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आज़ादी का
अमृत महोत्सव



कोयला मंत्रालय
Ministry of Coal



Achievements of Ministry of Coal 9 Years



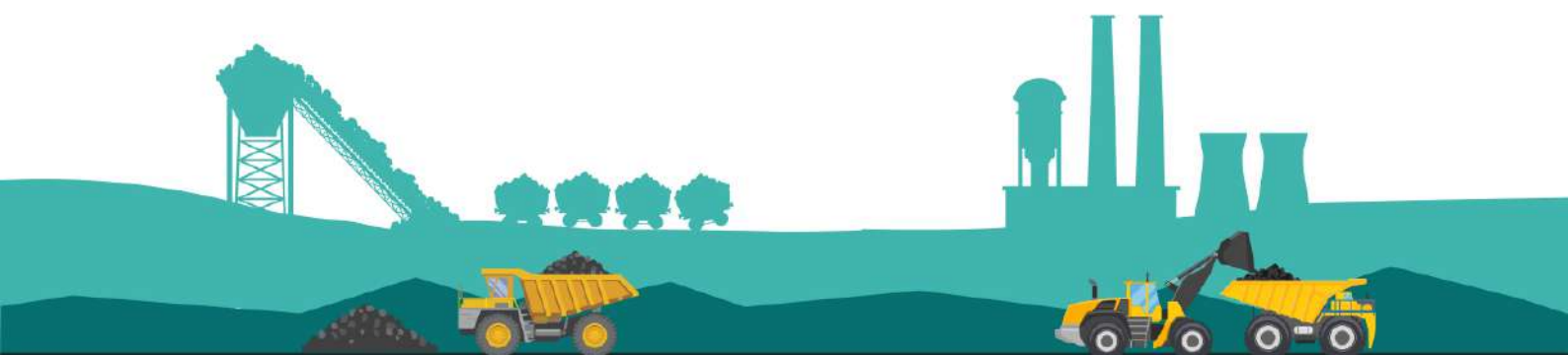
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Achievements at a Glance

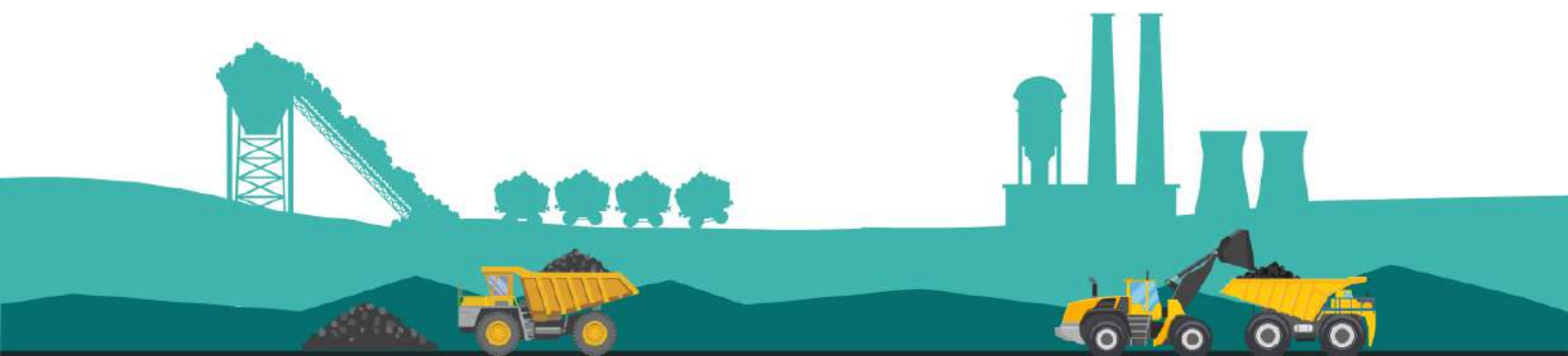
- The core objectives of the Ministry of Coal are to augment coal production by adopting state-of-the-art clean-coal technologies; enhancing exploration efforts with thrust on increasing proven coal resources and developing necessary infrastructure for prompt evacuation of coal to meet the demand of different sectors of the economy in an eco-friendly and sustainable manner.
- The overall annual Coal Production has surged from 609 MT in FY 2014-15 to 893.19MT in FY 2023-24, witnessing a massive **growth of 47%** over the last 9 years.
- **Hon'ble Prime Minister** launched a significant reform on **June 18th, 2020**, by introducing **Commercial Coal Mining**. This reform marked the implementation of a new transparent auction regime to allow participation of private sector in coal production.
- The Ministry has successfully allocated **152 coal mines** against which **52 mines** are operational and remaining are at various stages of development. These mines have a cumulative PRC (Peak Rated Capacity) of **553 MT**. Furthermore, Coal production from Captive/Commercial mines has increased from **52.70 MT** in 2014-15 to **122.7 MT** in 2022-23 a growth of **132.83%**.
- **67 First Mile Connectivity projects** worth **~₹ 21,000 crores** with **885 MT capacity** have been sanctioned, out of which 9 are commissioned and the remaining will be completed by **FY' 2028-29**.
- In line with PM Gati Shakti, the Ministry has undertaken **14 railway projects** worth **₹ 26000/- crores** to bridge the missing gaps of multimodal connectivity. Out of this, 3 rail projects are already commissioned till date.



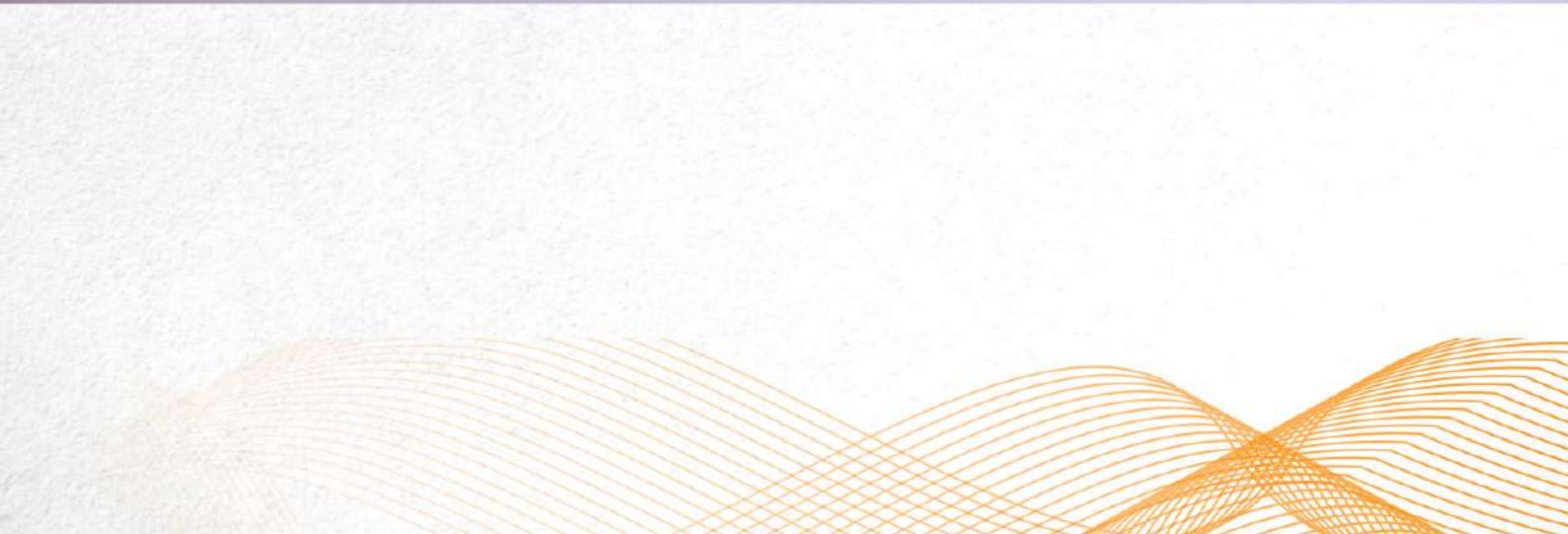
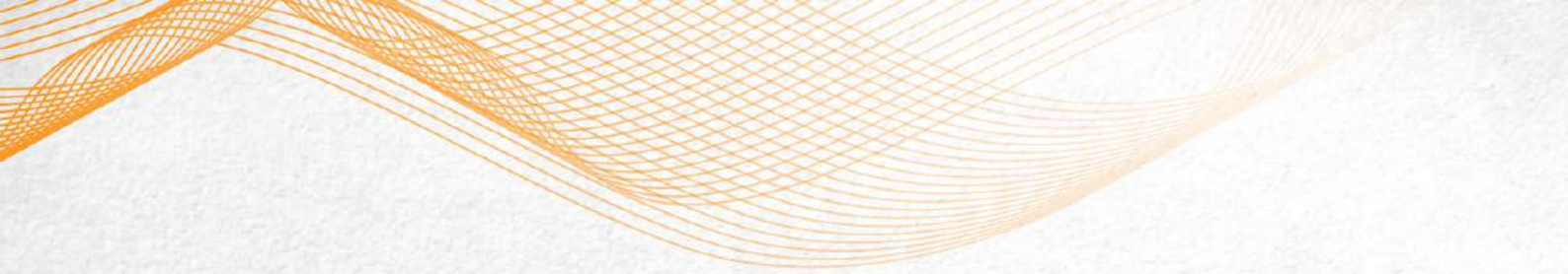
- During the last 9 years significant work on environmental protection has been achieved by converting about **16,262 hectares** of land into green cover through a massive plantation of more than **370 lakh saplings**, which is equivalent to **carbon sink of 8.15 lakh tonnes CO2 equivalent**.
- Coal/Lignite PSUs have identified about 2838 Ha afforested non-forest de-coaled land so far for compensatory afforestation as per the Accredited Compensatory Afforestation (ACA) guidelines.
- During FY 2014-15 to FY 2022-23, **25 Eco-parks/Mine Tourism** sites were established covering over 230 hectares of land integrating 7 nos. of parks with the local tourism circuit.
- Several reforms in the Coal Sector were introduced including **rationalization of coal linkage, Single Window Clearance System, Third Party Quality check**, and allowing **100% FDI** in coal mining under automatic route etc.



