



Towards Environmental Sustainability

An Endeavour of GMDC



GMDC: A GROWING KALPAVRIKSHYA

Gujarat Mineral Development Corporation Ltd (GMDC) is a flagship Public Sector Undertaking of Government of Gujarat. The Corporation is engaged in harnessing the mineral resources, beneficiating the minerals and power generation. The Corporation has been in the business since the year 1963-64 with mandate to develop major mineral resources in the state of Gujarat. The Company commenced its operations with a small sand crushing plant at Surendranagar. Presently GMDC is actively running a power plant, wind farms, two mineral beneficiation plants, five lignite mines and one bauxite group of mines across the state. Besides other new projects are in pipeline.

THE GREEN COMMITMENTS

Environment Policy of GMDC-2010

GMDC is committed to

- Adopt best environmental management practices by consistent knowledge upgradation, capacity building and adoption of best suited measures by systematic approach to prevent and control pollution at its facilities.
- Ensure total compliance of all environmental regulations, requirements and go beyond compliance by integrating best practices in every operational activity with assigned line-functions.
- Develop a culture of environmental and health consciousness, resource conservation and waste reduction awareness among all stakeholders for shared responsibilities of environmental protection.
- To develop green belt in harmony with nature for sustainable development, mining, power generation, industrial activities.
- To reduce carbon footprints and in long term goes for carbon and climate neutrality by adopting best practices in the operations and management.



Training to the executives



Biological reclamation of dump



Greenbelt development using fruit bearing plants



GMDC Lignite Mine at Mata no Madh



GMDC Thermal Power Plant at Nani Chher

SYNCHRONISING MINING WITH ENVIRONMENT

Eco-sensible mineral exploration

- Lighter and efficient equipments for exploration.
- Positioning of drill holes is always made away from existing trees. Plugging of bore hole is done at the location of exploration.
- No tar road or concrete road is made and existing track roads are used for approaching exploration area.

Reclamation at mine site

- Stripping of the top soil and subsoil ahead of the mine face and its separate storage at earmarked site and is reused for restoring the mine pit.
- Dump stabilization by compaction using dozers followed by plantation.
- Backfilling is done to restore mine pit to the ground level and plantation is done mainly by indigenous species.
- Creation of shallow water body in mined out area.
- Stabilizing physical structures of overburden dump by providing toe wall, garland drains and plugging of gullies.



Water storage at Panandhro Lignite Mine



Eco-sensible drilling in Kachchh



Backfilling at Rajpardi Lignite Project

OPERATIONAL ENVIRONMENT MANAGEMENT

- Water sprinkling at haul roads and potential fugitive dust emission area using mobile water sprinkler at all mining sites.
- Road side avenue plantation using local and ornamental tree species.
- Maintenance of roads and regular water sprinkling .
- Complete tarpaulin corral of loaded trucks.
- Safe collection and storage of used oil.
- Use of noise pollution protection devices.
- Controlling acidification of mine water using passive method.
- Peripheral plantation along project boundary.

ENVIRONMENTAL MONITORING AND AUDITING

- Monitoring of ambient air quality by establishing a network of monitoring location surrounding the active working area.
- Monitoring of seepage and stored water quality for physical and chemical characteristics.
- Monitoring of underground water level in mining area.
- Monitoring of pollution control measures for efficacy and efficiency by in-house team, third party environmental monitoring and third party environmental auditing.



Avenue Plantation at ATPS, Nanichher



Tarpaulin corral of loaded trucks



Hazardous waste storage facility at ATPS



Environmental monitoring activities at various projects

ECO-SENSIBLE THERMAL POWER GENERATION

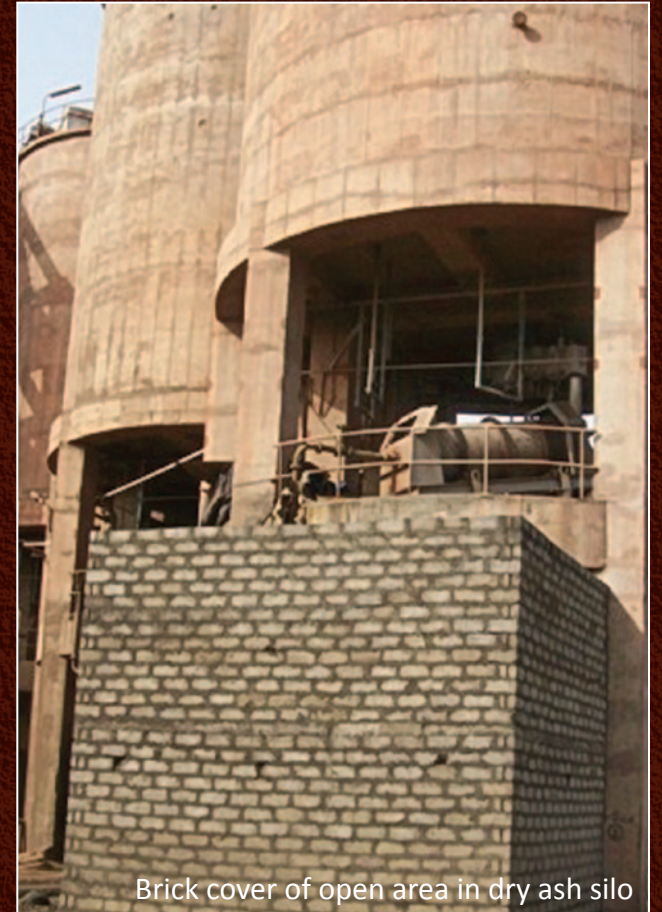


GMDC has CFBC boiler based 250 MW Thermal Power Plant at Nanichher in Kutch district. The plant is featured with advanced ultramodern technologies like

