

**F. No. 11/3/2018- HSMD**  
**Government of India**  
**Ministry of Environment, Forest & Climate Change**  
**(HSM Division)**

Indira Paryavaran Bhawan  
Jor Bag Road, Aliganj  
New Delhi - 110003

Date: 9<sup>th</sup> April, 2024

**OFFICE MEMORANDUM**

**Sub.: Minutes of the sixth meeting of 'Fly Ash Management and Utilization Mission' held on 31.01.2024 - reg.**

The undersigned is directed to refer the sixth meeting of 'Fly Ash Management and Utilization Mission' held on 31.01.2024 at 12:00 PM at Indira Paryavaran Bhawan, New Delhi to review the status of actions taken based on the decisions made by the Mission in the meeting held on 19.10.2023.

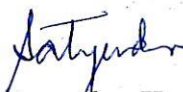
2. In view of the above, minutes of the sixth meeting of 'Fly Ash Management and Utilization Mission' is enclosed herewith.

3. It is requested to kindly furnish the action taken report to Central Pollution Control Board.

This issues with the approval of the Competent Authority.

**Encl.:** As stated

Yours sincerely,



**(Dr. Satyendra Kumar)**

Director

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**To:**

1. Secretary (Coal), Ministry of Coal, New Delhi
2. Secretary (Power), Ministry of Power, New Delhi
3. Secretary (Mines), Ministry of Mines, New Delhi
4. Chairman, Ministry of Railways (Railway Board), New Delhi
5. Chief Secretary, State of Uttar Pradesh
6. Chief Secretary, State of Madhya Pradesh

7. Chairman, CPCB, New Delhi
8. Additional Chief Secretary/Principal Secretary, Energy, Government of Uttar Pradesh
9. Additional Chief Secretary/Principal Secretary, Energy, Government of Madhya Pradesh
10. Additional Chief Secretary/Principal Secretary, Industries, Government of Uttar Pradesh
11. Additional Chief Secretary/Principal Secretary, Industries, Government of Madhya Pradesh
12. Director General, Directorate General of Mines Safety, Jharkhand
13. Additional Chief Secretary/Principal Secretary, Environment Department, Government of Madhya Pradesh
14. Additional Chief Secretary/Principal Secretary, Environment Department, Government of Uttar Pradesh
15. Chairman, UPPCB, Uttar Pradesh
16. Chairman, MPPCB, Madhya Pradesh
17. District Magistrate, Sonbhadra, U.P. (for stone crushers and all private mines)
18. District Magistrate, Singrauli, M.P. (for stone crushers and all private mines)
19. CMD, M/s NCL
20. CMD, M/s NTPC Limited
21. CMD, M/s Lanco Anpara Power Pvt. Ltd.
22. CMD, M/s Hindalco Industries Ltd.
23. CMD, M/s UPRVUNL
24. CMD, M/s Grasim Industries Limited, Chemical Division, Renukoot, Sonbhadra
25. CMD, M/s Birla Carbon India Pvt. Ltd., Renukoot, Sonbhadra
26. CMD, M/s Sasan Power Limited, Singrauli
27. CMD, M/s APMDC Ltd., Singrauli
28. Industries, Mines and Stone crushers concerned in Singrauli and Sonbhadra Region.

Copy to:-

1. PSO to Secretary (EF&CC)
2. PPS to AS(NPG)
3. Guard File

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**Minutes of the 6<sup>th</sup> meeting of Fly Ash Management and Utilization Mission held on 31.01.2024 at 12:00 PM**

The sixth meeting of 'Fly Ash Management and Utilization Mission' was convened on 31<sup>st</sup> January, 2024 at 12:00 PM to review the status of actions taken based on the recommendations/decisions made by the Mission in the meeting held on 19.10.2023. The list of participants is enclosed as Annexure.

2. At the outset, Secretary welcomed all the participants. Addl. Secretary, MoEF&CC briefed about the decisions made by the Mission in last meeting held on 19.10.2023.

3. A presentation was made by the Madhya Pradesh Pollution Control Board on progress of implementation of action plans and recommendations of Joint Committee in regard to control of air pollution due to transportation. The following details were presented:

- i. 05 Thermal Power Plants of capacity 12140 MW generated 158.08 LMT ash in Singrauli, Madhya Pradesh in FY 2022-23. Status of implementation of action plan for fly ash utilisation in the region were presented:

TPP name	Year 2021-22		Year 2022-23		Year 2023-24 (till Dec.)	
	Generatio n of ash (L MT)	Utilisatio n (%)	Generatio n of ash (L MT)	Utilisatio n (%)	Generatio n of ash (L MT)	Utilisatio n (%)
NTPC Vindhyach al Singrauli	82.38	53.05%	76.64	37.31%	51.18	56.66%
Sasan Power Limited	53.47	52.35%	45.99	109.5%	36.37	98.70%
Mahan Energen Limited	8.36	25.46%	9.08	100.2%	10.68	102.36%
Jaypee Nigrie Super TPP	15.79	89.55%	14.55	100.09%	13.83	75.38%

Vill. Nigrie, Singrauli						
Hindalco Industries Ltd, Mahan Aluminium, Singrauli	11.54	85.55%	11.82	79.4%	8.31	135.74%
<b>Total</b>	<b>171.54 LMT</b>	<b>56.96%</b>	<b>158.08 LMT</b>	<b>70%</b>	<b>120.36 LMT</b>	<b>81 %</b>

ii. Status of ash utilisation by 15 TPPs in Madhya Pradesh including TPPs in Singrauli:

<b>Year</b>	<b>Ash generation (LMT)</b>	<b>Ash utilisation (LMT)</b>	<b>Utilisation (%)</b>
FY 2021-22	285.12	176.99	62.07%
FY 2022-23	303.06	223.8	73.84%
FY 2023-24 (till Dec.)	204.4	172.53	87.41%

