmental Engineering.*

xix. The conditions stipulated in the previous EC dated 25.10.2013 granted by SEIAA shall also be complied with.

Agenda Item No. 16.3:

Sipat Super Thermal Power Project Stage-I of 3x660 MW in an area of 4382.44 acres located at Village Sipat, Masturi Tehsil, Bilaspur District, Chhattisgarh by M/s NTPC Limited – Reconsideration of Amendment in Environmental Clearance - reg.

[Proposal No. IA/CG/THE/223393/2021; F. No. J-13011/10/1996-IA.II (T)]

16.3.1 The proposal is for reconsideration for grant of amendment in Environment Clearance for Sipat Super Thermal Power Project Stage-I of 3x660 MW in an area of 4382.44 acres located at Village Sipat, Masturi Tehsil, Bilaspur District, Chhattisgarh by M/s NTPC Limited. The proposal for amendment in Environment Clearance was earlier considered in 14th meeting held on 16th August, 2021. The project was deferred by the EAC seeking additional information regarding Ash Utilization Plan for five years.

16.3.1 Additional information as sought by EAC from PP regarding Ash Utilization Plan for five years has been submitted by PP vide its letter dated 29.10.2021. PP submitted the following:

i. The ash generation vis-à-vis ash utilization at NTPC Sipat (2980 MW) during last 6 years is as below:

Ash Utilization for last Six years			
Financial year	**Ash Generation (MT)**	**Ash Utilisation (MT)**	**(%) Ash Utilization**
2015-16	55,11,001	8,37,410	15.20
2016-17	54,49,684	12,46,149	22.87
2017-18	52,11,383	9,70,974	18.63
2018-19	48,00,059	23,77,817	49.54
2019-20	49,05,238	24,08,428	49.10
2020-21	44,22,936	23,42,395	52.96

ii. Ash utilization at Sipat TPP is low during previous years because of its remote

geographical location, cluster of power plants in region and less industrial requirement in the vicinity. Now station has gained momentum to achieve 100 utilization soon.

iii. The reasons for not achieving 100% utilization NTPC Sipat as per MOEF&CC Notification dated 25.01.2016:

1) No expansion in production capacities of cement industries nearby project.
2) No major construction activities like construction of highways etc. took place in recent past years where fly ash could be used in substantial amount.
3) Few local fly ash brick manufacturers who use a minimal amount of fly ash from Sipat.
4) Cement manufacturers lift ash from other power plants in vicinity in view of incentive scheme.
5) Stone quarries are incentivized by private TPP's in vicinity.
6) Limited allocation of mine backfilling in and around NTPC Sipat.

iv. **Action Plan for Ash Utilization:**

The action plan to achieve 100% utilization by NTPC in light of directions from Hon'ble NGT is followed in subsequent paras.

The plan may be revised from time to time based on the actual consumption pattern as well as emerging trends in ash utilization.

1) The detailed modalities for providing ash to Cement Plants is being finalized and long term MOU shall be signed at the earliest.
2) Incentive scheme for transportation to cement plants is under finalization.
3) The scheme for filling of ash in stone queries is under finalization.

v. Following systems have been envisaged by Sipat STPP for ensuring 100% ash utilization:

1) Presently 1.2 lakh per day capacity fly ash brick plant is operational. An additional set-up of brick plants of production capacity of 2.5 Lakhs bricks per day is under pipe line . The bricks produced would be utilized for in- house construction activity and also to make available fly ash brick in the vicinity. This shall encourage other brick manufacturers in the vicinity to use fly ash.

2) Rail Loading facility for loading of wagons directly from silos. The wagons will be diverted to major hub of infrastructure activity area which will pave way for ash utilization.

3) Demonstrable project for conversion of ash to light weight sand will be set up at NTPC Sipat.

4) A Pilot Light Weight Aggregate (LWA) Plant is under construction where fly ash will be utilized to manufacture LWA. The product may prove a boon in the times to come and become a sustainable source of ash utilization.

5) The project has a full-fledged Ash Utilization Department to promote and coordinate the activities related to ash utilization. The Ash Utilization Department at project shall report to Head of the Project and shall draw support from CC-AU dept on policy issues and other critical issues.

vi. In order to have maximum ash utilization in various areas and also to comply the stipulations of MoEF&CC Gazette Notification on fly ash dated 03.11.2009 & 25.01.2016, following actions are being taken up NTPC Sipat:

1) For fly ash brick manufacturing, brick plant is installed within its premises; Ash bricks utilized in construction of own buildings of Sipat STPP and silos for own ash brick plant.

2) Sipat TPP is making efforts to motivate and encourage entrepreneurs to set up ash based building products such as fly ash bricks, blocks tiles etc. in the vicinity. This is being done through organizing workshop/ users meet for potential users. For creating wide publicity, station is also giving Advertisement in newspapers, distribution of pamphlet/ booklets/ brochures etc.

3) Ash is being supplied to road projects (transportation cost of ash being borne by Sipat TPP).

4) Ash filling in abandoned stone quarry and low lying area development work is in progress. Presently abandoned stone quarries are being identified for ash filling. This will help to enhance ash utilization level at Sipat. Permission obtained from Sub Divisional officer (Revenue) Tehsil Masturi and NOC obtained from RO, Chattisgarh Environmental Conservation Board, Bilaspur for ash filling in low lying areas.

