
MAHAGENCO

Ash policy

2024

Published by
MAHAGENCO, PRAKASHGAD, BANDRA , MUMBAI

Message by - Hon Chairman and Managing Director

The ash disposal and management in thermal power stations is a matter of significant concern for our environment and public health.

As we all know, thermal power stations, while essential for energy generation, produce large quantities of ash, which, if not properly managed, can cause serious environmental and health issues.

In thermal power stations, coal is primarily used as a fuel source. During the combustion process, about 30-40% of the coal is left as ash. This ash, known as fly ash, is composed of fine particles rich in silica, alumina, and other minerals. It is often mixed with bottom ash, a coarser form of ash left at the bottom of the boiler.

The safe disposal and management of this ash is an issue that calls for our immediate attention and action.

Given these challenges, it's crucial that we explore innovative solutions for ash management. One such solution is the utilization of ash in various industries.

For example, fly ash can be used in the production of cement and concrete, reducing the need for raw materials and thus decreasing the environmental impact. Similarly, bottom ash can be used in road construction and as a soil amendment in agriculture.

The Comprehensive Ash Utilization and Management Policy – 2024 of Mahagenco a revision to our own ash policy 2016 aiming to address the environmental and health challenges posed by the large quantities of ash generated by thermal power plants.

This policy takes into account the measures under the Ash notification 2021 issued by the Ministry of Environment, Forest and Climate Change (MoEF&CC).

Message by - Director (Operations)

The issue of ash disposal has gained significant attention due to its potential environmental and health impacts. Ash, a byproduct of coal-fired power plants, poses significant challenges in terms of safe and sustainable disposal.

Ash disposal presents significant environmental and health concerns that demand immediate attention. The release of toxic substances, air pollution, and the associated health risks necessitate the development and implementation of sustainable ash management strategies.

By prioritizing the reduction of ash generation, adopting advanced treatment technologies, and enforcing stringent regulations, we can mitigate its adverse impacts.

Stringent regulations and monitoring mechanisms should be in place to ensure the safe handling, transportation, and disposal of ash. This includes the enforcement of proper containment and leachate collection systems in ash disposal sites, as well as regular monitoring of air and water quality in surrounding areas. Education and awareness campaigns regarding the hazards of ash disposal are also essential to promote responsible practices among industries, policymakers and the public.

Promoting Sustainable Ash Management:

Addressing the concerns surrounding ash disposal requires a multi-faceted approach that emphasizes sustainable waste management practices. Firstly, it is crucial to prioritize the reduction of ash generation through the adoption of cleaner and more efficient technologies. This can minimize the overall impact on the environment and human health. Additionally, implementing advanced ash treatment technologies, such as thermal processing, can reduce the volume of ash and recover valuable resources.

Challenges in Ash Disposal:

The proper management and disposal of ash remain challenging tasks. Traditional ash disposal methods, such as landfilling and open dumping, are often inadequate in preventing leaching and contamination of surrounding ecosystems. These methods lack the necessary safeguards to protect the environment and human health. Furthermore, the sheer volume of ash generated by industries poses logistical and space constraints for its safe disposal.

Foreword

In the pursuit of progress and prosperity, we often lose sight of the impact we leave on our environment. We must acknowledge that as an integral part of the world's ecosystem, our actions, big or small, have consequences that affect the delicate balance of our planet. One such action is the disposal of ash, a byproduct of numerous industrial processes and everyday activities such as burning of coal, wood, and other biofuels.

The disposal of ash can also contribute to air pollution and climate change. Fly ash, a fine particulate matter generated during coal combustion, contains significant amounts of sulphur dioxide, nitrogen oxides, and carbon dioxide. When released into the atmosphere, these pollutants can exacerbate respiratory issues, smog formation, and contribute to global warming. Moreover, ash disposal sites can release methane, a potent greenhouse gas, during decomposition processes, further contributing to climate change.

Ash disposal, if not done correctly, has the potential to cause significant harm to the environment and to human health. Improper disposal can contaminate soil, water sources, and air, leading to long-lasting and sometimes irreversible damage. It is against this backdrop that we introduce this Ash Disposal Policy.

This policy is not just a set of rules or guidelines. It represents a commitment – a commitment by every stakeholder, from policy makers to industry leaders, from workers to consumers – to understand the impact of their actions and make conscious decisions to mitigate them. It is a commitment to move towards a more sustainable and responsible way of managing waste.

It is our hope that this Ash Disposal Policy will serve as a blueprint for action, driving change and fostering a culture of environmental stewardship. We encourage everyone to view it not as an imposition, but as an opportunity to contribute to a healthier and safer world for ourselves and for the generations to come.

In conclusion, ash disposal and management in thermal power stations is a complex issue that requires a multi-faceted approach. It calls for the implementation of more efficient ash disposal methods, the adoption of technologies that reduce ash production, and the promotion of ash utilization in various industries. By taking these steps, we can ensure the sustainability of our energy generation while protecting our environment and public health.

Executive Director (E&S)

MAHAGENCO's Ash utilization Policy- 2024

About Mahagenco:

Mahagenco has installed and operating 07 (seven) Thermal Power Stations within Maharashtra with a total generating capacity of 9540 MW. The details coal and ash generation through the operating generating stations are as under:

TPS	CAPACITY	COAL CONSUMPTION LAC (MT) (FOR F.Y. 2023-24)	TOTAL ASH GENERATION LAC (MT) (FOR F.Y. 2023-24)
Nashik	(3X210MW)	24.9	10.1
Bhusawal	(1X210MW + 2X500MW)	60.9	22.8
Parli	(3X250 MW)	29.6	12.1
Paras	(2X250MW)	27.1	10.6
Khaparkheda	(1X210MW+3X660MW)	69.5	26.7
Koradi	(4X210MW + 1X500MW)	96.8	35.8
Chandrapur	(2X210MW+5X500MW)	129.5	48.9
Total		438.3	167.0

+ Purpose of the policy

Mahagenco has adopted its own well formulated ash policy in the year 2016. Mahagenco was the first utility in the country to have adopted own ash policy with a vision

“Mahagenco intends 100% utilization of fly ash in accordance with MoEF notifications”

Now as per commitment under vision of policy document and as per the latest notification dated 31/12/ 2021 and the amendment notification 01/01/2024, the policy requires a revision as to accommodate/fulfil the requirement under the MoEF&CC notifications and to be in accordance to latest advisory issued by MoP dated 15/03/2024 which supersedes previous MoP advisory dtd. 22/02/2022 facilitating thermal power plant to adopt a synchronous methodology for ash utilisation / disposal / sale.