- iii. Out of 120.36 LMT ash utilisation by 05 TPPs in Singrauli in FY 2023-24 (till Dec.), 49.1 LMT (50%) ash was utilised for ash dyke raising and other activities, 19.07 LMT (19.5%) ash supplied to cement industries and 16.4 LMT (16.84%) ash utilised in road construction projects.
- iv. Out of 204.4 LMT ash generation by 15 TPPs in Singrauli region in FY 2023-24 (till Dec.), 25.94 LMT ash utilized for backfilling in Gorbi pit and low lying areas, 46.34 LMT supplied to roads & other construction projects and 49.47 LMT supplied to cement industries.
- v. 03 TPPs in M.P. have utilised less than 80% ash generated by them namely, NTPC Vindhyanchal (56.6%), Sanjay Gandhi TPS, Umaria (62.7%), Jaypee Nigrie STPP (75.3%) in FY 2023-24 (till Dec.).
- vi. NTPC Vindhyanchal is expected to utilise approximately 70 LMT (70%) available ash in road construction projects by March 2023. It was informed that a coordination Committee has been constituted under Director, NTPC to review the MoUs signed between TPPs and ash users for allocation of ash to road construction and other

related projects. CO2 sequestration plant is also installed to capture 20 tonnes of CO2 per day from the flue gas of the Power Plant to yield 10 tonnes/day of methanol through hydrogenation process.

- vii. Sanjay Gandhi TPS emphasized the challenges associated with the lifting of ash from the existing ash dyke (starter dyke only) with single lagoon. It was informed that the dyke was designed solely for ash disposal without any provision for lifting of ash and is surrounded by hilly terrain on three sides. MPPCB in this regard was requested to provide low-lying areas for disposal of current ash.
- viii. NCL operates 12 coal mines in Singrauli region, which produced 162 million tonnes of coal in FY 2022-23.
- ix. Action plans have been submitted by 05 Thermal Power Plants, 08 coal mines (NCL), 56 stone crushers and 08 railway sidings (03 ECR; 03 ECR; 02 NCL) for implementation of pollution control measures.
- x. The following activities form action plan of various industries in M.P. have been reported under progress:
  - a) M/s NTPC Vindhyanchal STPP, Singrauli (13 units)
    - FGD installation for SO2 in 12 units by June, 2025
    - NOX emission control measures
    - % increase in fly ash utilisation
    - Renovation of ESP and installation of Mechanized cleaning system by March, 2024.
  - b) M/s Sasan Power Limited
    - FGD installation for SO2 by Dec. 2026
    - Construction of pipeline for fly ash transportation by March 2024. Orders issued for procurement of equipment.
    - Sprinkling system in ash dyke
    - Submission of NEERI Report for breach of ash dyke
  - c) M/s Mahan Energen limited
    - FGD installation for SO2 by Dec., 2026

- Development work of railway siding. Railway's approval is pending.
  - Transportation by Merry go round. Forest clearance is pending.
- d) M/s Hindalco Industries Ltd.: Installation of FGD installation for SO<sub>2</sub> in Unit-1,2,3,4,5 by Dec. 2026 and construction of RCC road by Aug. 2024.
- e) Jaypee Nigrie STPP: Installation of FGD installation for SO<sub>2</sub> by Dec., 2026 and % increase in fly ash utilisation.
- f) Northern Coalfields Ltd., Singrauli: Submission of report on study conducted by CIMFR on backfilling of fly ash in OB in Nigahi Mine by March, 2024.
- g) NCL, Nigahi: Construction of additional 10 MTPA Coal Handling Plant (CHP) and CC roads by March, 2024.
- h) NCL, Jayant Project: Arrangements for truck mounted mist spray and fog forming sprinklers and installation of Continuous Effluent Quality Monitoring System (CEQMS).
- i) NCL, Block-B Project: Construction of 4.5 MT CHP and other roads by June 2024.
- j) NCL, Dudhichua Project: Construction of roads and RCC bunds. Proposal for construction of new ETP (30 KLD) is dropped. Existing ETP needs to be upgraded.
- k) NCL, Bina ext.: Construction of 9.5 MTPA CHP, ETP upgradation and Installation of CEQMS by March 2024
- l) APMDC Ltd.-Sulyari Open Cast Project: Construction of CHP by March, 2025 and approach roads (5.2 km) under progress.
- m) Sasan Power Limited (Moher & Moher Amlohri extension coal mine):
- As utilisation in OB dumps
  - Procurement of mist cannons for dust suppression
  - Rehabilitation and resettlement of affected people
- n) Jaiprakash Power Ventures Ltd., Amelia (North) Coal Mine: Ash utilisation in OB dump will be done as per CIMFR study.
- o) THDC India Ltd., Amelia Coal Block (new mine)
- Ash utilisation as per CIMFR study
  - Construction of CHP by November 2024
  - 10 KLD ETP installation

- Construction of railway sidings

p) East Central Railway, Spur III & X

- Fixed water sprinklers
- Green belt
- Work as per CPCB Guidelines

q) East Central Railway, Mahedaiya

- Fixed water sprinklers
- Green belt
- Work as per CPCB Guidelines
- Wind breaking wall
- Construction of approach road

r) West Central Railway, Gajra Bhara and Bargawan showed no substantial progress w.r.t. the following activities:

- Dust Protection walls
- Water sprinkling system or tankers
- Drainage facility
- A pucca circulating handling area
- All weather approach Road
- Green belt around coal siding area

- xi. NEERI was engaged to conduct a study on environmental damage caused due to fly ash breach in Sasan Mega Power Ltd. in year 2020. Environmental compensation of Rs. 75 crore was estimated. The report was further forwarded to IIT BHU for re-evaluation and is under review. The final report is yet to be submitted to MPPCB.
- xii. In order to complete the feasibility study at Nigahi operational mine, NCL requires 534 trips for ash transportation out of which 225 trips for fly ash have been completed so far. Due to the restrictions on fly ash transportation during the day, sufficient quantity could not be made available at the study area (10 trips as against 15 trips in a day).

