

# Spreading Smiles



**“Eco-Friendly Miner”**





The inaugural function of the Diamond Jubilee Year organized on 08.12.2017, was attended by Chief Guest Shri M. Venkaiah Naidu, Hon'ble Vice President of India; presided by Shri Chaudhary Birender Singh, Hon'ble Union Minister of Steel; in the august presence of Dr. Raman Singh, Hon'ble Chief Minister of Chhattisgarh; Shri Vishnu Deo Sai, Hon'ble Minister of State for Steel; Ministers of Telangana and Andhra Pradesh States; Ministry of Steel and NMDC Officials. In the inaugural function, NMDC Diamond Jubilee Logo, commemorative postal stamp and booklet of NMDC's 60 years journey was released by the dignitaries.

On 15<sup>th</sup> November, 1958, NMDC was set up as a fully owned Government Enterprise. Today it is a Navratna PSU and the single largest iron ore producer in the country. NMDC is the symbol of growth and development of the Nation itself and a fulfillment of the dreams of the great visionaries and founding fathers of Independent India. NMDC today has a pan India presence from Jammu & Kashmir to Karnataka and has global footprints too. NMDC, an eco-friendly miner, has established itself as a knowledge powerhouse of the mining sector.

The story of NMDC started around the dreamy hills and the deep jungles of Bastar in Chhattisgarh, known as Dandakaranya from the epic periods. NMDC has an avowed stand that the first beneficiary of its success ought to be the community in whose midst it undertakes its mining activities. This core organizational belief is manifested through significant contribution to environment and the society. The world class educational facilities and state of the art infrastructure in the midst of deep jungles are bright symbols of NMDC values.

The ethos and passion of NMDC collective has created a unique organizational culture of responsibility towards stakeholders i.e. customers, government, local communities, suppliers and others. The NMDC collective is gearing up to take up greater challenges emanating from the high growth trajectory of the country and its determination to become an economic super power.

The first Sustainability Report of NMDC in the Diamond Jubilee Year is dedicated to the tireless efforts of our predecessors in the journey of triple bottom line excellence in the past and a reinforcement of our commitment to achieve greater heights in the journey of excellence in the future to come.



# Index

CMD Message	4
About the Report	7
Organizational Profile	10
Iron Ore for Sustainable Growth	14
Sustainability Strategy	17
NMDC Alignment to Sustainable Development Goals	19
Sustainability Performance Highlights	25
Stakeholder Engagement	26
Corporate Governance	32
Industry Associations	36
Awards	37
<b>Economic Performance</b>	40
Production Performance	43
Supply Chain	45
<b>Environment Performance</b>	48
Sustainable Mining & Mineral Conservation	51
Energy	53
Climate Change	56
Raw Material Conservation	57
Managing Scarce Water Resources	58
Emissions	59
Effluents	60
Waste Management	60
Biodiversity	61
<b>Social Performance</b>	66
Employee Diversity	67
Occupational Health & Safety	69
Employee Benefits	75
Labour Practices	77
Human Resources Development	81
Corporate Social Responsibility	83
GRI Content Index	96
Assurance Statement	101

# Abbreviations

<b>AGM</b>	Annual General Meeting	<b>INTUC</b>	Indian National Trade Union Congress
<b>AC</b>	Air Conditioner	<b>ISO</b>	International Organization For Standardization
<b>AGM</b>	Assistant General Manager	<b>ISRO</b>	Indian Space Research Organization
<b>AINMDCWF</b>	All-India NMDC Worker's Federation	<b>IT</b>	Information Technology
<b>AITUC</b>	All India Trade Union Congress	<b>ITI</b>	Industrial Training Institute
<b>AP</b>	Apprentice	<b>IUCN</b>	International Union For Conservation Of Nature
<b>API</b>	American Petroleum Institute	<b>JNTU</b>	Jawaharlal Nehru Technological University
<b>BD&amp;CP</b>	Business Development And Corporate Planning	<b>JO</b>	Junior Officer
<b>BEML</b>	Bharat Earth Movers Limited	<b>K</b>	Kumaraswamy
<b>BIOM</b>	Bailadila Iron Ore Mine	<b>KIOCL</b>	Kudremukh Iron Ore Company Limited
<b>BL</b>	Baila Lump	<b>KIOM</b>	Kumaraswamy Iron Ore Mines
<b>BMS</b>	Bharatiya Mazdoor Sangh	<b>KL</b>	Kilo Litre
<b>BOD</b>	Biochemical Oxygen Demand	<b>KPIs</b>	Key Performance Indicator's
<b>BOF</b>	Basic Oxygen Furnace	<b>KWH</b>	Kilo Watt Hour
<b>BRR</b>	Business Responsibility Report	<b>KW</b>	Killowatt
<b>C</b>	Contractual	<b>LED</b>	Light-Emitting Diode
<b>CAMPA</b>	Compensatory Afforestation Fund Management And Planning Authority	<b>LODR</b>	Listing Obligation And Disclosure Requirements
<b>CCSI</b>	Columbia Center On Sustainable Investment	<b>m<sup>2</sup></b>	Square Meter
<b>CCTV</b>	Closed Circuit Television	<b>m<sup>3</sup></b>	Cubic Meter
<b>CDCP</b>	Coke Dry Cooling Plant	<b>MIP</b>	Minimum Import Price
<b>CG</b>	Chhattisgarh	<b>MLD</b>	Million Litre Per Day
<b>CGPSC</b>	Chhattisgarh Public Service Commission	<b>MM</b>	Metals & Mining
<b>CII</b>	Confederation Of Indian Industry	<b>MMDR</b>	Mines & Minerals(Development And Regulation) Act
<b>CIMFR</b>	Central Institute Of Mining And Fuel Research	<b>MMTC</b>	Metals And Minerals Trading Corporation Of India
<b>CIN</b>	Corporate Identity Number	<b>MOEF&amp;CC</b>	Ministry Of Environment, Forest And Climate Change
<b>CLO</b>	Calibrated Lump Ore	<b>MOU&amp;E</b>	Union Minister Of Labour And Employment
<b>CMD</b>	Chairman Cum Managing Director	<b>MOUs</b>	Memorandum Of Understanding
<b>CMDC</b>	Chhattisgarh Mineral Development Corporation	<b>MPSMCL</b>	Madhya Pradesh State Mining Corporation Limited
<b>CO<sub>2</sub></b>	Carbon Dioxide	<b>MSME</b>	Micro, Small & Medium Enterprises
<b>COB</b>	Close Of Business	<b>MT</b>	Metric Tonne
<b>COD</b>	Chemical Oxygen Demand	<b>MTPA</b>	Million Tons Per Annum
<b>CPCB</b>	Central Pollution Control Board	<b>MW</b>	Mega Watt
<b>CSIR</b>	Council Of Scientific And Industrial Research	<b>Mwh</b>	Megawatt Hour
<b>CSIRO</b>	Commonwealth Scientific And Industrial Research Organization	<b>NCDs</b>	Non-Communicable Diseases
<b>CSR</b>	Corporate Social Responsibility	<b>NGO</b>	Non Governmental Organisation
<b>CVC</b>	Central Vigilance Commission	<b>NIRD&amp;PR</b>	National Institute Of Rural Development And Panchayati Raj
<b>CVO</b>	Chief Vigilance Officer	<b>NIT</b>	National Institutes Of Technology
<b>DGM</b>	Deputy General Manager	<b>NMDC</b>	National Mineral Development Corporation
<b>DIN</b>	Director Identification Number	<b>NMET</b>	National Mineral Exploration Trust
<b>DIOM</b>	Donimalai Iron Ore Mines	<b>NML</b>	National Metallurgical Laboratory
<b>DIOPEA</b>	Donimalai Iron Ore Project Employees Association	<b>NO<sub>x</sub></b>	Nitrogen Oxide
<b>DMF</b>	District Mineral Fund	<b>NRSC</b>	National Remote Sensing Centre
<b>DPE</b>	Department Of Public Enterprises	<b>NSP</b>	National Steel Policy
<b>DR</b>	Direct Reduction	<b>NSP</b>	Nagarnar Steel Plant
<b>FICCI</b>	Federation Of Indian Chambers Of Commerce & Industry	<b>NTFP</b>	Non-Timber Forest Products
<b>FIMI</b>	Federation Of Indian Mineral Industries	<b>O/C</b>	Open Cast
<b>FPIC</b>	Free Prior And Informed Consent	<b>OBC</b>	Other Backward Class
<b>G4</b>	Fourth Version	<b>OCSL</b>	Ore Crushing Screen And Loading
<b>GEC</b>	Global Exploration Centre	<b>OHSAS</b>	Occupational Health And Safety Assurance Standrad
<b>GHG</b>	Greenhouse Gases	<b>P</b>	Permanant
<b>GOI</b>	Government Of India	<b>PAT</b>	Profit After Tax
<b>GPS</b>	Global Positioning System	<b>PBT</b>	Profit Before Tax
<b>GRI</b>	Global Reporting Initiative	<b>PHC</b>	Public Health Centre
<b>GSJ</b>	Geological Survey Of India	<b>PHKMS</b>	Panna Hira Khadaan Mazdoor Sangh
<b>ha</b>	Hectare	<b>PM</b>	Particulate Matter
<b>HEMM</b>	Heavy Earth Moving Machinery	<b>PMS</b>	Performance Management System
<b>HI-PO</b>	High Performance	<b>PSE</b>	Public Sector Enterprise
<b>HR</b>	Hot Rolled	<b>PSU</b>	Public Sector Undertakings
<b>MHRD</b>	Ministry Of Human Resource Development	<b>R&amp;D</b>	Research And Development
<b>HSM</b>	Hot Strip Mill	<b>RFID</b>	Radio Frequency Identification
<b>IAS</b>	Indian Administrative Service	<b>ROM</b>	Run-Of-Mine
<b>IBM</b>	Indian Bureau Of Mines	<b>RWLS</b>	Rapid Wagon Loading System
<b>ICFRE</b>	Indian Council Of Forestry Research And Education	<b>SA</b>	Social Accountability
<b>ICMM</b>	The International Council On Mining And Metals	<b>SAIL</b>	Steel Authority Of India Limited
<b>IFR</b>	Injury Frequency Rate	<b>SC</b>	Scheduled Caste
<b>IIT</b>	Indian Institute Of Technology	<b>SDG</b>	Sustainable Development Goals
<b>IMMT</b>	Institute Of Minerals & Materials Technology	<b>SDI</b>	Sustainable Development Indicators
<b>IMS</b>	Integrated Management System	<b>SEBI</b>	Securities And Exchange Board Of India
<b>INDC</b>	Intended Nationally Determined Contributions	<b>SKMS</b>	Sanyuktha Khadaan Mazdoor Sangh
<b>INR</b>	Indian National Rupee	<b>SME</b>	Small And Medium Enterprises
		<b>SMP</b>	Strategic Management Plan