Morning shot of dragline working at Jayant OCP, NCL









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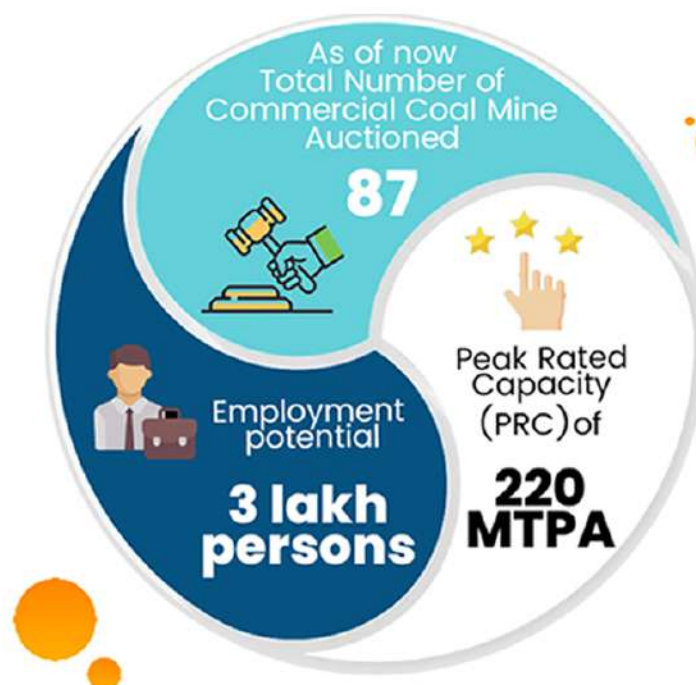
Reforms



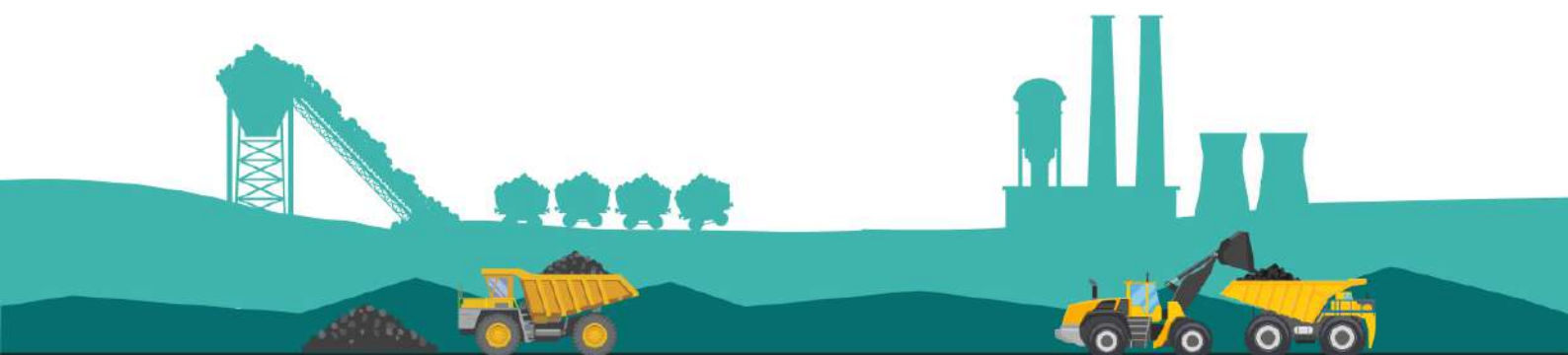
1.1. **Commercial Coal Mining:** To reduce import of coal and to promote domestic production, the auction-based regime introduced in 2014 allowed private sector participation. However, it was limited to captive usage within the own end-use plants. The sector underwent a significant transformation and opened up for commercial coal mining by allowing participation of private players in 2020. The first-ever successful auction of commercial mining was launched by the Hon'ble Prime Minister on 18.06.2020.

The auctions have terms and conditions which are very liberal, allowing new companies to participate in the coal mining based on Revenue sharing mechanism, reduced upfront amount, allowing exploitation of CBM, no restriction on the sale and/ or utilization of coal, providing more flexibility in coal production schedule, 100% FDI through automatic route and incentives for early production, gasification and liquefaction of coal.

The Ministry of Coal has completed six tranches of auctions and recently opened the 7th tranche of auction on **March 29, 2023** offering 102 coal mines.



1.2. **Mines and Minerals (Development and Regulation) Act, 1957:** Under the provisions of the Mines and Minerals (Development and Regulation) Act, 1957 and the Rules made thereunder, 35 coal blocks have been successfully auctioned.



1.3. Allocation of Mines under Coal Mines (Special Provisions) Act, 2015

After the cancellation of 204 out of 218 coal blocks allocated since 1993 by the Hon'ble Supreme Court, the central government enacted the CMSP Act 2015, effective from 2015, to ensure energy security of the country. Under the provisions of the CMSP Act, 2015, a total of 122 coal mines have been successfully allocated, with 69 allocated through auction and 53 through the allotment process. Overall, the Coal Mines (Special Provisions) Act, 2015 played a crucial role in reforming the coal mining sector in India. It introduced:

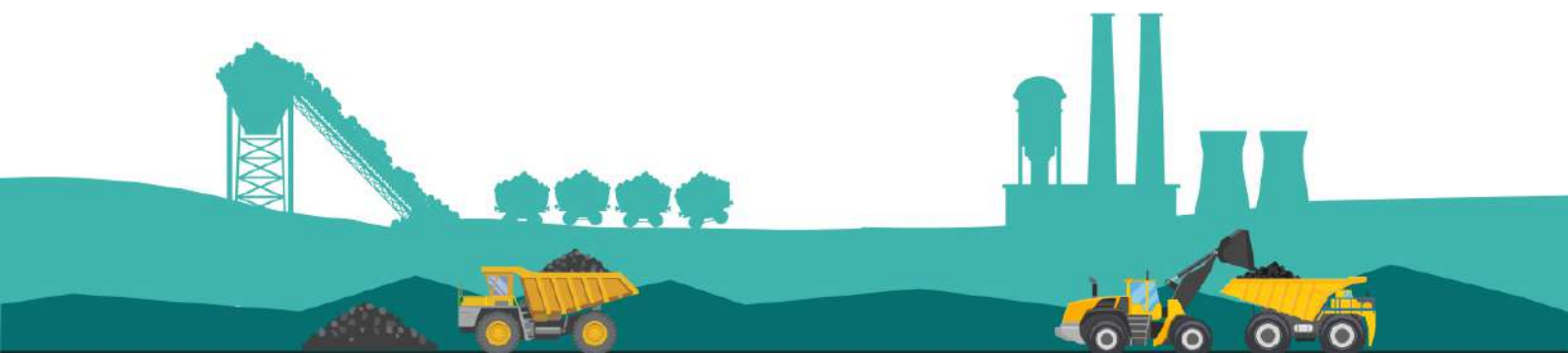
- The transparent auction process,
- Encouraged Private Sector Participation,
- Increased coal production,
- Generated revenue for the government
- Created employment opportunities and emphasized Environmental sustainability in coal mining operations.
- Liberal eligibility conditions

1.4. **Coal linkages for gasification plants of the coal companies:** - Coal India Limited (CIL)/ Singareni Collieries Company Limited (SCCL) have been allowed to provide a long-term allotment of coal to their own gasification plants. This will encourage adoption of coal gasification technology in the country.

1.5. **Guidelines for Mine Plan and Mine Closure Plans:** On 29.05.2020, Ministry of Coal had issued a consolidated guidelines for submission, processing and approval of Mine Plan and Mine Closure Plan. Subsequently, Mine Plans/Mine Closure Plans are approved online through SWCS portal.