- xiii. NCL, Dudhichuwa proposed to install a new ETP of capacity 30 KLD, however it was mentioned that the existing ETP is adequate with few modifications. It was informed that the request regarding the modification of existing ETP has been submitted. An Oversight Committee comprising officials from CPCB and MPPCB inspected the treatment plant and observed that the ETP was operating below capacity and outdated. It was recommended to upgrade the ETP with advanced treatment technologies. Expert agencies in this regard have been approached for modification of existing ETP.
- xiv. It was informed that APMDC Ltd. (Sulyari Open Cast Project) in Singrauli region is permitted to transport coal exclusively by road for the next 5 years and required to establish the railway transportation system within this timeframe. APMDC Ltd. yet to initiate the construction work.
- xv. Action plans have been submitted by 56 stone crushers. 48 stone crushers have installed Dust containment system, 41 installed wind breaking wall, 48 have arrangements for regular cleaning and wetting. 08 stones crushers are closed by Collector, Singrauli.
- xvi. MPPCB has issued following directions in compliance to recommendations of Joint Committee to control of pollution caused by ash transportation in accordance with Hon'ble NGT(PB) O.A. 862/2022 order dated 25.11.2022:
  - a. TPP/Coal mines vide letter dated 14.12.2023 were directed to use heavy duty cover such as 400 GSM & more thickness of adequate size by trucks/tippers transporting coal/fly ash.
  - b. TPP/Coal mines/ District administration/ Nagar Nigam Singrauli vide letter dated 14.12.2023 were directed to install PTZ CCTVs, lights and control rooms, impose penalty on transporters on violation, prepare traffic management plan, PUC certificate for vehicle used for transportation of ash and coal.
  - c. TPP/Coal mines/ District administration/ Nagar Nigam Singrauli vide letter dated 14.12.2023 were directed to procure mechanically designed vehicle for wet transportation of ash, follow CPCB guidelines for disposal of fly ash, deploy road sweeping machine.
  - d. District Collector was requested to prepare action plan for roads for transportation of coal/ fly ash on 14.12.2023.
  - e. NHAI to complete the pending work of NH-39. Work is under progress.



xvii. The Oversight Committee comprising officials of CPCB, MPPCB and District Magistrate, Singrauli inspected thermal power plants, coal mines and railway sidings for verification of compliances of directions given by Hon'ble NGT vide its order dated 18.02.2022 in the August 2023 and January 2024 and submitted the report for 3<sup>rd</sup> and 4<sup>th</sup> quarter, respectively. Recommendations are as below:

- a) The Committee has imposed environmental compensation on various TPPs, coal mines and railway sidings for non-compliances. Hon'ble Supreme Court has referred the case to the Hon'ble NGT for re-consideration.
- b) West Central Railway and East Central Railway to comply non-compliances reported by Oversight Committee and SPCB and obtain CTO.
- c) NCL Jayant to ensure proper maintenance of O&G trap and coal siding spur-I & II.
- d) NCL Dudhichua to expedite work of RCC bund, stop effluent discharge to Balia nalla and review technical feasibility of ETP design.
- e) NCL Nigahi to ensure that no overburden and effluent shall meet Mundwani dam.
- f) M/s Sasan TPP to review technical design and feasibility of overflow logoon and submit environmental damage assessment report prepared by NEERI and ensure cleaning of ash from where drain meets to river.
- g) M/s Trimula Industries Ltd. to ensure effective operation of air pollution control devices, conveyor belt and OCEMS, cleaning of iron fines and road cleaning.

4. A presentation was made by Uttar Pradesh Pollution Control Board on progress of implementation of action plans and recommendations of Joint Committee in regard to control of air pollution due to transportation. The following details were presented:

- i. 06 TPPs in Sonbhadra namely, M/s UPRVUNL, Anpara TPS, M/s UPRVUNL, Obra TPS, M/s NTPC Shaktinagar TPS, M/s NTPC Rihand Nagar, M/s Hindalco Industries Ltd. (Renusagar) and M/s Lanco Anpara Power Ltd have submitted 5-year action plan for 100% utilisation of ash.
- ii. 06 TPPs of capacity 10670 MW produced 56.8 LMT ash in FY 2022-23. Status of fly ash utilization by 06 TPPs in Sonbhadra, U.P. were reported as below:

Financial Year	Total quantity of ash generated (LMT)	Total quantity of ash utilised (LMT)	% ash utilisation
2021-22	151.1	57.9	38.3%

2022-23	161.9	56.8	35.08%
2023-24 (till Dec)	121.1	67.4	55.6%

- iii. 05 TPPs in Sonbhadra region have low ash utilisation level namely, Lanco Anpara (15.8%), Anpara, UPRVUNL (40.55%), NTPC Shaktinagar (42.4%), Rihandnagar (70.02%) and Obra (78.3%).
- iv. Out of 121.1 LMT ash generation in FY 2023-24 (till Dec.), 34.68 LMT was utilised in construction of roads and highways, 25.2 LMT was filled in low lying areas, 10.42 LMT ash supplied to cement industries and 10.2 LMT supplied to brick manufacturers.
- v. Sonbhadra regions have 05 NCL coal mines and had produced total 49 MTPA coal in FY 2022-23.
- vi. Action plans have been submitted by 06 TPPs, 03 industries, 05 coal mines (NCL), and 313 stone crushers for implementation of air pollution control measures. The following activities form action plan of various industries in U.P. have been reported under progress:
  - a) M/s NTPC Shaktinagar: FGD installation (by Dec, 2026) and expansion of Ash Water Recirculation System (AWRS) capacity.
  - b) M/s NTPC Rihandnagar: Installation of FGD, Dry Ash Extraction System (DAES) in stage I & II and cold fog dust is in progress.
  - c) M/s UPRVUNL (Anpara A, B & D TPS)
    - ESP installation
    - FGD installation at A, B & D TPS
    - Construction of Bio-methanation plant
  - d) M/s Lanco Anpara and M/s Hindalco Industries (Power Division), Renuagar yet to install FGD.
  - e) M/s UPRVUNL (Obra): FGD installation and removal of old deposited ash in progress.
  - f) NCL, Bina Project
    - Construction of new 9.5 MTPA CHP by March, 2024
    - Plantation along Auri-Shaktinagar highway