## Vision

To emerge as a Global Environment Friendly Mining Organization and also as a Quality Steel Producer with a positive thrust on Social Development.



## Mission

To maintain its leadership as the largest iron ore producer in India, while establishing itself as a quality steel producer and expanding business by acquiring and operating various iron ore, coal and other mineral assets in India and abroad, rendering optimum satisfaction to all its stakeholders.



## Macro Objectives

- To expand the operations in the areas of Mining and Mineral Processing to meet the growing demands from domestic and international Markets.
- Achieve international standards in per capita productivity, value addition and cost effectiveness.
- To increase the iron ore production capacity to 50 MTPA by 2018-19 and 67 MTPA by 2021-22.
- Setting up of Steel Plant at Nagarnar.



## Micro Objectives

- Achieve growth by:
  - ✦ Expansion of existing mines
  - ✦ Operating new mines fully owned by NMDC or in Joint Venture
- Give thrust to exploration and exploitation of iron ore and other strategic & critical minerals.
- To maintain environment protection
- To conserve mineral resources through scientific mining.
- To maintain high level of customer satisfaction.
- To improve the quality of life of people in general and socio economic environment in and around the mines in particular.





## NMDC Sustainable Development Policy

We, at NMDC, aim at being responsible miners with commitment to sustainable development in all our locations. We ensure that the sustainable development ethos are considered and integrated in all our decision making processes and business planning.

We believe that market competitiveness on a long run can be achieved only by adopting the best practices of health, safety and environmental management, community management, and actively engaging our stakeholders in addition to the economic performance of the organization.

We comply in full with the laws and regulations where we operate. We aspire to be a benchmark by adopting international standards in the field of Sustainable Development.



## CMD Message

Dear Stakeholders,

It gives me immense pleasure to present the first Sustainability Report of NMDC in accordance with Global Reporting Initiative (GRI)-G4 Guidelines, ushering in a new resolve in the organization to take Sustainable Development to greater heights by leveraging the decades of relentless efforts undertaken.

NMDC, a Navaratna PSU, has been one of the earliest signatories to the United Nations Global Compact (UNGC) Network and has played an active role in the formation and growth of the network in India. We have made significant progress on all the relevant Sustainable Development Goals (SDGs) set by United Nations aimed at Transforming our World. The key elements of Sustainability Principles are deeply ingrained in the organizational Vision, Mission, Policies, Management Systems, Processes, performance matrices and review mechanisms.

NMDC is the largest Iron Ore producing company in India and has diversified operations in India and abroad. Iron ore is the key raw material for steel, which is of strategic importance to our rapidly growing economy. We, the NMDC Collective, take unto ourselves, roles and responsibilities to shoulder the ongoing transformation of India in the capacity of the largest iron ore mining company in the country.

NMDC had an impressive performance in the year 2016-2017 with a highest ever production of 34 million tonnes of Iron ore, with a growth of 19% over the previous year. The financial performance included turnover of Rs.8,830 Crores, Profit Before Tax (PBT) of Rs.4,294 Crores and Profit After Tax (PAT) of Rs.2,589 Crores for the year. The performance during FY'18 is slated to surpass the previous best achieved in FY'17.

We are aware that iron ore mining industry in India is expected to witness increased competition over the next few years with threat of higher iron ore imports at lower global prices. Moreover, the domestic steelmakers are moving towards backward integration with acquisition of iron ore mines through auction route which will be a major challenge to our competitiveness. NMDC has prepared and adopted a long-term Strategic Management Plan (SMP), 'Vision 2025' to address risk and opportunities. We are targeting the production capacity of 67 MTPA of iron ore by 2021-22. Six strategic transformation areas - Business, Operations, Sustainability, Capital Projects, Human Resource and IT have been identified. We are firmly marching ahead on the path of Sustainable Economic Growth.

NMDC takes pride in transforming people and societies in its vicinities through its community engagement programs. The efforts made through decades by NMDC



towards providing education, health services and employment opportunities to the people in the surrounding locations have provided a direct stimulus in contributing to the economic growth of these backward regions. It is a matter of great satisfaction that NMDC has been adjudged the model PSE in the field of CSR and its stakeholder consultation mechanism for implementation of its CSR has been recommended by Department of Public Enterprises for other PSEs to emulate.

NMDC has firm belief that providing best of educational facilities to the younger generation is the critical success factor in its endeavor to transform the local community. NMDC has partnered with State Government to establish a state-of-the-art Education City benefiting around 5,000 students at Geedam, in Chhattisgarh with institutions ranging from primary school to professional ones in a single campus to spur an educational revolution in the area. ASTHA GURUKUL, a residential school for children affected by Naxal violence and SAKSHAM, the best in class institute for “Divyang” children are our most satisfying CSR contributions.

People are the most valuable part of our organization and their health and safety is of utmost importance to us. NMDC's approach towards best-in-class occupational health and safety standards is articulated in the Safety Policy emphasizing on Hazard identification, risk assessment, determining controls and continual improvement. In our safety management journey we are striving for beyond compliance achievements through systems approach and safety culture building. We believe that the positive transformation of employees' attitude and perception towards safety will go a long way in achieving our goal of accident free operations and Safety training and awareness is accorded a very high priority in the organization. Our efforts have resulted in marked improvement in safety performance parameters during 2016-17. The man days lost per 1000 man days is 0.20 in 2016-17 vis-à-vis 0.34 for the year 2015-16.

Planned Medical Examinations of employees and contract labor are undertaken to minimize the health associated risks. Providing best of medical facilities, high standard of sanitation & hygiene, clean drinking water and promotion of good life style through sporting and recreational facilities go a long way in the health and well being of the workforce.

We firmly believe that in the prevailing knowledge driven business environment, the key differentiator,

among business organizations is their employees' knowledge and competency. NMDC is committed to a robust talent management approach spanning recruitment, continuous engagement, capability building, leadership development, employee well-being supplemented by rewards and recognitions. We have ambitious plans to nurture our workforce and adopt world-class talent management systems and processes.

We, as an organization, are aware that environmental sustainability is no more a choice but a must do thing. We have deployed Management Systems, processes, R&D, technology and resources to minimize adverse impact of environment due to our operations. Our motto is to practice responsible mining to conserve resources by enhancing the life of mines. Carbon foot print studies have been conducted during the year and subsequent actions are under progress. Five of NMDC's mines have been conferred 5-Star rating from Indian Bureau of Mines for excellence in Sustainable Mining. Water Audit was carried out at all projects of NMDC and audit recommendations are under implementation to conserve water. We have been continuously contributing towards eco friendly initiatives, plantation programs and biodiversity conservation plan of the state govt.

NMDC is also investing in development of renewable energy resources. A wind mill project of 10.5MW capacity has been completed & commissioned at Karnataka. There is a sense of urgency towards energy saving and various interventions in downhill conveyor, modifications of drives, pumps and other major machineries have significantly improved the energy saving.

NMDC is in the process of moving into the next orbit where we are striving to raise our capacity and expand the areas of businesses in a big way. We are striving towards a world class organization and the start of Sustainability Reporting will be a key facilitator in this mission. We, at NMDC, are firm in our belief to reach new heights of performance in Economic, Social and environmental aspects to make significant contribution to our immediate society and the country which will add to global prosperity and conservation of world environment.



**N. Baijendra Kumar, IAS**  
**Chairman-cum-Managing Director**







## About the Report

### Content

National Mineral Development Corporation (NMDC) has made pioneering contributions in the areas of Iron Ore Explorations and Mining, transforming societies around its locations, environment protection and acting as a responsible Corporate Citizen as a whole. Essentially the key principles of Triple Bottom Line Excellence are deeply ingrained in the Organizational design through Guidelines, Frameworks and MOUs of Government of India. In order to give a sharper focus on Sustainability Principles and to embed them in the Systems, Processes and performance metrics, NMDC has decided to publish its first annual Sustainability Report for the reporting period of the financial year 2016-17 i.e. April 1, 2016 to March 31, 2017 to accelerate its journey of Sustainable Development.

