

ENVIRONMENTAL STATEMENT
OF
MEJA URJA NIGAM (P) LTD.
(A Joint Venture of NTPC Limited & U.P.R.V.U N. Ltd.)
For the financial year ending 31 March -2023.



MEJA THERMAL POWER PROJECT
P.O- Kohdar, Tehsil- Meja , Distt-Prayagraj (UP)-212301

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PART - A

Environmental Statement for the Financial Year ending 31st March 2023

1	Name and address of the Owner/Occupier of the Industry operation or process.	Shri Sunil Kumar – CEO (Chief Executive Officer) MUNPL
2	Industry category Primary (STC Code) Secondary (STC Code).	Coal Based Thermal Power Plant
3	Production capacity – Units	UNIT#-I & II, 660+660 = 1320 MW
4	Year of establishment	2011 (Erection Activities Started)
5	Date of last environmental statement submitted.	29.09.2022 vide Ref: No. MUNPL/EMG /Patra/22-23/62 dated 28.09.2023

PART - B

Water and Raw Material Consumption

1. Water Consumption (m³/day)

Process	1,401
Cooling	49,396
Domestic	1,110

Name of Products	During The Previous Financial Year (2021-22)	During the Current financial Year (2022-23)
Electricity	2.6051 L / kwhr	2.5717

2. Raw material consumption

Sl. no.	Name of Raw Materials	Name of Product	Unit	Consumption of raw material per unit of output	
				During the Prev. Financial Year 2021-22	During the Current financial Year 2022-23
i.	Coal	Electricity	Kg/KWh.	0.67	0.64
ii.	Oil	Electricity	MI/kWh	0.71	0.55

PART - C

Pollution discharged to Environment / unit of output

Pollutants	Quantity of Pollutant discharged	Concentration of Pollutant	% -Percentage of variation from prescribed standard with reasons
(A) Water	NIL - Due to ZLD implemented (contingent)	-	-
i- Ash Pond Effluents	NIL	NA	NA
ii- Main Plant Effluent	NIL	NA	NA
iii- Sewage Effluents	NIL	NA	NA
(B) AIR (Stack Emission) Average			
SPM	1.90 MT/Day	18.00 mg/Nm ³ (avg)	-40.0%
SO₂	91.23 MT /day	864.69 mg/Nm ³ (avg)	765%*
Nox	36.13 MT /day	341.52 mg/Nm ³ (avg)	242%**

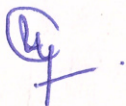
* FGD is being installed to control SO_x emission. Completion by Dec'24.

** For Nox control catalytic burners are installed. Under observation.

PART - D

HAZARDOUS WASTE

Hazardous wastes	2021-22				2022-23			
1. From Process								
(a) Waste Oil	NIL				NIL			
(b) Used Battery	NIL				14 (Nos.)			
(c) Empty barrels Container liners contaminated with hazardous chemical wastes	Nil				Nil			
(d) BMW	RED	YELLOW	BLUE	WHITE	RED	YELLOW	BLUE	WHITE
	58.24	45.34	23.04	93.54	43.25	34.00	16.95	11.01
(e) Spent carbon or filter medium	Nil				Nil			
(f) Oily Sludge	Nil				Nil			
2. From Pollution Control Facilities	NIL							



PART - E**SOLID WASTES**

Solid Wastes	Total Quantity	
	2021-22	2022-23
A- From Process	Nil	Nil
B- From Pollution Control Facilities		
i -Ash (Lakh Ton)	18.24149	15.73607
ii-Mill Rejects / Clinkers etc. (Ton)	1800	1700
C- (1) Quantity Recycled or Re- Utilised Within the unit		
i. HCSD lining of ash dyke I,II &III(Ton)	380839	26474
ii. Land filling (Ton)	781	4435
ii- Any other solid waste	NIL	
	(2) Sold	
i- Ash (issued to cement industries in(Ton)	1320738	833672.6
ii outside Brick units other than brick klins	8617	268.7
iii. Construction of road and fly over embankment	Nil	143475
(3) Fly Ash disposed to captive ash dyke		
i Ash Pond disposal (Ton)	503410	565281

PART - F

Please specify the characterization (in term of composition and quantum) of hazardous as well as solid wastes and indicate disposal practice adopted for both these categories of wastes.