- ETP & STP upgradation
- Installation of 01 additional Continuous Ambient Air Quality Monitoring Stations (CAAQMS)

g) NCL, Dudhichuwa Project

- Construction of new 10 MTPA CHP by March, 2024
- 02 RCC bunds to prevent discharge to balia nala
- Construction of Siltation pond
- Tyre washing system/mechanism of Coal transporting vehicles

h) NCL, Kakri Project: Plantation along roadside and tyre washing system/mechanism of Coal transporting vehicles on road.

i) NCL, Khadia Project

- ETP upgradation
- Tyre washing system/mechanism of Coal transporting vehicles
- Construction of railway sidings

j) NCL, Krishnashila Project: Construction of sedimentation pond and green belt.

k) Aluminium Smelter: Hindalco Industries

- Equipment for wastes generated
- Completion of study on mixing of red mud with fly ash
- Submission of report on feasibility study awarded to IIFM Bhopal

l) M/s Grasim Industries and M/s Birla Carbon have initiated Miyawaki plantation outside the plant premises.

m) Out of 313 stone crushers, 35 stone crushers have yet to install air pollution control system. Show cause notices were issued to 18 stone crusher units and closure directions to 17 Nos. of stone crusher under Air Act for non-compliance.

vii. Status of coal transportation by NCL via different modes in FY 2023-24 (till Dec) was presented as below:

S. No.	NCL projects	Mode of coal transportation %		
		Rail	Road	Ropeway
1.	NCL Dudhichua	84.4	15.6	-
2.	NCL Bina	71.2	28.73	-
3.	NCL Khadia	75.2	24.8	-
4.	NCI Krishnashila	50.51	14.9	34.5
5.	NCI Kakri	50.4	49.5	-

- viii. Coal mines in Sonbhadra region have adopted air pollution control measures such as use of tarpaulin covered trucks, installed CCTV cameras, covered conveyer belt, water sprinkling system, truck-mounted mist gun and mobile water sprinkling tankers.
- ix. MoU was signed on 15.07.2023 by NCL and Anpara for backfilling of ash in Gorbi Pit no. 3. Consent granted by NCL for ash filling. 13 Million cubic meters of void (filled with acidic water) will be made available by NCL. Regulatory permissions are being sought by UPRVUNL. Ash filling is yet to be started.
- x. Lanco Anpara has placed orders for 5 lakh tonnes, 3 MoUs and tenders are in pipeline. It was informed that 60% ash utilisation will be achieved by March, 2024.
- xi. Lanco Anpara has received request from UPEDA on 19<sup>th</sup> January, 2024 for supply of ash for road construction project for which signing of MoU is in final stage.
- xii. Obra TPS has stabilized and reclaimed legacy ash through plantation/ green cover. Additionally, an ash dyke has been constructed for disposal of ash.
- xiii. M/s UPRVUNL, Obra TPP has completely desilted 58000 CuM deposited ash from Renu/ Rihand river and was disposed in low lying area in Obra Sector 2 & 3. Soil stabilization has been completed and Miyawaki afforestation has been initiated.
- xiv. M/s Anpara TPP has removed 206540.9 CuM visible ash from Rihand reservoir so far and disposed off in low lying area. Soil stabilization is completed and plantation is under progress.
- xv. Consent-to-Operate granted to 11 units for disposal of ash in low-lying areas. 3856784.05 MT ash have been disposed so far.
- xvi. In the year 2023-24 (till January), 19 Million Tonnes of coal (17% of total coal production). 02 CHP are under construction and expected to be commissioned by next

year, which will enhance the rail transportation to 118 MTPA from the present 85 MTPA. Ministry of Coal has targeted to achieve mechanization and coal transportation by rail to 95% by year 2026-27.

- xvii. It was discussed that coal mines have sought amendments in Environmental Clearance for transporting coal by road for the period beyond year 2026-27.
- xviii. Central Laboratory, Bhopal to complete the study on mixing of red mud with fly ash in Gorbi mine. Hindalco Industries requested Indian Institute of Forest Management, Bhopal regarding feasibility study. Red mud pilot study may be taken up separately by MPPCB as it may lead to the leaching of heavy metals embedded in the red mud besides treating the acidic water of mine voids.
- xix. UPPCB has forwarded the list of available abandoned mines in Sonbhadra (06 mines) and Jhansi (04 mines) shared by Director, Geology and Mining Department, Govt. of U.P. to Thermal Power Plants on 16.10.2023, for backfilling activities.
- xx. CPCB estimated the combined CEPI score of 62.59 for Sonbhadra and Singrauli region in Dec. 2017 and March 2018. Further, CPCB evaluated CEPI Score for Sonbhadra region in May 2022 and was 67.88. Subsequently, UPPCB conducted re-assessment of CEPI score in August, 2023 and is at 49.2. Further, MPPCB assessed the CEPI score in August, 2023 for Singrauli region which is at 45.17. CPCB will assess CEPI score for Sonbhadra and Singrauli region in April, 2024.
- xxi. Air pollution control measure such as storage of ash under covered shed, ash transportation by closed tankers, silos for dry ash storage, facility for washing of wheels of transportation trucks, keeping pond ash in moist condition (about 15%) for transportation and loading of ash on trucks/bulkers through telescopic chutes have been undertaken by Thermal Power Plants.
- xxii. To control fugitive dust emission, measures such as transportation of coal in tarpaulin covered trucks, installation of CCTV cameras, covered conveyer belt, water sprinkling system, arrangements for truck-mounted mist gun and mobile water sprinkler tankers have been adopted by coal mines in Sonbhadra region.
- xxiii. In Sonbhadra region, ambient air quality was analysed to assess the impact of implementation measures by various TPPs. PM<sub>10</sub> level has improved to 146.3 µg/m<sup>3</sup> in 2023-24 (till Dec.) from 167.3 µg/m<sup>3</sup> in 2022-23. AQI improved to 135 in 2023-24 (till Dec.) as compared to 141 in 2022-23.
- xxiv. NEERI has conducted field visit on 27.12.2023 to determine carrying capacity of Stone crusher area Dala, Billi and Obra region. Report is awaited.