5) All government/ private agencies responsible for construction/ design of buildings, road embankment, flyover bridges and reclamation/ development of low lying areas within 100 km of the plant areas are being persuaded to use ash and ash based products.

vii. **Diversion of Proposed Land from ash park to other micro-small industrial cluster**

- Possession of 70 acre land in Saler Village, near NTPC Sipat, in district Bilaspur had been given to CSIDC on 24-05-2016.

- Further, CSIDC has got approval for Land diversion from Agricultural to Industrial use. Land diversion from Agricultural to Industrial use has been notified in Gazette on 08.05.2020.

- However, it is understood that the district administration has a view to divert this land for other micro small scale industries.

viii. It was submitted that natural Radioactivity at Sipat, Bilaspur, Chhattisgarh is as follows:

Sl. No.	**Type of Source**	**U-238 (Bq/kg)**	**Th-232 (Bq/kg)**	**Ra-226 (Bq/kg)**	**K-40 (Bq/kg)**
1	Coal	46 – 54	54 – 70	49 – 59	130 – 186
2	Fly ash	74 - 89	101 - 132	73 - 86	339 – 400
3	Bottom ash	86.9 ± 3.9	131.8 ± 4.1	85.9 ± 2.5	400.3 ± 6.6
Exemption level for Bulk Material (AERB) **(AERB Ref CH/AERB/OPSD/25125/2010/953 dated 26.11.2010)**		10^4	10^3	10^4	10^5

ix. In view of above, following amendments in EC are requested by the PP:

a) EC letter dated 22.02.1999, Condition No. (ix): "…..*As per the proposal submitted for Ash Utilization, it should be ensured that fly ash is used in cement industry, brick making and in raising the ash dyke etc. Efforts should also be made in the area of mine filling, land development and agriculture etc. For brick making,* ***about 50 acres of land*** *with all infrastructure facilities should be earmarked. Full fly ash utilization should be ensured at the end of 9th year from the date of commissioning of the Project….*". it was requested that "*About 50 acres of land for brick making infrastructure facilities as stipulated may be reduced to 10 acres."*

Justification by PP:

EC for Sipat STPP Stage-I was accorded on 22.02.1999 even before the first notification of MOEF&CC dated 14.09.1999 was published. As the ash utilization was at nascent stage at that time, the condition of 50 acres of land for brick manufacturing plant was stipulated to promote ash utilization. At present the share of use of ash in brick making is very small as compared to other avenues. Further Sipat STPP has already established a brick making plant over 10 acres (3.7 acres existing and 6.7 acres proposed) within Plant boundary to meet the in-house requirement of bricks. There are already 47 fly ash bricks industries within 30 km from to cater the requirement of Bilaspur area. In view of above and space

constraints in layout, it is requested that the condition may be amended as requested.

b) Further, it was requested that EC letter dated 08.09.2014 Condition no. (iii) stated as: "….*In-built continuous monitoring for Radio activity and heavy metals in coal and fly ash*…." may kindly be amended with "*regular periodical monitoring for Radio activity and heavy metals in coal and fly ash".*

Justification by PP:

No instrument for online in-built continuous monitoring of heavy metals is available. Only periodic sampling of Heavy metals and radioactivity is usually being conducted through reputed Laboratory/Institute. Further, there are no BIS standards/regulations for monitoring of Radioactivity in coal and ash in India.

The above mentioned condition has been amended by MOEF&CC for NTPC other projects like Telengana STPP Stage-IV, Phase-I (2x800 MW) vide MOEF&CC letter dated 21.10.2020 and Firoz Gandhi Unchahar STPP Stage-IV (1x500 MW) vide MOEF&CC letter dated 21.10.2020.

16.3.3 *The EAC, after detailed deliberations on additional information submitted by the project proponent,* ***recommended*** *for grant of amendment as requested by the project proponent in condition at Sr. No. (ix) of EC letter dated 22.02.1999 and Condition at S. No. (iii) of EC letter dated 08.09.2014 subject to compliance of following additional conditions:*

i. Fly ash utilization plan shall be adhered and 100% Ash utilization shall be carried out strictly as per extent rules and regulations of the Ministry.
ii. Backfilling in the low lying area shall be carried out as per the CPCB guidelines.
iii. 10 acres of land shall be identified outside the project boundary in the Bilaspur district (preferably within 10 km radius of the project cover area) to carry out afforestation using Miyawaki plantation technique with more than 90% survival rate as committed by the PP vide letter no. CC:ESE:9518:2021:GEN Dated 23.11.2021.
iv. Other conditions of the EC letter dated 22.02.1999 and EC letter dated 08.09.2014 shall remain unchanged.

Agenda Item No. 16.4:

Sipat Super Thermal Power Project, Stage-II of 2x500 MW in an area of 4382.44 acres located at Village Sipat, Masturi Tehsil, Bilaspur District, Chhattisgarh by M/s NTPC Limited - Reconsideration Amendment in Environmental Clearance - reg.