	Quantity (2022-23)	Nature	Disposal method
A. Hazardous Waste			
(a) Waste Oil	Nil	Brown liquid	--
(b) Used batteries	14 Nos.		Buyback by manufacturer (Garg Enterprises, Ludhiyana)
(c) Spent resin	Nil	Granular solid	--
(d) Oily Sludge	Nil	Black residues containing oil	--
(e) Discarded containers)	Nil	MS / PVC drums & jerry cans	--
(f) Spent Carbon	Nil	Black powder	--
B. Solid Waste			
Coal Ash	18,24,149 MT	Given below	As specified in Part – E above

Characteristics of fly ash

Sl. No.	Component	Composition (%)	Quantum (MT)	Disposal Practice
1-	Fly ASH:			After utilization in cement industries, HCSD lining, brick plants, land filling etc, the remaining ash disposed in ash dyke.
i-	Lead as pb	0.000220	2.763254	
ii-	Arsenic as As	0.000027	0.339899	
iii-	Mercury as Hg	0.000009	0.107005	
2-	Bottom Ash			
i-	Lead as pb	0.000135	0.423300	
ii-	Arsenic as As	0.000022	0.068452	
iii-	Mercury as Hg	0.000011	0.033833	



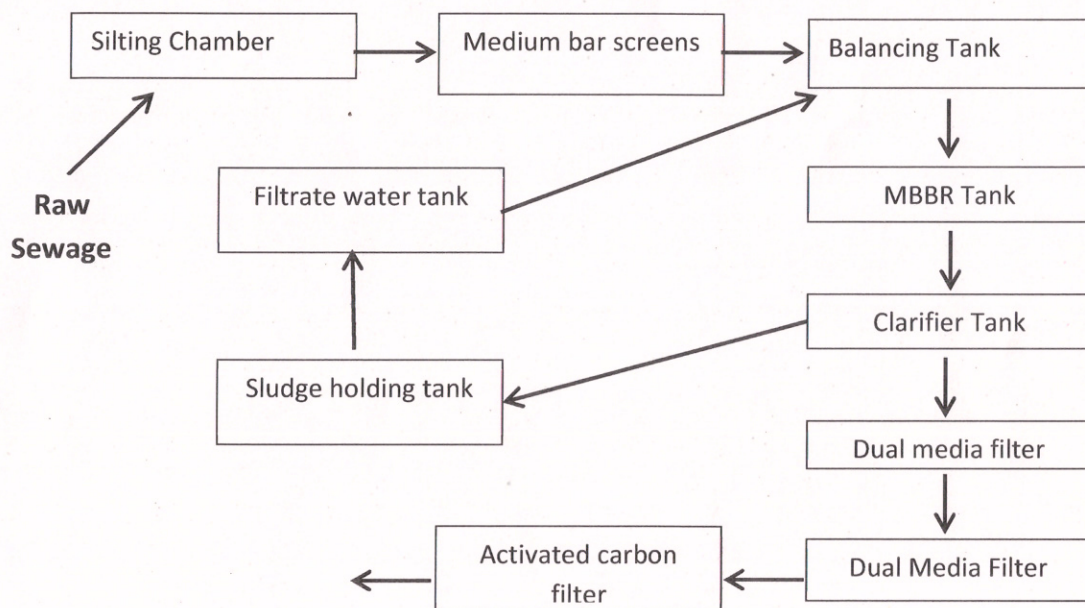
PART - G

Impact of the pollution control measures on conservation of natural resources and consequently on the cost of production.

- 51.45 MT of Green Charcoal received from “Varanasi Harit Koyla Pariyojna”, first time in NTPC.
- Replacement of conventional light by LED lights resulted annual saving of 3.6 million units of electricity in FY 21-22
- STP of 2200 KLD recycles sewage from plant and township and reutilised in horticulture leads to conservation of water.



Fig: STP in township area



Scheme of Sewage Treatment Process

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- The treated sewage water from Sewage treatment Plant is being reused for horticulture work inside NTPC Plant and township area. Analysis reports of treated STP water quality are sent on monthly basis to U.P. Pollution control Board. Third party monitoring of treated sewage water quality is also being done regularly.
- Drip irrigation system is being used in township for horticulture works. It reduces the water uses By directly targeting the root zone, water isn't wasted on areas that won't benefit the plant.



Figure: Drip Irrigation system in Township

- Liquid waste treatment system, CSSP and other effluent treatment recycles and reuse the treated effluent conserves the natural resource, water.
- Surge settling tank commissioned to reduce ash water circulation to dyke, thereby reducing evaporation loss. Around 6% of Ash handling system daily water consumption will be saved.
- Ash brick units for conservation of topsoil.
- Zero liquid discharge for effective and efficient conservation of water resource.
- 02 Rainwater harvesting pits have been commissioned in fy 2022-23.