Vision

Mahagenco is committed towards 100% utilization of fly ash in accordance with latest MoEF&CC notification finding ways to turn this byproduct into a valuable resource and its disposal/ utilization/ sale with Minimal Environmental harm in a social responsible manner.

Mission

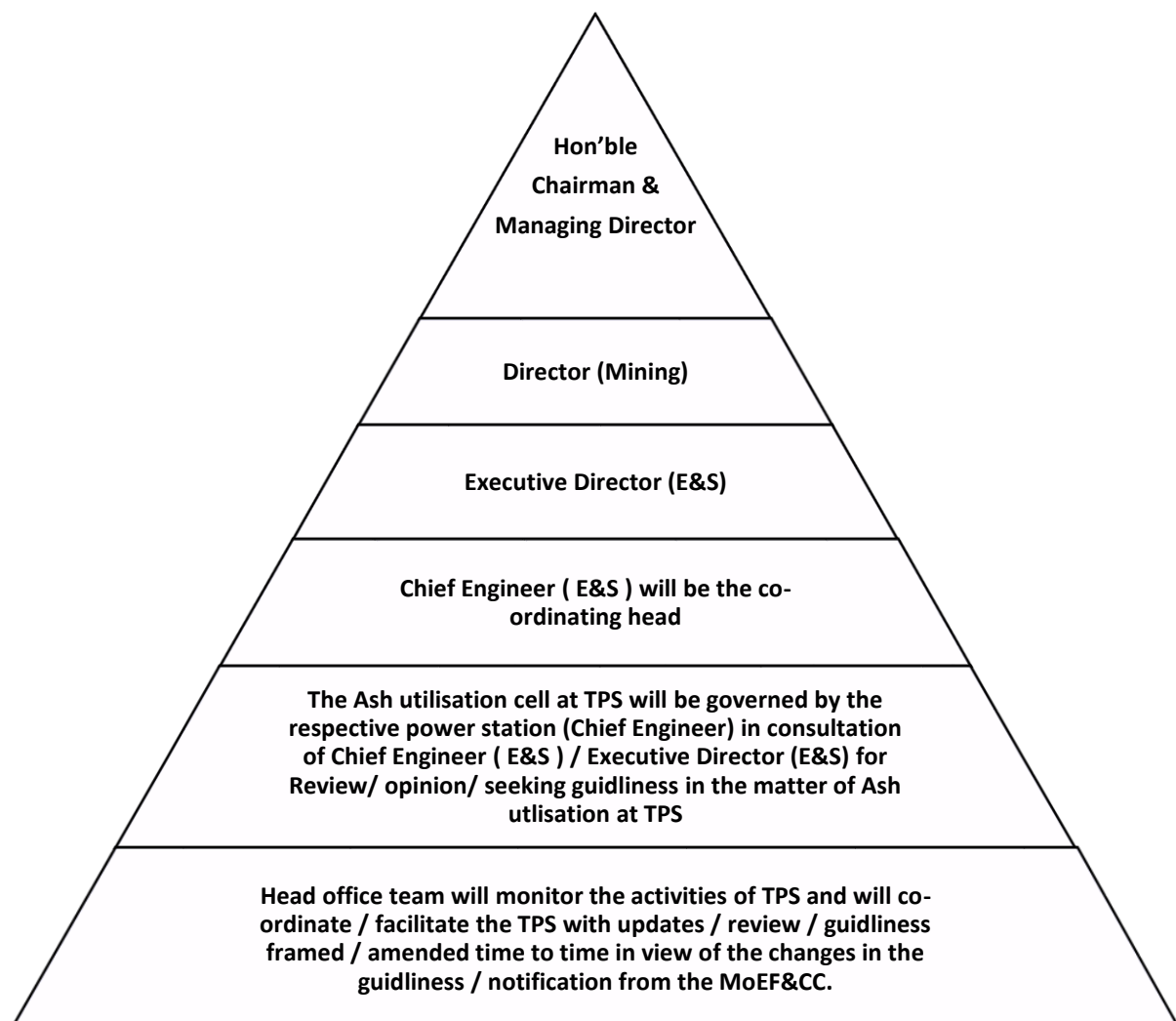
Mission of ash utilization within thermal power plants, aiming to create an environment friendly, economically beneficial, and sustainable approach to managing the Ash.

1. Environmental Protection: by properly utilizing ash, thermal power plants can minimize their environmental impact.
2. Mahagenco committed to use cleaner fuel/ wash coal to reduce the amount of Ash generated by thermal power plants.
3. Economic Benefit: Ash utilization will provide economic benefits by creating marketable products.
4. Compliance with Regulations: Mahagenco is committed to utilize a 100 % of the ash generated. Mahagenco will adhere to the regulatory requirements.
5. Community Engagement: Mahagenco thermal power plants will involve local communities in their ash utilization efforts, providing jobs/ promoting local business/ facilitating project affected and contributing to local economic development.
6. Innovation and Research: Ash utilization encourages the development of new technologies and research into novel uses of ash, contributing to scientific knowledge and innovation.

Terminology under MoEF&CC notifications:

- Fly Ash: Ash extracted from flue gases by any suitable process.
- Bottom Ash: Ash collected separately at the bottom of the boiler furnace.
- Pond Ash: Fly ash or bottom ash or both mixed in any proportion and conveyed in slurry/paste form and deposited in pond / lagoon.
- Legacy Ash: Accumulated ash /unutilized ash stored before publication of notification
- Cenospheres: Cenosphere is a lightweight, inert, hollow sphere comprised largely of silica and alumina and filled with air and/or gases, float in the lagoons where fly ash is discharged. Cenosphere, lighter than water, are skimmed from ash ponds, dried and sold for use.
- Station/Project/Plant/Site/TPS: Refers to Coal based thermal power station of Mahagenco.

Structure of Ash Utilisation Cell of TPS:



Functionality of Ash Utilisation Cell of TPS:

- A dedicated Ash utilization cell is formed at all TPS.
- The Ash Utilization Cell of TPS will be exclusively entrusted with the relevant functions including sale of fly ash, ash-based products and its awareness.
- Ash utilization cell at TPS will monitor ash disposal cost, water charges, electricity charges, etc. for ash disposal / utilization.
- Ash utilization cell at TPS will carry out all ash calculations on the basis of the coal used for the TPS.
- Regular meetings will be conducted among TPSs for sharing of best practices/ exchange of ideas as well as issues related with ash utilization.
- E&S, H.O department will co-ordinate with all ash utilization cell of TPS.
- Ash Anomaly Committee for effective utilisation of ash generated at the power stations. The Ash Management Group shall consist of the following officers at each Station:
 - Chief Engineer (TPS) - Head of Committee
 - S.E.(In charge of Ash Management) - Member
 - Sr. Manager (F&A) - Member
 - Executive Engineer (Ash Utilisation 'Division) - Member & Coordinator.
- The above committee shall have a monthly meeting to discuss matters of ash utilisation and the report of the same shall be submitted to CE (E&S), Head office for resolving issues, if any.