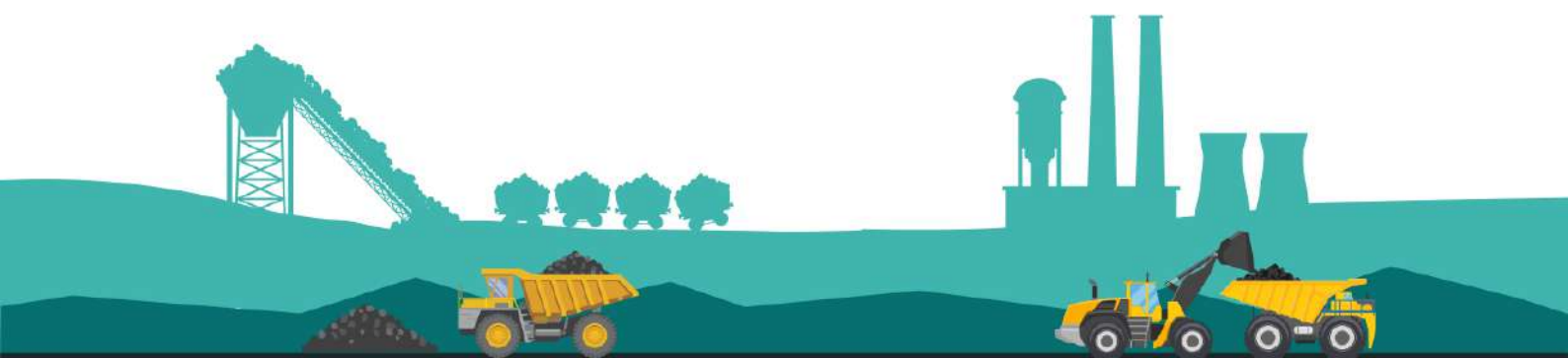


- 1.6. **Guidelines for mine closure for mines closed before 2009:** In order to scientifically close these mines in a manner that benefits the community, prevents illegal mining, and ensures the safety and repurposing of the mined-out land, the Ministry of Coal issued mine closure guidelines on October 28, 2022, providing guidance to all coal/lignite companies. The overall objective of these guidelines is to restore the mined-out land to its pre-mining stage to the extent possible.
- 1.7. **Utilization of land acquired under the Coal Bearing Areas (Acquisition & Development) Act, 1957:** The Ministry of Coal has issued policy guidelines for the use of land acquired under the Coal Bearing Areas (Acquisition & Development) Act, 1957. These guidelines consider lands that are no longer suitable or economically viable for coal mining activities, or lands that have been mined out or reclaimed for various coal infrastructure development activities, such as Conveyor Systems, Coal Handling Plants, Railway Sidings, etc.
- 1.8. **Mineral Concession (Amendment) Rules, 2022** - The Ministry of Coal has amended the Mineral Concession Rules, 1960 (MCR) to decriminalize its provisions. This amendment further promotes and boosts the government's "Ease of Doing Business" policy by decriminalizing sixty-eight (68) provisions of the MCR, while reducing the penalty for ten (10) provisions. The MCR regulates the application and granting of mineral concessions, including reconnaissance permits, prospecting licenses, and mining leases. Additionally, the rate of penal interest on delayed payments to the government, such as rent, royalty, fees, or other sums, has been reduced from twenty-four percent (24%) to twelve percent (12%).



1.9. Marketing Reforms

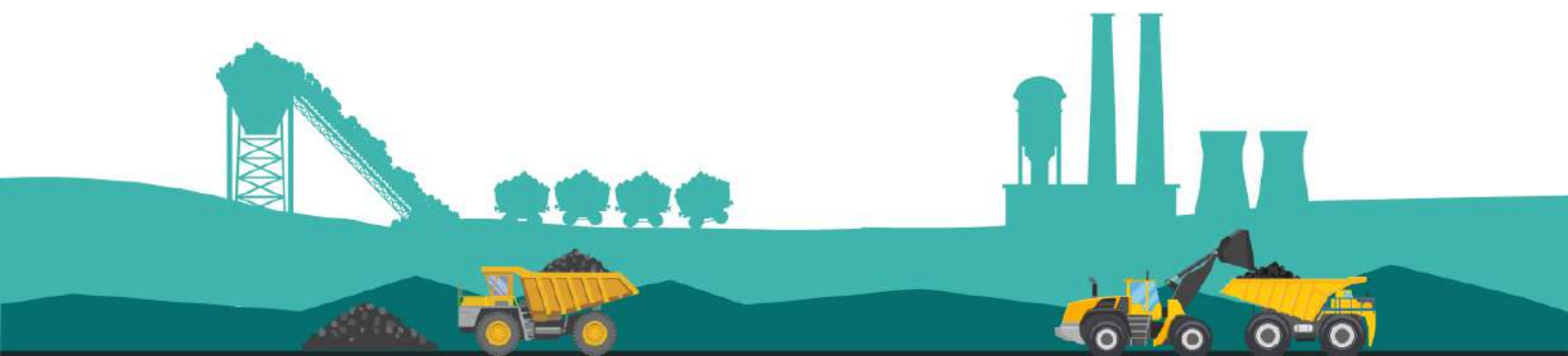
- **New sub-sector under the Policy for Auction of coal linkages of Non-Regulated Sector (NRS)** : A new Sub-sector 'Production of Syn-Gas leading to coal gasification' has been created in 2022 under the NRS linkage auctions in order to encourage coal gasification technology so that new consumers requiring coal for coal gasification are incentivized. This will also mitigate the adverse impacts of conventional use of coal on the environment.
- **Single window for e-auction of coal** : Government has approved in 2022 a new mechanism for e-auction of coal by the coal companies. The erstwhile sectoral e-auction windows of Coal India Limited has been done away with and henceforth, all the non-linkage coal of the coal companies would be sold through one e-auction window of Coal India Limited / Singareni Collieries Company Limited. This single e-auction window will cater to all the Sectors viz. Power & Non-Regulated Sector including traders. A single e-auction window would enable the coal companies to sell coal through the market discovered price mechanism and thus, implementing this policy will lead to the removal of Market distortions. It shall also increase operational efficiencies and lead to an increase in domestic coal demand by efficiency in domestic coal market.
- **Amendment to NCDP** : To promote optimum utilization of coal resources in the national interest, enabling provisions have been made by way of amendment to the New Coal Distribution Policy (NCDP), 2007, in order to allow the coal produced from Closed / Abandoned / Discontinued mines of CIL / SCCL to be sold through a transparent and objective manner as per the guidelines issued by Ministry of Coal from time to time.