The appropriate aspects and indicators were selected based on its significance on economic, environment and social performance of the organisation and its substantial influence on the assessment and decision of stakeholders. Furthermore, the report aims to apprise stakeholders transparently about the applicable materiality issues, adherence to the path of sustainable development, performance indices, major organizational achievements, its difficulties and challenges and steps taken to address the stakeholder's concerns. As this is the Maiden Sustainability Report, it has been compiled as per the guidelines of Global Reporting Initiative (GRI) version

G4 'in accordance' Core option. NMDC will continuously make progress in terms of expanding the reporting scope, developing a greater understanding of stakeholders, innovating new modes of engagement and defining a clear path forward in line with its sustainability strategy. To ensure comparability, the content maintains a historical series of three fiscal years, wherever applicable. In addition to the relevant GRI indicators captured from identified Aspects emerged from the Materiality Mapping process, the report also adopts indicators from the Mining and Minerals Sector Supplement.

In line with Listing Obligation and Disclosure Requirements (LODR) 2015, NMDC prepares Business Responsibility Report (BRR) describing the initiatives taken by the company from Environment, Social and Governance perspective vis. a vis. 9 BRR Principles. NMDC also communicates the organizational performance on the 10 principles of the International framework "United Nations Global Compact" Annually. NMDC has been one of the earliest signatories to the United Nations Global Compact Network. As signatories to the principles of the United Nations Global Compact (UNGC), this Sustainability Report serves as our UNGC Communication on Progress on implementation of the principles and support for its broader development objectives.



Indian Bureau of Mines (IBM), a Government of India (GoI) body, is engaged in promotion of systematic and sustainable development of mineral resources of the country through regulatory inspections of the mines, approval of mining plans and environment management plans to ensure minimal adverse impact on environment. IBM sustainability framework and their audit/inspection facilitate the sustainability practices of NMDC. All the major project sites have been awarded 5 star ratings, the highest ratings in the category.

This report deliberates on all matters pertaining to responsible and value based functioning of all NMDC operations along with addressing the risks associated with the economic, environmental, and social dimensions.

## Scope and Boundary

The Company has iron ore mines at Bailadila in Chhattisgarh state and Donimalai in Karnataka state. It also has a Diamond mine at Panna in Madhya Pradesh,

a Sponge Iron Unit at Paloncha in Telangana. NMDC is in the process of diversification in related areas and is setting up of value added projects like 3 MTPA steel plant at Nagarnar in Chhattisgarh state and Pelletization plants in Karnataka and Chhattisgarh states. NMDC is operating three highly-mechanised iron ore mine complexes. Two complexes are located in Dantewada (Chhattisgarh) namely Bailadila Iron Ore Mine, Kirandul Complex & Bailadila Iron Ore Mine, Bacheli Complex with yearly production of around 22 MT. One complex in Donimalai Iron Ore Complex, located in Bellary (Karnataka) produces around 12 MT per annum. Bailadila iron ore is the world's best grade of hard lumpy ore having +66% iron content, with negligible deleterious material and the best physical and metallurgical properties needed for steel making. NMDC has the only mechanized diamond mine in the country with a capacity of 84,000 carats per annum at Panna in Madhya Pradesh.

The scope of this Sustainability report covers NMDC and its fully owned subsidiaries in India.

- Bailadila Iron ore Mines –Kirandul Complex, Chhattisgarh
- Bailadila Iron ore Mines –Bacheli Complex, Chhattisgarh
- Donimalai Iron Ore Mines & Kumarswamy Iron ore Mines – Donimalai Complex, Karnataka
- Diamond Mining Project –Panna, Madhya Pradesh
- Pellet Plant –Donimalai, Karnataka
- Nagarnar Iron & Steel Plant – Jagdalpur, Chhattisgarh
- NMDC Corporate Office – Hyderabad, Telangana

### Salient Features Nagarnar Steel Plant (Under Construction)

- |  |           |
|--|-----------|
| • Capacity (Liquid Steel)  | 3 MTPA    |
| • Project Cost (Crores)  | Rs 15525  |
| • Product (HR coils/sheets/plates)   | 2.89 MTPA |
| • Coke Oven & CDCP - 7 m   | 2 Nos.    |
| • Sinter Plant (460 m <sup>2</sup> )   | 1 No.     |
| • Blast furnace - 4500 m <sup>3</sup>  | 1 No      |
| • SMS (BOF)  | 2 x175T   |
| • Thin Slab Caster + HSM - 2 Strand CC and HSM 2RM+4FM+2 Down Coiler   |           |
| • <b>Product Mix</b> – HR Plates, API - 5L Quality Plates, HR Sheets, HR Coils, High Carbon Steel, Silicon Steel, Automotive Steel |           |



## Reporting Standard

NMDC has been striving to achieve sustainable performance across the three organizational pillars i.e. economic, environmental and social aspects, in a balanced, clear, reliable, accurate, reasonable and transparent manner. Adequate care and a systematic approach have been taken to ensure that the reported data are complete and accurate at the operations level. We have represented the quantitative data in the metric system and the currency has been reported as Indian National Rupees (₹) with dollar conversion rate. All the relevant aspects from Indicator Protocol, Sector Supplements and Technical Protocol have been incorporated. The report adheres to the reporting principles of GRI Reporting Guidelines addressing 3 principles of Accountability as per AA1000 APS-2008 namely, materiality, stakeholder inclusiveness, sustainability context and completeness.

NMDC has deployed Integrated Management System (IMS) in the areas of Economic, Environment, Health and Safety and Social through Quality Management System - ISO 9001:2008; Environmental Management System - ISO 14001:2004; Occupational Health & Safety Management System - OHSAS 18001:2007 & Social Accountability - SA 8000:2008 Certification Standards respectively. Regular quality, environment, health and safety, Social Accountability and CSR audits are conducted by third party against International Standards, Policies, Guidelines and applicable frameworks.

Financial performance of the organization is reported on the basis of guidelines provided in the Company's Law. Financial Systems have successfully undergone the statutory audits and internal audits. Norms and procedures prescribed for the work place safety under the Ministry of Labour & Welfare (Factories Act), the Ministry of Environment, Forests and Climate Change and Directorate General of Mines Safety (DGMS) are followed. The GRI Index on relevant pages provides a list of GRI indicators and Disclosures (as per GRI G4 'in accordance- Core option criteria guidelines) and their location within this report.

The economic performance reported here is from the Company's Annual Report which is prepared in accordance with Companies Act, 1956 and has been audited by independent external auditor. Relevant information and data of economic, environmental and social aspects for this report has been collected from the concerned departments and reported by all project sites located in India. The data presented is verified through regular internal audits.

## Independent Assurance

NMDC management has also decided to get this report externally assured. Accordingly, external assurance of the Report has been carried out by TUV (India) Pvt. Limited. The Independent Assurance Statement is attached in the end of the Report. NMDC has also obtained the GRI Content Index service from GRI, Amsterdam. We appreciate your feedback and any comments on the report, so that we can improve our future reports. You may send your feedback, comments or suggestions to:

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Director responsible for implementation of the  
BR Policy/Policies :

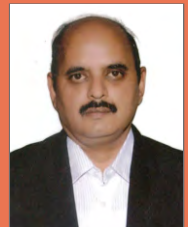
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# Organizational Profile

**Government of India holds 74.94%\***  
of the paid up equity share capital in the company.



**The remaining shares of 25.06%**  
is with Financial Institutions and public.

National Mineral Development Corporation (NMDC), a Navratna Central Public Sector Enterprise, and Government of India Undertaking, with its headquarter at Hyderabad, is the largest Iron Ore producer in the country. Government of India holds 74.94% of the paid up equity share capital in the company and the remaining shares of 25.06% is with Financial Institutions and public. The details of various operating mines and Nagarnar Steel Plant are discussed in previous Chapter "About the Report".

NMDC has played a key role in exploration and production of minerals, mainly Iron Ore and significantly contributed to the Indian Steel Industry to reach top rankings in the highest steel producing countries. NMDC is pioneer in exploration work with having established Global Exploration Centre (GEC) at Raipur in for taking up exploratory drilling works at potential mineral deposits. The function has been further strengthened to take up strategic exploration in mineral rich states (mainly iron ore). Under Section 4(1) of the MMDR Act, 1957, NMDC has been permitted as one of the PSUs to undertake exploration activity without obtaining Mineral Concession, at par with agencies like GSI, MECL, etc. In view of the same, Exploration Centre of NMDC is all geared up to boost mineral prospecting in the country. The Center is continuously doing exploration in the mines of NMDC and adding new reserves every year. With a view to share the expertise, NMDC has offered to State Governments to undertake free exploration to quantify mineral resources in various states. It has also established a well-equipped Centre for Geo-statistics.

NMDC has full-fledged mine planning wings at Corporate office as well as at project sites for ore body modeling & reserve estimation, with the help of advance software like Surpac, Whittle & Mineshed.

NMDC has an R&D Centre at Hyderabad which has been bestowed with "Centre of Excellence" by UNIDO. The centre has capabilities for undertaking studies on mineralogy, batch ore dressing, mineral beneficiation pilot plant, agglomeration, pyro and hydro metallurgy, bulk solids flowability with facilities for chemical analysis, electronic data processing and development of new products. The R&D efforts at NMDC are enriched through collaborative research with academia and other knowledge institutions such as The Commonwealth Scientific and Industrial Research Organisation (CSIRO), Australia, M/s ECT, Melbourne, Australia, Indian Institute of Technology (IIT), Hyderabad, Jawaharlal Nehru Technological University (JNTU), Hyderabad, Institute of Minerals & Materials Technology (IMMT), Bhubneshwar and National Metallurgical Laboratory (NML), Jamshedpur. A total of 4 projects were completed through collaboration with partner institutes like CSIRO, M/s ECT, IIT Hyderabad, JNTU Hyderabad, IMMT Bhubneshwar and NML Jamshedpur during the year. The rich R&D expertise of NMDC is also extensively sought by other organizations in iron ore and allied sectors in India and abroad. The R & D Center at NMDC is constantly striving to improve the existing technologies & processes driven by customer satisfaction & innovation.

