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HON'BLE NATIONAL GREEN TRIBUNAL
WESTERN ZONE BENCH, PUNE

ORIGINAL APPLICATION NO. 62/2021 (WZ)

Krishi Vigyan Arogya Sanstha. Applicant

VERSUS

Maharashtra State Power Respondents
Generation Company Limited
(MSPGCL).

**SURREJOINDER BY RESPONDENT NO. 1 TO
THE AFFIDAVIT SUBMITTED BY THE
APPLICANT DATED 16/03/2023 AND REPLY
TO THE AFFIDAVIT FILED BY RESPONDENT
NO. 2 (MOEF&CC)
DATED 04/12/2023
"MAHARASHTRA STATE POWER
GENERATION COMPANY LTD., (MSPGCL)
KORADI, NAGPUR"**

INDEX OF ENCLOSURES - NEXT PAGE

Date : **11/07/2024**

Place : **Mumbai**

Filed by :



A-202 Chandravijay, Phule Road, Opp. Bansuri Hotel,
Mulund East, Mumbai - 400081, Maharashtra, India.
7400116222 mahabal60@gmail.com

Raghunath Mahabal रघुनाथ भालचंद्र महाबळ
BE (Mechanical), ME (Industrial Management) VJTI Mumbai
Chartered Engineer, FIE, Arbitrator-IIIE, LLM ADVOCATE

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CONTACT DETAILS

BETWEEN

..... APPLICANTS

- 1. Kisan Manch Krishi Vigyan Arogya Sanstha**
2. Kisan Manch
3. Shri Pradyumna Sahasrabhojane

V E R S U S

..... RESPONDENTS

- 1. Maharashtra State Power Generation Company Ltd**
2. Union of India
3. The State of Maharashtra
4. Maharashtra Pollution Control Board

ABBREVIATIONS

Short	Full-form
DPR	Detailed Project Report
EAC	Environment Assessment Committee
EC	Environment Clearance Letter
EIA	Environmental Impact Assessment
FGD	Fuel Gas Desulphurization
HDPE	High Density Polyethylene
km	Kilo Meter
KTPS	Koradi Thermal Power Station
LDPE	Low Density Polyethylene
LOA	Letters of Agreement
MoEF&CC	Ministry of Environment Forest Climate and Change
MOIL	Manganese Ore (India) Limited
MPCB	Maharashtra Pollution Control Board
MSPGCL	Maharashtra State Power Generation Company Ltd
MSRDC	Maharashtra State Road Development Corporation Limited
MT	Metric Ton
MW	Mega Watt
NHAI	National Highways Authority of India
SO₂	Sulphur Dioxide
STP	Sewage Treatment Plant
TPS	Thermal Power Station

MOST RESPECTFULLY SUBMITTED

1. This is being submitted by **Respondent No. 1 Maharashtra State Power Generation Company Ltd. (MSPGCL) having its Thermal Power Plant (TPS) at Koradi (hereafter mentioned as the Respondent)**. I know the facts and have the authority to file this affidavit, for and on behalf of the Respondent, which I hereby do, on solemn affirmation and oath.

2. Respondent is submitting this affidavit in continuation with the previous submissions. **This affidavit mainly deals with the rejoinder filed by the Applicant dated 16/03/2023.** We have dealt with only those points to which a reply is required. All other allegations are simply denied.

Applicant's Rejoinder dated 16/03/2023
Page No. 336 Point No. 3(i):

Shift in location of the project: Respondent has admitted to the fact that there has been a shift in the location of the project and the same has taken place because It is an expansion project.

REPLY BY MSPGCL: The expansion project means that the proposed units (3×660 MW) were to be installed in addition to the existing units on the land adjacent to the units (120 & 210 MW)

which were in possession of MAHGenco. This is very much within the study area of 30 km radius from the existing area which is in possession of Respondent. As such the issue of admittance does not arise.

Page No. 338 Point No. 11:

The location of the project has shifted from geographical coordinate of Lat. 21 14 20 N & Lon. 79, 6, 56 E to coordinates of Lat. 21 14 9.096 N & Lon. 79 5 37.644 E for which no environmental clearance was obtained.

REPLY: The EIA submitted for the 3×660 MW Thermal Power project by MSPGCL mentions under chapter 3 for baseline data and description of Environment, the details of latitude & longitude for plant & ash bund as;

For Plant: Lat.- 21 14 19 N to 21 14 46 N, Lon.- 79 05 29 E to 79 05 50 E,

For Ash bund: Lat.- 21 13 25 N, Lon.- 79 07 06 E. The EC was granted based on the EIA report submitted.

Page No. 338 Point No. 12:

The Environmental Clearance was granted for a different location from where it is currently in operation. That the Environmental impact study of the project where conducted for the location for which the environmental clearance has been granted and not for the new location.

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REPLY: The Environmental Impact Assessment study was carried out considering a total spread of 30 km radius around the existing plant. As mentioned above in Point No. 11 the EC was granted for the location mentioned under Chapter 3 of the EIA and not for any new location.

Page No. 338 Point No. 13:

Technical EIA guidance manual for Thermal power plants prepared by IL & FS Eco smart Limited for MoEF & CC mentions the siting guidelines for thermal power plants and the location that need to be avoided in locating a thermal power plant.

REPLY: This is not applicable to the case of 3×660 MW units as the land was already available adjacent to the existing units and the issue of industry to be sited at least 25 km away from the projected growth boundary of the settlement is not applicable. The old Koradi units have been into existence since the decade of 1970-80, where human settlement was not in number as that of today. Instead due to the Koradi power plant, residential and commercial establishments increased in the vicinity due to the availability of power plant and social-economical benefits arising out of it.

Page No. 339 Point No. 14:

The power plant in present case is located within the distance of approximately 4-5 km of the city of Nagpur. The location of the project is in violation of the siting criteria given under the technical EIA guidance manual for the thermal power plant.

REPLY: The power plant is constructed on the available land under the possession of MSPGCL. The land for the location of the power plant was allotted by the government as per the prevailing norms. As such the power plant came into existence initially, followed by urbanization in the vicinity of the power plant. As the EIA study of the proposed project was carried out for a 10 km radius, the Environmental impact was evaluated considering the city of Nagpur.

Page No. 339 Point No. 15:

Failure to install Flue gas desulphurization units: The EC condition to install FGD was part of the EC dtd 04.01.2010.

REPLY: Although the condition to install FGD was mentioned in the EC granted, even before the issue of EC in January 2010, MSPGCL had been approaching the ministry/ EAC for a wavier of installation of FGD in their plant. Accordingly, the matter was considered by the EAC in its meetings held in December 2009, April – May 2010 and August 2012. In the minutes of the 54th meeting of reconstituted EAC on Environmental impact assessment of thermal power plants conducted in

August 2012, it mentions that "The committee however agreed that request can be reviewed at the later stage after adequate study has been done and a scientific justification is submitted by the project proponent informing that non-installation of FGD would not entail any adverse effect on Air quality of Nagpur city."

Page No. 339 Point No. 16:

Respondent has averred that with regard to installation of Flue gas desulphurization unit, the tenderisation process is complete and LoA is pending for approval. Respondent has admitted that the due date said by MoEF & CC for installation FGD units in thermal power plants of December -2022 will not be met.

