

Mission LiFE : Environmental Sustainability and Just Transition in Coal Sector

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The Government of India is committed to a sustainable coal sector, balancing environmental sustainability with the well-being of coal-dependent communities while acknowledging the vital role of the coal sector in India's energy security. As part of this commitment, the Ministry of Coal is integrating the principles of Mission LiFE (Lifestyle for Environment), launched by the Prime Minister, Shri Narendra Modi, into the coal sector to promote environmental sustainability by placing individual action at the forefront of climate change mitigation.

In the Coal Sector, apart from implementing sustainable and environmentally friendly initiative under the guidance of the Ministry of Coal, Coal/Lignite PSUs are actively organizing programs aligned with the Mission LiFE to promote sustainable and eco-friendly and sustainable lifestyles among employees and coal-dependent communities. The goal is to cultivate a community of individuals dedicated to pro-planet values. These endeavors involve creating awareness campaigns focused on waste reduction principles, including Refuse, Reduce, Reuse, Repair, and Recycle (5R). Events such as "Know Your Tree" discussions and Sustainable Food System Programs are also part of these initiatives. Furthermore, efforts include the distribution of fruit-bearing plants, the organization of essay writing and quiz competitions, and cycling events to actively engage both employees and local communities. Additionally, activities like plastic waste and e-waste collection drives, cleaning initiatives, and seminars on home composting have been organized to educate and inspire employees and well as local communities to adopt environmentally responsible behaviors.

As part of the People-Centric Greening Initiative – Bio-reclamation/Plantation, Coal/Lignite PSUs have been consistently and dedicatedly working towards sustainable environmental practices. Their primary focus is on reducing the carbon footprint associated with coal mining through extensive plantation programs featuring native species, including fruit-bearing plants. These initiatives span various locations, encompassing overburden (OB) dumps, haul roads, mine peripheries, residential colonies, and available land outside the lease area. The aim is to benefit local communities by fostering environmental sustainability. By employing advanced techniques such as high-tech cultivation, bamboo plantations, seed ball plantation, grassing, and the Miyawaki method in suitable command areas, they have successfully planted more than 235 lakh native saplings over the past five years (from FY 2019-20 to FY 2023-24 until January). This extensive effort has covered an area exceeding 10,784 hectares, making a substantial contribution to enhancing the carbon sink and promoting a greener environment for local communities. Moreover, these PSUs annually distribute fruit-bearing plants to local communities.



Plantation on overburden dump at Samleswari OCP, MCL

In the Coal Sector's community-centric initiative of Eco-Mine Tourism, Coal/Lignite PSUs actively contribute to reclamation efforts, focusing on enhancing local tourism and fostering conservation in mining areas. As part of this initiative, these PSUs engage in developing Eco-Parks, Eco-Tourism sites, and Eco-Restoration sites on de-coaled areas. These mine tourism sites have evolved into venues for various social events, recreational activities, morning walks, yoga, meditation, and more for local communities and tourists also. Over the past five years (from FY 2019-20 to FY 2023-24), Coal/Lignite PSUs have successfully established 16 Eco-Parks/Mine Tourism sites, with 7 such sites seamlessly integrated into the local tourism circuit. The future plans include the development of 23 new eco-parks/mine tourism sites in the coming years, emphasizing the commitment to creating sustainable and engaging spaces for the local communities.



Nigahi Eco- Park & Chandrashekhar Azad Eco- Park developed by NCL

As part of Sustainable Development Goal 6 (SDG 6) to ensure the availability and sustainable management of water and sanitation for all, as outlined in the 2030 Agenda for Sustainable Development, Coal/Lignite PSUs focus on the conservation and efficient utilization of mine water. Through the implementation of appropriate treatment techniques, this water is conserved and utilized for community use. Coal/Lignite Public PSUs are actively involved in the efficient utilization of mine water, both from active and abandoned mines, for community purposes such as domestic use and irrigation. A particular emphasis is placed on transforming mine voids into facilities for pisciculture and water sports, alongside the promotion of water harvesting practices. Over the last five years (from FY 2019-20 to FY 2023-24 until January), a substantial amount of 16,808 lakh kilolitres (LKL) of mine water has been utilized for community purposes. This initiative is benefiting approximately 17.7 lakh people across 981 villages in coal-bearing states annually. This concerted effort not only aligns with the Jal Shakti Abhiyan of the Government of India but also makes a significant contribution to the achievement of the SDG 6.



Discharged Mine water utilized for cultivation in CCL

The gainful utilization of overburden, specifically in the production of M-sand, offers numerous benefits to local communities. During open-cast mining, excess soil and rocks above coal deposits are extracted and discarded, forming heaps of fragmented rock which necessitates careful planning and management to mitigate environmental impact. Coal/Lignite PSUs have taken an innovative approach by establishing OB processing plants and M-sand plants to make the process cost-effective and environmentally sustainable and has commissioned 4 OB processing plants and 5 OB to M-Sand Plants. The initiative to produce M-sand from overburden helps in decreasing the reliance on river

bed mining for sand. This is significant for preserving river ecosystems and mitigating the environmental impact of traditional sand extraction. The gainful utilization of overburden for M-sand production, as undertaken by Coal/Lignite PSUs, presents a holistic solution with positive implications for the environment, economy, and overall welfare of local communities.



Overburden to M-Sand Plant at WCL

In the pursuit of community-centric initiatives, the focus on Energy Efficiency Measures stands out as a significant contributor to both environmental sustainability and community well-being. The Ministry of Coal has been actively overseeing these measures in Coal/Lignite PSUs since FY2021-22, reflecting a commitment to responsible energy consumption. The concerted efforts of Coal/Lignite PSUs towards energy efficiency have yielded tangible benefits for the community. Initiatives such as the replacement of 4.33 lakh conventional lights with LED lights, installation of 5554 energy-efficient air conditioners, 84494 super fans, deployment of 215 electric vehicles, and utilization of 1640 efficient water heaters, among others, have resulted in remarkable savings. They have witnessed a conservation of 14.34 crore kWh units, translating to substantial savings amounting to Rs 107.6 crore and resulted in reduction of 1.17 lakh tonnes of CO2 emissions. Notably, these energy efficiency measures have not only contributed to economic savings but have also had a positive impact on the environment. This aligns with India's broader commitment to reducing the Emissions Intensity of its GDP by 45 percent by 2030, as outlined in the updated Nationally Determined Contributions (NDC). By implementing these energy efficiency measures, Coal/Lignite PSUs are not only demonstrating environmental responsibility but are actively contributing to the betterment of the community. The resulting cost savings and reduced carbon footprint directly benefit the local population, emphasizing the integral role of sustainable practices in fostering a healthier and more resilient community.

The Ministry of Coal places a priority on the concept of a "Just Transition" as part of Vision India @ 2047, recognizing its substantial and enduring implications in long term. The Ministry of Coal has delineated specific objectives to facilitate Just Transition, encompassing support for affected communities to safeguard their livelihoods and preserve social infrastructure through economic diversification of abandoned and closed coal mines. The focus extends to promoting environmental sustainability, incorporating measures such as the remediation and repurposing of land and assets. In a concerted effort to mitigate the repercussions of mine closure, Coal/Lignite PSUs, guided by the Ministry of Coal, are actively implementing sustainable and environmentally friendly initiatives. These initiatives align with the core principles of Just Transition and Environmental Sustainability.

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