## R & D Center

### Capabilities

- Mineralogy & batch ore dressing,
- Mineral beneficiation pilot plant
- Agglomeration, pyro and hydro metallurgy
- Bulk solids flowability with facilities for chemical analysis
- Electronic data processing
- Development of new products.













### Thrust Areas

- Development of dry processing technologies for hydrated iron ores by beneficiation of laterite/ goethite iron ores in collaboration with CSIRO, Australia.
- Flowability study of different types of iron ores for design of reliable storage hoppers/silos and transfer chutes
- Processing of Iron ore of around 45% Fe into high grade iron ore concentrate of >64% Fe
- Beneficiation studies for slurry pipeline for all identified projects
- Development of technology for reduction of iron ore using lignite as reducing agent along with NLC and ECT, Australia

\*As on 01.01.2018

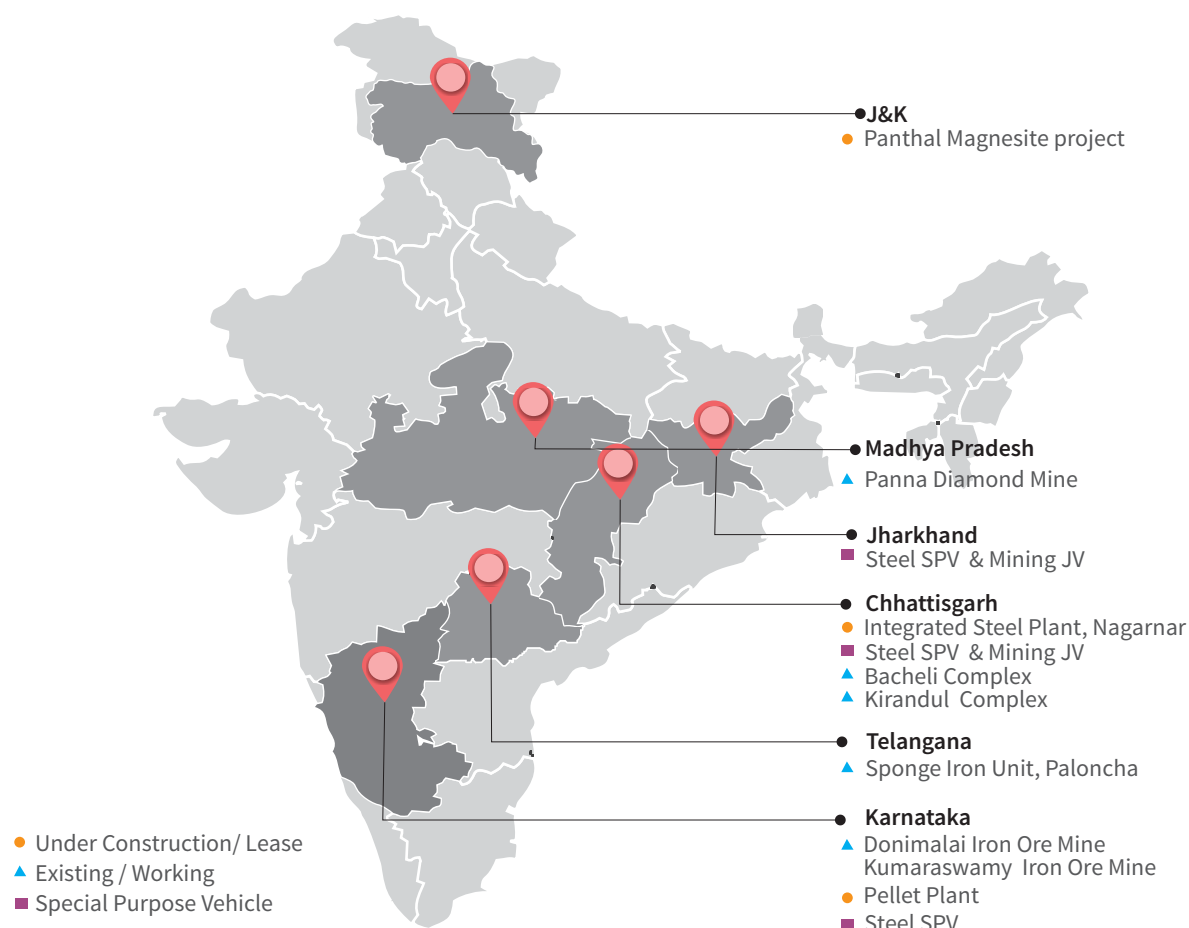


## Product Profile

 <p><b>Baila ROM</b> (FOR kirandul/Bacheli)</p> <p><b>Chemical:</b></p> <p><b>Fe</b> 65.50 %  <b>Silica</b> 2.25 % max  <b>Alumina</b> 2.25 % max  <b>Silica + Alumina</b> 4.0 % max  <b>Sulphur</b> 0.04 % max  <b>Phosphorus</b> 0.075 % max  <b>Size:</b> 10-150 mm  + 150 mm 2.5 % max  -10 mm 15.0 % max</p>	<p><b>Baila Lump</b> (FOR FOT-Kirandul)</p> <p><b>Chemical:</b></p> <p><b>Fe</b> 65.5 %  <b>Silica + Alumina</b> 4.0 % max  <b>Sulphur</b> 0.01 % max  <b>Phosphorus</b> 0.05 % max  <b>Size:</b> 6-40 mm  +40 mm 5% max  -6 mm 15 % max</p> 	 <p><b>DR Calibrated Lump Ore</b> (FOR bacheli)</p> <p><b>Chemical:</b></p> <p><b>Fe</b> 67.0%  <b>Silica + Alumina</b> 2.6 % max  <b>Sulphur</b> 0.01 % max  <b>Phosphorus</b> 0.05 % max  <b>Size:</b> 10-40 mm  + 40 mm 5% max  -10 mm 7.5 % max</p>	<p><b>Baila Fines</b> (FOR Kirandul/Bacheli)</p> <p><b>Chemical:</b></p> <p><b>Fe</b> 64.0 %  <b>Silica</b> 3.0 % max  <b>Alumina</b> 3.0 % max  <b>Silica + Alumina</b> 6.0 % max  <b>Sulphur</b> 0.04 % max  <b>Phosphorus</b> 0.075 % max  <b>Size:</b> -10 mm  +10 mm 5 % max  -100 mesh 15%max</p> 
 <p><b>Doni Lump</b> (FOR RNJP)</p> <p><b>Chemical:</b></p> <p><b>Fe</b> 65.0 %  <b>Silica + Alumina</b> 6 % max  <b>Sulphur</b> 0.05 % max  <b>Phosphorus</b> 0.08 % max  <b>Size:</b> 6-30 mm  +30 mm 5% max  -6 mm 15 % max</p>	<p><b>Doni Fines</b> (FOR RNJP)</p> <p><b>Chemical:</b></p> <p><b>Fe</b> 64.0 %  <b>Silica + Alumina</b> 6.0 % max  <b>Sulphur</b> 0.05 % max  <b>Phosphorus</b> 0.08 % max  <b>Size :</b> -10 mm  + 10 mm 5 % max  -100 mesh 25 % max</p> 	 <p><b>Kumarswamy Lump</b> (FOR RNJP/Kumarswamy Mines)</p> <p><b>Chemical:</b></p> <p><b>Fe</b> 64.5 %  <b>Silica + Alumina</b> 6 % max  <b>Sulphur</b> 0.05 % max  <b>Phosphorus</b> 0.08 % max  <b>Size:</b> 10-40 mm  +30 mm 5% max  -6 mm 15 % max</p>	<p><b>Kumarswamy Fines</b> (FOR RNJP/Kumarswamy Mines)</p> <p><b>Chemical:</b></p> <p><b>Fe</b> 64.0 %  <b>Silica + Alumina</b> 6.0 % max  <b>Sulphur</b> 0.05 % max  <b>Phosphorus</b> 0.08 % max  <b>Size :</b> -10 mm  + 10 mm 5 % max  -100 mesh 25 % max</p> 
 <p><b>Sponge Iron Lumps</b> (FOR Paloncha)</p> <p><b>Size</b> 4-20 mm  <b>Fe(M)</b> 76±1%  <b>Carbon</b> 0.25 % max  <b>Sulphur</b> 0.04 % max  <b>Phosphorus</b> 0.08 % max  <b>Non-Magnetics</b> 1 % max  <b>SiO2 + Al2O3</b> 5 % max</p>	<p><b>Iron Ore Pellets</b> (FOR Donimalai)</p> <p><b>Size</b> 6-16 mm  <b>Fe</b> 64+/-0.5%  <b>Sio2</b> 4 % max  <b>Al2O3</b> 2.5% max  <b>Sulphur</b> 0.021 % max  <b>Phosphorous</b> 0.055 % max  <b>CCS kg/Pellet</b> 230 min  <b>Tumbler Index</b> 95 % min  <b>Abrasion Index</b> 6 % max</p> 	 <p><b>Kumarswamy CLO (Sized Ore)</b> (FOR RNJP/Kumarswamy Mines)</p> <p><b>Chemical:</b></p> <p><b>Fe</b> 64.5 %  <b>Silica + Alumina</b> 6 % max  <b>Sulphur</b> 0.05 % max  <b>Phosphorus</b> 0.08 % max  <b>Size:</b> 10-20 mm</p>	<p><b>Diamond</b> Panna Mines</p> <ul style="list-style-type: none"> <li>Gem</li> <li>Off Colour</li> <li>Industrial</li> </ul> 

LTAs were entered into with Donimalai and Kumarswamy customers for the period from 2010-11 to 2014-15. As per the directives of Hon'ble Supreme Court of India, these agreements have been suspended w.e.f. October 2011 and since then Monitoring has been conducting the e-auction.