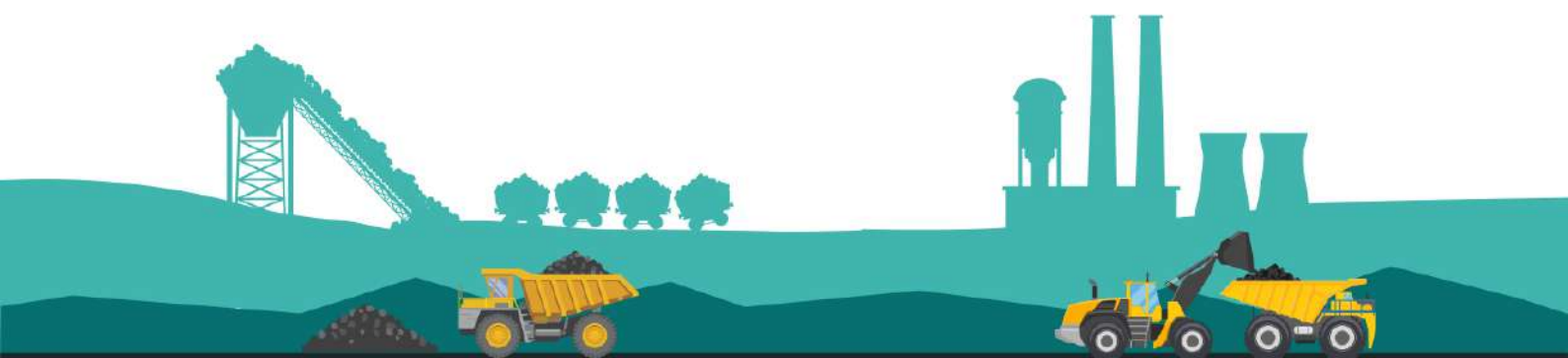


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Policy Initiatives



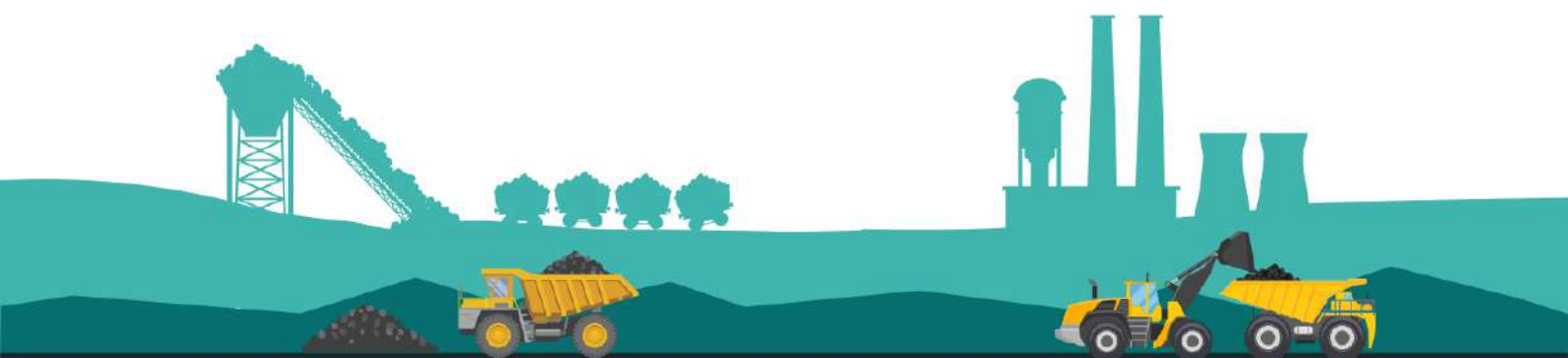
- 2.1. **Ensuring Coal Quality by Third-Party Sampling** : For enhanced customer satisfaction, special emphasis has been given to the Quality Management of coal. All the consumers of CIL / SCCL have the option for quality assessment of the supplies through independent third-party sampling agencies (TPSA). All consumers of power /non-power sectors are free to take services of any of the empaneled agencies.
- 2.2. **Mission Coking Coal** : The Ministry of Coal has launched Mission Coking Coal to promote 'Atmanirbhar Bharat' initiative of the Hon'ble Prime Minister. Domestic raw Coking Coal production is likely to reach 140 MT by 2030 & CIL has planned to increase raw coking coal production from existing mines up to 26 MT and identified ten new mines with PRC of 22.64 MT by FY 2025. CIL has also offered 8 discontinued mines on a new innovative model of revenue sharing with the private sector in Tranche I, II & III to augment domestic coking coal production. To further enhance raw coking coal production, the Ministry of Coal has allocated 16 coking coal blocks to the private sector with a PRC of 25.82 MT during the last two years. Most of these blocks are expected to start production by 2025.
- 2.3. **Mine Developer cum Operator** : Ministry of Coal intends to engage reputed MDOs in coal mines, through open global tenders, and ramp up domestic coal output, and reduce import dependency to the extent possible. The contract period of engagement is for 25 years or the life of mine whichever is less. Coal India Limited (CIL) has identified 25 mines for operating in MDO mode, out of which for 12 mines LoA has been issued. Cumulatively, these projects have a production capacity of close to 100 million tonnes (MT) per year.
- 2.4. **Reopening of discontinued mines on Revenue sharing modal** : 36 abandoned mines have been identified for re-opening on Revenue Sharing basis. Out of which, for 13 mines, LoA has been issued. Discontinued mines pose a national loss because large amounts of reserves cannot be extracted. Therefore, the Ministry of Coal offers mines in the revenue-sharing model that includes private-sector participation in order to bring these abandoned mines back into operation.



2.5. Grant of Coal Linkages to the Power Sector:

Coal linkages to the Power Sector are presently governed under the Scheme for Harnessing and Allocating Koyala (Coal) Transparently in India (SHAKTI), 2017. SHAKTI Policy was a shift from the earlier nomination based regime of allocation of coal linkages to a transparent way of allocation of coal linkages through auction / tariff based bidding based regime as well as on nomination. The Scheme has provisions for coal linkages on nomination basis to Government Gencos only. Amendments to the said policy were introduced in 2019. The scheme provides various avenues under which the power plants can obtain short, medium & long term coal linkages. Coal supplies under the SHAKTI Policy have been enabled against Medium & Short Term PPAs also. As of now, coal linkages to the following capacities have been granted under various Paras of the policy:

- Clearance has been given for signing of Fuel Supply Agreement (FSA) to 9 LoA holders with a total capacity of 8,780 MW under provisions of Para A (i) of SHAKTI Policy.
- 44 Thermal Power Plants have been granted coal linkages for a total capacity of 45,860 MW under the provisions of Para B (i) of SHAKTI Policy.
- Under SHAKTI B (ii), total five rounds of auction has been completed by Coal India Limited in which total booked quantity is 36.2 MT.
- Coal linkage have been earmarked from Coal India Limited for the States of Gujarat, Uttar Pradesh and Madhya Pradesh for a capacity of 4000 MW, 1600 MW and 2640 MW respectively under B (iv) of the SHAKTI Policy. Coal linkage earmarked to the State of Madhya Pradesh and Gujarat continues to the extent of power requirement procured / to be procured through tariff based bidding. The balance quantity has lapsed.
- Coal linkage earmarked from Coal India Limited for a capacity of 4500 MW under B (v) of SHAKTI Policy.
- 14 tranches of linkage auction have been conducted by Coal India Limited under B (viii) (a) of SHAKTI Policy. Out of total offered quantity of 74.27 MT of coal, 36.27 MT have been booked by the successful bidders.



Auction of coal linkages of Non-regulated sectors:

In 2016, a new policy on Auction of Coal Linkages to Non-Regulated Sector (NRS) was introduced. The Policy is a shift from the earlier nomination based regime of allocation of coal linkages to the NRS to a transparent way of allocation of coal linkages through auctions. The policy prescribes that allocation of coal linkages for NRS [except Fertilizer (urea)] shall be auction based. Only the erstwhile Fuel Supply Agreement (FSA) for CPSEs and Fertilizer (Urea)] shall be renewed. The new FSAs under the Policy shall be for the maximum period of 15 years. With the amendment to the policy introduced in 2020, the tenure of coking coal linkages in the NRS linkage auction has been revised for a period upto 30 years. Separate quantities are earmarked for various sub-sectors of NRS and the auctions are conducted for the sub-sectors. Presently, the sub-sectors are Cement, Sponge Iron, CPP, Steel (Coking) Others (Coking) and Others.

A new sub-sector 'Production of Syn-Gas leading to coal gasification' was created in 2022 under the NRS linkage auctions in order to encourage coal gasification technology.

5 tranches of linkage auction have been completed by Coal India Limited so far and the 6th tranche is underway. Under the linkage auctions for NRS under the Policy, a coal quantity of 152.57 MT has been booked by the successful bidders so far.

- 2.6. **Coal Mine Surveillance and Management System (CMSMS) and 'Khanan Prahari' App** : The Coal Mine Surveillance & Management System (CMSMS) a web-based application and 'Khanan Prahari' a Mobile based application was launched on 04.07.2018 to detect, monitor and take action on any kind of illegal coal mining activities being carried on within the leasehold boundaries in the coalfield areas.





03

Coal Production & Dispatch

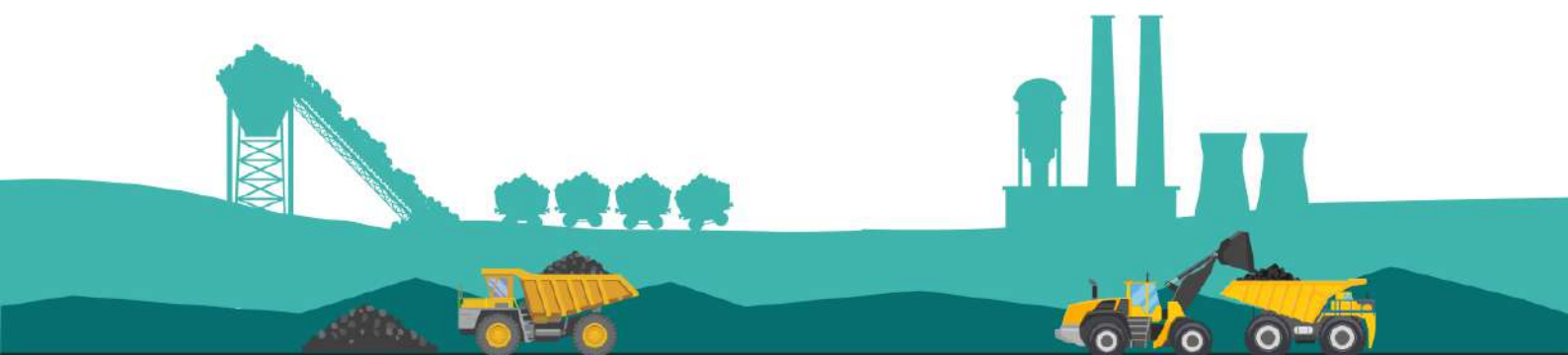
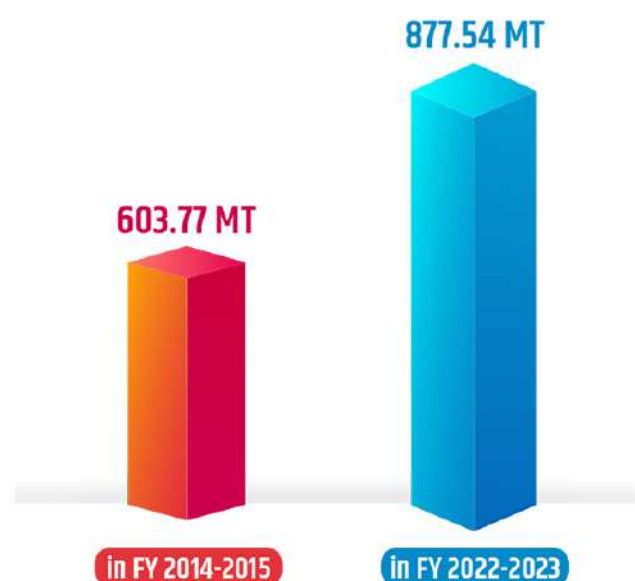


Major leap in coal production over the years has been achieved, with a record coal production of **893.19 MT** in FY 2023, which is the highest in the history of India. In comparison to 609.18 MT in the year 2014-15 with a **growth of about 47%**. In Coal supply too there is a major leap from 603.77 MT in FY 2014-15 to 877.54 MT in FY 2022-2023 with a **growth of about 45.34 %**.