Fig: Rainwater harvesting structure: Township

- MUNPL, Meja has installed various state of the art pollution control devices to minimize levels of pollution and to reduce the GHG emissions from its operations. Some of the major pollution control equipment installed at MUNPL, Meja are:
 - a. 02 Nos. of High Efficiency Electrostatic Precipitators in all the units having efficiency more than 99.7% for control of particulate matter emissions through stacks.
 - b. Closed circuit cooling towers for conservation of water.
 - c. Ash Water Recirculation systems for 100% reuse of ash slurry disposal water after settlement of ash.
 - d. Dust suppression systems in the coal handling plant to minimize fugitive coal dust emission.



Fig: Dust suppression system in Coal yard



Fig: Dust suppression system in Wagon Tripler

- e. Coal slurry settling ponds for reuse of water.
- f. Effluent Treatment Plant (ETP) for maintaining zero discharge of effluent and reuse of wastewater after treatment.
- g. Dry Fog dust suppression system in coal handling plants.

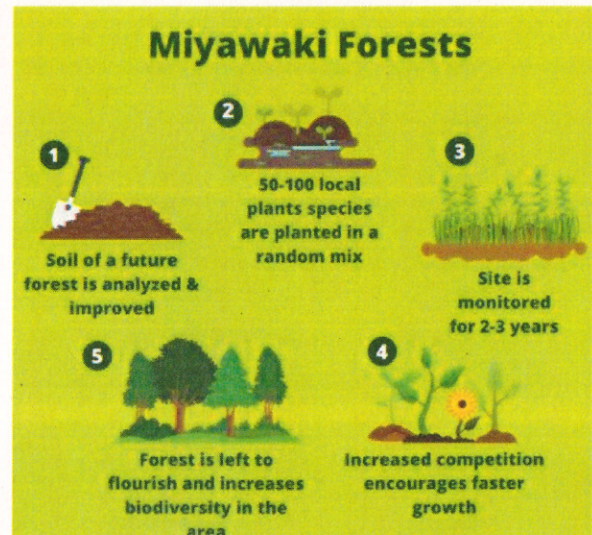


Fig: Dry Fog Dust suppression system in Conveyor belts

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- h. Dust collection from road is being done on daily basis by road Swiping machine.
- i. Apart from above, MUNPL, Meja has gone one step further towards protecting the native species and ecosystem by taking the pilot project of developing Urban dense Forest through **Miyawaki Technique**.

The approach is supposed to ensure that plant growth is 10 times faster and the resulting plantation is 20 times denser than usual. It involves planting native species in the same area and becomes maintenance-free after one to two years. By this method, up to 30 times or more Carbon dioxide absorption as compared to conventional forest. This method is completely chemical-fertilizer free forest that sustains itself and supports local biodiversity. In Miyawaki method multi-layered saplings are planted close to each other. This blocks sunlight from reaching the ground and prevents weeds from growing, thus keeping the soil moist. The close cropping further ensures that the plants receive. Work is in progress for plantation of 30000 nos. of trees using Miyawaki Method during the year 2022 – 23.



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PART - H

Additional measures / investment proposal for environmental protection including abatement of pollution

- Online monitoring system i.e. AAQMS, CEMS & EQMS installed for effective monitoring of ambient air quality, emissions and effluents.
- Third party monitoring of environmental parameters for effective environment management of project.
- Development of dense forest through Miyawaki technique for planting 30,000 nos. of sapling is being done by forest department.
- Vermin composting is being done in MUNPL premises.
- 3.3275 lac saplings already planted till March'23, 45000 saplings to be planted in 2023-24.
- Fly ash being disposed to Cement factories and Other Ash users.
- 270 KW of roof top solar PV systems at Switchyard building, Guest House and Hospital is under award.
- 25 MW of floating PV solar project planned on 145-acre area of water reservoirs.
- Awareness program related to environment has been regularly made in nearby villages, schools and with employees and associates by MUNPL, Meja. In Financial year 2022-23 a total expenditure of amount ₹5,55,365.00 has been made in awareness campaign related to environment.
- DeNox system has been installed in MUNPL, Meja for control of oxides of Nitrogen.
- Replacement of conventional light by LED lights resulted annual saving of 3.6 million units of electricity in FY 21-22
- Utilization of pond ash is being done in NHAI road projects by providing transport charges from MUNPL, Meja ash dyke to nearby road projects of NHAI.
- Recurring expenditure are being done for maintenance of AAQMS, CEMS and EQMS system.
- Flue Gas Desulphurization (FGD) system is being installed for control of Sox emission.