# NMDC Locations



NMDC serves the National market and also the International market by exporting iron ore to countries like Japan and South Korea. It has a market share of about 25% domestically (excluding captive iron ore production). Average grade of iron ore of NMDC sold in the market is ~64% Fe, which is one of the best globally.

The various Iron Ore products are DR CLO, Baila Lump, Bail ROM, Baila Fines, BL (10-20), Doni Lump, Doni Fines, K lump and K fines, K CLO (10-20). It also produces Iron ore Pellets, Sponge Iron and rough Diamonds. The details of NMDC subsidiaries, JVs and Associate Companies are shown below.

## Product Group, Class and Sub-Class

Description	Group	Class	Sub Class
Mining of Iron Ore	071	0710	07100
Mining of Diamond	089	0899	08991
Manufacture of Sponge Iron	241	2410	24102
Electric Power generation (wind)	351	3510	35106

## NMDC Subsidiaries, JV's & Associate Companies

### NMDC Ltd

#### SUBSIDIARIES

95.86%	J&KMDC Ltd
100%	NMDC Power Ltd.
78.56%	Legacy Iron Ore Ltd. Australia
100%	Karnataka Vijaynagar Steel Ltd.
100%	NMDC Steel Ltd.
100%	Jharkhand Kolhan Steel Ltd
100%	NMDC SARL(Under Closure)

#### ASSOCIATE COMPANIES

14.82%	Krishnapatnam Railway Co. Ltd
26.57%	International Coal Ventures Pvt. Ltd.
12.87%	Neelanchal Ispat Nigam Ltd.
25%	Romelt SAIL (India) Ltd.(Under Closure)
26%	Chhattisgarh Mega Steel Ltd.

#### JV Companies

50%	Kopano -NMDC Minerals( Pty) ltd.
51%	NMDC-CMDC Power Ltd.
60%	Jharkhand Minerals Development Corporation Ltd.
51%	NMDC SAIL Ltd.
	Chhattisgarh Mining Ventures Ltd.
80.35%	Bastar Railway Private Ltd.

Our product being a bulk commodity, it is not feasible to put product labels. The product specifications are being displayed on the Company's website.

There has been one customer complaint pending in FY 2016-17. No consumer survey has been done in FY 2016-17. However, Interactions are being conducted with the customers on regular basis to assess our product-mix as per their needs, pricing strategy to retain existing customers and collaborate with key customers to be long-term and strategic partners in future. To have a formal feedback also, NMDC has started the process to obtain customer feedback on quality and specification of the iron ore being supplied with the help of M/s IPE as consultant).

The company serves clients like MMTC, Rashtriya Ispat Nigam Ltd.(RINL), Essar Steel, Ispat Industries, Vikram Sponge Iron, KIOCL, JSW Steel, Visvesvaraya Iron & Steel Plant, Aparant Iron & Steel Company, Lanco Industries, Tata Metalliks, Kirloskar Ferrous Industries, Southern Iron & Steel Company and CG based Sponge Iron Units. As a forward integration approach, NMDC is in the process of developing a 3 MTPA Nagarnar Steel Plant (NSP) at Jagdalpur.

NMDC has a global presence and has got a Mining Lease for Gold Mining Project in Tanzania where it planned to setup a Pilot Plant of 12 ton per hour initially. NMDC has 78.56% equity in Legacy Iron Ore Ltd, based in Perth, Australia with a focus on iron ore, gold and base metals.

As on 1.4.2017, NMDC had a total employee strength of 5572 which consisted of 1664 executives and 3908 non-executives. The ratio of male to female stood at 18.9 : 1. The diversity of the workforce is well evident from the categories viz. Scheduled Caste employees 956 (17.16%), Scheduled Tribe employees 1195 (21.45%) and Backward Class employees 1001 (17.96%). All the employees are covered under collective bargaining mechanism which ensures a harmonious and fair workforce practices. The contract labor number stood at 10041 during the year.





## Iron Ore for Sustainable Growth

Iron ore is the key raw material for steel production, one of the most strategically important products when it comes to development and growth of Nations and Societies. Indian Domestic Steel Industry has seen consolidation, capability and capacity building, enhanced levels of competitiveness, deployment of world class technologies leading to India becoming the third largest producer of steel after China and Japan. With the per capita steel consumption in the country around 60 kg being very low compared to the world average of 208 kg and that of China's at 490 kg, there is a huge growth potential for the Domestic Steel Industry. The Indian Government has taken a comprehensive set of proactive measures to restore the health of the Indian Steel Industry and crafted National Steel Policy 2017.

The National Steel Policy envisages 300 MT of steelmaking capacity by 2030-31 with an investment of excess of Rs. 10 lakh Crores which will lead to employment generation to the tune of around 1.1 million additional jobs. The National Steel Policy documents lays a strong emphasis on ensuring raw material security for steel industry like iron ore, coking coal, non-coking coal, natural gas etc. at competitive rates through sustainable operations.

India is the 4<sup>th</sup> largest Iron ore producer in the world and it is expected to scale new heights. Iron ore Industry has a huge responsibility towards Sustainable Development Goals i.e. Poverty alleviation, promotion

of sustainable patterns of consumption, production, environment protection and managing the natural resource base of economic and social development.

### National Steel Policy 2017

- 300 MT steel and 437 MT Iron ore by 2030
- Sustainable mining practices
- Time bound mine development and exploration
- Future leases through robust mechanisms
- Transparency and efficiency in raw material scenario
- Raw material securitization
- Transportation of iron ore fines by slurry pipelines
- Low grade fines utilization
- Beneficiation and agglomeration
- Intensive and deeper exploration
- Overseas acquisition of mineral assets
- Focus on Water, energy, GHG, clean energy, emission
- Minimizing environmental damage
- Optimizing resource utilization
- Adoption of International Best practices



It is imperative on iron ore mining companies committed to sustainable development to forge partnerships with government, society and institutions to ensure positive impact on the local community, natural environment, climate change, and social capital. The essential features of new age iron ore mining with responsibility include exploration with responsibility, reducing waste during production, in-built safety aspects in processes, deployment of state of the art technologies, commitment to well-being of local communities, reduced emissions and pioneering role in environmental protection. Commitment and imbibing SDGs goals will go a long way in benefiting mining companies by way of high level of strong relationship with society, government and local communities. .

The amended Mines and Mineral Development and Regulation Act (MMDR) will promote an era of higher transparency and enhanced competitiveness in the allocation of mineral blocks. Mergers and Acquisitions of companies will become easier.

With the Government's consistent efforts in the promotion and development of the sector through Sustainable Mining, the iron ore mining sector is poised to enter a new orbit of growth, profitability and responsibility.

## NMDC - Opportunities & Threats

### Opportunities

- Envisaged growth in domestic steel production on account of factors given below would lead to higher demand of Iron Ore in the country
- Growth in steel intensive sectors such as housing, infrastructure, automotive, consumer durables in the coming years.
- Growing urbanization of the Indian economy coupled with rising income levels of the burgeoning Indian middle class.
- Government initiatives such as Make-in-India, Freight Corridors, 100 Smart Cities, Rural Electrification and Housing for all by 2022.
- Continuous thrust by the government to use domestically manufactured iron and steel products in government procurement.
- Restrictions on steel imports in the country on account of measures being taken by Govt. of India such as anti- dumping duty, Minimum Import Price (MIP) etc. would also help domestic steel production to rise.
- NMDC Strategy of growth in business through Special Purpose Vehicles (SPVs) envisaged in mineral rich states offer a good opportunity in both the Steel and Mining. Acquisition of Strategic and critical mineral assets based on





business potential and national interest is a key part of overall strategy. NMDC being one of the agencies nominated to undertake exploration activities is investing to intensify exploration for mapping of minerals across the country, which could open new avenues for the Company to grow.

NMDC also sees opportunity in strategic and critical raw materials which are required by our nation for long term supply security. Accordingly NMDC has entered into MoUs with MIDHANI & DMRL to explore opportunities for investment in Tungsten mineral assets in India and abroad.

## Threats

- NMDC is exposed to sharp fluctuations in demand for its products and volatility in prices.
- Quantum jump of production of merchant miners in the country, particularly Odisha, may lead to oversupply situation in the near term.
- Backward integration by Steelmakers into iron ore mining through auction route may significantly shrink the market of the Company.
- Indian iron ore industry will continue to be

uncompetitive on a global level due to higher rates of royalty and other levies such as DMF, NMET, Export duty etc. as well as significantly higher logistic costs.