Coal Production in last 9 years



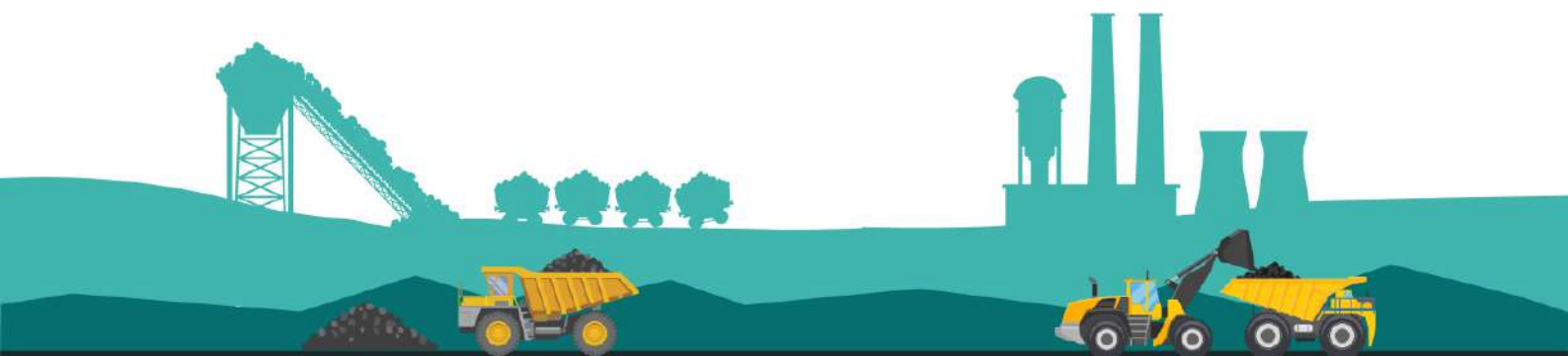
Coal Supply in last 9 years





04

Infrastructure Projects

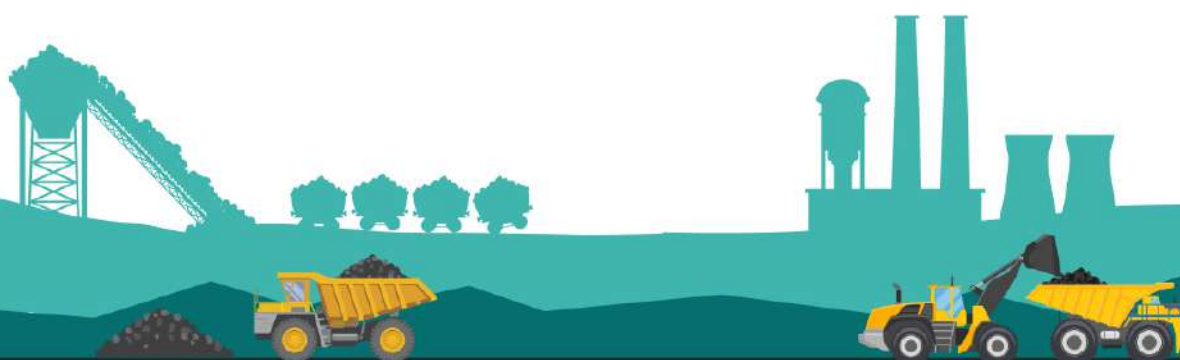


- 4.1. **First Mile Connectivity [FMC]** : To strengthen India's energy security and realize the vision of **AtmaNirbhar Bharat** by reducing the reliance on imported coal, the Ministry has formulated an integrated approach to eliminate road transportation of coal from mines and has initiated steps to upgrade mechanized coal transportation and loading systems under the 'First Mile Connectivity' projects. Coal Handling Plants (CHPs) and SILOs with Rapid Loading Systems offer benefits such as coal crushing, sizing and cleaner loading.

The Ministry of Coal has undertaken 67 First Mile Connectivity (FMC) projects, with 59- CIL, 5 - SCCL, and 3 - NLCIL, with a total capacity of 885 MTPA. Currently, 9 projects (7-CIL and 2-SCCL) with a capacity of 105.5 MTPA have been commissioned. 18 FMC projects of CIL will be commissioned during 2023-24. The remaining are scheduled to be commissioned by FY 2029.



Illuminated CHP at SECL



4.2. **PM Gati Shakti:** The Ministry of Coal, in view of cleaner environment in coal transportation has given momentum in coal evacuation and also initiating news efforts to gradually move away from road movement of coal in country. Planned construction of new broad gauge rail lines in Greenfield coal bearing areas, extending the rail links to newer loading points and doubling and tripling the rail lines in some cases will enhance rail capacity considerably.

- Ministry of Coal drafted coal logistic policy and National Coal evacuation plan in consultation with private sector with vision to develop a smart, integrated, optimized, resilient, sustainable and trusted Coal logistics ecosystem for accelerated and inclusive growth.
- Ministry of Coal populated data as Layers on National Master Plan Portal of PM Gatishakti like – location of Coalfields, Coal Blocks, Forest area, Railway Lines (New and capacity enhancement) Land Asset Data, Washeries, FMC, to develop Multi-Model Connectivity.
- Ministry of Coal has organized East Zonal Conference at Bhuvneshwar, Odisha on 16.2.2023 to address queries raised by Zones/States on National Logistic Policy. The conference brought various Ministries, Departments and Industries on a single platform which greatly address the huge volume of transportation of minerals and materials across the country.

The screenshot shows the PM-Gati Shakti National Master Plan Portal. The header includes the Government of India logo, the PM Gati Shakti logo, and the eSAG-MeITY logo. The main banner features the text "PM-Gati Shakti" and a portrait of Prime Minister Narendra Modi. Below the banner, there is a section titled "CONNECTING PILLARS OF NEW INDIA" and logos for the Ministry of Indian Railways, Ministry of Road Transport & Highways, Ministry of Petroleum and Natural Gas, and Ministry of New and Renewable Energy.

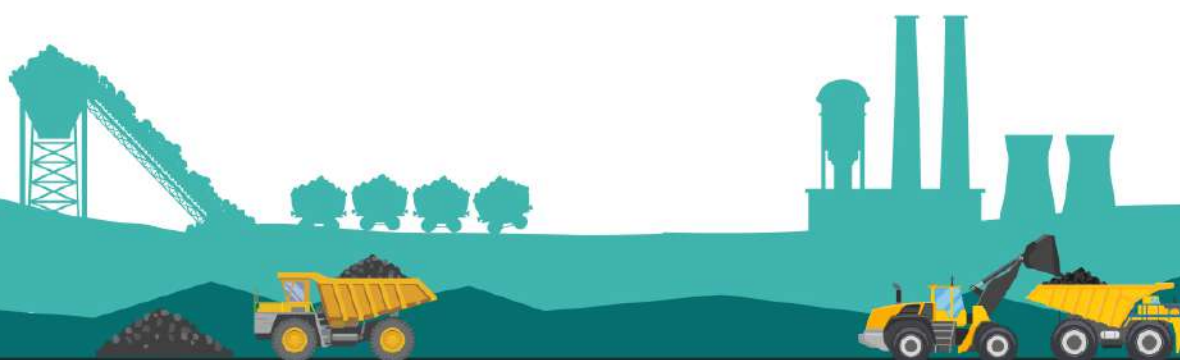


4.3. Washeries -

- **Coking Coal** - Coal India Limited (CIL) has existing 7 coking coal washeries with capacity of 7.24 MTY to supply clean coal to steel sector and middling to power house. CIL has planned 11 coking coal washeries with capacity 33.1 MTY for enhancing washing capacity. Out of these, 3 Washeries are commissioned with capacity 11.6 MTY, 2 washeries are under construction to be commissioned by FY 2024 and remaining 6 washeries are at different stages of tendering to be commissioned by FY 2028.
- **Non-coking Coal** - CIL has existing 2 non-coking washeries of 11 MTY capacity to supply washed coal to power houses. CIL has planned one more non-coking washery with capacity 10 MTY, to be commissioned by Aug'2023.



PATHERDIH COAL WASHERY, BCCL

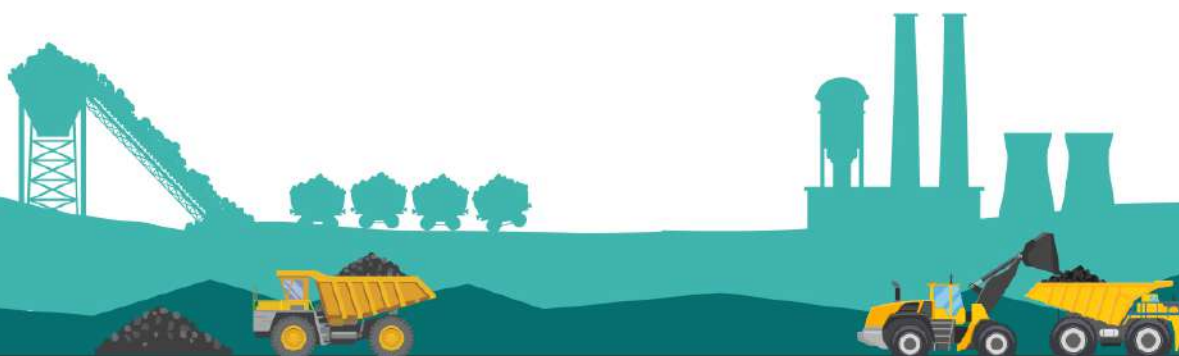


4.4. **Thermal Power Plants-** Coal PSUs have planned to add 9,960 MW Thermal capacity in the country.