[Proposal No. IA/CG/THE/223442/2021; F. No. J-13011/05/2002-IA. II (T)]

16.4.1 The proposal is for reconsideration for grant of amendment in Environment Clearance for Sipat Super Thermal Power Project, Stage-II of 2x500 MW in an area of 4382.44 acres located at Village Sipat, Masturi Tehsil, Bilaspur District, Chhattisgarh by M/s NTPC Limited.

16.4.2 Observation in Earlier EAC:

a) The proposal for amendment in Environment Clearance was earlier considered in 14th meeting held on 16th August, 2021.

b) The project was deferred by the EAC seeking additional information which is reflected in the Minutes of meeting at Parivesh Portal.

c) Additional sought by EAC from PP regarding Ash Utilization Plan for five years has been submitted by PP vide its letter dated 29.10.2021. PP submitted the following:

i. The ash generation vis-à-vis ash utilization at NTPC Sipat (2980 MW) during last 6 years is as below:

Ash Utilization for last Six years			
Financial year	**Ash Generation (MT)**	**Ash Utilisation (MT)**	**(%) Ash Utilization**
2015-16	55,11,001	8,37,410	15.20
2016-17	54,49,684	12,46,149	22.87
2017-18	52,11,383	9,70,974	18.63
2018-19	48,00,059	23,77,817	49.54
2019-20	49,05,238	24,08,428	49.10
2020-21	44,22,936	23,42,395	52.96

ii. Ash utilization at Sipat TPP is low during previous years because of its remote geographical location, cluster of power plants in region and less industrial requirement in the vicinity. Now station has gained momentum to achieve 100 utilization soon.

iii. The reasons for not achieving 100% utilization NTPC Sipat as per MOEF&CC Notification dated 25.01.2016:

1) No expansion in production capacities of cement industries nearby project.
2) No major construction activities like construction of highways etc. took place in recent past years where fly ash could be used in substantial amount.
3) Few local fly ash brick manufacturers who use a minimal amount of fly ash from Sipat.
4) Cement manufacturers lift ash from other power plants in vicinity in view of

incentive scheme.

5) Stone quarries are incentivized by private TPP's in vicinity.
6) Limited allocation of mine backfilling in and around NTPC Sipat.

iv. **Action Plan for Ash Utilization:**

The action plan to achieve 100% utilization by NTPC in light of directions from Hon'ble NGT is followed in subsequent paras.

The plan may be revised from time to time based on the actual consumption pattern as well as emerging trends in ash utilization.

1) The detailed modalities for providing ash to Cement Plants is being finalized and long term MOU shall be signed at the earliest.
2) Incentive scheme for transportation to cement plants is under finalization.
3) The scheme for filling of ash in stone queries is under finalization.

v. Following systems have been envisaged by Sipat STPP for ensuring 100% ash utilization:

1) Presently 1.2 lakh per day capacity fly ash brick plant is operational. An additional set-up of brick plants of production capacity of 2.5 Lakhs bricks per day is under pipe line . The bricks produced would be utilized for in- house construction activity and also to make available fly ash brick in the vicinity. This shall encourage other brick manufacturers in the vicinity to use fly ash.

2) Rail Loading facility for loading of wagons directly from silos. The wagons will be diverted to major hub of infrastructure activity area which will pave way for ash utilization.

3) Demonstrable project for conversion of ash to light weight sand will be set up at NTPC Sipat.

4) A Pilot Light Weight Aggregate (LWA) Plant is under construction where fly ash will be utilized to manufacture LWA. The product may prove a boon in the times to come and become a sustainable source of ash utilization.

5) The project has a full-fledged Ash Utilization Department to promote and coordinate the activities related to ash utilization. The Ash Utilization Department at project shall report to Head of the Project and shall draw support from CC-AU dept on policy issues and other critical issues.

vi. In order to have maximum ash utilization in various areas and also to comply the

stipulations of MoEF&CC Gazette Notification on fly ash dated 03.11.2009 & 25.01.2016, following actions are being taken up NTPC Sipat:

1) For fly ash brick manufacturing, brick plant is installed within its premises; Ash bricks utilized in construction of own buildings of Sipat STPP and silos for own ash brick plant.

2) Sipat TPP is making efforts to motivate and encourage entrepreneurs to set up ash based building products such as fly ash bricks, blocks tiles etc. in the vicinity. This is being done through organizing workshop/ users meet for potential users. For creating wide publicity, station is also giving Advertisement in newspapers, distribution of pamphlet/ booklets/ brochures etc.

3) Ash is being supplied to road projects (transportation cost of ash being borne by Sipat TPP).

4) Ash filling in abandoned stone quarry and low lying area development work is in progress. Presently abandoned stone quarries are being identified for ash filling. This will help to enhance ash utilization level at Sipat. Permission obtained from Sub Divisional officer (Revenue) Tehsil Masturi and NOC obtained from RO, Chattisgarh Environmental Conservation Board, Bilaspur for ash filling in low lying areas.

5) All government/ private agencies responsible for construction/ design of buildings, road embankment, flyover bridges and reclamation/ development of low lying areas within 100 km of the plant areas are being persuaded to use ash and ash based products.

vii. **Diversion of Proposed Land from ash park to other micro-small industrial cluster**

- Possession of 70 acre land in Saler Village, near NTPC Sipat, in district Bilaspur had been given to CSIDC on 24-05-2016.