- Increasing regulatory pressure on environment, safety and sustainability are some of the key concerns of mining industry.
- NMDC may be affected by government actions, including the imposition of tariffs and duties, Speculative trades, regulatory issues arising due to judicial verdicts, the development of products substitutes or replacements, recycling practices, an increase in capacity or an oversupply of the company's products in its main markets.
- Huge surplus steel capacity in most regions including China will continue to exert downward pressure on steel prices and thereby iron ore prices. Lowering of the global iron ore prices coupled with low seaborne freight rates have made imports competitive for coastal based plants particularly on west-coast.
- Timely enhancement of evacuation capacity in line with production plans also remains a potential risk. This could impact production and inventory levels for NMDC.





## Sustainability Strategy

NMDC Sustainability Policy is integrated with Environmental Policy, Occupational Health and Safety Policy, Community Development Policy and together they provide the broad framework for driving business in a responsible manner.

Sustainability for NMDC means that mining activities should be financially viable; socially responsible; environmentally, technically and scientifically sound; with a long term view of development; uses mineral resources optimally; and ensures sustainable post-closure land uses.

Sustainability management is an integral part of NMDC business strategy. We leverage business opportunities, minimize risk and seek to overcome social and business challenges such as scarcity of resources and climate change at an early stage. We continuously strive to improve our sustainability performance and further develop our strategy, defining it more precisely. To this end, we have established a company-wide strategy cascaded to subsidiary specific sustainability activities and ensuring systematic consideration of stakeholder's requirements. In our sustainability management, we place a special focus on the lasting and effective establishment of a culture of integrity, discipline and respect. We review our sustainability targets annually and adjust them as required. In doing so, we also take the changing requirements of our stakeholders into account.

We align our activities in line with Sustainable Development Goals (SDGs). Our sustainability policy lays emphasis on Environmental Sustainability, Economic Sustainability, and Socio-Cultural Sustainability. Respective functions at Corporate and at Project Sites have been earmarked responsibility to improve the performance in their sustainability dimensions. These form the core areas for implementing relevant Sustainability improvement projects.

We also have an exclusive policy for Corporate Social Responsibility which acts as a strategic tool for integrating business processes with the social processes for the overall development of the society. Further, the policy also aims at strengthening implementation of welfare projects undertaken by government, through our CSR ventures

NMDC has a robust Risk Management framework and a Risk Management Committee, comprising of all the functional directors, has been established to monitor the progress of Risk Management Performance. The committee reports regularly to the Board of Directors on its activities. Top 15 Risks That Matters (RTMs) have been identified and the Mitigation Plan has been formulated and implemented.

With a view to address the long term opportunities and risks, NMDC has formulated Vision 2025 and has developed six pillars of strategy wherein sustainability



NMDC commitment to sustainable mining focuses on following key topics

- Competitiveness, Profitability and growth
- Efficient mining and state of art technology deployment in mining
- Lean ore utilization and tailings management
- Protecting water resources
- Land management and Biodiversity preservation
- Reducing emissions, improve energy efficiency and reduce GHG emissions in our operations
- Being committed to health and safety of employees, contract labours and communities
- Attract, develop and retain people
- Valuing human rights
- Engaging and supporting our communities
- Being trustworthy and transparent

NMDC has various Policies in the areas of Environment, Social, Communication, Ethics etc. to charter the course of the organization in these areas necessitated by external business environment and stakeholder concerns. As the formulation of a Policy takes into accounts the present and future needs and expectations of stakeholders, the needs and expectations of a large number of stake holders have been addressed.

All the major international standards i.e. ISO 9001, ISO 14001, OHSAS 18001 and SA 8000 have been deployed. These standards cover a significant area of Sustainable Development. The extensive tools associated with these standards are being utilized towards Sustainable Development. All the policies are embedded and aligned to ISO 14001:2004 (Environmental management systems), ISO 9001:2008 (Quality Management systems) and OHSAS 18001:2007 (Occupational health and safety), United Nations Global Compact, Corporate Environmental Policy and CSR policy. ([https://www.nmdc.co.in/Handlers/DownloadCommunicationOnProgress.ashx?ID=65243eb7-](https://www.nmdc.co.in/Handlers/DownloadCommunicationOnProgress.ashx?ID=65243eb7-5ad1-4ba5-9fd8-24fa0012c626)

[5ad1-4ba5-9fd8-24fa0012c626 \(iii\) https://www.nmdc.co.in/Docs/Service%20Regulations.pdf](https://www.nmdc.co.in/Docs/Service%20Regulations.pdf)

(iv) [https://www.nmdc.co.in/](https://www.nmdc.co.in/CSR/Default.aspx)  
CSR/Default.aspx (vi) <https://www.nmdc.co.in/EnvironmentalMgmt.aspx>

The tools include policy, procedure, objectives & goals, KPIs, risk identification and review mechanism.

# NMDC Alignment to Sustainable Development Goals

**NMDC commitment and Sustainable Development Goals (SDGs) mapped to Mining Industry** (Developed by The Columbia Center on Sustainable Investment (CCSI), a joint center of Columbia Law School and the Earth Institute at Columbia University)

[http://unsdsn.org/wp-content/uploads/2016/11/Mapping\\_Mining\\_SDGs\\_An\\_Atlas.pdf](http://unsdsn.org/wp-content/uploads/2016/11/Mapping_Mining_SDGs_An_Atlas.pdf)

SDG No.	SDG Goal	NMDC Contribution to Key Elements of SDG Goals Relevant to Mining
SDG1:	End Poverty	<p><b>Paying a fair and accurate share of taxes and royalties</b> – As responsible Corporate Citizen and PSU Company, NMDC pays its taxes &amp; duties in a transparent manner which in turn contributes to development activities of the Country.</p> <p><b>Promoting inclusive employment</b> – NMDC contribute to poverty reduction through direct and indirect employment. The recruitment policy, free from biases and corrupt practices, ensures reaching out to a broad and diverse set of potential candidates</p> <p><b>Promoting skills development</b> - A Skill Development Program for local youths/contract labor in partnership with NSDC is in place. ITIs and Polytechnic institutes have been established.</p> <p><b>Building local, regional and national procurement strategies</b>- Apart from the procurement policy covering Global and National vendors, NMDC is promoting local vendors /SMEs also</p>
SDG2:	Zero Hunger	<p><b>Synergies in mining and agriculture where applicable</b>- Both mining and agriculture have shared need of land and water resources and NMDC is committed to contribute to agriculture wherever relevant. Integrated Village Development Program in backward villages around its operations has been implemented.</p> <p><b>Designing infrastructure with shared benefits to agriculture</b> – Extensive irrigation system has been created for CSR project “Mochobadi” and there has been a revolutionary growth of farming of cash crop raising the income of the locals to higher level.</p> <p><b>Keeping farmland and livestock free from contamination and dust</b> - Baseline studies of soils and water surrounding the mine are conducted to ensure that no harmful addition is taking place in the environment. Dust suppression programs are extensively used at all the dust generation part of the process to minimize impacts on the environment. Extensive measures such as retaining wall, Geo-carpeting of dumps, garland drains, desilting etc. are taken to ensure that effluents do not cause any harm to the surrounding. Most of the project sites run on dry system.</p>



SDG3: Good Health and Well-being



**Improving occupational health and safety, including road safety** - NMDC has implemented OHSAS 18001 to achieve desired goals in the area of occupational health and safety. Elaborate healthcare facilities including regular check up and treatment facilities are in place for the workforce. As regards the Community, the CSR initiative “Niramaya – Towards Healthy Life” provides both preventive as well as curative healthcare and includes awareness building among the local communities and mobilizing them on issues related to personal hygiene, safe sanitation and cleanliness.

The initiatives include free Medicare services at Project Hospitals, basic Medicare facilities at the door-steps of remote villagers through fully equipped mobile health vans, free medical care, creation of Healthcare infrastructure, sponsoring Tribal Girls to pursue career in medical field and starting a medical college with the partnership with State Government.

**Preventing non-communicable diseases (NCDs)** –Workplace health promotion programs, healthy canteen food, promotion of healthy lifestyle and ensuring general hygiene are focused to reduce the risk of NCDs. Full-fledged Occupational Health Services function at all the projects carry out structured periodical Medical Examination to prevent the onset of NCDs.

SDG4: Quality Education



**Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all**- NMDC has made transformational contribution in the area of literacy and quality of education in the local community with a focus on building state of the art educational infrastructure, financial assistance to poor, sponsoring tribal girls for nursing courses, free transport, mid day meal to poor students, ITIs, Polytechnic. Education City is the bold initiative covering 5000 students, to overcome the massive age old challenge of absence of education in the local society.

**Investing in workforce education, training and technical programs.** Human Resource Development strives to create a robust HR ecosystem through high impact HR Initiatives in areas like Leadership Development, Culture Building, robust Performance Management, Skill Development, Capability Building Programs, High Potential Leadership Development Program (HIPOs) and Mentoring & Coaching.

SDG5: Gender Equality



**Ensuring equal opportunities for women** -Due to various factors like remote locations of the projects, challenging nature of work etc, the women employees are less in number in Mining Sector. However NMDC promotes women empowerment and there are 280 permanent women employees with Men : Women ratio 18.9 : 1

**Ensuring gender-sensitive work environments** -NMDC strives to offer a gender-sensitive look at the workplace through awareness training, grievance redressal mechanisms to help enforce anti-harassment policies and persuading contractors to ensure a gender-sensitive approach for their work. A separate Committee for redressal of grievances of women employees in particular is in place.