Applicability:

This ash utilization policy will be applicable to all existing/projects/ future Thermal Power Stations of MAHAGENCO.

Scope of Policy:

1. Regulatory Compliance:

Commitment to compliance to the MoEF&CC notification and other relevant regulations with all applicable laws and regulations.

2. Ash Generation:

Mahagenco will consider ash utilization as an integral process of power generation and make all out efforts to maximize ash utilization towards 100% on sustainable basis.

3. Ash collection and Utilization:

- Making available dry fly ash with suitable loading system for mechanical loading in railway wagon/ bulkers/ hiva vehicles/bags for issue to end users/ industries/traders etc.
- Utilization of fly ash, bottom ash, pond ash and ash based products within TPS premises for in- house construction /upkeep activities.
- To facilitate utilization of ash through production of fly ash bricks, blocks, tiles, sintered or cold bonded ash aggregates, fibre cement sheets, pipes, boards, panels etc., cement manufacturing through BOO or feasible basis.
- Advertising to build up awareness on the beneficial utilization of ash such as use of fly ash in cement / light weight aggregate/ light weight sand / mortar, use of pond ash in bricks / blocks / tiles, use of bottom ash as substitute of sand etc.
- Carrying out/promoting studies and R&D activities for developing innovative methods for new areas of ash utilization and for development of better & cost effective ash based products.
- Mahagenco envisages to set up a mechanism of full fly ash collection in dry form and suitable storage system.
- Mahagenco shall install its own Dry Fly Ash Extraction System (DFAES) t all its power plants or take on lease from other users, on long term contract basis.
- Mahagenco shall facilitate for loading of fly ash into tankers/ railway wagons/ bulkers/ bags from silos.

- Mahagenco shall create a provision for loading of fly ash into tankers/ railway wagons/ bulkers/ bags from silos.
- Mahagenco shall facilitate increased and easy off take of fly ash at existing TPS by widening/ strengthening of road, creating new approach road, modification in silo for pneumatic loading of fly ash in tankers/ jumbo bags, etc. This activity shall be financed from Ash Fund created as per directives of MoEF&CC.
- Mahagenco envisages to develop a standard layout for ash evacuation system for all future TPS, indicating facilities near each silo such as access road for easy movement of bulker/ larger capacity truck, railway line (if possible) for wagon loading, compressed air for cleaning, service water, staff rooms, weighing facility, type of weigh bridge and number of weigh bridge to be installed for weighing empty and filled bulkers/ tankers/ so that the ash filled truck/ bulker/ tanker/ wagons, etc can exit from plant in a minimum possible time.
- Mahagenco shall issue pond ash to users for construction of roads & embankments, structural fills, etc. on free of cost basis in line with MoEF&CC notification.

Implementation strategies for ash utilization

1. Mahagenco will adhere to the Timelines for fly ash utilisation as per MoEF Notification of Dec-2021

Thermal Power Plants shall be Responsible to Utilise 100% Ash generated during that year and in no case fall below 80% in the year.

Category	Utilization Percentages for FY 2021-22	First Compliance Cycle to meet 100% Utilization from Apr- 2022	Second Compliance Cycle onwards to meet 100% Utilization From Apr-2025	TPS
1	> 80%	3 Years	3 Years	Nashik, Bhusawal, Parli, Paras, Koradi
2	60 - 80 %	4 Years	3 Years	Khaperkheda
3	< 60%	5 Years	3 Years	Chandrapur

2. Mahagenco will adhere to the Timelines for legacy ash utilization as per MoEF Notification of Dec-2021

Unutilized accumulated ash (Legacy ash) which is stored before publication of notification should be utilized fully within 10 years as in mentioned below table.

Year from Date of Publication (2021-22)	1 st (2022-23)	2 nd (2023-24)	3 rd to 10 th (2024-32)
Utilization of Legacy Ash (In % of Annual Ash generation as per Installed Capacity)	At least 20%	At least 35%	At least 50%

- Minimum Quantity of Legacy Ash Utilization is calculated based on Annual ash generation as per installed Capacity of the Power Plant.
- Legacy ash utilization shall not be required where ash pond or dyke has stabilised and the reclamation has taken place with green belt or plantation and certified by State Pollution Control Board/CPCB/PCC.

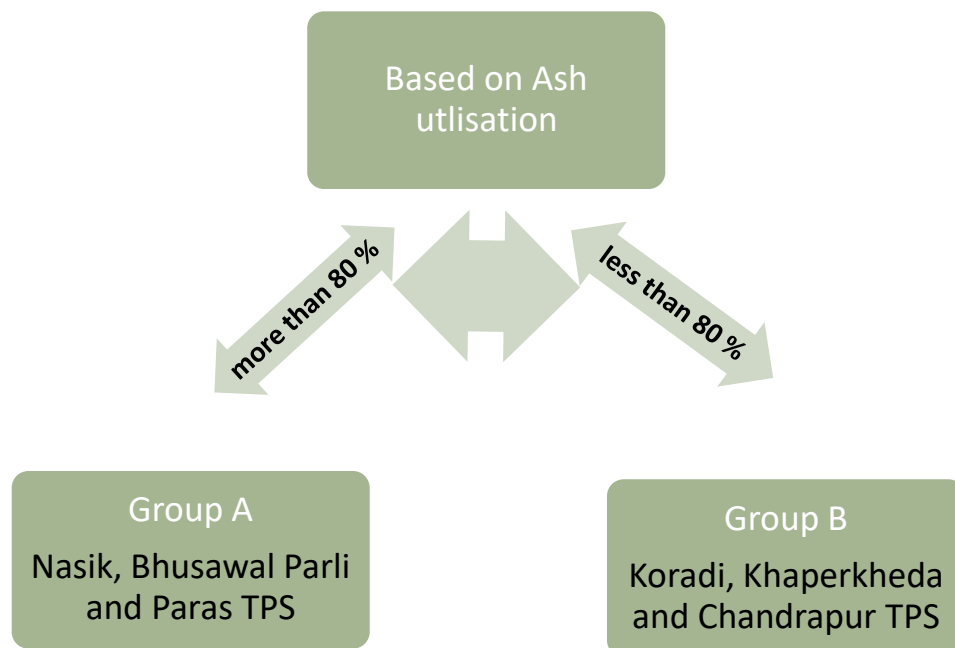
3. Formation of Group of TPS (Based On Fly Ash Utilization)

Mahagenco has faced the Constraints for achieving 100 % ash utilisation at Khaperkheda, koradi, chandrapur TPS due to Non availability of market for fly ash based products in nearby area. Also many power generators located in near by areas are promoting ash sale by means of giving incentive as well as Bearing transportation cost of fly ash.