- Further, CSIDC has got approval for Land diversion from Agricultural to Industrial use. Land diversion from Agricultural to Industrial use has been notified in Gazette on 08.05.2020.

- However, it is understood that the district administration has a view to divert this land for other micro small scale industries.

viii. In view of above, following amendments in EC have been requested by the PP:

a) In EC dated 08.06.2004 following conditions of additional land of 70 acres were imposed:

"*Condition No. 3(ii): "Utilization of land for Stages I & II of the project shall be restricted to 4382.44 acres, which is already in possession of the project authorities. 70 acres of additional land will be acquired by M/s. NTPC for ash based units..."*

it was requested that "*70 acres of additional land will be acquired by M/s. NTPC for ash based units*" may partly be deleted.

b) **"Condition No. 3(xii): "*Details of the plan to develop ash utilizing industrial units in the 70 acre plot proposed by the project proponent should be worked out in consultation with the State Government and the draft plan in this regard should be submitted to MOEF within 6 months of environmental clearance. 70 acres of land will only be utilized for setting up ash based industries.*"**

it was requested that particular condition may be deleted.

Justification by the PP:

The share of use of ash in brick making is very small as compare to other avenues. Further Sipat STPP has already established a brick making plant over 10 acres(3.7 acres existing and 6.7 acres proposed) within Plant boundary to meet the in-house requirement of bricks. There are already 47 fly ash bricks industries over an area of 94 acres within 30 km from plant to cater the requirement of Bilaspur area. In view of above and space constraints in layout, it is requested that the condition may be amended as requested.

16.4.3 *The EAC after detailed deliberations on additional information submitted by the project proponent* ***recommended*** *the proposal for amendment in* EC Condition No. 3(xii) and Condition No. 3(xii) of EC letter dated 08.06.2004, *Condition No. 3(ii) as requested by the PP, subject to compliance of following additional conditions:*

i. *Fly ash utilization plan shall be adhered and 100% Ash utilization shall be carried out strictly as per extent rules and regulations of the Ministry in this regard. Backfilling in the low lying area shall be carried out as per the CPCB guidelines.*
ii. *10 acres of land shall be identified outside the project boundary in the Bilaspur district (preferably within 10 km radius of the project cover area) to carry out afforestation using Miyawaki plantation technique with more than 90% survival rate as committed by the PP vide letter no. CC:ESE:9518:2021:GEN Dated 23.11.2021.*

iii. Other conditions of the EC letter dated 8.06.2004 and EC letter dated shall remain unchanged.

Agenda Item No. 16.5:

Barh Super Thermal Power Project (Stage-II) (2x660 MW) in an area of 3200 acres located at Village Barh, Tehsil Barh, District Patna, Bihar by M/s NTPC Limited – Amendment in Environmental Clearance – reg.

[Proposal No. IA/BR/THE/236422/2021; F. No. J-13011/29/2007-IA.II (T)]

16.5.1 The proposal is for grant of amendment in Environment Clearance for Barh Super Thermal Power Project (Stage-II) (2x660 MW) in an area of 3200 acres located at Village Barh, Tehsil Barh, District Patna, Bihar by M/s NTPC Limited.

16.5.2 The details of the project submitted by project proponent and ascertained from the document submitted are mentioned below:

i. Barh Super Thermal Power Project (Stage-II) (2x660 MW) is located at Latitude: 25° 29' 31.62"N to 25° 29' 21.39"N and Longitude: 85° 44' 10.73"E to 85° 45' 36.28"E. Plant area is bounded by villages Ramnagar, Nawada, Dariyapur and Lakshmipur to the north; villages Raili, Dargahitola and Lemuabad to the east; Shahri, Chopadi and Gulabbag to the west and Parsawa and Chintamanchak to the south.

ii. Source of Coal: Chatti-Bariatu and Kerandari captive coal mining blocks allotted to NTPC in North Karanpura Coalfields. Coal requirement is 7.72 MTPA at 90% PLF. Water requirement is fulfilled from River Ganga.

iii. It was submitted that natural Radioactivity at Barh, Patna, Bihar is as follows:

Sl. No.	**Type of Source**	**U-238 (Bq/kg)**	**Th-232 (Bq/kg)**	**Ra-226 (Bq/kg)**	**K-40 (Bq/kg)**
1	Coal	56 – 85	74 – 102	41 – 89	155 – 259
2	Fly ash	78 - 96	122 - 146	87 - 95	324 - 444
3	Bottom ash	78.3 ± 5.1	87.5 ± 3.5	122 ± 5.5	323.7 ± 8.6
Exemption level for Bulk Material (AERB) **(AERB Ref CH/AERB/OPSD/25125/2010/953 dated 26.11.2010)**		10^4	10^3	10^4	10^5

iv. Environment Clearance was accorded by MoEF&CC vide letter no. J-13011/29/2007-IA-II (T) dated 23.10.2007 for 2x660 MW Barh Super thermal Power Project (Stage-II), District Patna, Bihar. Subsequently, its amendment in EC for fuels source was accorded on 08.04.2013.

v. In EC dated 23.10.2007 read with amendment letter dated 08.04.2013 (EC condition Clause No. xxxiv) it is mentioned that :

"A long term study of radio activity and heavy metals contents on coal to be used shall be carried out through a reputed institute. Thereafter mechanism for an ***in-built continuous monitoring*** *for radio activity and heavy metals in coal and fly ash (including bottom ash) shall be put in place.".* The project proponent submitted online proposal no. IA/BR/THE/236422/2021 on 29th October 2021 seeking amendment in the aforesaid condition.