- Electrostatic precipitator (ESP), Scrubber, Multicyclone and Dry fog systems to control particulate matter emission.
- Lime dosing system and lower bed temperature to control SO_x, and NO_x emission.
- Fly ash of power plant is backfilled in mine pit or utilised in cement plant.
- Sewage is treated in Sewage Treatment Plant (STP) before reuse in plantation.
- Preventive maintenance of machineries and vehicles are done for reduction of noise generation.
- Operators of high noise generating equipment like drills are provided with earplug, ear muff, etc.
- Air silencers for noise reduction of machineries and the potential noisy fixed machineries are enclosed in sound proof cabinet.



ESP for boiler



Brick cover of open area in dry ash silo



Dry fog system for lignite conveyor



Pollution control facilities at ATPS



STP at ATPS

GREEN ENERGY GENERATION

- Corporation is contributing 60 MW wind energy directly to the grid by its wind mills spread in Warshamedi (Rajkot), Balambha (Jamnagar), Chingaria (Porbandar).
- Corporation harness solar energy by installing 5 MW solar panels at Panandhro Lignite mine, Kachchh; 10.5 KW at Corporate office, Ahmedabad and 20 KW at Surkha (North) Lignite mine at Bhavnagar to meet the energy requirement.
- Corporation has plans for further massive capacity expansion in renewable energy generation.
- GMDC is committed to increase renewable energy generation and consumption to decrease dependency on conventional energy for reducing its carbon footprint.



An overview of wind mills of GMDC



Solar panels installed at various places at projects

GREEN, GREENER, GREENEST

Greening of project area

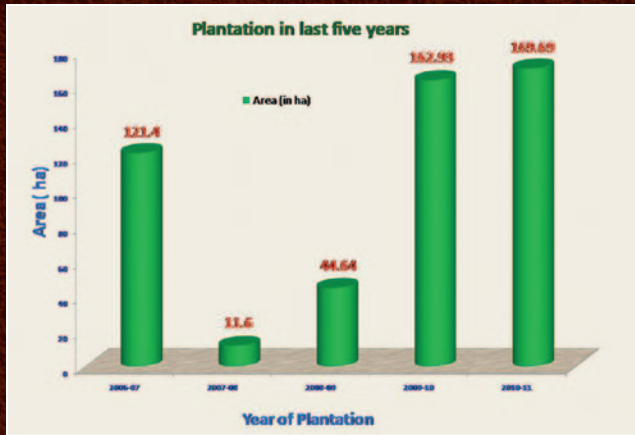
- Developing greenbelt in mining areas by planting local species like Pilu, Neem, Desi Baval, etc. in 800 ha. area.
- Development of plantation emphasizing drip irrigation in semi-arid localities like Kutch in 450 ha. area.
- Energy plantations using energy plant like Jatropha.
- Fodder development at backfilled mine pits for the use of villagers.
- Medicinal and fruit bearing plantations at project sites like Aloe vera, Mango, Nuts, Palm, etc. in 200 ha.

GREEN ACTIVITIES BEYOND PROJECT AREA

- Plantation out side project in 300 ha. area on waste land.
- Strengthening wildlife conservation measures at Narayan Sarovar Wildlife Sanctuary (NSWLS).
- Environmental awareness program sponsored for school childrens through WWF for Nature.
- Participating in the State Government drives for environmental conservation measures such as celebrating World Environment Day, Van Mahotsav, etc.
- GMDC conducts special study apart from environment impact assessment through research organizations to get deeper knowledge of the biodiversity nearby the project area to implement conservation measures in better way.



Fodder development at Panandhro



Plantation on dumps at Mata No Madh



Nilgai spotted in afforested area



Plantation at ATPS



Spotted Owlet

Avifauna spotted in afforested area

WATER HARVESTING AND WATER CONSERVATION NEAR PROJECT AREA

- Creation of more than 20 water recharging structures.
- Renovation and capacity enhancement of existing water bodies and water recharging structures.
- Reuse of treated mine seepage water and treated sewages for agriculture, greenbelt development & dust suppression.
- Use of drip irrigation system to optimize water use in plantation.
- Rainwater harvesting and its reuse in drip irrigation system and new water conservation structure development.
- Well recharging / underground cheek dam development.
- Regular water auditing to optimize water use.
- Construction and renovation of water harvesting structures through State Water Resource Department (29 nos.).



Wast weir of Chiyad pond, Nakhatrana, Kachchh



Waterbody at Panandhro Mines



Sinpai Dam, Fulra, Kachchh



Pond for Punrajpur Village



Khirsara storage pond at Sandhro Vandh, Kachchh



Checkdam at Khanot

PEOPLE'S PARTICIPATION FOR ENVIRONMENTAL CARE

- Environmental awareness campaign and Van Mahotsav celebrations.
- Encouraging villagers for greenbelt development.
- World environment day celebrations by means of Quiz, Painting, Seminar, Multimedia, etc.
- People's contribution for the water harvesting structures in peripheral villages.
- Organizing nature education camp for school students.
- Free health check-up and sanitation camp for enhancing sanitation awareness.



MD, GMDC planting a sapling



GMDC driving communities for greening activities





GMDC Lignite Mine at Panandhro



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