- NLCIL has planned to set up 3 Thermal Projects with combined capacity of 5700 MW. Out of which, 1 project is expected to be commissioned by FY2024.
- SCCL has commissioned 2 units of 600 MW each Thermal plants in Sep' 2016 and Oct'2016 respectively. Project was Ranked as No.1 during FY23 up to Feb'2023 and Ranked as No. 7 during FY2022-23 in PLF rankings out of best performing Thermal Power Plants in India. In addition, SCCL has planned to add 3rd unit of 800 MW capacity.
- CIL has planned to set up 2 Thermal Power Projects at Madhya Pradesh with a capacity of 660 MW and at Odisha with a capacity of 2x800 MW. These projects are expected to be commissioned by FY2029.



SINGARENI THERMAL POWER PLANT 2X600 MW, SCCL





05

Sustainable Development & Just Transition



The coal sector envisages promoting a sustainable development model in which coal production goes hand in hand with environmental protection, resource conservation, care for society, and measures to protect our forests and biodiversity.

The Major Thrust Areas are:

- 5.1. **Development of Eco-parks/Mine Tourism** : Development of Eco-Parks on Reclaimed Land & Mine Tourism - Improve public perception of coal mining via Coal Mine Tourism. Coal/Lignite PSUs created 25 Eco-parks/Mine Tourism sites from FY 2014-15 to FY 2022-23 in an area of more than 230 ha area of land and integrated 7 nos. of parks with the local tourism circuit.



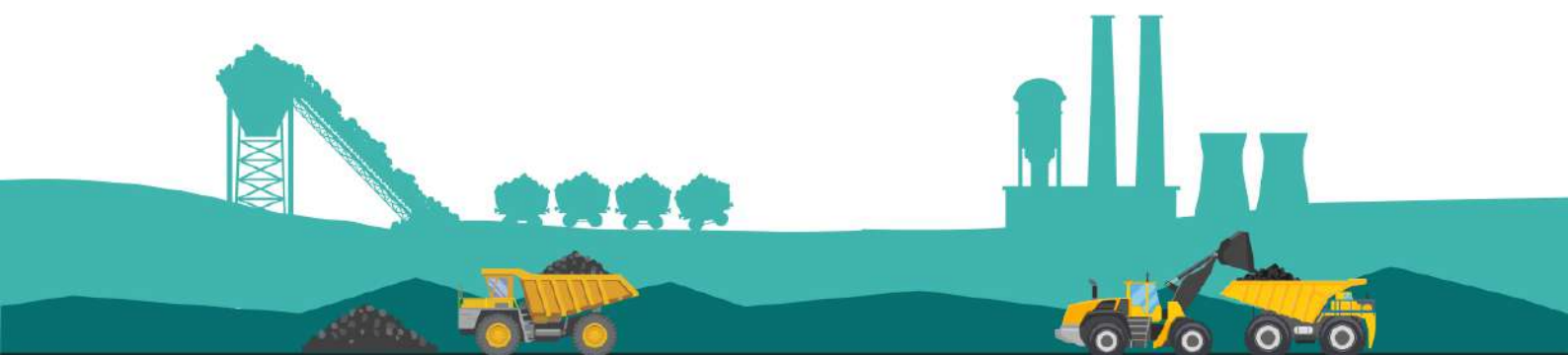
Paranath Udhyan
BCCL



GK OC ECO PARK
SCCL



Mahatma Gandhi
Eco-Park at Saoner,
WCL



5.2. Mine Water Utilisation:

- Mine water is supplied for community purposes - drinking as well as irrigation purposes.
- Volume of mine water supplied for community purposes has been around 16,012 LKL thereby benefitting around 17.7 lakh people in 981 villages annually during FY 2018-19 to FY 2022-23.
- Volume of mine water supplied for irrigation purpose has been 10762 LKL & for domestic/ drinking purposes has been 5250 LKL during FY 2018-19 to FY 2022-23.



RO Plant Facility, WCL



Bishrampur OC, Pisciculture at SECL



Mine Water Utilisation for Irrigation Purpose at NLCIL



5.3. Greening Initiatives:

- Bio-reclamation of mined out areas as well as plantation in coal regions is important for sustainable development.
- Coal/Lignite PSUs has brought about 16,262 ha of land under green cover during FY 2014-15 to FY 2022-23 through plantation of more than 370 lakh saplings.
- The plantation carried out on non-forest backfilled as well as external overburden dumps is best suitable for Accredited Compensatory Afforestation (ACA). The Ministry of Coal has guided Coal/Lignite PSUs to extensively cover non-forest land for compensatory afforestation in future to promote ACA and expedite the Forest Clearance process. In compliance of the direction, Coal/Lignite PSUs have identified about 2838 Ha afforested non-forest de-coaled land so far for compensatory afforestation as per the ACA guidelines.



Orchard Plantation at ECL



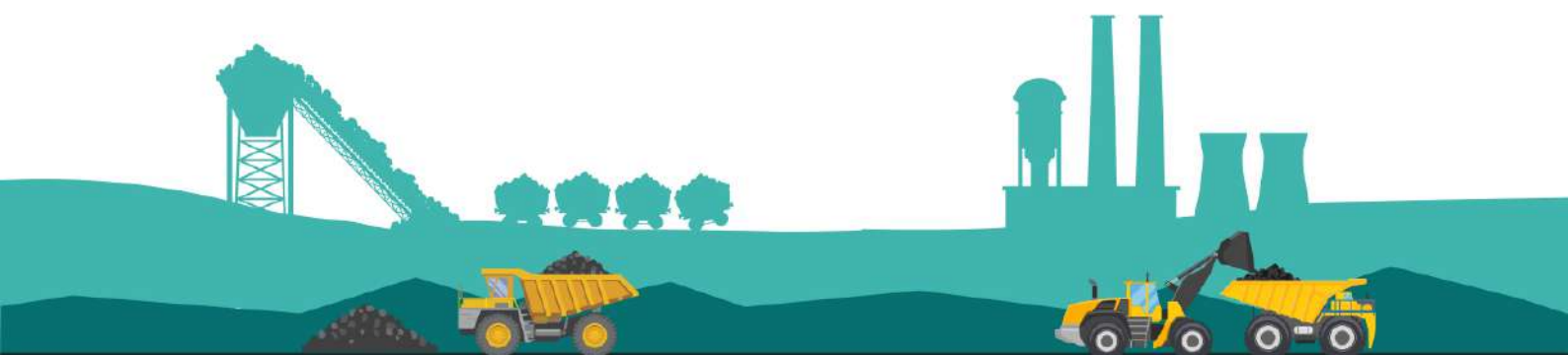
Green cover developed along Damodar River in NK Area, CCL



Plantation/ Bio-reclamation at Gevra, SECL



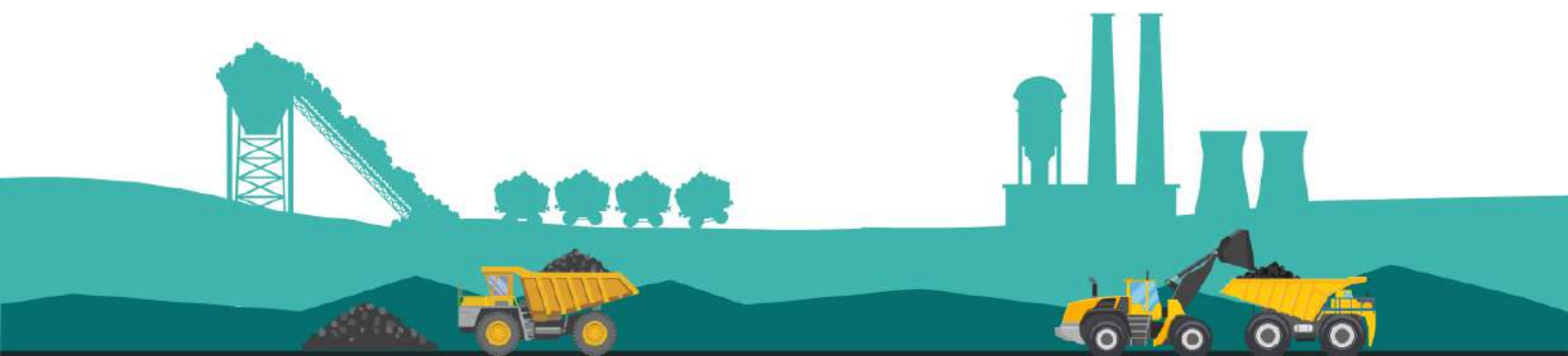
- 5.4. **Alternative Usage of Overburden (OB)** - Promotion of waste to wealth (Circular economy) in coal sector - overburden to sand.
- 5.5. **Energy Efficiency Measures** - Coal PSUs are taking various energy conservation & efficiency measures such as use of LED lights, energy efficient ACs, E-vehicles, DC Super Fans, Efficient Water Heaters, Auto timers in street lights, capacitor banks, installation of distributed and rooftop solar projects and promoting use of Efficient use of energy resources and their conservation assume tremendous significance as one unit of energy saved at the consumption level ultimately translates into equivalent reduction of carbon footprint.
- 5.6. **Air Quality Management in Mining Areas in Coal Sector** - Modern technologies are adopted and regularly monitored – surface miners, fog canons, mist sprayer, wheel washing, mechanized road sweeper, Continuous Ambient Air Quality Monitoring Station (CAAQMS).