Amendment sought:

The PP has requested that the term ***"in-built continuous"*** in aforesaid stipulation may be amended with ***"regular periodical monitoring"***.

Justification from PP:

a) NTPC has explored the technologies for in-built continuous monitoring of radioactivity and heavy metal in coal and ash. It may kindly be noted that no instrument for online in-built continuous monitoring of heavy metals available. Only periodic sampling of Heavy metal and radioactivity is usually being conducted through reputed Laboratory/institute,
b) The above mentioned condition has been amended by MoEF&CC for our other project like Firoz Gandhi Unchahar STPP Stage –IV (1x500 MW) and Telengana STPP Stage-IV, Phase-I (2x800 MW).

16.5.3 *The EAC after detailed deliberations on information submitted by the project proponent* ***recommended*** *the proposal for amendment in EC condition as requested by the PP subject to compliance of following additional conditions:*

i. *24x7 online Continuous monitoring system for ambient air quality parameters SOx, NOx and PM shall be established with connected server to CPCB and SPCB.*
ii. *Other conditions of the EC letter dated 23.10.2007 and amendment letter dated 08.04.2013 shall remain unchanged.*

Agenda Item No. 16.6:

Khargone Super Critical Thermal Power Project (2x660 MW) in an area of 1370 acres located at Village Selda and Dalchi, Khargone District, Madhya Pradesh by M/s NTPC Limited – Amendment in Environmental Clearance – reg.

[Proposal No. IA/MP/THE/237308/2021; F. No. J-13012/54/2010-IA.II (T)]

16.6.1 The proposal is for grant of amendment in Environment Clearance for Khargone Super Critical Thermal Power Project (2x660 MW) in an area of 1370 acres located at Village Selda and

Dalchi, Khargone District, Madhya Pradesh by M/s NTPC Limited.

16.6.2 The details of the project submitted by project proponent and ascertained from the document submitted are mentioned below:

i. Khargone Super Critical Thermal Power Project (2x660 MW) is located at Latitude 22° 03' 25'' N to 22° 04' 01'' N and Longitude 75° 50' 02" E to 75° 50' 38" E. project is located at Village Selda and Dalchi, Khargone District, Madhya Pradesh.

ii. Source of Coal: Pakri Barwadih captive coal block allotted to NTPC. Coal requirement is 6.51 MTPA. Water requirement is fullfiled from Narmada River.

iii. Environment Clearance was accorded by MoEF&CC vide letter no. J-13012/54/2010/IA.II (T) dated 31.03.2015 for Khargone Super Critical Thermal Power Project (2x660 MW) in an area of 1370 acres located at Village Selda and Dalchi, Khargone District, Madhya Pradesh by M/s NTPC Limited. Subsequently, its amendment in EC for temporary permission for transportation of coal was accorded on 22.08.2019.

iv. The PP has sought following amendments in EC dated 31.03.2015:

a. **Specific Condition (vi)** "*One twin flue stack of 275 m height shall be provided with continuous on-line monitoring system for SOx, NOx and PM2.5 & PM10. Exit velocity of flue gases shall not be less than 22 m/sec. In addition to the regular parameters, Mercury emission from stack shall also be monitored on six monthly basis."*

Amendment sought:

The para "……***continuous online monitoring of $PM_{2.5}$ & PM_{10} in stack emissions……."*** may please be amended as "…….***continuous online monitoring of PM in stack emissions…..".***

Justification from PP:

(i) Instruments for online monitoring of PM2.5 & PM10 in stack emissions is not available.
(ii) The amendment of similar condition in EC for Tanda STPP, Stage-II, FGUTPP Stage-IV, Meja TPP based on the above justification was already accorded by MOEF&CC.

b. **specific condition No. (xix)** *"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 shall be analyzed every two years and shall be reported to the Ministry along with the 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."*

Amendment sought: The term "……***in-built continuous monitoring…...***" in said stipulation may kindly be amended with "…….***regular periodical monitoring…...”***

Justification from PP:

(i) NTPC has explored the technologies for in-built continuous monitoring of radioactivity and heavy metal in coal and ash. It may kindly be noted that no instrument for online in-built continuous monitoring of heavy metals available. Only periodic sampling of Heavy metal and radioactivity is usually being conducted through reputed Laboratory/institute.

(ii) The above mentioned condition has been amended by MoEF&CC for our other project like Firoz Gandhi Unchahar STPP Stage –IV (1x500 MW) and Telengana STPP Stage-IV, Phase-I (2x800 MW).

vi. The project proponent submitted online proposal no. IA/MP/THE/237308/2021on 5th November 2021 seeking amendment in Environmental Clearance dated 31.03.2015 in the aforesaid condition.