REPLY: As mentioned in the earlier reply, the due date set by MoEF&CC for the Thermal Power Plant was of December 2022 as per notification no GSR 243(E) dated 31/03/2021.

As per the latest notification of MoEF&CC no. GSR 682 (E) dated 05/09/2022 the timeline for compliance for industries under Category "A" for SO₂ emissions is given as 31st December 2024.

Hence as per revised guidelines, the time limit shall be December 2024. Category A is set by MPCB for Koradi Power Plant.

Page No. 340 Point No. 17:

The Respondent has stated that time required for installation of wet limestone FGD is 26-30 months & the process got delayed due to Corona virus pandemic. Respondent had more than sufficient time to install the FGD units in the power plant from 2010 (when EC was granted). However no concrete steps have been taken in this regard.

REPLY: As mentioned earlier, MSPGCL had applied a waiver of FGD condition to MoEF after the issuance of EC as stated in the 54th minutes of the meeting reconstituted EAC on Environmental Impact Assessment of Thermal Power Plants conducted in August 2012. Also, kind attention is drawn to the fact that MoEF kept on revising the timeline for installation of FGD units to TPS across India which can be demonstrated in terms of notification of March 2021 and subsequent notification of September 2022. That means the TPP industry across India was facing techno-commercial problems regarding the installation of FGD. Review report on new SO₂ norms by CEA dated 23/06/2021 is enclosed.[Ax. A ■]

Page No. 340 Point No. 18:

Respondent has only issued tender for installation of FGD unit and not further steps have yet been taken by respondent since the year 2010. It is submitted that the delay in installing a FGD unit is causing increasing in pollutant beyond permissible limit.

REPLY: Respondent has issued the letter of award vide no. CE(P&P)/3×660 MW/Koradi/FGD/1236 dated 16/11/2023 for design, engineering, manufacture, assembly, testing at works, supply at the site, civil, structural, & architectural works and erection, testing & commissioning of FGD system for 3×660 MW unit 8, 9, & 10 at Koradi, TPS on EPC basis including O &M of installed FGD system for the span of three years.

The present status of FGD is that land development work has started. Also, the agreement with contractor M/s Shapoorji Pallonji & Co. Pvt. Ltd. has been signed and the letter of the award has already been issued on 16/11/2023 by Respondent. Which is already submitted to the Hon'ble Tribunal on 02/12/2023 Page No. 373.

Although FGD was not installed, the SO₂ concentration in Ambient air remained within the prescribed NAAQ standard(time weighted avg. of 50ug/m³)

Page No. 340 Point No. 19:

MoEF&CC had also acknowledge non-compliance on part of respondent with regards to installation of FGD. A site visit was conducted by official of MoEF & CC on 07.12.2021 to the project site to check the status of compliance with condition of environmental clearance. With regard to the status of

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installation of FGD unit the status as on 07.12.2021 was stated as not complied.

REPLY: MSPGCL in its earlier affidavit dated 21/07/2022 had submitted that the minimum time required for installation of wet limestone FGD is about 26-30 months. Considering the status & lockdown situation it was not possible to achieve the timeline. Also, a feasibility study for gypsum storage and transportation is in progress.

Apparently, during this time MoEF&CC also revised the timeline with revised notification, and as of now as per the latest notification no. GSR 682 (E) dated 05/09/2022, the revised timeline is set as December 2024.

Page No. 340 Point No. 20:

It is also important to note that Respondent no. 4 (MPCB) has stated in its reply affidavit dtd. 09.11.2021, the installation of FGD unit is not complete and under tenderisation process. It also stated that Respondent no.4 (MPCB) has issued directions to Respondent no.1 (MSPGCL) which also included installation of FGD unit at site. Respondent no 4 also issued show cause notice to Respondent no 1 on dtd. 02.11.2021.

REPLY: Same as per Point No. 19.

Page No. 341 Point No. 21:

Incomplete Fly ash utilization- The respondent no 1 has stated that 100% utilisation has not taken place because various traffic restriction are imposed on ash vehicle movement, there

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is absence of major ash based industry in the vicinity & ash utilization had drastically reduced due to monsoon & corona pandemic.

REPLY: The state of Fly ash utilization shall now be considered in light of the new notification of MoEF&CC vide no SO 5481 (E) dated 31/12/2021 wherein the ministry has revised the timeline by providing a three-year cycle to the Thermal Power Plant for achieving the ash utilization target. The new notification also mentions the timeline for utilization of legacy ash that shall be completed within ten years from the date of publication of the notification. The new notification under section -5 states that the obligations for achieving the ash utilization targets shall be applicable from 1st April 2022.

Page No. 341 Point No. 22:

That at the outset, it is made clear that the present Thermal power plant has been in operation since last forty years, and yet has not been able to achieve 100% Fly ash utilization. The reason for non-compliance with 100% Fly ash utilization, as given by Respondent no.1 must have been known at the time when Environmental clearance for the expansion of the unit was granted in 2010. In light of this no expansion of the plant should have been allowed.

REPLY: Although the plant has been operational for the last forty years in the present scenario four units of 120 MW capacity are decommissioned

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and also another two units of 210 MW capacity are de-commissioned. As such the Environmental Pollution load has minimized.

The issue of fly ash utilization is mentioned as an EC condition issued in 2010. The EC condition states that 100% utilization of fly ash has to be achieved from the fourth year of operation. The third unit came into operation in January 2017. Hence four years thereafter, the timeline for achieving the ash utilization target would have been 2021.

During the same time, MoEF&CC has come with a new notification vide no. SO 5481 (E) dated 31/12/2021 with a revised timeline for achieving the ash utilization target has been extended.

Page No. 341 Point No. 23:

That the Environmental clearance condition stated that 100% utilization of Fly ash has to be achieved from the fourth year of the operation. It states "Fly ash shall be collected in dry form and storage facility (silos) shall be provided. 100% Fly ash utilization shall be ensured from fourth year onwards."

REPLY: In continuation to the explanation given for Point No. 22, Respondent further submits that a storage facility (Silo) is provided for three units of 660 MW which are in operation. Since the fourth year of operation was 2021, the total ash

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utilization for the Year 2020-21 for the entire Koradi TPS (210 MW+660 MW) stood at 80.96% whereas for the Year 2021-22, it was 81.13%. However, MoEF&CC as per recent notification has set the baseline date of 01/04/2022 to achieve a 100% ash utilization target within the three-year cycle (i.e. up to March 2025)

Page No. 341 Point No. 24:

The MoEF&CC notification SO 2804 (E) dtd 03.11.2009 amended the provisions of fly ash notification 1999.

REPLY: The said notification is superseded by new notification no. SO 5481 (E) dated 31/12/2021

Page No. 342 Point No. 25:

As per the data available on website of Respondent no 1, quantity of Fly ash utilized by the three units from Jan-2020 to May-2021 varies from 0% - 0.7%. Respondent no. 1 has by their own admission, stated that they have not achieved 100% fly ash utilization. The same was also mentioned by the applicants in the original application and has not been denied by Respondent no. 1. It is submitted that the three units have been operational since 16.12.2015, 22.11.2016 & 17.01.2017 & should have complied with the condition by 2019, 2020 & 2021 respectively. However no efforts have been made by Respondent no. 1 to attain 100% utilization even though four years since operation got over for the three units in 2019 to 2021.