- xxv. Environmental compensation of Rs. 13.473 cr. were imposed on 8 TPPs (Lanco Anpara, NTPC Rihandnagar, Shaktinagar, Anpara TPs, Obra TPS, Hindalco Ind. Aluminium re-processing unit, Hindalco-Al Division and Birla Carbon). Rs. 0.516 cr. have been deposited by 04 TPPs. Closure directions issued to 17 stone crushers out of 313 stone crushers.
- xxvi. Environmental compensation of Rs. 9.954 crores imposed on 05 NCL projects (Bina, Duddhichua, Kakri, Khadia, Krishnshila). Amount is yet to be deposited. NCL Bina project deposited Rs. 2 crores for illegal dumping of coal at railway siding at Krishnshila as per Supreme Court and NGT directions.
- xxvii. UPPCB vide letter dated 18.10.2023, 13.12.2023 & 09.1.2024 has issued directions in compliance to recommendations of Joint Committee to control of pollution caused by ash transportation in accordance with Hon'ble NGT(PB) O.A. 862/2022 order dated 25.11.2022. Status was presented as below:
- a) 20% moisture content of ash is being maintained for transportation
  - b) Tyre cleaning mechanism before ash transportation is under construction.
  - c) Air pollution control measures such as transportation of ash through bunkers/ tarpaulin covered trucks, installation of water sprinkling system, development of green belt at ash dykes and water sprinkling on roads is undertaken by all TPPs. Submission of ash dyke report annually by TPPs.
  - d) TPPs have installed PTZ camera at exit of the ash transportation point.
  - e) NCL Coal mines have installed truck mounted fog cannons machines, fixed fog cannon, tyre washing mechanism (in 1 out of 4 coal mines), mechanical road sweeping machines, fixed water sprinkling mechanism, road sweeping machines and water sprinkling activities on mine road.
- xxviii. A workshop to promote ash utilisation in manufacturing of fly ash bricks and other was held on 7.10.2023 with fly ash brick manufacturing units, thermal power plants, officials of district administrative, and representatives from the State Pollution Control Board (SPCB), at UPRVUNL Obra, Sonbhadra.
5. A presentation was made by Ministry of Power/ CEA on status of implementation of the provisions of Ash Utilization Notification, 2021 to achieve 100% ash utilisation by TPPs

- i. A joint meeting under the chairmanship of Member (Thermal), CEA with the officials of CPCB and NTPC was held on 2.01.2024 regarding to review the implementation of provisions of Ash Utilisation Notification, 2021 and recommended the following:
    - a) CPCB to engage professional IT solutions agency to modify the portal w.r.t. essentials like current and legacy ash targets and their present utilisation.
    - b) All SPCBs (enforcement agencies under the Notification) to be requested to direct all TPPs within their respective jurisdictions, to upload the ash ponds coordinates for development of GIS layer for geo-tagging of TPPs. MoM/MoC may be requested for sharing mine coordinates for geo-tagging of mine voids.
  - ii. With respect to geo-tagging of TPPs, 50 TPPs have uploaded ash ponds coordinates as on date. TPPs have reported constraints in retrieving coordinates after uploading on CPCB's coal ash portal. CPCB has been provided with regular updates on this issue.
  - iii. Guidelines for procedure for annual certification of the ash pond or dyke has been published by CEA and CPCB on 30<sup>th</sup> June, 2023 and is available at CPCB and CEA's websites.
  - iv. CEA has forwarded the list of 505 TPPs (194 grid connected plants and 311 captive power plants) to CPCB for their updation and registration on Coal Ash Portal.
  - v. A meeting was convened with NHAI and NTPC to resolve the issues related to supply of ash by TPPs for road construction projects.
6. A presentation was made by Ministry of Coal on finalisation of SOPs for backfilling of ash in mine voids and mixing of ash in overburden dumps by Thermal Power Plants:
- i. SOPs have been drafted and submitted to the Committee chaired by Additional Secretary (Coal) for approval. Draft SOPs have been circulated to the concerned stakeholders and will be finalised within one month.
  - ii. CIL allocates its mine voids in accordance with the 'Guidelines of CIL offering mine out voids for fly ash disposal' as approved on 15.04.2020. No ash backfilling activities are currently being undertaken in the open-cast and underground mines of SCCL. SECL has prepared SOP for signing of MOU between identified mines and TPPS in line with CIL guidelines.
  - iii. It was informed that 60 L CuM out of 1788 L CuM voids of allotted mines have been filled with ash, so far. Steps to identify mines closing in next 3-5 years have been

finalized and will present before the Committee constituted under the Chairmanship of Additional Secretary (Coal). Thermal power plants were requested to identify mines in close proximity to their locations.

- iv. M/o Coal has identified various underground mines voids for filling bottom ash. The list will be circulated to concerned stakeholders.
  - v. The Central Level Working Group on 21.09.2023 allocated the following mines to TPPs-
    - a) CIL–MCL Jagannath OCP (Quarry-VII) allocated to Jindal India Thermal Power Limited
    - b) CIL –CCL Dakra- Bukbukamine allocated to Hindalco Industries Ltd.
    - c) CIL –CCL New Selected Dhoru UG mine allocated to DVC (CTPS)
    - d) Krishnashila, NCL allocated to NTPC-Singrauli
    - e) CIL –NCL Gorbi Pit 1 & 2 allocated to NTPC (Singrauli TPS also)
  - ii. MPPGCL informed that the issue regarding allocation of Sarni UG of WCL to Satpura TPS was discussed in the 4<sup>th</sup> meeting of Central Level Working group on 21.09.2023. The allocation request is still pending with WCL for approval. WCL is also not in agreement with the MoU.
7. NCL presented the status on feasibility study conducted at Nigahi mine and action plan and status of mine closure in terms of reclamation and restoration of biodiversity for the abandoned mines:
- i. CIMFR to complete the feasibility study conducted at Nigahi operational mine by March 2024. The study aims to identify the factors based on which the mixing of percentage of fly ash with overburden will be determined.
  - ii. Central Level working group allocated abandoned pits of Gorbi mine to the following TPPs:

<b>Gorbi Mine void</b>	<b>Area of pit (Ha)</b>	<b>Quantity of ash that can be accommodated (Million tonne)</b>	<b>Allotted to Power plant</b>	<b>Quantity of ash filled</b>
Pit 1	40	25	NTPC Vindhyanchal	1.853 Million tonne



			NTPC Singrauli	MoU in process
Pit 2	8	7.5	NTPC Vindhyanchal	MoU in process
			NTPC Singrauli	MoU in process
Pit 3	26	16.25	UPRUVNL- Anapra TPS	Mou signed on 15.7.2023.  Ash filling yet to be started.