16.6.3 *The EAC after detailed deliberations on information submitted by the project proponent* ***recommended*** *the proposal for amendment in EC condition as requested by the PP subject to compliance of following additional conditions:*

iii. 24x7 online Continuous monitoring system for ambient air quality parameters SOx, NOx and PM shall be established with connected server to CPCB and SPCB.

iv. Other conditions of the EC letter dated 31.03.2015 and amendment letter dated 22.08.2019 shall remain unchanged.

Agenda Item No. 16.7:

Gadarwara Super Thermal Power Project, Stage-I (2x800 MW) in an area of 1990 acres located near village Gangai, Umaraiya, Mehrakheda, Chorbarheta, Dongergaon and Kundari, tehsil Gadarwara, District Narsimhapur, Madhya Pradesh by M/s NTPC Limited – Amendment in Environmental Clearance – reg.

[Proposal No. IA/MP/THE/237313/2021; F. No. J-13012/125/2009-IA.II (T)]

16.7.1 The proposal is for grant of amendment in Environment Clearance for Gadarwara Super Thermal Power Project, Stage-I (2x800 MW) in an area of 1990 acres located near village Gangai, Umaraiya, Mehrakheda, Chorbarheta, Dongergaon and Kundari, tehsil Gadarwara, District Narsimhapur, Madhya Pradesh by M/s NTPC Limited.

16.7.2 The details of the project submitted by project proponent and ascertained from the document submitted are mentioned below:

i. Gadarwara STPP, Stage-I (2x 800 MW) at Village Gangai Dist. Narsinghpur in Madhya Pradesh located at Latitude 22°51'06" N to 22°52'30" N and Longitude 78°41'24" E to 78°52'42" E.

ii. Source of Coal: NCL, SECL, WCL to NTPC. Coal requirement is 8 MTPA. Water requirement is fulfilled from Narmada River.

iii. Environment Clearance was accorded by MoEF&CC vide letter no. J-13012/125/2009-IA. II (T) dated 22.03.2013 for 2x800 MW Gadarwara Super Thermal Power Project near villages Gangai, Umaraiya, Mehrakheda, Chorbarheta, Dongergaon and Kundari, in Gadarwara Tehsil, Narsinghpur District, Madhya Pradesh by M/s NTPC Limited. Subsequently, its amendment in EC were accorded even nos. dated 01.09.2017, 07.02.2019, 11.08.2020 and 22.10.2019.

iv. The PP has sought following amendments in EC letter dated 22.03.2013:

a. **Specific Condition No. A(iii):** *"Bi-flue stack of 275 m height with flue gas velocity not less than 22 m/s shall be installed and provided with continuous online monitoring equipment for SOx, NOx and PM2.5 & PM10.*"

Amendment sought: The para "……***continuous online monitoring of $PM_{2.5}$ & PM_{10} in stack emissions…….***" may please be amended as "…….***continuous online monitoring of PM in stack emissions…..".***

Justification from PP:

(i) Instruments for online monitoring of $PM_{2.5}$ & PM_{10} in stack emissions is not available.
(ii) The amendment of similar condition in EC for Tanda STPP, Stage-II, FGUTPP Stage-IV, Meja TPP based on the above justification was already accorded by MOEF&CC.

b. **General Condition No. (v):** "*A long term study of radio activity and heavy metals contents on coal to be used shall be carried out through a reputed institute. Thereafter mechanism for an in-built continuous monitoring for Radio activity and heavy metals in coal and fly ash (including bottom ash) be put in place."*

Amendment sought: The term "……***in-built continuous monitoring…..***" in said stipulation may kindly be amended with "…….***regular periodical monitoring…..***"

Justification from PP:

(i) NTPC has explored the technologies for in-built continuous monitoring of radioactivity and heavy metal in coal and ash. It may kindly be noted that no instrument for online in-built continuous monitoring of heavy metals available. Only periodic sampling of Heavy metal and radioactivity is usually being conducted through reputed Laboratory/institute.
(ii) The above mentioned condition has been amended by MoEF&CC for our other project like Firoz Gandhi Unchahar STPP Stage –IV (1x500 MW) and Telengana STPP Stage-IV, Phase-I (2x800 MW).

v. The project proponent submitted online proposal no. IA/MP/THE/237313/2021 on 5th November 2021 seeking amendment in Environmental Clearance dated 22.03.2013 in the aforesaid condition.

16.7.3 *The EAC after detailed deliberations on information submitted by the project proponent* ***recommended*** *the proposal for amendment in EC condition as requested by the PP subject to compliance of following additional conditions:*

i. 24x7 online Continuous monitoring system for ambient air quality parameters SOx, NOx and PM shall be established with connected server to CPCB and SPCB.

ii. Other conditions of the EC letter dated 22.03.2013 and amendment letters dated 01.09.2017, 07.02.2019, 11.08.2020 and 22.10.2019 shall remain unchanged.

Agenda Item No. 16.8:

Darlipali Supercritical Coal Based Thermal Power Plant 2x800 MW (Stage-I) in an area of 1670 acres located at village Darlipali, Tehsil Lephripam, District Sundergarh, Orissa by M/s NTPC Limited – Amendment in Environmental Clearance – reg.