REPLY: From the previous affidavit submitted on 21/07/2022 it was clarified that to increase the dry fly ash utilization, regular advertisements are published in various newspapers and tenders from various agencies are being processed. All three remote silos are available. In addition to this, a separate weighbridge is provided and KTPS is exploring various prospective users of fly ash as well as backfilling of mines and bulk transportation of fly ash through railway wagons. TPS is taking continuous follow-ups with bulk users to enhance ash utilization. Now the proposal for the lifting of ash for two NHAI projects and filing of stone quarries are initiated. From this, it can be seen that MSPGCL has made enough efforts to enhance Fly ash utilization.

Recently, MAHAGENCO has issued a LOA dated 16/02/2024 for transportation of fly Ash by Rail/Road from Koradi TPS to M/s Ambuja Cement for the quantity of 10 Lac MT/year by providing financial assistance of Rs. 100/MT in order to enhance fly ash utilization at Koradi TPS.

Page No. 342 Point No. 26:

That the site visit report of MoEF & CC dtd 07.12.2021, it has been stated that taking into account average fly ash utilization for the month of Nov. -2021 for the power plant, 100% fly ash utilization has not been achieved It is stated that daily fly ash

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generation is approximately 7822 MT which may vary depending upon coal consumption for a day and coal ash %. The daily fly ash utilization is about 7799 MT. Therefore it is cleared that 100% fly ash utilization is not taking place for the unit.

REPLY: The percentage of daily fly ash utilization is about 99.7% i.e., 7799 MT is utilised out of ash generated quantity 7822 MT comes out to be 99.7%.

Page No. 343 Point No. 27:

That Respondent no. 4 (MPCB) has also stated in its reply affidavit dated 09.11.2021 that fly ash utilization for the year 2015-2016, 2016-2017, 2017-2018, 2018-2019, 2019-2020, 2020-2021, is 59.06%, 28.79%, 12.81%, 29.33%, 42.95% & 80.96%. Therefore it is clear that Respondent no. 1 has not achieved 100% fly ash utilization as required as per EC condition.

REPLY: EC condition states to achieve the fly ash utilization from the fourth year of operation that comes out to 2021. From the figure given by the applicant, it is seen that the ash utilization percentage has gradually increased over the years vis a vis- MSPGCL has made efforts to increase fly ash utilization.

Accordingly, 3 × 660 MW Koradi TPS is taking the following steps to improve the ash utilization-

Short Term Action Plan for Ash Utilization:

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- ❖ M/s. Eklavya Enterprises is deputed at Khasara ash bund & M/s Sai Engineering Works is deputed to Koradi ash bund for regular pond ash lifting. This pond ash is used for brick manufacturing and road embankment.
- ❖ **Target for Khasara Ash Bund is @ 45 - 50% Ash lifting/utilization in F.Y. 2024-25.**
- ❖ **Target for Koradi Ash Bund is @ 50% Ash lifting/utilization in F.Y. 2024-25.**
- ❖ LOA is issued to M/s Ambuja Cement for the work of lifting and transportation of fly ash by rail/road mode from Koradi TPS by providing financial assistance.
- ❖ Vendor has to lift and transport Dry fly ash quantity of 10 Lac MT/year on Rs.100 per MT handling charges by rail/ road mode.
- ❖ Also, lift and transport pond ash of quantity equal to 10 % of allotted /committed annual dry fly ash quantity i.e. 1 Lac MT/year compulsorily.
- ❖ Bank guarantee submitted by M/s. Ambuja Cement.
- ❖ Draft agreement sent to M/s Ambuja Cement for review & same is sent to H.O. of Ambuja Cement for approval.

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- ❖ **Expected bulkers started for dry fly ash lifting in the month end of June – 24 @ 25 to 30 nos. of capacity 50 MT each.**
- ❖ M/s. Ultrafine Mineral (RDC Concrete Unit), visited the site for work of Dry Fly Ash collection from all three units of ESP Fields Nos.6, 7, 8 & 9 of 3×660MW, KTPS, Koradi units into Classification unit to be installed by M/s. Ultrafine Mineral & Admixtures Pvt. Ltd. near Remote Silo.
- ❖ DPR submitted.
- ❖ Agreement is signed on dtd.30/05/2024
- ❖ Implementation of the said proposal to increase the day-to-day ash utilization from 1000 to around 20,000 MT per month.
- ❖ Target date started after line laying and steel silo installation & commissioning work is @ October 2024
- ❖ LOA is issued to M/s Dalmia Cement for the work of lifting and transportation of fly ash by rail/road mode from Koradi TPS by providing financial assistance.

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- ❖ Vendor has to lift and transport Dry fly ash quantity of 10 Lac MT/year on Rs.100 per MT handling charges by rail/ road mode.
- ❖ Also, lift and transport pond ash of quantity equal to 10 % of allotted /committed annual dry fly ash quantity i.e. 1 Lac MT/year compulsorily.
- ❖ Correspondence is continued for fulfilling the documentary parts and BG submission.
- ❖ **The M/s. Dalmia Cement, an ash transporter visited the site on dtd.02.06.2024 and ready to transport the bulkers is @ 30 nos. from July first week of capacity 50 MT each.**
- ❖ The draft agreement was sent to M/s. Dalmia Cement on dtd.03/06/2024.
- ❖ Koradi TPS has identified stone quarries in - Pachgaon, Umri (Jungli-Khurd) area.
- ❖ NOC received from Pachgaon.
- ❖ **As per the process followed by NTPS two proposals for work of Excavation, collection, Loading & Transportation of Pond Ash @ 2 Lakh MT from Khasara Ash Bund and unloading at Pachgaon, Salai Menda and Navegaon crusher Mines were sent to HO for approval.**

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- ❖ **The said proposal approval is in process.**
- ❖ Promotion of ash utilization through newspapers.
- ❖ **The process is being regularly carried out by advertisement in various newspapers and encouraging prospective vendors.**
- ❖ **Advertisement published for lifting pond ash from Khasara Ash Bund of 3×660 MW Koradi TPS in a newspaper on dated 04/05/2024.**
- ❖ Koradi TPS also identified the MOIL Khapa Gumgaon mines for course ash filling.
- ❖ **Dy. General Manager (Mines) and their team visited the Khasara Ash Bund on 21/05/2024 to finalize the sample of bottom ash for filling in the mines.**
- ❖ **Ash sample finalized and as a sample of total 30 nos. trucks are transported to M/s. MOIL Gumgaon mines through M/s Eklavya Enterprises till date.**
- ❖ **M/s. MOIL required total quantity is @ 50 Lakh MT.**

Long-Term Action Plan for Ash Utilisation:

- ❖ To achieve 100% legacy ash utilization, as per MOEF & CC notification, following long term

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measures are being taken-

- ❖ For transportation of dry fly ash beside Railway siding line of Railway chord cabin for loading of dry fly ash in Railway wagon at 3x660MW.
- ❖ Railway Platform no.1 is ready.
- ❖ The size of platform is 20 × 180 m.
- ❖ For loading & transportation of pond ash beside Railway Shunting neck track in between Koradi/Khasara Ash Bund.
- ❖ Railway Platform no.2 is ready.
- ❖ The size of platform is 20 x 650 m.
- ❖ **TPS both Railway platform is ready for ash utilization but Railway DPR proposal approval by Railway yet not received.**
- ❖ M/s Rites submitted DPR for BG siding for ash utilization vide M/s RITES letter 1067 dated 01/04/2024, TPS Koradi given approval 1154 dated 02/04/2024 for DPR & M/s RITES submitted above DPR to railways for their approval by vide letter 1080 dated 17/04/2024. The approval is pending from Railway. After getting approval the said Railway track work will be started through a remote silo site and it will be very helpful to maximize the dry fly ash

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utilization. The proposed target is @ 8 – 10 months.