- iii. The post-mine closure plan, inter alia, encompasses the biological reclamation of the three Gorbi Pit-1, Pit-2, & Pit-3 (74 ha) after filling it with ash up to ground level.
  - iv. Final mine closure plan envisages activities such as ambient air quality and water quality monitoring (during and post backfilling), dismantling of infrastructure, construction of concrete wall with masonry pillars around backfilled pits (Length: 17,000 m), garland drain, sign boards, sprinkling system, vegetation of external OB dump degraded slope over 29.4 ha, landscaping and plantation over 164.4 ha, mine void completely filled with fly ash (devoid of water body), achieve convex shaped area by covering it with soil layer to avoid water accumulation after backfilling.
  - v. It was informed that in line with Ministry of Coal's Policy Guidelines for use of land acquired under Coal Bearing Areas (Acquisition & Development) Act, 1957, NCL has imposed lease rent (approximately Rs. 1 crore per annum) on the land area to be used for development of infrastructure required for backfilling activities which is causing delay in finalising the MoUs.
  - vi. Anpara TPS, UPRUVNL has sought permission from District Administration in Singrauli, M.P. regarding transportation of fly ash by road to the allotted Pit-3 of Gorbi mine for backfilling activities.
8. CPCB presented the status of actions taken on various decisions of the Mission:
- i. Status of actions taken on decisions of 1st, 2nd, 3rd and 4th meetings of the Mission obtained from the stakeholders are as follows:

Meeting	No. of Decisions	Compiled	Regular activities	Time-bound / Yet to comply*
1 <sup>st</sup>	11	7	3	1

2 <sup>nd</sup>	18	12	3	3
3 <sup>rd</sup>	23	12	4	7
4 <sup>th</sup>	21	8	8	5

\* 08 decisions are time bound/ yet to comply and are related to health risk assessment studies, feasibility study for OB, pilot study for red mud, desiltation, reclamation and stabilization of ash by UPRVUNL plants and its verification, review of EC condition of non-coal mines, cost-benefit analysis of compliance / non-compliance by TPPs, GIS mapping of coal mine pits, SOP for non-coal mines, real-time data of availability of ash across all thermal power plants across the country, assessment of legacy ash in respect of all power plants across the country, online clearance for use of ash in low lying areas for approved projects only and making the compliance and reporting of all provisions relating to Ash Utilisation Notification online for all coal/lignite based thermal power plants across the country.

- ii. CPCB vide letter dated 27.12.2023 to MPPCB and UPPCB has sought details regarding monitoring/ assessment of CEPI score in and around TPPs, coal mines and stone crushers and status of compilation/ analysis of data done to assess the progress made in respect of control of air pollution.
- iii. CPCB has commenced the re-validation process of CEPI score assessed by MPPCB and UPPCB for Singrauli and Sonbhadra region, respectively in August 2023. Tender has been floated for re-validation, and will be made available by the end of February, 2024. The bid in this regard was uploaded on 29.01.2024, and will be finalized on 09.02.2023.
- iv. CPCB has published 'Environmental Guidelines for Stone Crushing Units' in July, 2023 to prevent fugitive dust emission and uploaded on CPCB's website. The guidelines were circulated to all the SPCBs/ PCCs.
- v. Jadavpur University has submitted the study proposal on value-added utilization of bottom ash generated from coal fired thermal power plants by developing innovative technologies for its use in concrete production as partial replacement of sand on 28.04.2023. CPCB conducted a meeting with JU on 8.11.2023 and also discussed the matter with the relevant department of NTPC. A short Proposal on testing bottom ash of 10 TPPs was submitted on 5.1.2024, and revised proposal on 16.1.2024. CPCB on 30.1.2024 recommended to provide financial assistance of Rs. 20 lakhs for the study. The study will be completed within nine months.

9. Chairman, Railway Board was requested to nominate an officer as a member of the Mission on 30.11.2023. MoEF&CC vide letter dated 17.01.2024 forwarded the recommendations of Mission w.r.t. air pollution control measures at ECR and WCR railway sidings.

10. Request of Hindalco TPP regarding allocation of abandoned stone quarry in Dala region was forwarded to PS, Dept. of Geology and Mining and Chairman, Committee for identification of mines on 21.12.2023.

11. Ministry of Mines vide letter dated 8.11.2023 has stated that Ministry of Labour & Employment may be requested to provide inputs regarding exemption from permission of DGMS for backfilling in mine voids and mixing of ash in OB dumps and preparation of SOP for carrying out feasibility studies in respect of all mines in view of safety issues in non-coal mines.

12. The following **recommendations were made during the meeting:**

- i. A streamlined procedure may be devised to enable potential users of ash in reaching out to Thermal Power Plants to acquire ash for various construction projects or other eco-friendly purposes. NTPC and thermal power plants to upload the availability of ash for utilisation by various agencies and prospective user agencies on the centralized portal on real time basis, to facilitate relevant stakeholders or ash users to reach out to the respective Thermal Power Plants (TPPs) for utilization in various eco-friendly purposes. A feature could be integrated in the portal allowing potential ash users to submit their applications to TPPs. Demand and supply module may be integrated into the portal.

**(Action: Ministry of Power, NTPC and CPCB)**

- ii. Carry out continuous evaluation of implementation of action plans by TPPs, industries, coal mines and stone crushers in Singrauli and Sonbhadra region. Compliance reports of TPPs that have effectively utilized ash above 80% in the past two years may be shared with other TPPs or Industries.

**(Action: Ministry of Power, Ministry of Coal, UPPCB and MPPCB)**

- iii. CIMFR to complete the feasibility study to assess the area/volume available for ash backfilling and mixing of ash in with overburden of NCL mines at Nigahi and Amelia (North) coal mines within given timeframe. Findings of feasibility study of Nigahi operational mine to be presented in the next meeting of the Mission.