The Average ash utilization % for last 5 years total is as below:

TPS	NTPS	BTPS	PARLI	PARAS	KORADI	KPKD	CSTPS
Total Ash Utilization (%)	100%	100%	100%	85%	55%	60%	18%

Based on the above ash utilisation percentage, the Thermal power plants of Mahagenco are divided in 02 (Two) groups i.e. having average % ash utilisation more than 80% and less than 80 % to focus on commercial aspect and to enhance ash utilization as per the Ash demand.



Group A:

- Group A comprises of Nasik, Bhusawal Parli and Paras TPS having fly ash utilisation more than 80%.
- Whereas 100% Fly ash and 80% pond ash shall be sale off through a transparent bidding process only. The highest prevailing rate of TPS shall be taken as base rate for above bidding process.
- Whereas any quantity of ash remains un- utilized even after bidding / auction, may be considered to be given at highest prevailing rate of TPS to interested / demanding agencies.
- This in accordance to the provisions of the MoEF&CC amendment notification 01/01/2024.

Group B

- The Group B comprises of Koradi, Khaperkheda and Chandrapur TPS having fly ash utilisation less than 80%.
- Whereas Fly ash and pond ash shall be sale off through a transparent bidding process only. The Weighted average rate of TPS shall be taken as base rate for above bidding process
- Whereas any quantity of ash remains un- utilized even after bidding / auction, may be considered to be given free of cost on first come first serve basis, if the user agency is willing to bear the transportation cost.
- Whereas, if any Quantity of ash still remains un-utilised, then TPS shall serve notice/ communication to the construction agencies/mine owners located within 300 kms from TPPs to use ash mandatorily in their projects /filling of mine as per the provisions of the MoEF&CC notification 2021.

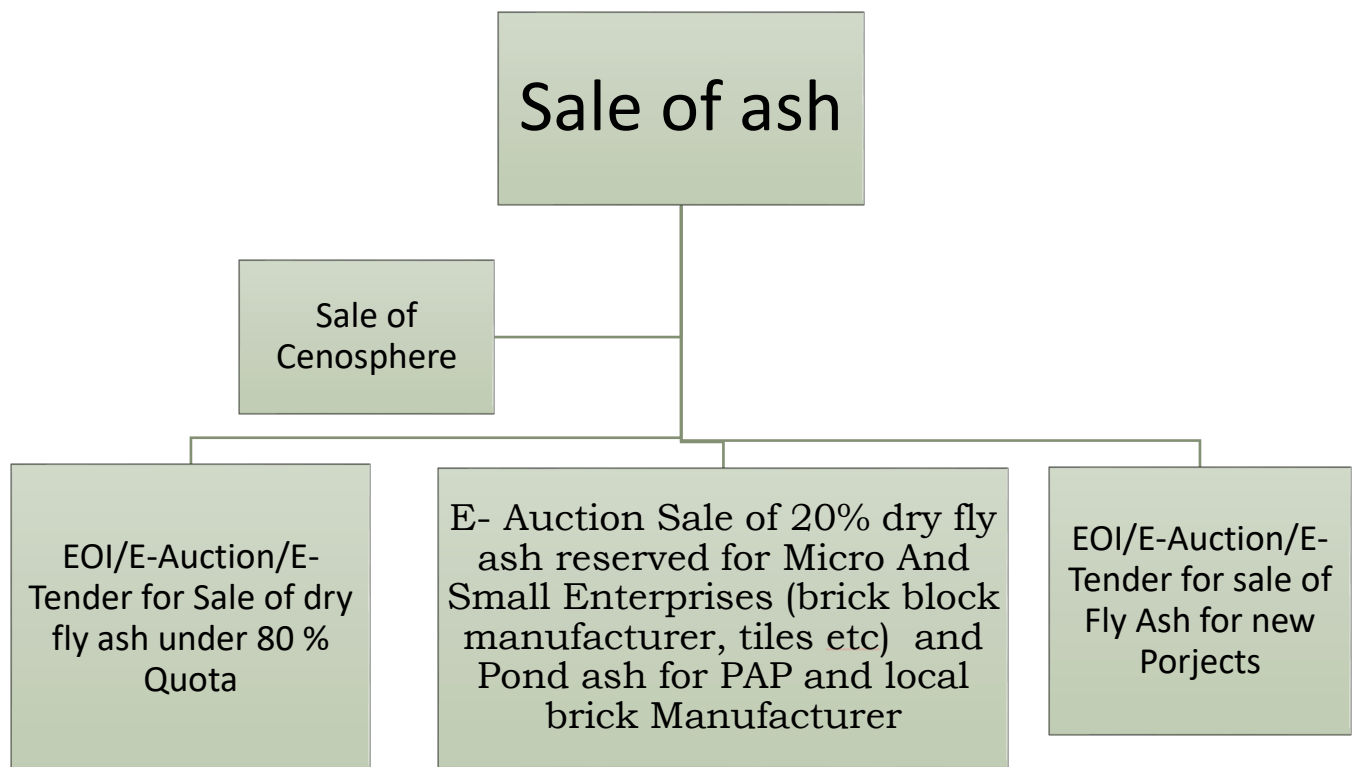
Sale of Ash

In the present scenario and market demand, ash is being treated as commodity and not as Waste.

As per the provisions of the Latest MoEF&CC notification and guidelines by MoP , Mahagenco with intention to sell the Ash generated, have formulated the transparent procedure.

Board of Mahagenco has empowered the Chief Engineer of respective thermal power plant to sale/ dispose the ash generated in accordance to the approved Qualifying Requirement and terms and conditions.

The Ash Notification dated 31.12.2021 supersedes all previous notifications, so the practice of issuing of Ash (Pond Ash + 20% dry fly ash) free of cost on “as is where basis” has stand abolished.