[Proposal No. IA/OR/THE/237472/2021; F. No. J-13012/65/2008-IA.II (T)]

16.8.1 The proposal is for grant of amendment in Environment Clearance for Darlipali Supercritical Coal Based Thermal Power Plant 2x800 MW (Stage-I) in an area of 1670 acres located at village Darlipali, Tehsil Lephripam, District Sundergarh, Orissa by M/s NTPC Limited.

16.8.2 The details of the project submitted by project proponent and ascertained from the document submitted are mentioned below:

i. Darlipali Supercritical Coal Based Thermal Power Plant 2x800 MW (Stage-I) located at Latitude 21°52' 57'' N to 22° 03' 32'' N Longitude 83° 49' 29" E to 83° 57' 31" E. Project is located at village Darlipali, Tehsil Lephripam, District Sundergarh, Orissa.

ii. Source of Coal: MCL – kulda, Dulanga, NLC Talavira allotted to NTPC. Coal requirement is 8 MTPA. Water requirement is fulfilled from Hirakund Reservoir on Mahanadi River.

iii. Environment Clearance was accorded by MoEF&CC vide letter no. J-13012/65/2008-IA.1(T) dated 17.02.2014 for 2x800 MW (Stage-I) Darlipali Supercritical Coal Based Thermal Power Plant at village Darlipali, in Lephripam Taluk, in Sundergarh District in Orissa. Subsequently, amendments in EC was accorded on 12.02.2019 and 11.08.2020.

iv. The PP has sought following amendment in EC letter dated 17.02.2014:

Specific Condition (viii) "*The two stacks of 275m height with flue gas velocity not less than 22 m/s shall be installed and provided with continuous online monitoring equipment for SO_2, NOx, and $PM_{2.5}$ & PM_{10}. Mercury emissions from stack may also be monitored on periodic basis*."

Amendment sought:

The para "……***continuous online monitoring of $PM_{2.5}$ & PM_{10} in stack emissions……."*** may please be amended as "…….***continuous online monitoring of PM in stack emissions…..".***

Justification from PP:

(i) Instruments for online monitoring of $PM_{2.5}$ & PM_{10} in stack emissions is not available.
(ii) The amendment of similar condition in EC for Tanda STPP, Stage-II, FGUTPP Stage-IV, Meja TPP based on the above justification was already accorded by MOEF&CC.

v. The project proponent submitted online proposal no. IA/OR/THE/237472/2021 on 8th November 2021 seeking amendment in Environmental Clearance dated 17.02.2014 in the aforesaid condition.

16.8.3 *The EAC after detailed deliberations on information submitted by the project proponent* ***recommended*** *the proposal for amendment in EC condition as requested by the PP subject to compliance of following additional conditions:*

i. 24x7 online Continuous monitoring system for ambient air quality parameters SOx, NOx and PM shall be established with connected server to CPCB and SPCB.
ii. Other conditions of the EC letter dated 17.02.2014 and amendment letters dated 12.02.2019 and 11.08.2020 shall remain unchanged.

Agenda Item No. 16.9:

Feroz Gandhi Unchar Thermal Power project, Stage-IV (500 MW) in an area of 2003 acres located in Village Uchahar, Tehsil Uchahar, District Raebareli, Uttar Pradesh by M/s NTPC Limited – Amendment in Environmental Clearance – reg.

[Proposal No. IA/UP/THE/237833/2021; F. No. J-13012/50/2010-IA.II(T)]

16.9.1 The proposal is for grant of amendment in Environment Clearance for Feroz Gandhi Unchar Thermal Power project, Stage-IV (500 MW) in an area of 2003 acres located in Village Uchahar, Tehsil Uchahar, District Raebareli, Uttar Pradesh by M/s NTPC Limited.

16.9.2 The details of the project submitted by project proponent and ascertained from the document submitted are mentioned below:

i. Feroz Gandhi Unchar Thermal Power project, Stage-IV (500 MW) located at Latitude 25° 53' 55" N to 25° 54' 56" N and Longitude 81° 18' 50" E to 81°20' 25" E. Project is located near villages Babahanpur & Niranjanpur, Khanpur, Faridpur, Khaliqpur Khurd, District Raebareli, Uttar Pradesh.
ii. Environment Clearance was accorded by MoEF&CC vide letter no. J-13012/50/2010-IA.II (T) dated 10.05.2013 for Feroz Gandhi Unchar Thermal Power project, Stage-IV (500 MW) is

located in Unchahar Tehsil of Raebareli district of Uttar Pradesh. Subsequently, amendment in EC was granted on 21.10.2020. The project is under operation since 30.09.2017 (Date of COD).

iii. The project proponent submitted online proposal no. IA/UP/THE/237833/2021 on 10th November 2021 seeking amendment in Environmental Clearance dated 10.05.2013 in General Condition mentioned at Sr. No. (x), which is as under:

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

Amendment sought:

"The general Condition No. (x) may be deleted."