**(Action: Ministry of Coal, NCL & Jaiprakash Power Ventures Ltd.)**

- iv. Allocation of Sarni UG mine voids of M/s WCL to Satpura TPS, M.P. Power Generation Company Ltd. for backfilling of ash may be made at the earliest.

**(Action: Ministry of Coal & WCL)**

- v. Neutralization of acidic mine water may be carried out, and subsequent reclamation may be undertaken through development of green cover/ plantations in abandoned mine voids to foster biodiversity restoration.

**(Action: Ministry of Coal and NCL)**

- vi. Ministry of Coal to review the policy/ guidelines regarding charging lease rent from TPPs for development of facilities/infrastructure required for the purpose of ash backfilling, water treatment and connected activities in the allocated mine voids/coal bearing areas.

**(Action: Ministry of Coal)**

- vii. A review to be undertaken with coal mines for early operationalisation of Coal Handling Plants and achieving maximum transportation of coal by rail as per the timelines prescribed by M/o Coal vis-à-vis timelines obtained through amendments of Environmental Clearances of coal mines.

**(Action: Ministry of Coal, NCL, Coal Mines & Railway Board)**

- viii. Draft SOPs prepared by M/o Coal for allocation of mines, signing of MoU and feasibility studies for mixing of ash with OB/backfilling of ash in o/c & u/g mines, to be shared with SPCBs and TPPs for their inputs for making it practical for implementation. A consultation meeting to be convened with all concerned stakeholders to finalize the draft SOPs. Following finalization of SOPs, the Ministry of Coal and the Ministry of Power may jointly organize a program to disseminate them to Thermal Power Plants (TPPs) and State Pollution Control Boards (SPCBs) and all other stakeholders. Additionally, the application process for allocation of mine voids to TPPs for backfilling activities may be streamlined by making the application as well as availability of mine voids online on the centralized portal. The progress to be presented in the next meeting.

**(Action: Ministry of Coal and Ministry of Mines)**

- ix. Details of specific air pollution control measures to be taken by Railway Board at railway sidings to be shared for communication to Railway board to by MoEFCC.

**(Action: MPPCB, UPPCB and MoEF&CC)**

- x. Secretary, Dept. of Power, UP to be communicated regarding the low status of status of utilisation of ash by UPRVUNL for reviewing situation to increase the utilisation levels in accordance with Ash Utilisation Notification, 2021.

**(Action: MoEF&CC)**

- xi. Re-validation of CEPI score of Singrauli (45.17) and Sonbhadra region (49.2) as estimated by MPPCB and UPPCB in August 2023 to be completed by April, 2024.

**(Action: CPCB)**

- xii. Assessment of CEPI score in Singrauli and Sonbhadra region is to be done twice in a year i.e. pre-monsoon (April-May) and post-monsoon season (December-February).

**(Action: MPPCB and UPPCB)**

- xiii. Examine environmental damage assessment reports submitted by NEERI and IIT BHU, and evaluate the environmental compensation & liability for the damage caused by the ash dyke breach and necessary safeguards to be taken for restoration of environment. Action taken report to be shared with MoEF&CC and CPCB.

**(Action: MPPCB)**

- xiv. Progress of implementation of action plans, along with timelines in respect of ash utilization and control of pollution may be updated by all Thermal Power Plants, stone crushers and coal mines. A meeting may be convened with the TPPs regarding ash utilisation in various purposes to show best practices and solutions about how several other TPPs are able to achieve 100% utilisation. Status in this regard may be presented in the next meeting.

**(Action: UPPCB and MPPCB)**

- xv. Estimation of environmental compensation in line with Ash Utilisation Notification, 2021 for non-compliance of targeted ash utilisation or low utilisation of ash by TPPs, and other Industries in Singrauli and Sonbhadra region. Action taken report may be shared.

**(Action: CPCB, UPPCB and MPPCB)**

- xvi. Action plans submitted by thermal power plants, industries, stone crushers, coal mines and railway sidings in regard to ash utilisation and control of air pollution to be evaluated and compared against Environmental Clearance (EC) conditions and

Consent to Operate (CTO) requirements, and carry out verification of implementation of these action plans. Compliance status to be presented in next meeting of the Mission.

**(Action: UPPCB, MPPCB and CPCB)**

- xvii. Third-party audit/evaluation for verification of implementation of action plans of TPPs, industries, stone crushers, coal mines and railway sidings in Singrauli and Sonbhadra region may be undertaken by technical institution/ agencies for implementation of action plan as well as compliance EC and CTO conditions. CPCB may create an institutional system for third-party verification of environmental compliances with use of EC funds available with SPCBs.

**(Action: CPCB, MPPCB & UPPCB)**

- xviii. Concerns regarding implementation of action plans by Eastern Central Railway (Spur III & X and Mahedaiya) & West Central Railway (Gajra Bahra and Bargawan) and construction of railway sidings at TPPs, industries and coal mines for coal and ash transportation by Thermal Power Plants (TPPs), industries, and coal mines in the Singrauli and Sonbhadra region may be addressed and compiled. Report in this regard may be shared with CPCB and MoEF&CC.

**(Action: MPPCB and UPPCB)**

- xix. Inter-state transportation of ash may be permitted for utilization of ash in the specified eco-friendly purposes along with safeguards for pollution control and mitigation.

**(Action: Env. Dept., Govt. of UP and M.P.)**

- xx. Notices to be issued for the TPPs & industries (Jaypee Nigrie, Mahan Energen, APMDC & THDC, etc) who are not present during meeting of the Mission.

**(Action: MoEFCC)**

- xxi. Contracts for supply of ash to users of road construction projects to be finalised by March, 2024 for utilisation of ash from NTPC Vindhyachal and other TPPs of NTPC.

**(Action: NTPC and Ministry of Power)**

- xxii. A solution to evacuation of the current ash stored temporarily in the ash pond is to be found out for achieving 100% ash utilisation, in line with the prescribed timelines in the Ash Utilisation Notification, 2021.