❖ MSRDC is demanded the pond ash for construction of the Super Communication Expressway i.e. i) Nagpur to Gondia ii) Swarkheda to Gadegaon & iii) Seldoh to Rajura. The total requirement of pond ash is @ 3-4 Crores MT. Their requirement for lifting & transportation "cost pass-through" to their destination. **A meeting with MSRDC was conducted on 29.03.2024 regarding above said work and their EPC contract project taken time up to 6-8 months. MSRDC Tender Published.**

Page No. 343 Point No. 28:

That it should be made clear as per para B (1) of the fly ash utilization notification 2021, it is mandatory for thermal power plant to mandatorily provide fly ash to all agencies engaged in construction within 300 km of thermal power plant. The fly ash needs to be delivered at project site free of cost and transportation cost is to be borne by thermal power plant itself.

REPLY: The same para B (1) of fly ash utilization notification 2021 states that Thermal Power Plant may charge for ash cost and transportation as per mutually agreed terms in case Thermal Power Plant is able to dispose of the ash through other means and those agencies make a request for it

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and provision of ash free of cost and free transportation shall be applicable if Thermal Power Plants serves a notice on the construction agency for the same. Further the same notification under para B (3) states that it shall be obligatory in all mines located within 300 km radius of Thermal Power Plant to undertake back filling of ash in mines void or mixing an ash with external overburden dumps, under extended producer responsibility.

Hence, it is to be submitted that in such case fly ash utilization does not merely remain the responsibility of Thermal Power Plant alias it is shared responsibility of Thermal Power Plant as well as mine owners

Page No. 343 Point No. 29:

That therefore it is incumbent on Respondent no 1 to ensure that the fly ash is provided to all construction activity within 300 km radius. In light of this provision, it cannot be claimed by Respondent no 1 that it is exploring various prospective user of the generated fly ash since the law requires them to provide fly ash to all construction activity within 300 km range.

REPLY: Hon'ble Secretary Ministry of Mines vide letter no. D.O. no. M.V- 8/1/2023-Mines-V dated 12/05/2023 has informed Hon'ble Secretary MoEF & CC New Delhi regarding the list of 82 leases and an additional list containing 56 leases where final

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mine closure plan has been implemented and where the lease area has been surrendered to the state government was enclosed. As per the list attached of 82 abandoned mines two mines in Maharashtra are identified viz. Nawargaon-II and Pitichua are both of M/S MSMC Limited in Chandarpur district.

Page No. 344 Point No. 30:

Dumping of ash into bunds without LDPE/HDPE Lining- That the condition no 4 (IX) of the environmental clearance dtd 04.01.2010 states that "Ash pond shall be lined with HDPE/LDPE lining or any other suitable impermeable media such that no leachates takes place at any point of time. Adequate safety measures shall also be implemented to protect the ash dyke from getting breached."

REPLY: The condition seems optional as the EC condition states HDPE/LDPE lining "OR" any other suitable impermeable media. It is to submit that Khasara ash pond dyke wall is pitched with stones. Toe drains are established around the periphery of the ash pond and the supernatant water from the ash pond is recovered for ash disposal back into the plant.

Adequate safety measures are taken to avoid the ash dyke wall from getting breached such as Lagoons being established inside the ash pond, a syphoning system being maintained to drain out

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excess water from ash pond, well/ weir are in place at the periphery of ash pond.

Page No. 344 Point No. 31:

That Respondent no 1 has admitted to the fact that no HDPE/LDPE lining work has been undertaken at project site. It is stated in its affidavit that since ash bund was already in operation, therefore work of HDPE/LDPE lining could not be taken up. It is submitted that there are two ash bunds associated with the thermal power plant namely Koradi & Khasala. HDPE/LDPE lining could have been undertaken by diverting the ash flow to Koradi ash bund. However the same was not done by Respondent no. 1 & thereby has committed violation of Environmental Clearance condition.

REPLY: It is submitted that when the EIA report was submitted for 3 × 660 MW units, it mentioned that the ash disposal from these 660 units after commissioning shall be in Khasala ash bund. As such there was no reference of Koradi ash bund vis a viz Koradi ash bund was out of the ambit of EC conditions issued thereof. So the issue of ash disposal to Koradi ash bund does not arise. Further Khasala ash bund was active and as project proponent MSPGCL had informed in the EIA report that the Khasala ash bund height shall be raised in two stages. This was to be done to accommodate the quantum of ash which was to be generated by three units of 660 MW

Page No. 344 Point No. 32:

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It was also stated by Respondent no 1 that no breach has taken place and other precautionary measures such as stone pitching, construction of waste weirs etc. have been dually undertaken. It is submitted that the EC condition requires additional safety measures to be undertaken in addition to HDPE/LDPE lining. Therefore, stating that additional measures have been undertaken does not exempt Respondent no. 1 from undertaking HDPE/LDPE lining as well.

REPLY: Same as clarification submitted to Point No. 30.

Page No. 344 Point No. 33:

That additionally the statement by the Respondent no. 1 that no incidences of breaching of bund or overflow of ash water over bund are observed is faulty and misleading as few days before the filing of the reply affidavit of Respondent no 1, the Khasala fly ash bund of Koradi thermal power station breached on 16.07.2022 flooding three villages and the nearby Kanhan river with toxic fly ash slurry. The same was also recorded in article titled ' Koradi thermal power station plants ash bund falls, toxic slurry in farm & houses published in Times of India on 17.07.2022'.

REPLY: The unfortunate incident occurred due to unprecedented heavy rainfall during that period. Immediate corrective actions were taken by deploying manpower and machinery and the situation was brought under control. Compensation was paid to affected farmers.

By nature's justice when a calamity occurs it causes an impact that could be beyond human control. However, MSPGCL extended all its

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support to the nearby villages during the unfortunate incidence.

Page No. 345 Point No. 34:

That in the light of the same, Respondent no 4 (MPCB) had also issued show cause notice dtd 19.07.2022 and 04.08.2022 to Respondent no 1 (MSPGCL) However no further action was taken on the same.

REPLY: MSPGCL had submitted a compliance report to the show cause notices issued depicting corrective actions taken after the incidence and preventive actions to avoid the same. MPCB has forfeited the Bank Guarantee of MSPGCL against the incident that occurred.

Page No. 345 Point No. 35:

That it is stated by Respondent no 1 that the application for amendment of the said Environmental Clearance condition has been submitted to MoEF & CC. It is submitted that even if an application for amendment of Environmental Clearance condition was submitted, it has not been stated if the same has been approved. Therefore until the amendment is approved, the E.C condition will have to be complied with by Respondent no: 1. It is also pertinent to mention that the E.C was granted in 2010 and respondent no: 1 was in violation of the condition for 12 years, before an amendment application was moved in 2022.