Justification from PP:

a) No new ash dyke has been proposed to be constructed for FGUTPP, Stage-IV.
b) The existing ash dykes at Arkha and Umran are under operation for more than 32 and 22 years respectively and it is not possible to provide lining at this stage.
c) The ash utilisation at FG Unchahar Project is very high (On an average 120% during the last five years with 113% being used in Cement, Bricks and Road Construction), which indicates the use of legacy ash also. Thus, the ash dykes are being used for temporary storage of ash only.
d) Provision of lining at subsequent raising shall jeopardize the lifting of ash from existing dyke reducing the ash utilisation as well as increase in use of soil as substitute material.

iv. Ash Utilisation for 5 years at Feroz Gandhi Unchar Thermal Power project are as follows:

Financial Year		**2017-18**	**2018-19**	**2019-20**	**2020-21**	**2021-22 (Till Oct 21)**
Ash Generated (MT) during the Year		16,79,795	17,20,727	21,65,413	19,77,162	12,77,429
Sl No	**AREAS OF UTILIZATION**					
1	Ash Issued to Bricks/Block/Tile Industries	33,750	39,696	36,351	44,016	39,166
2	Ash Issued to Cement & Other Industries	9,84,448	9,85,490	8,82,548	7,85,526	5,06,766
3	Ash Issued Roads, Fly over Construction	4,67,825	9,65,255	6,65,545	24,60,718	10,08,712

4	Ash used for Ash Dyke raising		25,000	1,81,000	0	0
5	Ash used for Landfill/Reclaimation of low lying area	19,830	936	36,495	0	0
8	Ash Issued for waste land development	0	13,737	0	0	0
9	Ash Issued for other purposes (CLSM/ Cenosphere/ Bottom Ash Cover etc.)	2,10,000	0	1,55,000	0	0
Total Ash Utilization (MT)		17,15,853	20,30,114	19,56,939	32,90,260	15,54,644
% Ash Utilization		**102.15**	**117.98**	**90.37**	**166.41**	**121.70**

16.9.3 The EAC during deliberations noted the following:

Environment Clearance was accorded by MoEF&CC vide letter dated 10.05.2013 for Feroz Gandhi Unchar Thermal Power project, Stage-IV (500 MW) is located in Unchahar Tehsil of Raebareli district of Uttar Pradesh. The project is under operation since 30.09.2017 (Date of COD).

PP has requested to waive off General Condition (X) of Environmental Clearance dated 10.05.2013 regarding HDPE/ LDPE lining in ash pond. It was observed that the unutilized ash from Feroz Gandhi Unchar Thermal Power project, Stage-IV is being disposed into the existing ash dykes at Arkha and Umran, which are under operation for more than 32 and 22 years respectively and it is not possible to provide lining at this stage. So, the said condition was not applicable for the Stage-IV project. However, necessary amendment/clarification was not taken by the PP at earlier stage. No new ash dyke has been proposed to be constructed for FGUTPP, Stage-IV.

16.9.4 *The EAC after detailed deliberations on information submitted by the project proponent* ***recommended*** *that the Ministry may issue necessary clarification in this regard. The PP will insure 100% ash utilization in terms of extent rules and regulations of the ministry and guidelines issued by the CPCB in this regard.*

The meeting ended with vote of thanks to the Chair.

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Annexure - A

ATTENDANCE

S. No	Name	Role	Attendance
1.	Shri Gururaj P. Kundargi	Chairman	P
2.	Dr. N.P Shukla	Member	P
3.	Shri SuramyaVora	Member	P
4.	Dr Santosh Kumar	Member	P
5.	Dr. Umesh Jagannathrao Kahalekar	Member	P
6.	Shri K.B. Biswas	Member	P
7.	Dr. Nandini. N	Member	P
8.	Dr. Unmesh Patnaik	Member	P
9.	Shri M.P. Singh	Member (Representative of CEA)	P
10.	Prof S. S. Rai	Member Representative of IIT/ISMDhanbad	P
11.	Prof R. K. Giri	Member Representative of IMD	P
12.	Shri Yogendra Pal Singh	Member Secretary	P

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APPROVAL OF THE CHAIRMAN

Fwd: Draft MOM of 16th EAC (Thermal) meeting held on 18.11.2021-reg Inbox ×

Yogendra Pal Singh via nic.in Fri, Nov 26, 10:54 PM (13 hours ago)
to me

From: gpkundargi@gmail.com
To: "Yogendra Pal Singh" <yogendra78@nic.in>
Cc: "Munna Kumar Shah" <munna.shah@gov.in>
Sent: Saturday, November 27, 2021 12:12:35 PM
Subject: Re: Draft MOM of 16th EAC (Thermal) meeting held on 18.11.2021-reg

Dear Yogendra Pal Singh ji
Thank you for draft MOM of 16 th EAC.
I have gone through the draft minutes.
They are in order & approved.You may take further needful action.
Thank you
G P Kundargi

On Fri, 26 Nov, 2021, 6:21 pm Yogendra Pal Singh, <yogendra78@nic.in> wrote:

> Dear Sir,
> Please find attached draft MoM of 16th EAC (Thermal) meeting held on 18.11.2021 for kind perusal and comments, if any.
>
> With Regards,
>
> **Yogendra Pal Singh**
> **Scientist 'E'**
> **M/o Environment, Forest and Climate Change**