 Sale of dry fly ash under 80 % Quota and 20 % reserved quota for brick block tile etc manufacturer:

❖ Sale of dry fly ash under 80 % Quota

- The Sale of dry fly ash under 80 % quota at Nashik, Bhusawal, Parli, Paras, Chandrapur TPS is to be through competitive bidding process such as Open e-tender/e-auction/EOI.
- Considering the demand of various type of agencies like end user/ trader/ Transporters TPS wise, the qualifying requirements are formulated for the participation in the competitive bidding process i.e. e-tender/e-auction/EOI.
- Mahagenco will allow end users i.e. Ash product manufacturers as well as to traders with bulk quantity storage capacity and providing the ash to end users.
 - (a) Manufacturer of cement,
 - (b) Bricks / blocks,
 - (c) Tiles,
 - (d) Sintered or cold bonded ash aggregates
 - (e) Fibre cement sheets,
 - (f) Pipes,
 - (g) Boards,
 - (h) Panels etc.
 - (i) Ash processing industry and grinding units etc.
 - (j) Traders with bulk lifter providing the ash to end users.
- If the contracted agencies are not lifting /unable to lift the ash or in case of excess ash generation, then the remaining/ balance ash quantity will be given to ash demanding agencies on short term basis (first come first service) for the maximum period of six months or till further instructions whichever is earlier at the highest existing prevailing rate at the respective power station.

❖ E-auction of 20 % Dry Fly Ash reserved for brick, block, tile etc manufacturer:

The 20% of the total fly ash generated is to be sold through e-Auction. This quota was previously reserved for brick, block, tile etc manufacturer at free of cost, but is now open/ available through limited auction to Micro And Small Enterprises engaged in ash based product manufacturing as per the provisions under the latest MoEF&CC Notifications and MoP guidelines dated 15.03.2024.

A. Mahagenco has framed and formulated standard Qualifying Requirement approved by Board of Mahagenco

1. Nature of Business: Bidder should be ash product manufacturer (i.e. manufacturer of bricks, sheets, blocks, tiles, construction products, wall panels, cement sheets etc.) with SSI/ DIC certificate.
2. Bidder should produce relevant license for their business (i.e consent to operate) from Pollution Control Board of respective area.
3. Bidder should produce documentary evidence regarding Consumption capacity for qualifying for e –auction of 20 % Quota Dry fly ash.
4. Bidders manufacturing unit should be located within 300 KM radius of respective TPS.
5. Following documents will be considered for making the bidders eligible for the ash allocation under 20% quota:
 - i. Valid consent to operate from MPCB.
 - ii. Certificate from District Industries Centre regarding Manufacturing of fly ash or clay-fly ash bricks, blocks, tiles, sintered or cold bonded ash aggregates, fibre cement sheets, pipes, boards, panels etc.
 - iii. Undertaking regarding purpose of use of fly ash.
 - iv. Monthly GSTR-3B with ARN E-mail showing Monthly sales figure and GST paid thereon.
 - v. Monthly or quarterly GSTR-1 or GSTR-4 whichever is applicable showing sales effected with the unit and GST liability thereon.
 - vi. Copies of six monthly and annual Manufacturing Account, Profit and Loss account, Balance Sheet and Yield statement of the unit duly certified by a chartered accountant.

- vii. No objection certificate from respective Village-Council/Municipal Corporation
- viii. 7/12 extract in the name of business
- ix. PAN card in the name of business
- x. Electricity bill of business area
- xi. Map showing the distance of manufacturing unit/plant of applicant from TPS

B. Estimated Yearly Quantity

Sr. No	TPS	Available quantity in MT	Min Quantity (MT)* for a bidder	Max Quantity (MT) for a bidder
A	B	C	D	E
1	Bhusawal	225000	100	67500
2	Nashik	45000	100	13500
3	Parli	108000	100	32400
4	Paras	120000	100	36000

* All Bidders shall bid for min 100 MT and in multiple of 10 MT up to max quantity (E).

• **As per MoP guidelines dated 15.03.2024**

The 'Reserved Quantity': The 'Reserved Quantity' shall be 1.10 (one point one zero) times of the highest quantity issued up to previous three years to these Micro and Small Enterprises by the TPP. If there is no previously issued quantity available, TPP shall reserve 20% (twenty per cent) of issuable quantity for first year of limited auction.

C. Other Terms and Conditions

- Bidder have to register on Metal Scrap Trade Corporation Ltd (MSTC) portal for participation in e-auction.
- Bidder should be ash product manufacturer (i.e. manufacturer of bricks, blocks, tiles, sintered or cold bonded ash aggregates, fibre cement sheets, pipes, boards, panels etc.) with SSI/ DIC certificate.
- Bid evaluation and rate applicability shall be strictly as per QR documents and bid document and decision by the auction committee in this regard shall be final and binding on all bidders.
- Earnest Money Deposit and Security Deposit shall be taken as per the standard practices of Mahagenco.
- Penalty for short lifting of ash shall be levied suitably.
- If any agency fails to lift 70% of the allotted quantity consecutively for the period of Three months, the sale order will be terminated.
- Total Balance quantity (Not-lifted by agency, balance quantity after e-auction, balance quantity after termination) will be made available to the demanding agencies at TPS wise Highest quoted rate in e-auction on First come first serve basis.
- Minimum quantity of 100 MT on yearly basis is assured quantity to the qualified bidders. Above 100 MT, the quantity will be allocated proportionately if total demanded quantity is more than the available quantity.
- Bidders may quote the annual quantity required against a price starting from floor price and with increment for bidding of Rs. 1.00.
- Contract period: One year from the date of issue of order
- There will be no lower limit for bid evaluation below which the tender will be declared unsuccessful.
- All successful bidders should quote to match the rate with H1 bidder of the TPS wise respective slabs in the following manner:

Sr. No	TPS	Slab-1	Slab-2	Slab-3
1	Bhusawal	100-7500	7510-11250	11260-67500
2	Nashik	100-1500	1510-2250	2260-13500
3	Paras	100-4000	4010-6000	6010-36000
4	Parli	100-3600	3610-5400	5410-32400

D. Base Price: 50% of Highest prevailing Rate (As per BR)

E-Auction for Pond Ash (excluding the quantity reserved for Local Brick , block manufacturer)

Legacy of Pond ash (Group A)

TPS	Pond ash (MT) upto 31.06.2024
Nashik	48,89,403
Bhusawal	40,02,603
Parli	4,40,281
Paras	11,48,430

- Utilization of Legacy Ash (In % of Annual Ash generation as per Installed Capacity) will be at least 20% for 1st , 35% for 2nd and 50 % for 3rd year onwards upto 10yrs respectively.
- E-auction of pond ash legacy to be carried out considering the potentially high ash demand market. At present auction is carried out at Bhusawal, Nashik, Parli & Paras TPS.
- E-auction will be carried out by appointing MSTC (Metal Scrap Trade Corporation Limited) as auctioneer.