REPLY: Since the issue of E.C. conditions in 2010, the condition for HDP/LDP lining was considered as optional as it stated that HDPE/LDPE Lining OR

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any suitable impermeable media. During the submission of periodical compliance, MSPGCL informed MoEF&CC that since the Khasara ash bund is live the work of HDP/LDP lining cannot be taken up. However, the matter was reviewed during a visit of the IRO office MoEF&CC in the month of Dec 2021 and during discussion it was opined that MoEF&CC should be requested for amendment in condition. Accordingly, the letter was sent to MoEF&CC regarding amendment of condition stating that since the Khasara ash bund is alive the condition may be modified.

Page No. 346 Point No. 36:

That the E.C on HDP/LDP lining is based on the precautionary principle and requires the project proponent to undertake certain measures to ensure that no leachates take place. Therefore HDP/LDP lining is a mandatory requirement, not only in terms of E.C condition but also in terms of precautionary principle.

REPLY: As described earlier certain measures were taken such as stone pitching of dyke wall and the reuse of ash water from the ash bund.

Regarding scientific certainty it is to state that MSPGCL is monitoring and chemically testing effluent samples from ash ponds from MoEF&CC approved lab. The pH of effluent from ash pond is in the range prescribed as per statutory norms.

(6.5 to 8.5) Hence the possibility of leachate is not envisaged

Page No. 346 Point No. 37:

That it is also pertinent to mention that the report DT: 07/12/2021 of MoEF & CC which was prepared after a site visit states that " PP has increased the ash bund height from 305.2 ML to 312.0 ML without amendment in EC, which construe violation".

REPLY: During the compliance report sent to the MoEF&CC in reply to the observations pointed out in the report dated 07/12/2021, MSPGCL has informed that the matter of increasing the bund height has already been mentioned in the EIA report submitted to the ministry against 3×660 MW Koradi units. As such ministry was aware of the situation as the ash slurry from three units of 660 MW was to be dumped in Khasara ash bund for which raising of bund height was essential to accommodate the ash disposed of from these units.

Page No. 346 Point No. 38:

That the same report also states that precautionary measures are not in place at the ash bund and "on the ash bund area some cattle/cows were observed roaming on the dry area of the bund. Proper security was not observed. It is suggested to increase the patrolling area at ash bund area". Therefore the averment by respondent no: 1 that all the precautionary measures are in place is misleading.

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REPLY: As mentioned by the applicant and as referred to the report dated 07/12/2021, cattle /cows were observed roaming on the "dry area of the bund". The cattle's come from nearby areas to graze the green vegetation available on dry portions of ash bund. The Khasara bund area is 314 Hects which is a huge area. Security personnel are deputed around the clock near the ash bund site and patrolling is also carried out. Preventive/ corrective actions are taken by personnel as and when required if such incidences are observed

Page No. 347 Point No. 39:

That a perusal of the reply affidavit DT; 09/11/2021 of respondent no: 4 also shows that in a site visit conducted by the officials of respondent no; 4, non-compliance with the condition regarding LDP/HDP lining was found and show cause notice was also received to respondent no: 1 on DT; 02/11/2021. However, despite the same respondent no; 1 has not complied with the EC condition.

REPLY: The same was communicated MPCB that since the Khasara ash bund was live, HDP/LDP lining to the bund was not possible

Page No. 347 Point No. 40:

Failure to utilize sewage water: That Respondent no: 1 has stated that sewage water from Bhandewadi STP is being used

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for the Project and the said STP is being operated and maintained is being carried out by Respondent No:1.

REPLY: Yes, the policy is being adopted and followed.

Page No. 347 Point No. 41:

That the environmental clearance condition stated that; "Additional fresh water will be required for this proposed expansion Project will be met from the sewage collected by Nagpur Municipal Corporation after treatment. MoU with Nagpur Municipal Corporation is in place. No additional fresh water will be drawn, since only the allotted water, from PENCH river (Through a canal) will be utilized"

REPLY: Yes, as per EC condition stated.

Page No. 347 Point No. 42:

That as submitted by the applicant in the original application, Respondent no: 1 has constructed a weir over Nag river and the river water is pumped to Bhandewadi STP and then to Koradi Plant. Therefore, all of its water requirement is being met through fresh water of Nag river and not through the sewage water from the Nagpur Municipal Corporation.

REPLY: An agreement is in place between MAHAGENCO and Nagpur Municipal Corporation for the construction of a sewage treatment plant at Bhandewadi. The Nag River at Nagpur carries away raw sewage along with water which is untreated and this can be determined from the physical characteristics of water received at

Hiwari Nagar Pump House. (Inlet source of Bhandewadi STP).

Page No. 347 Point No. 43:

That the respondent no: 4 has also stated in its reply affidavit dtd: 09/11/2021 that the source of water for the expansion unit is supply from Pench Project.

REPLY: The supply from the Pench Project is to prepare D.M. water and Potable water. Tertiary treated water from Bhandewadi STP is used as cooling water in the Thermal Power Plant. MoEF&CC has taken cognizance of the matter and issued EC on same conditions for utilizing raw water from Pench for D.M. and potable water generation.

Page No. 348 Point No. 44:

Failure to develop a green belt in compliance with Environmental Clearance condition: That respondent no: 1 has admitted to non-compliance with the E.C condition of developing a green belt. Respondent no: 1 has averred that 3 tier plantation are not possible at the power plant site as no land was acquired for the activities of the thermal power plant and the available land already had established structures.

REPLY: The project proponent has not admitted but put forth the factual status as to the reason for not executing the condition at the site due to space constraints due to established structures.

Page No. 348 Point No. 45:

That respondent no; 1 has provided details about the plantation undertaken by it. It is submitted that providing information on the number of trees planted and the percentage of the area under forest cover by respondent no: 1 is not sufficient as the E.C condition specifically provided for 3 tire plantation to take place.

REPLY: There is also another norm that 33% area should be under green cover out of the total area of the project. As such total area of the project is 652.02 Hects. 33% of the total project area comes out to be 215.16 Hects. Out of total project area till date 276.4 Hects area has been developed as green belts. As such the area covered under the green belt is more than 33% of the total project area.

Page No. 348 Point No. 46:

That it is made clear that any variance in compliance with the E.C condition cannot be met with its non-compliance. If the project proponent cannot comply with the E.C condition, it will lead to withdrawal of E.C, unless the competent authority grants an amendment to the E.C Therefore the averment by respondent no: 1 that it is not feasible to undertake 3 tire plantation cannot stand.

REPLY: The matter cannot be categorized as non-compliance as the Project Proponent has taken enough efforts to develop a green belt. Almost more than 33% of the land is covered

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under a green belt. Further, it is to inform that tree plantation is carried out every year in a phased manner in view of environment conservation measures.

Regarding withdrawal of E.C the purview is of MoEF&CC and the status is regularly informed to MoEF&CC through six monthly compliance report

Page No. 348 Point No. 47:

That the MoEF & CC report has also specifically noted in its report DT; 07/12/2021 the non-compliance on behalf of respondent no: 1 with regard to plantation for green belts in the following manner "Thick green belt of indigenous species around the ash dump, Pond no: 3, VIP guest house and around plant premises has not been observed."

REPLY: Various landscaping and beautification activities are taken up by the local body around Pond no: 3. The VIP guest house of the Project Proponent has a good rose garden and avenue plantation is carried out in the vicinity of the Guest House. 10,000 trees are planted in FY 23-24 near ash pond area as part of tree plantation program.