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PART - I

Any other particulars for improving the quality of the environment.

1. Mass public awareness programs:

- MUNPL World water day is celebrated in order to raise awareness and to sensitize people of vicinity, students of nearby schools, employees of MUNPL and associates about importance of water for life and the need to manage this precious resource in a sustainable and equitable way for the benefit of present and future generations.



Fig: World Water Day celebration in administrative building and plant area

- Nukkad Natak has been organized in nearby villages and schools to sensitize the peoples about importance of water and spreading awareness about this year world water day theme "Accelerating change" to solve the water and sanitation crisis.



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Fig: Nukkad Natak in the nearby village and schools regarding protection of environment.

- Various mass public awareness programs e.g. Water day pledge, Drawing and essay competition, awareness through speech and slogans, were carried out with workers, MUNPL employees, associates and school children's.



Fig: Awareness campaign through drawing competition in school and walkathon in nearby village

- Mass communication has been made with workers, of various areas of plant e.g. Coal handling Plant, Ash handling Plant, Main plant area, water system area and township, to recognise how they consume and manage water in their lives and make necessary changes to help utilize it better



Fig: Mass communication and Water Day Pledge with workers

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- Awareness about Mission LIFE:** In order to make Mission LIFE (Lifestyle for Environment) a mass movement of environmentally conscious lifestyle and spread awareness about need of Mindful and Deliberate Utilisation, instead of Mindless and Destructive Consumption, An awareness campaign has been done with school students regarding mission LIFE. The participants were briefed about seven themes of life mission and importance of mindful and deliberate utilization of natural resources.



- Reduced Waste:** A training session for children in the topic “Best out of waste” has been done with the help of expert. Children were trained for making various artistic crafts with the newspapers, paper waste, plastic wastes and other waste items.



Fig: training session for children in the topic Best out of waste with the help of expert.

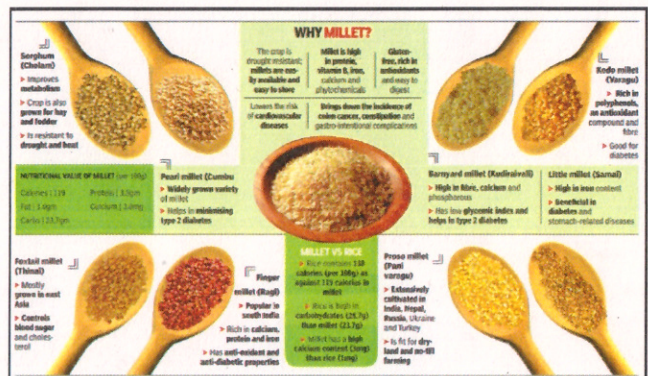
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- As part of Mission LiFE (Lifestyle for Environment) Save energy campaign a cycle rally has been organized from MUNPL to Kohdar market covering a distance of 15 km. Senior executives, employees, associates, ladies and workers were actively participated in the cycle rally for spreading the message regarding various actions that can helps in saving the energy e.g. using cycle for local or short commute, use carpooling and using public transport wherever possible etc.



Fig: Cycle rally has been organized for spreading awareness regarding save energy campaign

- Millets are a multipurpose crop that consume 70 percent less water than rice, grow in half the time of wheat, and require 40 percent less energy in processing. They are a one-stop solution in the wake of climate change, water scarcity, and drought conditions along with high nutritive value to provide sustainable food security. Millet is a heat tolerant crop that offers a profitable alternative to rice as it



does not require much water to grow. Millets require far less water than paddy or wheat and are also pest free, more resilient, and require absolutely no pesticide³.

- Campaign for introduction of sustainable food system has been launched by MUNPL. Millets has been introduced in the menu of Plant and township canteen and awareness campaign regarding adopting millets in the part of daily diet and its benefits for human as well for environment were propagated as part of Mission LiFE (Lifestyle for Environment).



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Fig: Campaign for introduction of millet items in plant canteen

- World Environment Day was celebrated by organizing various awareness programs for peoples of nearby villages, employees, associates, families, CISF to widely spread the awareness on environment protection. The events include mass tree plantation, a walkathon with banner, poster and slogan, awareness message by senior executives and through Nukkad Natak program were carried out in and around Plant in township.