Agency Name-	Metal Scrap Trade Corporation Limited
Mail ID-	wroopn6@mstcindia.in

- Details of The Q.R., terms & conditions as well scope of work duly approved by Board of Mahagenco for sale of pond ash at Bhusawal, Nashik, Parli & Paras TPS is given below.

E – Auction of Pond Ash

A. Scope of Work

1. Deployment of one JCB/Pock lain machines, one water tanker of mini 20,000 liter capacity, one four-wheeler vehicle for patrolling. All machines/vehicles shall have valid RTO registration.
2. Scientific excavation of pond ash from ash so as to avoid formation of water bodies in bund.
3. Leading of trucks/bulkers/vehicles with pond ash along with proper tarpaulin as to avoid spillage of pond ash on road.
4. Deployment of engaged labours as well as proper security guard for execution of the assigned work.
5. Assistance in proper movement of vehicles (Bulkers, trucks, tractors etc) in and out of the ash bund of TPS.

6. Compliance of all pollution norms as prescribed by MPCB/CPCH/RTO etc as far as loading and transportation of pond ash is concerned. If any damages happens to MAHAGENCO properties, agency shall be held wholly responsible for the same and damages will be recovered from the agency.
7. Weekly cleaning of spilled ash on ash bund approach roads.
8. Proper monitoring and keeping watch round the clock (24*7) at ash bund so as to avoid any malpractices.
9. Maintaining record of the pond ash lifting vehicles on daily basis with details such as:
 - i. Name of agency
 - ii. Vehicle/truck No
 - iii. Capacity of vehicle/truck/bulker (MT)
 - iv. Pond ash lifted quantity (MT)
 - v. Payment mode: cash/online etc.
10. Submission of pond ash lifting record containing all details mentioned at Sr.No.4 to TPS on daily basis
11. To sprinkle water on approach roads and in ash bund as per the instructions received from TPS officials
12. Patrolling of ash bund to prevent theft of material and inform the same to security of TPS immediately if any such incidence happens.
13. Prevention of excavation of pond ash by unauthorized agencies/persons.
14. Developing Ash bund surrounding area by means of Tree plantation, gardening etc
15. In one year maximum 200 trips for spraying of water will be instructed by TPS as per requirement. The bidder has to make its own arrangements for spraying of water.
16. All qualifying bidders who matches with the rate of H1 bidder shall be allotted the proportionate of their bidding quantity.
17. Chief Engineer (Civil-III) will ensure that proper roads/routes shall be provided to the area of ash pond allocated to all bidders before awarded work to successful bidders.

B. Other Terms and Conditions

1. Contract period :- One year from the date of issue of order
2. Earnest Money Deposit and Security Deposit shall be taken as per the standard practices of Mahagenco.
3. Penalty for short lifting of ash shall be levied suitably.
4. Agency shall have to dispose of 50% of monthly allotted quantity given by TPS consecutively for the period of three months, failing which his order will be
5. Terminated and the same quantity shall be offered to other successful bidders as per ranking.

Pond Ash reserved for Local brick, block, tiles etc. manufacturer.

Considering the several representations from local agencies/ public representatives received at TPS requesting / demanding Viz. to provide pond ash to local brick kiln business at affordable rates

To promote the local brick, block, tile manufacturers for utilisation of ash at affordable rate a quantity shall be reserved.

Reserved Quantity: a Quota of 20% pond ash of total generated pond ash for that year will be reserved for project / land affected and local brick manufacturer/ micro and small enterprises engaged in ash-based product manufacturing namely, bricks, blocks, tiles, sintered or cold bonded ash aggregates, fibre cement sheets, pipes, boards, panels.

Rate: The Pond Ash will be sold at concessional price.

Sale of Cenospheres

Mahagenco have formulated set of guidelines regarding sale /lifting of Cenosphere from ash bund vide circular dated 15.12.2020 and 25.03.2022.

	For year 2023-2024 (up to June - 2024)		
	Cenosphere Lifted Quantity (MT/Year)	Rate in Rs./ MT	Total Revenue against sale of Cenosphere (Rs)
Nashik	NIL	Nil	NIL
Bhusawal	NIL	Nil	NIL
Parli	NIL	Nil	NIL
Paras	4.17	25100	111000
*Koradi	Kasala - 467.95	7900	3830082
	Koradi - 117.71		703538
Khaperkheda	12.21	4600	56166
Chandrapur	Yet to start	12000	

❖ Qualifying Requirements for sale of Cenosphere:

- Bidder should have an experience of collection of floating ash [Cenosphere] from ash dykes of any coal based thermal power station/power utilities for atleast one year {Experience certificate for complete execution of sale order shall be submitted}
- Bidder should strictly follow the pollution norms prescribed by pollution Control Board of respective area and obtain NOC if required.

Tender for sale of fly ash for new project

(Only for 1x 660 MW Bhusawal and future / upcoming project)

- There shall be three groups of bidders.
- The groups shall be based on its fly ash lifting capacity, turnover and nature of business as below:

S.N.	Group	Particulars
1	I	Fly ash based industries that require fly ash in bulk quantity as well as to traders with bulk quantity storage capacity
2	II	Fly ash based small & medium scale industries that require fly ash in less quantity as well as to traders with bulk quantity storage capacity.
3	III	Project affected people certified by Mahagenco. (#)

Note:

- Person whose land was acquired by Mahagenco for thermal power station and / or by Railways for laying of track (for coal, oil etc.) for Mahagenco.
 - In this case the certificate issued by the District Collector will be considered.
 - Preference shall be given to people whose affected land is nearer respective TPS.
 - Project affected person or his nominated relative shall not have availed any benefit in terms of employment from Mahagenco.
 - Only one individual / agency per document of land extract (7/12 document) maintained by the Revenue Department of the Government of Maharashtra, shall be considered to avail this group benefit.
- The percentage allocation of fly ash to above groups shall be suitably decided at the time of floating the tender.
 - Bidder has to submit relevant license for their business (i.e. consent to operate) from Pollution Control Board of respective area.
 - If any ash quantities remains/ left un-utilized after the bidding / tender process, then Chief Engineer of respective TPS in their empowerment will allocate the ash to interested agencies at the highest prevailing rate on first come first serve basis for short term (3 – 6 months).