**Recognizing the roles and rights of women** - NMDC believes that a gender-inclusive approach that is culturally appropriate is likely to be more effective in identifying negative impacts and positive opportunities that would not have been uncovered without the participation of women. Women's participation can also help identify impact. Under the CSR several initiatives have been taken towards women education and women empowerment.

SDG6: Clean Water and Sanitation



**Conserving and recycling water** -NMDC takes various measures to conserve water i.e. Water Audit, regular physical monitoring of ground water quality & levels, construction of check dams, construction of Sewage Treatment Plants for conservation and improving efficient quality.

**Monitoring water quality and reporting on water use**- NMDC is aware of its responsibility to ensure that its operations do not negatively impact water quality and makes significant efforts for regular physical monitoring of surface and ground water quality and ground water levels. Water Audit was also carried out at all projects of NMDC and recommendations of audit are under implementation by projects to conserve water.

**Taking approaches to managing water that considers social, cultural and technical aspects.**

In the era of Sustainable Development NMDC is committed to take a holistic approach to understand high value water assets by considering the full scope of social, cultural, economic and environmental values at the catchment scale to identify material risks and align operational water management and engagement with communities and government. Through the flagship CSR scheme “Payjal”, NMDC has undertaken measures to provide clean drinking water to the communities around its Projects

SDG7: Affordable and Clean Energy



**Improving energy efficiency**-NMDC supports research & development and Assessment & Audit focused on improving energy efficiency. Energy audits are conducted vis a vis targets which helps to identify and prioritize energy efficient technological measures and savings opportunities. The specific electricity consumption reduced to 2.16 Kwh/t ROM from 2.41 Kwh/t ROM in the previous year.

**Incorporating renewable energy**- NMDC believes that besides the benefit of reducing greenhouse gas emissions, promotion of renewable can yield benefits like reduced energy costs and less impacted by fuel supply bottlenecks. NMDC has taken up setting up of Solar Power projects (Rooftop & Overland) at its Office premises and at its units which include a 30 KW rooftop solar power generation at Head Office, 1 MW rooftop solar power generation at production units of NMDC and 5 MW overland solar power generation at SIU, Paloncha. NMDC has a project related to Clean Development Mechanism. It is a 10.5 MW Wind Project registered with the United Nations Framework Convention for Climate Change (UNFCCC).

SDG8: Decent Work and Economic Growth



**Understanding the limits and opportunities of mining's economic impacts**- NMDC is aware of three types of economic impacts: direct, indirect and induced. NMDC assesses different ways it can contribute to economic growth for identifying opportunities to leverage more inclusive and sustainable growth.

**Driving economic growth with local procurement and supplier development strategies** - NMDC is making steady efforts to procure inputs locally and is regularly engaging with local vendors to build local supplier capacity.

**Expanding the inclusiveness of direct employment**-NMDC has taken major steps to build the employability of local population through education and training. It has started ITIs to impart skill based training for enhancing employability opportunities.



SDG9: Industry, Innovation and Infrastructure



**Supporting local procurement and skill development-**NMDC is playing an active role in promoting the local industry through financial, technical and/or technological support programs for local vendors that have the potential to become suppliers.

**Considering shared infrastructure solutions** –With the Sustainability Principles in mind NMDC is progressively building infrastructure under 'Prakalp – Creating Infrastructure' CSR Programme on creating infrastructure in & around the Project location since its initial days. These initiatives extend from creating roads to creating school buildings, health infrastructure to community centers.

SDG10: Reduced Inequalities



**Understanding how mining activities may exacerbate inequality-**NMDC is abreast of the fact that mining wages & salaries are higher than agricultural sector and brings inequality. These dynamics are anticipated and suitable CSR initiatives are designed to reduce inequality through education and training.

**Anticipating and preventing the risks of conflict to communities and the company related to inequality** – NMDC is aware of the responsibility of mining companies to evaluate the impact of its activities towards potential conflict and conducts participatory and inclusive consultation practices with the local community under CSR activities and gathers valuable inputs on potential conflict scenarios.

**Championing inclusivity widely across operational activities-** NMDC makes efforts towards improving employability of the marginalized populations, including women and young people in the area with the collaboration with Government.

SDG11: Sustainable Cities and Communities



**Planning land use for life-of-mine-** NMDC adopts life-of-mine planning when developing strategies for land use and infrastructure development which includes considering post-closure land use in closure planning strategies, and aligning any footprint expansion with anticipated community use. It also includes considering ways to minimize the mine's footprint and building operational approaches to reduce the cost and impact of closure into early project design.

**Developing cultural heritage management plans** – NMDC understands that local people have strong cultural, historical and local ties to land that is designated for mining activities and under the Government regulatory framework and proactive approach the management and protection of archaeological and cultural assets are preserved.

**Anticipating and mitigating the negative impacts of urban development** – NMDC is sensitive to the phenomena of uncontrolled urban development and strain on public infrastructure and resources and takes suitable measures to mitigate the same.

**Mining waste-** We understand that In the face of changing commodity prices and in the event of high prices, waste can turn into valuable ore. NMDC has a structured approach to blend suitable mining waste in the product ensuring that customer requirements are met. Commissioning of pelletization plant has also added value in utilization of low grade ore.

SDG12: Responsible Consumption and Production



**Minimizing mine inputs and waste**-Sustainable mining entails minimizing inputs of water, energy, land and other materials, as well as outputs of waste, effluent and emissions. One of the thrust areas of NMDC's R&D Centre is Development of Technology for utilization of mine wastes.

**Implementing the environmentally sound management of chemicals and all wastes throughout their life cycle**-NMDC is conscious of its responsibility to strengthen its efforts to improve responsible management and minimizing risks associated with use of chemicals and other waste. ISO 14001 has been implemented at all mining locations which adequately addresses the issues.

**Moving away from extraction only.** -NMDC is aware of the depletion of easily extractable resource deposits which will drive innovation in new technologies for the extraction of less accessible deposits, while encouraging recycling and/or substitution using different materials. R&D efforts are made in this area to conserve resources.

**Implementing responsible sourcing**-NMDC is progressively integrating environmental and social requirements into procurement processes with adoption of Systems i.e. ISO 14001 and SA-8000 Standard

SDG13: Climate Action



**Adopting a corporate policy to address climate change**- NMDC understands and recognizes the implications that climate change would have on its business, environment and community. NMDC has framed policies around the climate change and other global environmental challenges. It stands committed in promoting greater environmental responsibility in mining and processing of minerals for sustainable development. The environmental management at NMDC is governed by its Corporate Environmental Policy. NMDC believes that Greenhouse gas emissions are one of the key concerns of "cost to environment" for modern business. NMDC measures, records, calculate and reports its GHG's every financial year. NMDC being a signatory to the 'United Nations Global Compact, it reports its environmental performance annually under the defined principles of UNGC.

**Reducing, measuring and reporting emissions** - NMDC considers Emissions reductions as a core component of the Corporate Policy which requires increased use of renewable energy, significantly cleaner fuel sources or efficiency gains realized through increasing mechanization.

**Aligning company strategies with national efforts and sharing the company's policy on climate change** - NMDC, a GOI Company and India being a signatory of Paris Agreement which in turn have led to the Intended Nationally Determined Contributions (INDCs), the foundation for building a climate resilient future, NMDC is committed to INDCs.

**Building climate change resilience** - NMDC is sensitive to the impact of its operations on the climate and suitable actions are taken to reduce the risk of climate change on account of its operations.

SDG14: Life Below Water



**Incorporating "downstream" and marine impacts into environmental assessments** -NMDC is well aware of the impact of Tailings disposal which is a major mining-related challenge for the life that depends on it and accords a very high importance to ensure desired outcomes.

**Identifying social impacts and relationships to marine resources** - NMDC operations are in land locked areas in remote forest and its operations do not have any impact on marine life.

**Mining the seafloor.** - NMDC operations are in land locked areas in remote forest and its operations do not have any impact on marine life.



SDG15: Life on Land.



**Avoiding impacts to critical habitat and working towards no net loss and net gain** - NMDC, through applying the mitigation hierarchy, and working with key stakeholders such as state forest department, manages the impacts to protect and conserve biodiversity and ecosystem services.

**Implementing biodiversity offsets** - At NMDC, the mitigation hierarchy helps identify measures to prevent and minimize impacts, restore impacted features, enhance existing biodiversity and understand cumulative impacts.

**Preserving ecosystem services**- NMDC in partnership with State Government agencies has been making the required efforts to preserve eco system of the surroundings.

SDG16: Peace Justice and Strong Institutions



**Preventing company-community conflict**- Consistent and ongoing engagement with local communities and other stakeholders, is a strong practice at NMDC which mitigates the risk of company-community conflict.

**Implementing human rights impact assessments**. NMDC adheres to the Indian Constitution, GOI Rules and United Nations declarations which have comprehensive acts, framework and principles to protect human rights and the same are assessed regularly.

**Respecting free, prior and informed consent (FPIC) and the special status of indigenous peoples** - FPIC as “the principle that indigenous peoples and local communities must be adequately informed about projects that affect their lands in a timely manner, free of coercion and manipulation, and should be given the opportunity to approve or reject a project prior to the commencement of all activities. GOI has adequate provisions through regulations to address the same.

SDG17: Partnerships for the Goals





**Transparently mobilizing resources**.- NMDC is a GOI enterprise and works under the Government rules and regulations and resource mobilization is done in a transparent manner.