**(Action: MPPGCL)**

- xxiii. Submission of environmental damage assessment reports prepared by NEERI in regard to ash dyke breach, to MPPCB within 15 days and laying of pipeline for transportation of ash from TPP to mine void by March, 2024.

**(Action: M/s Sasan Power Ltd.)**

- xxiv. A notice to be issued for not initiation of construction of railway sidings, in order to complete the construction and ensure coal transportation by rail within the permitted time of 5 years, stipulated timeframe.

**(Action: MPPCB & APMDC Ltd.-Suliyari Open Cast Project)**

- xxv. Enforcement of 'Environmental Guidelines for Stone Crushing Units' published by CPCB in July 2023, to curb fugitive dust emissions and control of air pollution. SPCBs to prepare a report outlining the applicability of guidelines based on capacity and implementation the said guidelines including emission level in and around stone crushing units pre and post implementation. Status in this regard to be presented in the next meeting.

**(Action: UPPCB, MPPCB & All stone crushers in Singrauli and Sonbhadra region)**

- xxvi. Submission of action plan indicating timelines for completion of activities in regard to ash utilisation and air pollution control measures. TPPs to plan utilisation in eco-friendly purposes and utilisation in mine voids and low lying areas to be the last resort after exhausting all other eco-friendly purposes.

**(Action: All TPPs and Coal mines in Singrauli and Sobhadra)**

- xxvii. Initiation of backfilling of ash in allotted mine void of Gorbi Pit no. 3 by Anpara TPS, UPRVUNL. Status may be shared with UPPCB and CPCB.

**(Action: UPPCB, UPRVUNL & Anpara TPS)**

- xxviii. Finalisation of MoU with UPEDA for supply of ash for road construction projects.

**(Action: M/s Lanco Anpara and UPPCB)**

- xxix. All the pending/ ongoing activities in respect of implementation of decisions made during 1st, 2nd, 3<sup>rd</sup>, 4th and 5<sup>th</sup> meeting of the Mission shall be undertaken and action taken report shall be furnished. Progress to be updated on the website on monthly

basis. Necessary formats may be put up on the website to enable all stakeholders to upload the progress online. Login and passwords for all stakeholders to be generated immediately.

**(Action: Concerned Ministry/ CPCB/ State Govts./ SPCBs/ Organisation)**

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**List of Participants**

1. Smt. Leena Nandan, Secretary, EF&CC- Chairperson
2. Shri Tanmay Kumar, Chairman, CPCB
3. Shri Naresh Pal Gangwar, Additional Secretary, MoEFCC
4. Shri Anandji Prasad, Advisor (Project), MoC
5. Shri Satyendra Kumar, Director, MoEF&CC
6. Shri Abhishek Singh, DEE/ Mining, MoC
7. H.K. Sharma, Director (Technology), MPPCB
8. R.K. Gupta, S.E., MPPCB
9. Shri Sanjeev Kumar Singh, MS, UPPCB
10. Shri Umesh Kumar Gupta, RO, Sonbhadra, UPPCB
11. Shri Nazimuddin, Scientist F, CPCB
12. Shri N. Subrahmanyam, Scientist D, MoEFCC
13. Shri Mohammed Niyazi, Dir. (S&T), DGMS
14. Shri Satish Kumar, Director (Thermal), MoP
15. Shri Ajay Jha, Director/ EnHM, Railway Board
16. Shri Gaurav Sharma, Director ME/EnHM, Railway Board
17. Shri Amit Kumar, Director, CEA
18. Shri Aman Khare, Dy. Director, CEA
19. Shri Deepak Kumar Raghuvanshi, Dy. Director, CEA
20. Shri Shubham Pachauri, Dy. Director, CEA
21. Shri Praveen Gupta, Member (Thermal), CEA
22. Shri D.K. Sharan, AE, CD-2, Gahziabad, UPPWD
23. Shri Ranjeet Nirmal, District Mining Officer, Directorate of Geology and Mining, GoUP.
24. Shri Gaurav Gahlot, Scientist C, CPCB
25. Shri S.K. Takhele, ED (SSEA), NTPC
26. Dr. Vijay Prakash, ED (Env.), NTPC

27. Shri G., Rajashekar, GM (AMG), NTPC
28. Shri Ashwani Tyagi, DGM (Ash Mgt.), NTPC
29. Shri A.K. Samaiyar, ED, NTPC
30. Shri Sanjeev Kumar, GM (Env. & Forest), NCL
31. Shri Rajeev Sharma, AE, RO Gwalior, MPIDC
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35. Prabhat Yadav, Manager (Civil), UPSIDA
36. Shri Abhishek Pal, Manager (Civil), GNIDA
37. Shri Abhishek Singh, Manager (Civil), GNIDA
38. Shri S.K. Dutta, Director (Project), UPRVUNL
39. Shri Anand Kumar, Chief Engineer, UPRVUNL
40. Shri Ravikant Raut, Chief Chemist, MPPGCL
41. Shri N.B. Soni, Executive Engineer (F.A.V.), Sarni STPS, MPPGCL
42. Shri Narendra Malgaye, Executive Engineer, SSTPP Mundi, MPPGCL
43. Smt. Rehana Beg, Resident Engineer, MPPGCL
44. Shri Ravikant Raut, Chief Chemist, MPPGCL
45. Shri Jitendra Prasad, Additional VP-EHS, Sasan Power Ltd. (Reliance power)
46. Shri Santosh Kumar Singh, Head (AESG), Mahan Energen Ltd.
47. Shri Himanshu Verma, Sr. Manager (HSE), Lanco Anpara Power Ltd.
48. Dr. Vinay Kumar Yadav, AGM (Environment & Sustainability), Grasim Industries Ltd.,  
Renukoot
49. Shri Sayed M Islam, Sr. Manager (EHS), Birla Carbon Industries Pvt. Ltd.
50. Shri Ashutosh Kumar Dwivedi, Additional CEO, Greater Noida Authority, U.P.
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53. Shri Kamlesh Maurya

54. Shri Indranil Das

55. Shri Vinay Ramaiya

56. SCCL