❖ Adoption of Methodology: (to improve Ash utilization for Group B)

Legacy of Pond ash (Group B)

Utilization of Legacy Ash (In % of Annual Ash generation as per Installed Capacity) will be at least 20% for 1st , 35% for 2nd and 50 % for 3rd year onwards upto 10yrs respectively.

To counter the concern over low ash utilization at certain power plants of Mahagenco (Group B of TPS based on ash utilization).

Various innovative / feasible / proactive ways are initiated to enhance the ash utilization and adopted to be the part of policy.

TPS	Pond ash (MT) upto 31.06.2024
Khaperkheda	2,77,73,550
Koradi	3,43,74,727
Chandrapur	8,89,73,905

- Financial Aid and Incentive

- ✓ In the present Scenario, out of 07 power station of Mahagenco, the TPS under the group A are achieving 100% ash utilisation due to heavy demand in the region. This is generating revenue. On the contrary the TPS under Group B who generate ash in a huge / large quantum as compared to the TPS under group A, the ash utilisation percentage is less. Even after giving the ash free of Cost basis the utilisation of Ash for group B is still less. AS per the latest MoEF&CC Notification dated 31/12/2021, there is a huge penalty for less utilisation of Fly ash and Legacy ash.
- ✓ Mahagenco is in process of designing an incentive scheme for lifting and transportation of fly ash to cement manufacture, RMC plants, Asbestos cement products manufacturing units from Ash Fund or O&M fund (If Ash Fund is not available)
- ✓ Considering the huge quantum (In Crores MT) of legacy pond ash under group B (Koradi, Khaperkheda & Chandrapur TPS), financial assistance of Rs. 100/MT will be provided for pond ash for road projects undertaken by Govt agencies such as NHAI, MSRDC, PWD etc.

- ✓ The rate of Incentives and terms and conditions for offtake of ash shall be worked out by the Ash Management Committee of Respective Power Station.

Committee shall work out the following parameters:

➤ For Fly Ash

- Fly ash disposal cost from ESP to ash bund.
- Analysis of Incentives, if any, being given by other TPS In the vicinity to Cement and other Industries for offtake of fly ash.

➤ For legacy pond Ash

- Cost towards Ash bund / bund raising and maintenance.
- Analysis of Incentives, if any, being given by other TPS In the vicinity to Cement and other Industries for offtake of legacy ash.

- Transportation of Ash by Railways/ Road Mode

- Possibility to transport ash from TPS to the area having high demand for ash, may be explored.
- Agency may be appointed through competitive bidding process, which shall transport ash to ash based industries by road/ railway mode. Suitable financial assistance may be provided to the agency.
- Development of railway infrastructure at these TPS by using ash revenue funds.

- Export of Fly Ash

- Mahagenco TPS may also explore possibility for export of fly ash and ash based products on price through transparent method of EOI/ e-tender.
- Mahagenco will tie-up any organisation or association at National level which will provide platform to export fly ash outside India.

- ❖ Manufacture and Sale of Ash bricks, blocks, tiles, sintered or cold bonded ash aggregates, fibre cement sheets, pipes, boards, panels etc

- TPS may also explore possibility for manufacturing of ash bricks, blocks, tiles, sintered or cold bonded ash aggregates, fibre cement sheets, pipes, boards, panels etc for in house construction and civil maintenance work.
- Regular civil maintenance activities shall be carried out by using ash or ash based products by allocating suitable manpower.

❖ Setting Up of Cement Plant/ Clinker Grinding Unit

- Cement Plants are one of the bulk consumers of fly ash. Cement contains 30% of fly ash.
- TPS may also explore possibility for setting up of Cement plant / Clinker Grinding Unit / Cement Blending Unit in its vicinity on Built Own Operate basis.
- Mahagenco shall provide support such as water & electricity at prevailing rate.

Ash may be provided at free of cost. Gypsum produced in Flue Gas De-Sulphurisation Unit (FGD) of TPS may also be provided at prevailing rate.

❖ Sharing the Transportation Cost

- Improvement in ash utilisation may be brought by sharing the ash transportation cost with end users as per the procedure laid by latest guidelines of MoP vide dated 15.03.2024.
- TPS in consultation with E&S Section, HO Mumbai may consider for sharing the transportation cost of fly ash / pond ash which shall be used for infrastructure projects of NHAI / Govt. projects as per directives of regulatory authority / MoP / statutory authorities.
- Commercial feasibility depending on the factor viz disposal cost of ash to bund, Distance to which it is to be transported will be checked for Sharing the transportation cost. However Mahagenco is not bearing the transportation cost in order to keep the Merit Order Dispatch (MOD) suitability.
- As per the latest guidelines issued by MoP dtd. 15.03.2024, for Open Auction/EoI for sale of Ash (Dry Fly Ash, Bottom Ash and Pond Ash) among all users of ash, a Panel of transportation agencies shall be prepared every year in slabs of 50 Kms by TPPs based on competitive bidding for transportation to road projects/ embankments/ Mines etc.

❖ Ash Processing Unit

- Wherever feasible, ash processing units such as fly ash bagging plant, hydra-bin for bottom ash separation etc. shall be set up. This shall facilitate off take of fly ash to interested users.
- TPS may outsource the operation of bagging plant of bagged fly ash to a reputed agency by adopting transparent tender process.

❖ Low Lying Area Development

- Wherever feasible, low lying area development inside of TPS premises and outside of TPS within 50 km of power plant may be taken up in consultation with concerned individuals / agencies and with consent of regulatory authorities / District authority/ Municipal Corporation etc.

❖ Mine Filling / Stowing

- Backfilling of abandoned mines identified by Ministry of Power shall be carried out in consultation with the Mine Owners.
- Stowing of abandoned stone quarries shall be carried out in consultation with the Quarry Owners.
- Modalities such as sharing of ash transportation cost etc shall be decided mutually between TPS and Mine / Quarry Owners.
- Pond ash shall be used for this purpose.

❖ Adoption of new Technologies / Methods for Ash Utilization.

- In addition to the traditional ash utilization methods such as manufacturing of bricks, blocks, tiles, sintered or cold bonded ash aggregates, fibre cement sheets, pipes, boards, panels etc., new methods wherein ash may be used shall be explored.
- TPS may encourage the studies for manufacturing of fly ash based lightweight aggregate/sand, Geo-Polymer concrete to explore/promote new areas of ash utilization.
- Any technology/ methods which is proven/ feasible will be taken under consideration of Hon board for implementation in Mahagenco.