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**REPLY TO THE AFFIDAVIT FILED BY
RESPONDENT NO. 2 (MOEF&CC)
DATED 04/12/2023**

3. Respondent says and submits that Respondent No. 2 (MOEF&CC) had issued the show cause notice to the Respondent on 14/08/2023. But immediately after receipt of the show cause notice Respondent submitted its reply with the compliance details to the MOEF&CC on 28/08/2023. The updated compliance status report with respect to the project is awaited from the Regional Office of MOEF&CC Nagpur. This fact is already admitted by the MOEF&CC in their affidavit dated 04/12/2023 on **Page no. 416 Point no. 13**. All necessary annexures are already enclosed by MOEF&CC in its affidavit from **Page no. 1122 to 1188 (i.e., R2/10 to R2/13)**.

Place: Pune
Date: 11/07/2024


Respondent No.1
Maharashtra State Power
Generation Company Ltd.
(Koradi 3x660 MW)
Chief Engineer (O & M)
MSPGCL, KTPS, Koradi



A review report on new SO₂ norms
Notified by MOEF&CC for Thermal Power Plant

1. So far thermal power plants were required to meet the particulate emission norms only and there was no regulation for SO₂, NO_x and Mercury emissions. Standards were specified only for the chimney height to ensure the emissions from flue gas were dispersed. On December 7, 2015, the Ministry of Environment, Forest and Climate Change (MoEF&CC) introduced stricter environmental standards for coal-based TPPs (**Table-1**) under the Environment (Protection) Act, 1986.

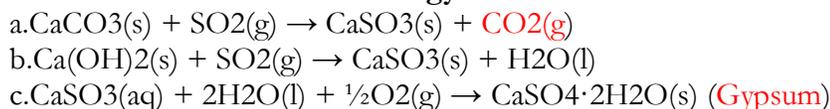
Table I

NEW ENVIRONMENTAL NORMS (wef DEC 2015)				
Date of Installation	PM	SO ₂	NO _x	Mercury (Hg)
Before December 2003	100mg/Nm ³	600mg/Nm ³ < 500MW 200mg/Nm ³ ≥ 500MW	600 mg/Nm ³	0.03mg/Nm ³ for ≥500MW
January 2004 to December 2016	50mg/Nm ³	600mg/Nm ³ < 500MW 200mg/Nm ³ ≥ 500MW	300 mg/Nm ³ (*)	0.03mg/Nm ³
January 2017 onwards	30mg/Nm ³	100 mg/Nm ³	100 mg/Nm ³	0.03mg/Nm ³

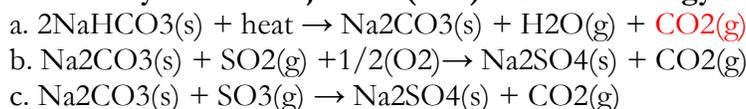
(*) NO_x norms 300mg/Nm³ revised to 450mg/ Nm³ vide MOEF&CC notification G.S.R. 662(E) dated 19.10.2020.

2. After notification of new environmental norms in December, 2015, a detailed phasing plan, for installation of FGD to be completed till 2024 was prepared by CEA in consultation with all stakeholders and was sent to MoEF&CC in June,2017. However, subsequently, time line was squeezed by MoEF&CC to December, 2022.
3. The chemical equation pertaining to most prevalent Wet limestone FGD, DSI FGD and Sea water FGD technology are given as under for reference:

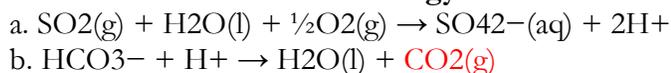
i. Wet lime FGD technology



ii. Dry Sorbent Injection (DSI) FGD technology



iii. Seawater FGD technology



It is seen from the empirical calculation that one mole CO₂ is being generated by absorption of one mole of SO₂ in all desulphurization process. The Wet lime desulphurization process which is economical, produces additional 0.5% CO₂ considering complete neutralization of SO₂. The coal consumption is also expected to increase up to 1 % (due to APC) depending on the FGD technology and Green House Gas (CO₂) will be released additionally due to increased coal consumption. **Global warming and Climate Change shall worsen further with the implementation of FGD due to this additional release of CO₂ from all thermal power plants post FGD implementation.** The increased APC also reduces the efficiency of power plants.

4. CEA started monitoring the implementation of measures to comply with new norms. More than 90% TPPs are installing wet lime stone based FGD system as it is economical. Major issues/challenges being faced during the implementation of FGD system in thermal power plant are as under:
 - a. Till the end of 2015 no SO₂ norms were applicable, thus FGD manufacturing capacity was almost nonexistent in the country.
 - b. FGD technology being new to our country, there are at present limited vendors with limited capacity to supply FGD components. Therefore, there is an availability constraint.
 - c. A sudden surge of demand has arisen as all thermal generating units, about 470 running units of 180 GW capacity, have to implement FGD system in one go. Proper planning was not there for development of infrastructure to meet the demand surge.
 - d. Although India has the manufacturing capability of 70% FGD components, it depends on the imports from other country as manufacturing capacity is insufficient to cater to huge demand in a short period of time. To boost up the production for meeting huge demand as per required specifications, a few years' time is required.
 - e. Balance 30% of FGD component is not manufactured in India. Thus, import from other countries is the only option and to create a manufacturing capability of these items in India would take few years.
 - f. A huge foreign exchange for importing technology, equipment and skilled manpower from other countries shall be required.
 - g. Placing order (Rupees one lakh thirty thousand cr.)for installation of FGD in all the plants simultaneously without ascertaining its performance in Indian condition may not be a correct decision.
 - h. Thus, no time for fine tuning of the specification is possible, considering the implementation time of about 36 months and all the orders being placed in one go, targeting December 2022 deadline.
 - i. Due to huge gap in demand and supply of FGD equipment, prices are escalating exorbitantly and it can also lead to market manipulation.
 - j. Impact of Covid-19 pandemic on planning, placing of order, supply chain of equipment and installation of FGD is severe.
 - k. Finally increasing cost of electricity.

5. To overcome all the above issues /challenges being faced by power industry, CEA prepared a **paper on location specific norms for thermal power plants** and suggested a graded action plan for FGD implementation in TPP which is summarized below. **The paper was approved by MOP and forwarded to MOEF&CC for consideration in January, 2021.**
- a. The target should be uniform ambient air quality across the country and not the uniform emission norms for thermal power plants. Implementation of uniform emission norms in TPPs located in different atmosphere may result in different ambient air quality.
 - b. Thermal power plants located in an area, where quality of air is very good in terms of SO₂ level, can be exempted from immediate installation of additional equipment to control SO₂ emission from stack. A large number of thermal power stations are located in remote locations away from towns with little habitations around. Thermal power plants located in remote locations, ambient air quality (AQI) can be made as the guiding factor for formulating emission control. This may avoid installation of additional emission control equipment without compromising the ambient air quality.
 - c. To explore such a feasibility, the 24hr avg.(max) SO₂ ground based measured levels (CPCB, 2018 data) were categorized into 5 distinct levels:
 - i. Level I : >40 µg/m³
 - ii. Level II : 31-40 µg/m³
 - iii. Level III : 21-30 µg/m³
 - iv. Level IV : 11-20 µg/m³
 - v. Level V: 0-10µg/m³.
 - d. To achieve tangible results, the SO₂ emission control equipment in the thermal power plants located in level-I should have to be installed on priority basis. The regions as identified under level-II can be covered subsequently under the next phases seeing the performance of FGD system in Level-I. Presently no action is required for the plant located in region under level III/IV/V as the SO₂ level in ambient air of these area is very less and as per CPCB the quality of air is good in regards to SO₂ level.
 - e. The graded action will help in understanding the impact of these control equipment on their effectiveness and give a time for future course of correction. There are different technologies available to control the flue gas emissions and their suitability needs to be ascertained in the Indian conditions. An unworkable time schedule will create markets scarcity leading to import, jacked up prices unnecessary burden on power utilities thus on common person. Graded action plan will help in utilizing the resources in effective manner and it will help in fine tuning the technology for local conditions. If the process of emission control is completed in 10-15 years' time frame, and consider thermal power plants located in critically polluted areas in first phase, it will help in developing indigenous manufacturing base, skilled manpower in the country which shall take care of the local operating conditions.
6. Thereafter, MOEFF&CC notified G.S.R.243(E) dtd.31.03.2021, that the emission compliance would mean all the plant emission norms (2015) for PM/SO₂/NO_x are to be met by the specified timeline (**Table II**), any deviation in the above norms beyond the timeline would be liable for the levy of emission compensation (EC) as detailed in **Table III**.