Fig: Walkathon during World Environment Day



Fig: Tree Plantation program World Environment Day



Fig: Nukkad Natak for awareness about environment protection

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- In order to get rid of plastic / polythene waste, MUNPL, Meja has declared its plant and township premises as polythene waste free zone by banning the 'single use plastic'. Along with this following has been also undertaken to facilitate the activity of banning of single use plastic.



- Launching awareness campaign and Bring Your own bag # BYOG campaign in the shopping complexes, vegetable market, co-operative stores etc.
- Display of banners and distribution of pamphlets in shops, vegetable market and parking lots.
- Distribution of jute bags among all employees, associates, CISF etc.
- Encouraging employees and their families for storage of domestic waste in segregated condition.

- In order to encourage the mitigation of plastic bag usage and to facilitate the process, MUNPL has distributed biodegradable and compostable bags developed by DRDO in collaboration with M/s Eco Plastic products Hyderabad, to nearby shops and vegetable market.



Fig: biodegradable and compostable bags distribution in Sabji market

- Nukkad Natak is a drama performed on streets to create social awareness. Nukkad Natak is not just a medium of entertainment, but also a versatile tool to educate society about any important topic. MUNPL, Meja regularly organize the Nukkad Natak organized in nearby village for communicating the nearby people regarding environment and conservation of ground water.

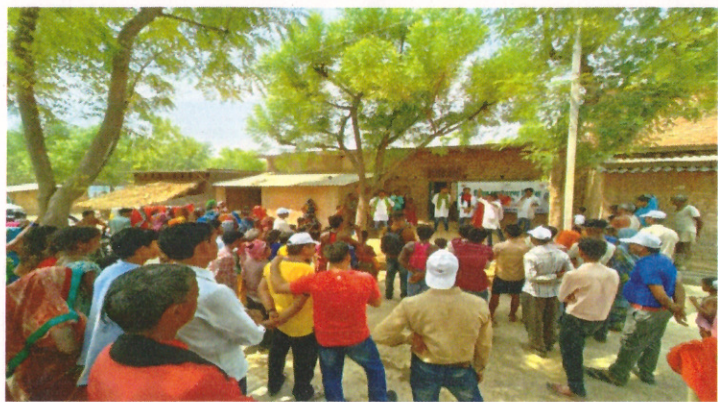


Fig: Nukkad Natak in nearby village regarding environment awareness

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2. Distribution of fruit bearing sapling to peoples of nearby villages shall increase the green cover and also helps local people to gainfully utilize their resources. MUNPL, Meja has distributed around 2000 nos. fruit bearing saplings in nearby villages



Fig: fruit bearing sapling distribution in nearby villages

3. Afforestation has not only contributed to the enrichment and restoration of local ecosystem but also helped in carbon sequestration by serving as a 'sink' for pollutants released from the station and thereby protecting the quality of ecology and environment. Total 332750 nos. of sapling has been planted by MUNPL till March'2023.



4. MUNPL, Meja has organizing various mass tree plantation drive programs. 1500 nos. tree sapling were planted on 15 august in mass tree plantation drive of Uttar Pradesh govt.



5. All Ash Water Recirculation Systems (AWRS) are under continuous operation. Decanted clear ash water after disposal of ash slurry in the ash dykes is fully recycled in the plant for ash slurry preparation. Zero Liquid Discharge is being maintained in the ash dykes.
6. CEMS & EQMS have been installed at MUNPL, Meja and are fully operational.
7. Effluent treatment plants are fully operational for treatment of effluent generated during the power generation process. Treated effluent is being utilized fully in plant process.
8. Ash Utilization: Ash utilization is one of the major factors interacting not only with the surrounding environment, but it is also an area of prime concern of community and regulators. MUNPL, Meja has

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taken multi – pronged approach to increase its ash utilization level not only to comply with the requirements but also to exceed the expectations of regulatory bodies and community at large. Ash utilization for financial year 2022-23 has been 64.10%.

9. MUNPL, Meja has taken handover of GREEN CHAR CAOL (made from municipal waste) first time in MUNPL as well as in NTPC. Torrefied charcoal (green coal) which is similar to natural coal can be successfully blended with fuel in the thermal power plant to produce electricity. The process of torrefied charcoal (green coal) is environment friendly as there is no burning of waste, it is rather processed inside the reactor using Macawber Beekay's specialized conversion technology.



Sunil Kumar

(Sunil Kumar)
CEO (Chief Executive Officer), MUNPL

Prateek Gupta

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