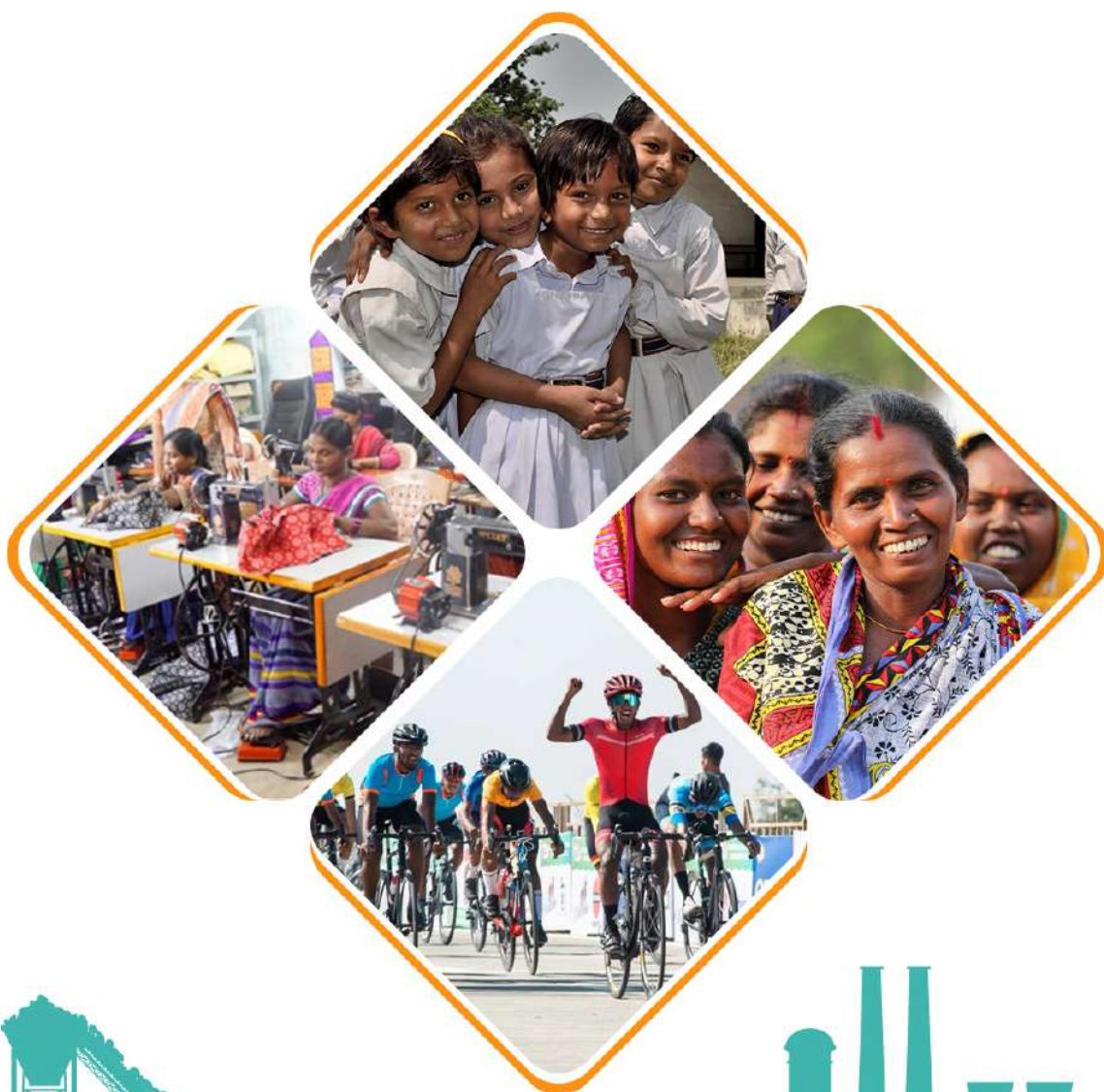
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Corporate Social Responsibility



The coal companies have undertaken important activities under CSR initiatives in various areas, including:

- Water supply
- Healthcare
- Nutrition & Sanitation
- Education & livelihood
- Rural development
- Environmental sustainability
- Promotion of sports
- Disaster management & relief



Since coal public sector undertakings (PSUs) operate primarily in backward areas with a significant population of poor and vulnerable individuals, their CSR efforts have a significant impact. The command areas of coal PSUs are home to an estimated 3.89 crore people, with 35% belonging to scheduled caste (SC) and scheduled tribe (ST) populations.



CSR funded school

In FY 2022-2023, Coal PSUs allocated ₹ 546.04 crore for Corporate Social Responsibility (CSR) expenditure, marking a substantial 51.43% increase compared to the ₹ 360.5 crore spent in 2014-15. **During the period FY 14 to FY 22 Coal Companies have spent ₹ 5808.2 crore on CSR.**

9 Years Achievements on CSR Expenditure

(figures in crores)





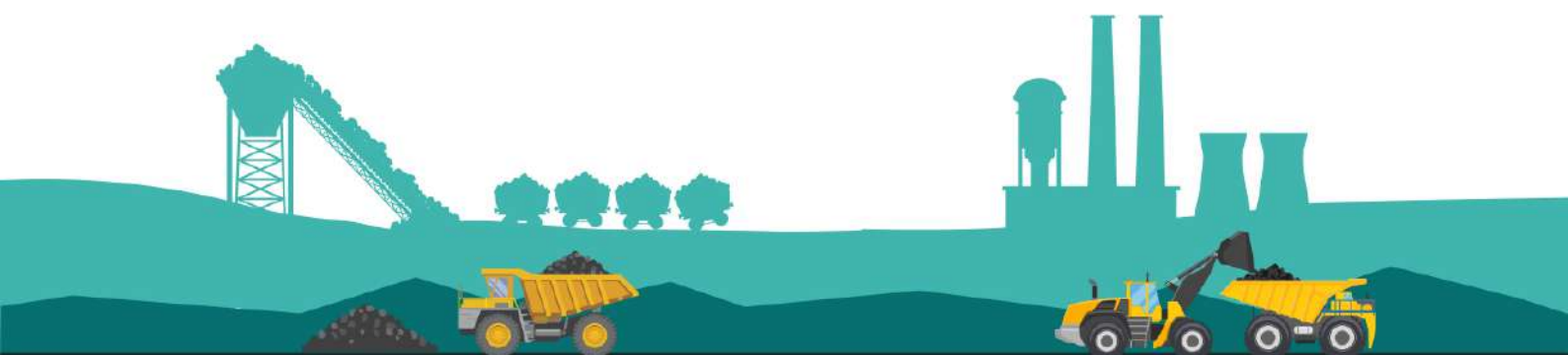
07

Way Forward



7.1. **Coal Gasification** : With huge coal availability in the country, the Government of India has decided to promote gasification of coal in a big way. Coal gasification can yield multiple energy, chemical, and Petro-chemical products, most of which are presently being imported.

- National Coal Gasification Mission has been launched in September, 2021 to gasify 100 MT of coal by 2030.
- Creation of separate window under NRS linkage Auction Policy 2016 for Coal Gasification Projects for long term supply for desired quality and quantity.
- Providing 50% rebate in revenue share for coal Block Allocatee for Coal used for Gasification.
- Coal India Ltd signs MoUs with BHEL and GAIL (India) Ltd for Setting up 02 SCG projects and MCL and ECL.
- Tenders have been floated for SCG project of WCL and Lignite to methanol Project of NLCIL.
- In order to establish financial and technical viability of Coal gasification, Government of India has announced to support gasification projects.
- A scheme is under finalization to provide financial support of ₹ 6000 Crore and reimbursement of GST compensation of ₹ 400 crore for Coal used in gasification projects.