❖ Infrastructure development for ash utilization

- Mahagenco will set up fly ash collection system at all its TPS and units. It will also make provision for loading of fly ash into bulkers, trucks, trailers, railway wagons and bags from the fly ash silos.
- Mahagenco will make a provision of weighbridge for weighing of fly ash loaded into bulkers, trucks, trailers and railway wagons.

- Mahagenco shall develop standard layout for ash evacuation system for all future thermal power plants indicating facilities near silo such as access road for easy movement of bulker/larger capacity truck, including railway line for wagon loading, compressed air for cleaning, service water, staff rooms, weighing facility, type of weigh bridge and number of weigh bridge to be installed for weighing empty and filled bulkers/tankers/wagons so that in a minimum possible time the ash filled truck/bulker/tanker/wagons etc can do exit from plant.
- All future power projects should have the facility for separate bottom ash collection and storage.
- Mahagenco will provide CCTV system near ash silos and gates at each TPS / unit for monitoring ash off-take.
- Mahagenco will allow ash off-take at TPS on round the clock basis except for shift change and in case of any plant emergency, etc.
- Mahagenco will maintain the access roads in good condition for easy movement of trucks, trailers and bulkers. Repairing/ upgrading/ strengthening/ widening of existing roads, approach roads near fly ash silos and ash bunds shall be undertaken on a regular basis.
- To facilitate easy and increased off-take of fly ash, MAHAGENCO will develop railway siding wherever feasible.
- All new ash ponds, top roads, access roads, slope protection of ash dykes, lining of toe drains etc. will be provided with ash-based bricks, blocks, tiles, sintered or cold bonded ash aggregates, fibre cement sheets, pipes, boards, panels etc. or roller compacted pavements.
- It will be mandatory to use ash or ash-based products while floating tender of civil department for works such as roads, buildings, drainage etc. for TPS and premises.
- Raising of existing dykes shall be done with the help of ash, wherever feasible.
- All embankments and road constructions in TPS shall be done with the use of ash, wherever feasible.

❖ Revenue generation:

Fly Ash revenue (In Crs)			
TPS	2021-2022	2022-2023	2023-2024
	Revenue collected from April 2021 to March 2022	Revenue collected from April 2022 to March 2023	Revenue collected from April 2023 to March 2024
NASHIK	17.98	23.26	* 57.51
BHUSAWAL	12.88	18.66	28.80
PARLI	8.45	19.1	21.27
PARAS	4.58	5.64	* 15.18
KHAPERKHEDA	0.00	0	0.00
KORADI	0.00	0	0.00
CHANDRAPUR	5.97	5.06	12.76
Uran	0.00	0.00	0.00
Hydro	0.00	0.00	0.00
Total Value	49.86	71.72	135.52
* Nashik & Paras TPS revenue for 2023-24 - Including sale of pond ash			

🚧 Ash Fund Utilization:

- The revenue collected from sale of fly ash and fly ash-based products by TPS as applicable should be kept in a separate Account Head “Ash Fund”.
- This account will be maintained at Finance department for accounting, disclosure and allocation purposes.
- This fund shall be utilized for following works related to development of infrastructure/ facilities, Promotion & facilitation activities as per the approved guidelines vide circular dated 04.08.2018 & circular dated 12.08.2021

(Annexure-A). Activity wise proposals duly vetted by ED (E&S) as per applicable.

The list of works for improving ash utilization and enhancing infrastructure development within TPS premises includes:

1. Construction and repair of roads which are used exclusively for ash transportation.
2. Construction of platform for parking of ash loading trucks in Ash silo area/ Ash bund area
3. Repair and retrofitting work of Silos.
4. Development of site and allied civil works for installation of road weighbridge.
5. Design, supply, installation, testing and commissioning of weighbridge.
6. Encourage the studies for manufacturing of fly ash based lightweight aggregate/sand, Geo-Polymer concrete to explore/promote new areas of ash utilization.
7. Wherever feasible, laying of railway track under the ash silo and in-motion/ static weighing facility shall be carried out so that fly ash can be loaded directly into railway wagon for bulk transportation of ash.
8. To develop railway siding to facilitate easy and increased off-take of ash, wherever feasible.
9. Any other work towards enhancing the ash utilisation work and approved by competent authority of Mahagenco.

Ash user Data base and Public awareness

Creation of an ash user database shall help Mahagenco reach out to several potential ash users for enhanced marketing and sale of ash and ash based products.

- In order to develop an ash user database, each Mahagenco station shall issue a notice in regional newspapers inviting all ash users like cement manufacturers, ash brick manufacturers, other ash based entrepreneurs, traders and other potential ash users to register with Mahagenco in a proforma having details of their area of activity, capacity, quantity of ash required, location details, email ID, telephone/ mobile number, address and other details.
- Further, online web portal of Mahagenco stations shall also be developed for periodic updation of ash user database on Mahagenco website. The updation and maintenance of data base shall be done by a representative nominated by H.ead of Project of respective Station.

To create public awareness on the beneficial uses of fly ash in cement, light weight aggregate, light weight sand, use of bricks/ blocks/ tile, use of bottom ash & pond ash, an aggressive awareness campaign shall be carried out by stations through advertisement local newspapers, magazines, cinema halls, public places etc. so as to generate demand for fly ash, bottom ash and pond ash and thus increasing ash utilization.

Mahagenco achievements and activities on ash utilization shall be disseminated through publicity, media coverage, etc. at Corporate as well as Site levels. The expenses for this activity shall be met from the Ash Fund

Stakeholder Engagement

- Identification of relevant stakeholders (e.g., government agencies, local communities)
- Identification of prospective ash user agencies.
- Communication and consultation processes.
- Mechanisms for addressing grievances/ complaints and concerns.

Training and Awareness

- Training programs for employees involved in ash management
- Awareness campaigns for stakeholders
- Regular review and update of training and awareness initiatives

Monitoring and Reporting

- ❖ Database of Ash Users:
 - Each TPS shall maintain ash database for fly ash, pond ash and bottom ash. This ash database shall be updated by respective TPS (Ash Utilization Cell) regularly.
 - Each TPS will carry out compliance Audit of Ash disposal through the as committed under the Latest notification. This will be in accordance to the office memorandum of CPCB.
 - Parameters for monitoring ash management performance.
 - Reporting requirements and frequency
 - Synchronous procedure of documentation and record-keeping for ash data will be adopted. The data base shall be built in SAP.

Review and Improvement

- Regular review of the policy effectiveness
- Procedures for identifying areas of improvement
- Revision and update of the policy as necessary