Table II

S.No.	Category	Location/Area	Timeline for Compliance	
			Non retiring Units	Retiring Units
(1)	(2)	(3)	(4)	(5)
1	Category A	Within 10 km radius of National Capital Region or cities having million plus population.	Upto 31st December 2022	Upto 31st December 2022
2	Category B	Within 10 km radius of Critically Polluted Areas or Non-attainment cities.	Upto 31st December 2023	Upto 31st December 2025
3	Category C	Other than those included in category A and B	Upto 31st December 2024	Upto 31st December 2025

7. Thermal power plant located in Category-A means if they are within 10 km from NCR/million plus population cities. Similarly, TPP in Category B means they are within 10 km from critically polluted area/ Non-attainment cities. **However, the presence of SO₂ or NO_x level in the ambient air in the area has not been considered. It is well known that there is issue of PM₁₀ or PM_{2.5} in many cities but there may not be any issue regarding level of SO₂ or NO_x.** Thus ambient air quality (AQI) has not been made as the guiding factor for formulating the categorization. On the other hand the area where ambient air quality is actually critical in terms of SO₂ or NO_x level may not be located in cities/ areas as specified, there is a fair possibility that these areas may fall under category C.
8. Due to paucity of implementation time, any new technology which is being implemented in category A shall be repeated in category B without seeing its performance in category A. Therefore, sufficient time shall be required for fine tuning the performance of FGD already in operation. However, there is not enough time in between timeline of category A and B.
9. As per MOEF&CC March 2021 notification, December,2024 has been decided as the target date for compliance of TPP under category C (**Table II**), which shall allow a time period of 3.5 years for completion of FGD work for around 150 GW installed thermal capacity. Indigenous manufacturing capacity of FGD may not be available to cater to such an immediate demand of over 150 GW. This may be a very tight timeline considering the ground situation at present. Out of the 170 GW capacity comprising of 448 units which is being monitored by CEA, so far about 2 GW capacity comprising of 6 units have commissioned FGD system. Out of 6 units, 4 units adopted DSI technology which takes less time compared to wet limestone based technology and wet lime based FGD system was inbuilt in remaining 2 units which is made operational only. **Orders placed by a major central power utility as early as in 2018 for 26 FGD units for a total capacity of 15 GW have on an average completed a time period of over 33 months, and some units have completed 40 months since the award, and not a single FGD has been commissioned so far. These orders have been fairly distributed among five different major Indian vendors. The detailed evaluation of the progress of above orders shall help in understanding the roadblocks and estimating the existing capability of the EPC contractors in the country. Based on which a realistic time schedule for installation of FGD for 180 GW installed capacity can be planned.**

10. About 150 GW plus capacity of TPPs is under Category C (exact number of units and capacity will be known only after completion of categorization work by A Task Force constituted for this purpose) and sufficient time will be required so that they can modify the order seeing the performance of FGD in category A. After commissioning of FGD system almost 2-3 years are required for stabilization. Thus minimum 6 years' time may be given from commissioning of TPP under Category A. **Therefore timeline for category C shall be 2028 (considering 3 years for stabilization and 3 year for implementation).** Further, there will be huge demand of FGD equipment in 2028 which may create crisis in the FGD market in India. Therefore, it is suggested that all these units timeline may be spread in four years i.e. 2028, 2029, 2033 & 2034 according to their distance from million plus city/ critically polluted area/ Non Attainment city. If distance is 11-40 km, 41-70 km, 71-100 km and more than 100 km, timeline will be 2028, 2029, 2033 and 2034 respectively. This will help in understanding the performance of the emission control equipment, their effectiveness and give a time for course of correction.

An unworkable time schedule is creating market scarcity leading to import, jacked up prices unnecessary burden on power utilities. **The project cost for wet lime based FGD technology is varying between rupees 0.39 crore to 1.10 crore per MW, which is quite high, around 2.8 times.** Graded action plan especially for category C will help in utilizing the resources in economic manner and will help in fine tuning the technology for local conditions. If the process of emission control is completed in 10-15 years' time frame, and considering thermal power plants located in critically polluted areas (category A & category B) in the first phase, it will help in developing indigenous manufacturing base, skilled manpower in the country and in turn shall take care of the local operating conditions and reduce the financial burden. A workable timeline based on realistic manufacturing capability of 30-40 GW per year can be adopted. Likewise, in other countries in the world, where SO₂ and NO_x emission standards for coal fired power plants were proposed more than two decades back giving them sufficient time for adoption of the new emission control technology. A larger timeline would be beneficial to salvage the present situation faced by the industry. It would also allow proper gestation of the new technology for its efficacy.

11. The environmental compensation (EC) max. per unit (Table III) of 20 paisa (Category A), 15paisa (Category B) and 10paisa (Category C) which shall be levied for noncompliance beyond assigned time limit, takes into the consideration that the impact of thermal power plant emissions is location specific. The merchant plants which are not operating in pass through regime may have the option, whether to go for the compliance or alternatively pay the EC. It can also happen, when generating station and the power procurer/user are owned by the same entity, the generating station may continue to operate without meeting the emission norms by paying a penalty in case it is lower than the cost of compliance.

Table III

Non-Compliant operation beyond the Timeline	Environmental Compensation (Rs. per Unit electricity generated)		
	Category A	Category B	Category C
0-180 days	0.10	0.07	0.05
181-365 days	0.15	0.10	0.075
366 days and beyond	0.20	0.15	0.10

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It may be noted that CERC (Terms and Conditions of Tariff) Regulations, 2019 has provision for additional capitalization for installation of additional equipment for meeting new emission norms/standards. However, these regulations do not include pass through of penalty levied on generating companies on account of the non – compliance of emission norms. Further, the responsibility of complying with environmental emission norms lies with the generating companies and the expenditure to be incurred on account of installation of additional emission control equipment is being passed on to beneficiaries. However, it is opined that the penalty levied by CPCB is unlikely to be allowed as pass through by the Appropriate Commission in tariff, as delay seems to be attributable to the generating company concerned. Therefore, the entire penalty is likely to be borne by TPP concerned. Environment compensation for a typical 500 MW unit operating at 60% PLF is calculated in table-IV. It can be seen from table that EC is increasing after six months and further increasing in 2nd year. Environment compensation is 13 cr. in 1st six months, 20 cr. in next six months and 33 cr. in 2nd year for thermal plants under category A.