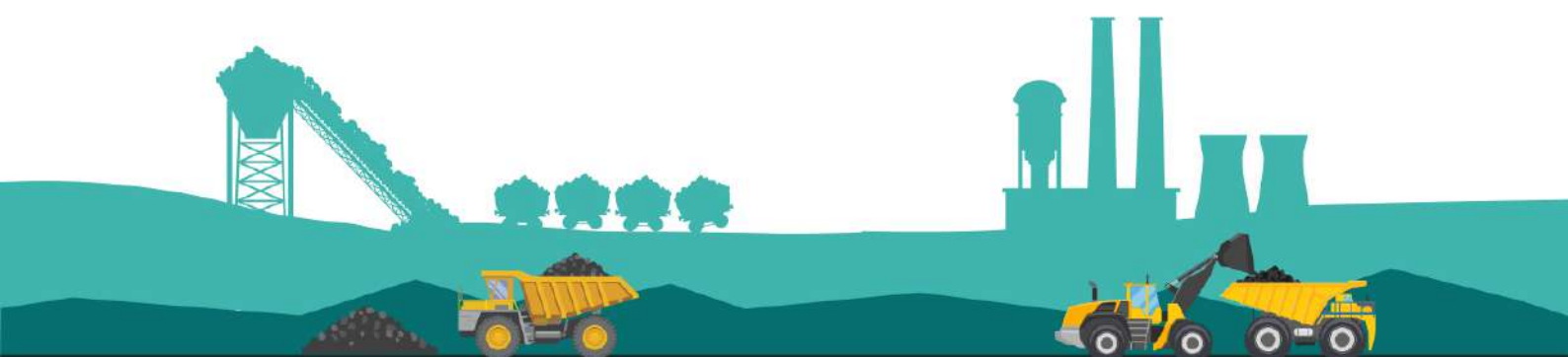
7.2. Coal to Hydrogen

- Roadmap of Coal to Hydrogen has been prepared and launched by **Hon'ble Minister of Coal in May'2022 at Mumbai.**
- In order to determine technical and financial viability, a pilot project is under conceptual stage for producing hydrogen through coal gasification process.

7.3. Technology Roadmap for the Coal Sector

On 06th May 2022, the Ministry of Coal has launched the Technology Roadmap for the coal sector in Mumbai with the objective to implement new technologies and building digital infrastructure to support current and future ramp-up for the mines. The scope of this roadmap is:

- Technology enablement in coal mines for transformation across the business value chain.
- Leveraging “Digital Technology” as an accelerator for demonstrating performance enhancement in the coal mines.
- Defining Coal sector's technology transformation ambition and preparing the workforce in Coal Sector for Industry 4.0 Digital Technology.
- Increasing productivity, safety & sustainability while reducing environmental impact by upgrading conventional technologies to new technologies.



7.4. Adoption of New Technology

In new technology adoption, CMPDI has introduced Drones for surveying and mapping applications in CIL. CMPDI has two survey-grade drones which are equipped with LIDAR, optical, and thermal sensors. It is presently being used for various applications in SECL, BCCL, CCL & MCL.

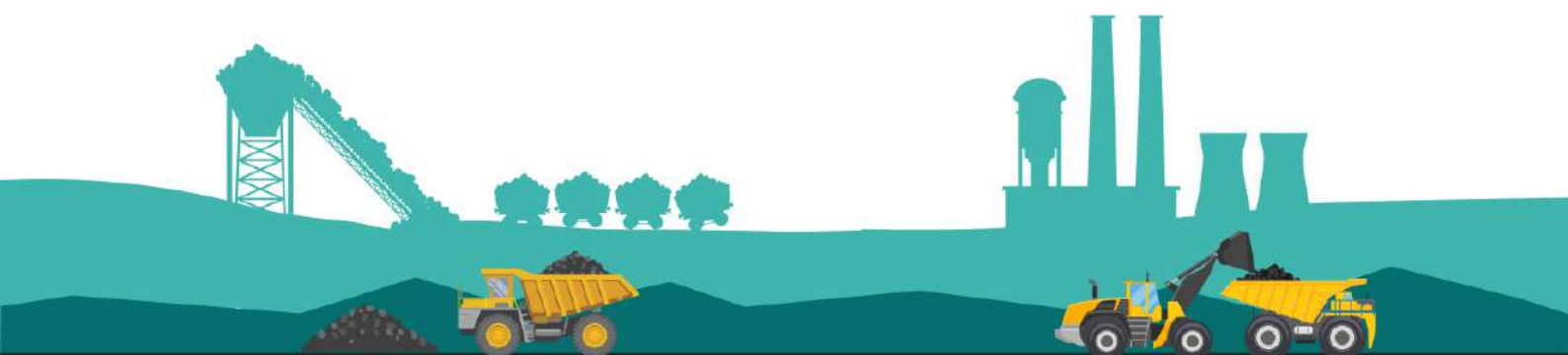


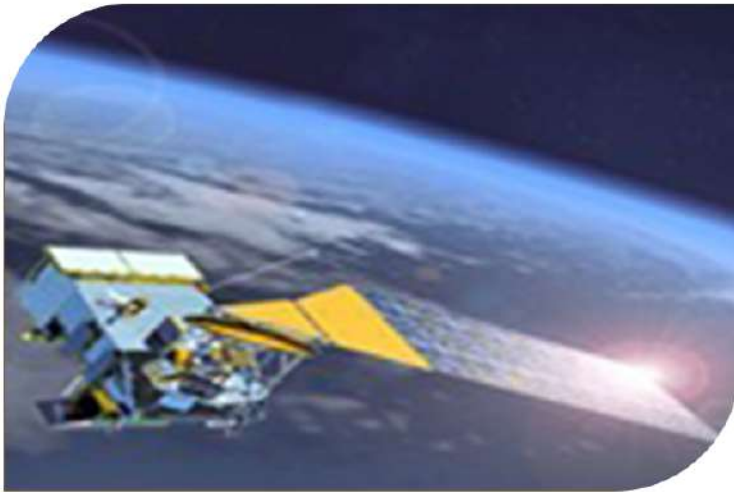
Unmanned Aerial Vehicles (UAVs)/ Drones or Remotely Piloted Aircraft System (RPAS) are now being used in the industry for multiple applications as they are a versatile platform on which various suitable sensors can be mounted for the acquisition of data as per the requirement. CMPDI recognized this technology as a potentially useful technology which could be used in augmenting coal mining operations.

GYROSCOPE APPLICATION

GYROMAT 3000 has been used in Tunnel Alignment for

- Udampur-Baramulla-Srinagar Rail Link Project, J&K using GYROMAT 3000.
- Sivoke-Rango Rail Link Project, West Bengal. (ITD Cementation)





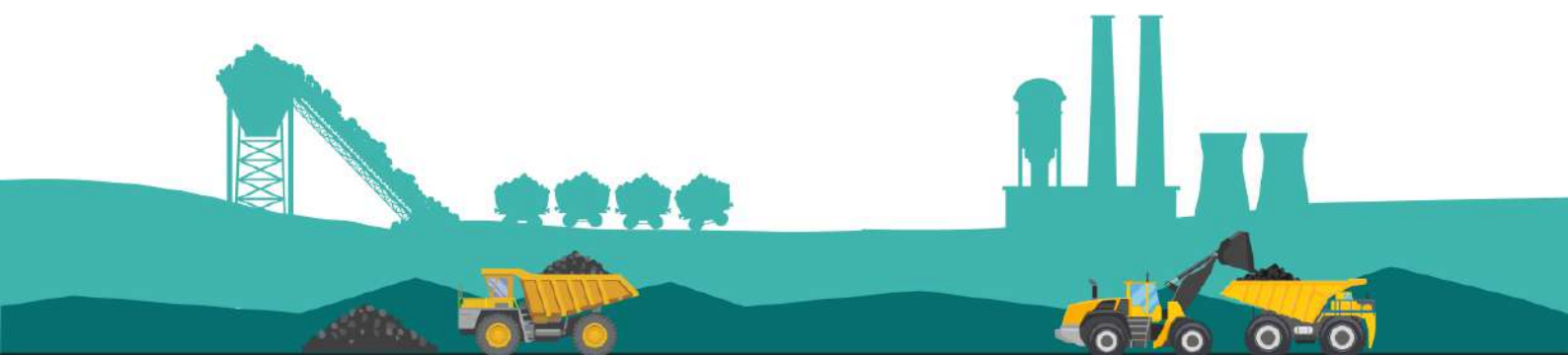
APPLICATION OF SATELLITE DATA

Satellite Data are used for studies like Land Reclamation Monitoring, Vegetation Cover Mapping, Settlement Mapping, Coal Mine Fire Mapping, Site Selection for infrastructure projects, Locating potential ground water zone, Reservoir Sedimentation, Coastal Zone Mapping, Geo-structural Mapping and other Thematic Mapping applications at CMPDI

7.5. Coking Coal Mission

The Coking Coal mission was launched in Aug'2021 to enhance the production of coking coal with the following objectives:

- To increase domestic coking coal blending % in steel making from the present 10 % to 30%
- Enhancing domestic coking coal production from 52 MT in FY 2022 to **140 MT** in FY 2030 based on demand projected for steel making in National Steel Policy 2017.
- Enhancing domestic coking coal washing capacity from 23 MT in FY 2022 to 61 MT in FY 2023.





पहुंचाया कोयला, किया, करोड़ों घरों को रोशन,
उद्योगों, नौकरियों और सुदूर लोगों का जीवन हुआ गुलशन ।

हुई सरल अनेकों खनन प्रक्रिया,
कोरोना के खिलाफ लड़ाई मे, देशवासियों ने कहा शुक्रिया ।

बनाया कोयला खनन का नया कीर्तिमान,
आत्मनिर्भर भारत की ओर हुआ देश गतिमान ।

आओ, लें संकल्प थामे अमृत महोत्सव की डोर,
ले जाये भारतवर्ष को अमृत काल की ओर ।





सत्यमेव जयते
कोयला मंत्रालय
Ministry of Coal



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