Table-IV

Non- Compliant Operation beyond the timeline	Environment compensation					
	Category A		Category B		Category C	
	Rs./ Unit	Rs. Cr.*	Rs./ Unit	Rs. Cr.*	Rs./ Unit	Rs. Cr.*
0-180 days	0.1	13.0	0.07	9.1	0.05	6.5
181-365 days	0.15	20.0	0.1	13.3	0.075	10.0
One year delay total		32.9		22.4		16.5
366 days and beyond	0.2	52.6	0.15	39.4	0.1	26.3
Two year delay total		85.5		61.8		42.8

In Rs. Cr. for 366 days & beyond calculation is for one full yer (i.e. 365 days)

The amount 33 cr in 1st year and 52,6 cr in 2nd year onwards is quite high compared to the profit of a thermal power plant as EC will not be passed through in tariff instead may have to be borne by generating utilities.

Further, EC should not be made unending/perpetual. Instead it should be allowed for a limited period beyond which the plant may be asked to shut down. Otherwise the definite purpose of EC will be defeated.

It may be noted that CEA, representative of thermal generating utilities, equipment manufacturers and suppliers/ vendors were not consulted during preparation of new environment norms 2015 about status/ requirement of the basic infrastructure for meeting SO₂ norms by all TPP in one go which might be the main reason for missing the target 2017 or 2022. The kind of infrastructure required for 180000 MW thermal capacity (470 units) can easily be understood from Table-V where the requirement (in Metric Tonnes) of materials for a typical FGD system for a 2x500 MW TPS is estimated.

Even after submitting the ground reality, issue & challenges of FGD implementation, CEA's apprehension was undermined by not considering proposed graded action plan which may be the reason for missing target 2024 again. To achieve the huge target of installation of about 470 FGD systems, proper roadmap has to be prepared by ensuring availability of FGD technology, equipment, skilled man power, supply of FGD component and sufficient time for implementation. Imposition of environment

compensation without creating infrastructure will not serve any purpose. Instead, it may cause disruption of power supply in the country as more than 70% of country's energy demand is being met from thermal power plants.

Table-V

Sl. No.	Major Materials	Materials Requirement
i	Cement	25000
ii	Structural Steel	15000
iii	Reinforcement steel	5750-6000
iv	Stainless steel & plates	350-400
v	Aluminum	50-70
vi	Casting and Forgings	200
vii	Casting and Forgings special alloy / Duplex stainless steel	50
viii	Tube & Pipes	600-800
xi	BQ Plates	30
x	C276 clad/sheet for absorber	350-375
xi	Titanium Gr2 for ducting	300-350

12. Way forward

a. **There should be longer duration plan (up to 2035) for adopting the new emission norms (2015), especially for power plants falling under category C of the MoEF&CC notification (Table II) for the followings:**

- i. This will help in understanding the performance of the emission control equipment, their effectiveness and give a time for course correction.
- ii. There are different technologies available to control the flue gas emissions of thermal power plants and their suitability needs to be ascertained in the local conditions.
- iii. This will help in developing indigenous manufacturing facility,
- iv. Reducing import of equipment from foreign companies,
- v. Avoiding price escalation exorbitantly or market manipulation.

b. **A Task Force may be constituted comprising representative of MOP, MOEF&CC, NITI Aayog, CEA, CPCB, Generating Utilities/Manufacturers/Vendors for smooth implementation of new environment norms considering phased Manufacturing Program (PMP) of FGD equipment under Atma Nirbhar Bharat.**

1. Task Force should review the category or create separate category for controlling SO₂ emission from chimney.
2. Prepare a realistic timeline for FGD system implementation and then, environment compensation (EC) considering following:

- i. Availability constraint of FGD equipments.
- ii. Vendor's constraint.
- iii. Present manufacturing capabilities
- iv. Time to enhance indigenous production
- v. Time for manufacturing of 30% equipment indigenously (which is being imported presently) under PMP.
- vi. Target for zero or minimum import.
- vii. Stop price escalation / market manipulation due to huge gap in demand and supply of FGD equipment.
- viii. Impact of Covid-19 on supply chain of FGD equipment and ground reality of FGD implementation.
- ix. Least increase of electricity tariff thus least burden on common person.

3. **To study the SO₂-reduction against CO₂ increase in flue gas emission by FGD system. Accordingly exemption may be given to few units where SO₂ level in ambient air is very less compared to permissible limit.** Thus avoiding following by not implementing FGD system aimlessly:

- i. Increase of CO₂ emission by FGD system
- ii. Increase of water consumption by thermal plant
- iii. Increase of auxiliary consumption thus burning more coal means further increasing CO₂ emission.
- iv. Increase of limestone consumption means more mining, more transportation, thus more consumption of electricity and diesel. Therefore more coal burning and more dust pollution & CO₂ emission.
- v. Increase of transportation of Gypsum byproduct thus, further increasing CO₂ emission.
- vi. Issue of low grade Gypsum disposal as no buyer for the same
- vii. Increasing cost of electricity thus more burden on common person.



ATTESTED

Suresh Sadashiv Meshram
Advocate & Notary
Rani Durgawati Square, Nil
Complex, Flat No. A-5, 1st Floor,
Nagpur-17 Maharashtra



T.C



Gmail

Proof of Service

raghunath mahabal <adv.rbmahabal@gmail.com>

NGT OA 62/2021 (WZ) Kirshi Arogya Vs. MSPGCL: Next Date: 18/07/2024: SURREJOINDER BY R1

1 message

raghunath mahabal <adv.rbmahabal@gmail.com>

13 July 2024 at 14:14

To: litigation.life@gmail.com, cegenkoradi@mahagenco.in, ms@mpcb.gov.in, chiefsecretary@maharashtra.gov.in, secy-moef@nic.in, Rahul Garg <rahul.garg@mgklegal.com>, Aniruddha Kulkarni <aniruddha1488@gmail.com>, ritwickdutta@gmail.com, National Green Tribunal Pune <ngt-pune@gov.in>, "rahulchoudharyy@gmail.com" <rahulchoudharyy@gmail.com>, Maitreya Ghorpade <maitreya.ghorpade@gmail.com>

Cc: Raghunath Mahabal <mahabal60@gmail.com>, Adv Sachin S Gore 7350212877 <ssgore2005@gmail.com>, chemicaldivision660ktps <chemicaldivision660ktps@mahagenco.in>, supchemngp@mahagenco.in, edens <edens@mahagenco.in>

To: The Hon'ble Registrar, NGT WZ Pune

cc: All other Respondents as per above email IDs

We are pleased to circulate the enclosed documents.
These documents are also being uploaded to the NGT website, with payment of fees.

Regards

Dhananjay Chavan 7038383654= Raghunath Mahabal, Advocate +91-74-0011-6222 [adv.](mailto:adv.rbmahabal@gmail.com)rbmahabal@gmail.com =

B-202 Chandravijay, Phule Road, Mulund East, Mumbai-400081

| Adv. Sumedha Marathe | Adv. Ashlesha Gondhalekar | Adv. Antima Bazaz New Delhi |

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