**Transferring innovative and environmentally sound technologies**- As SDGs promotes the industry to collaborate and innovate around new technologies, NMDC is collaborating with Government and Institutions to develop new technologies to meet SDGs. Development of Entrained flow Gasification System using non-coking coal blended (F-grade) with dolochar for thermal applications is being done with IMMT, Bhubaneswar.

**Sharing Geo-data** - NMDC is open to share scientific data with governments and society in general via publication or open data formats.

# Sustainability Performance Highlights

S No.	Parameters	Unit	2015-16	2016-17	Improvement %
 <b>Economic Performance</b>					
1	Turnover	Crores INR	6457	8830	↑ 36.8%
2	Profit Before Tax	Crores INR	4093	4294	↑ 4.9%
3	Iron Ore Production	MT	28.574	34.005	↑ 19.0%
4	Sales Iron Ore	MT	28.839	35.621	↑ 23.5%
5	Diamond Production	Carats	35558	35636	↑ 0.2%
6	Earnings Per Share	INR	6.84	7.22	↑ 5.6%
7	R&D % Expenditure of PAT	%	0.65	0.78	↑ 20.0%
 <b>Environment Performance</b>					
1	IBM sustainability rating status	-	-	5 star	
2	Specific water consumption	m <sup>3</sup> /t ROM	0.19	0.13	↑ 31.6%
3	Specific diesel consumption	L/t ROM	0.39	0.35	↑ 10.3%
4	Specific electricity consumption	Kwh/t ROM	2.41	2.16	↑ 10.4%
5	Environmental Expenditure	Crores	15.49	56.15	↑ 262.5%
6	Specific GHG emission (Scope1/Scope 2)	kg CO <sub>2</sub> / t ROM	2.99	2.59	↑ 13.4%
 <b>Social Performance</b>					
1.	Employee Training	Mandays/emp/yr	5.66	5.04	↓ 11%
2.	Injury frequency rate	Accidents/ million manhours worked	1.83	1.13	↑ 38.3%
3.	Mandays lost per 1000 mandays worked	Man days	0.34	0.20	↑ 41.2%
4.	Total CSR Spent	Crores	210.09	174.18	↓ 17.1%
5.	Spending on local suppliers	Crores	29.56	25.35	↓ 14.2%

1 Crore INR = 154354.3 USD (as on 31.03.2017)



## Stakeholder Engagement

Stakeholders, by definition, refer to individuals and organizations who are affected by the activities of a company either directly or indirectly and may have an influence over a company's business. Thus, we recognize and involve all entities who have the potential to influence or get affected by our business activities and ensure that necessary actions are taken to foster mutual long term growth. Our stakeholders have contributed significantly to the overall development of the company. The important stakeholders identified are Government (Ministry of Steel) / Government Statutory / Regulatory Authorities, Investors, shareholders, business partners/JVs, Employees, Local villagers and community, Customers, Suppliers, Contractors/Service providers and Industry Associations. As a responsible corporate citizen we consider it as our responsibility to develop and retain an amicable relationship with all our stakeholders throughout the year to understand their concerns and address their issues.

Stakeholder engagement and identifying Material issues are the key to success of the Sustainable Development. The expectations and the concerns of stakeholders and the extent to which the relevant issues are addressed, play a vital role in influencing the sustainable growth of an organization. It is imperative

to conduct assessment of the internal and external context of organization with respect to three pillars of sustainability viz. economic, environment and social aspects. This facilitates in taking up effective strategic initiatives to address the sustainability risks and opportunities and provide a sound basis for sustainable development initiatives. During the engagement and consultation process, the critical inputs have been obtained which has given an opportunity for introspection, identifying any gap in the business strategy and to find out ways to address them. During the reporting period, we engaged with our stakeholders on various platforms. The key concerns that emerged out of these interactions have also been compiled. The information pertaining to stakeholders is periodically updated through formal or informal channel of communication. The details of stakeholders, mode of engagement, key concerns and the subsequent actions have been detailed.



## Stakeholders: Mode of Engagement ,Key Concerns and NMDC Actions

Stakeholders	Mode of Engagement	Key Concerns	NMDC Actions
<b>Shareholders /Investors</b>	Annual General Meeting, Periodic financial reports to shareholders and investors , Interactions with financial institutions, shareholders , Shareholders meets	Company's performance, Financial restructure Dividend, results and other issues, Grievance resolution	Analyst meet & conference calls, Quarterly results, Annual General meeting, Annual report, Press releases, Website updates
<b>Government (Ministry of Steel) / Government Statutory / Regulatory Authorities</b>	Meeting with Centre and State Government, Ministry of steel, Ministry of mines, DPE, Ministry of Environment, Forests and climate change, Ministry of Corporate Affairs, Indian Bureau of Mines, Director General Mine Safety Periodic communication and submission of various compliances to statutory authorities, Performance Report (Quarterly & Annually) Board Meetings, Compliance Report Inspections	Infrastructure development, labour welfare, export and balance of trade, import taxation and anti-dumping duty, Forest and Environment compliance, other applicable act like mines and mineral conservation act .  Performance at every front Policy decisions Abiding by the Law	MoU with Ministry of steel, Ministry of mines, Alignment with Government policies and priorities, Periodic government submissions, Parliamentary committee visits, District administration on peripheral development, Annual reports and regular filings, Inspection and audit by different regulatory authorities
<b>Employees</b>	Corporate level Industrial Relations meetings with Union leaders , Bipartite and tripartite meetings, Collective bargaining interactions with officer associations, Official communications, Internal magazines and e-newsletters, Employee satisfaction surveys, Grievance redressal forums Employee trainings and seminars Safety Week (Annually) Vigilance Week (Annually) Monthly Co-ordination meetings (Monthly)	Job Satisfaction, Wage negotiation, Promotion, Learning and Development Welfare (Housing related matters), Employee benefits and remunerations, Performance management and recognition, Carrier growth, Training and skill development, Safe and healthy condition, Quality of life	Newsletters, mailers, notices circular and office order Grievance redressal mechanism Different employee committees, discussion with recognized unions
<b>Local villagers and community , including disadvantaged and marginalized</b>	Sustainable Development initiatives and CSR activities (on going), Gramsabha and Public Hearing / Consultation (For New & Expansion projects) as and when required	Livelihood options and Job Opportunities, Basic amenities, Rehabilitation and Resettlement	Local Infrastructure development including Road, Street lighting, Drinking water, Education, Health

<b>Customers</b>	Regular meeting in the Project, Cultural, religious and social functions with community members and representatives, Need assessment interactions for CSR projects, Local community events, Sports events Meeting with Industry representatives and Ministries. meetings with Customers, Customers visit to projects and management interactions Customer feedback and Grievance redressal forums	Compensation, Financial, social and environmental impact of operation on community  Quantity and quality, Delivery Time, Customer feedback and Customer complaint resolution	camps, Livelihood creation, Women empowerment, Biodiversity management, other CSR initiatives  Strict quality control and timely delivery, Product information through website, Customer satisfaction survey, Product support, Customer compliant resolution system
<b>Suppliers</b>	Interactive meetings and sessions during tenders Vendors meet , periodic vendor and supplier meets, Regional, International trade fairs, Supplier relationship management	Special privilege to MSE units, Transparency & anti-corruption practices, Simplified procedure & timely payment, Adoption of integrity pact programme, NIT conditions, Supply schedule, Quality of items of supply	Vendor development and import substitution, E-procurement & E-payment, Participation in exhibitions organized by industry associations, State and Central government
<b>Industry associations</b>	Conference, Workshops & Seminars	Policy issues Statutory regulations International & internal market condition Technological developments	Participation in developing mines and issue centric programmes and action plans as member of CII, FIMI, FICCI etc
<b>Contractors/other service providers</b>	Sharing information with job contractors & workers engaged by them, Improvement of their competence/capability	Health and safety at workplace, Employability, Welfare measures, Working hours and wages	On the job counseling and feedback, Trainings during induction, tool box talk, periodic meeting
<b>Business partners/ JVs</b>	Review of business , Technical presentations	Review of business, technical presentations	Meetings, Official communication between the parent and joint venture entities

## Materiality Mapping

Materiality Assessment is the process of identifying, prioritizing and defining the aspects that are of highest importance to the stakeholders and the management of a company. The material issues have been identified which are topics that reflect most significant sustainability impacts and opportunities. Materiality, in this context, is the threshold at which an issue or interest should be reported. Focus areas have been identified representing the most significant challenges and opportunities facing the company in the area of sustainability which in turn are the foundation for the sustainability strategy.

Our materiality analysis process allows us to further define our report content by identifying material topics within these focus areas, as well as to identify key risks and opportunities outside these focus areas. Our process is informed by guidance from the Global Reporting Initiative's Technical Protocol, applying the Report Content Principles and from AccountAbility's Five-Part Materiality Test. Our assessment of the material aspects was based on the inputs and various engagements we have had during the year with different stakeholders.

To capture perspectives of different stake holders, a structured materiality assessment exercise was carried out across all the operational locations. A formal workshop was organized at each of our operational locations where we interacted with internal as well as some external stakeholders. Apart from informal verbal discussion the stakeholders were included in a

survey, inputs for which were carefully selected as a questionnaire based on our past experience and current challenges.

We gathered input from stakeholders. Based on this list we attempted to prioritise the most material aspects of the stakeholders. These aspect were then assessed qualitatively by our Management Team. Finally, we have come up with a materiality matrix that is an amalgamation of both the stakeholder perspective and management perspective. The materiality matrix determined was plotted on a 2X2 matrix and the aspects were plotted on the basis of their relevance to the management and their significant impact on the stakeholder.

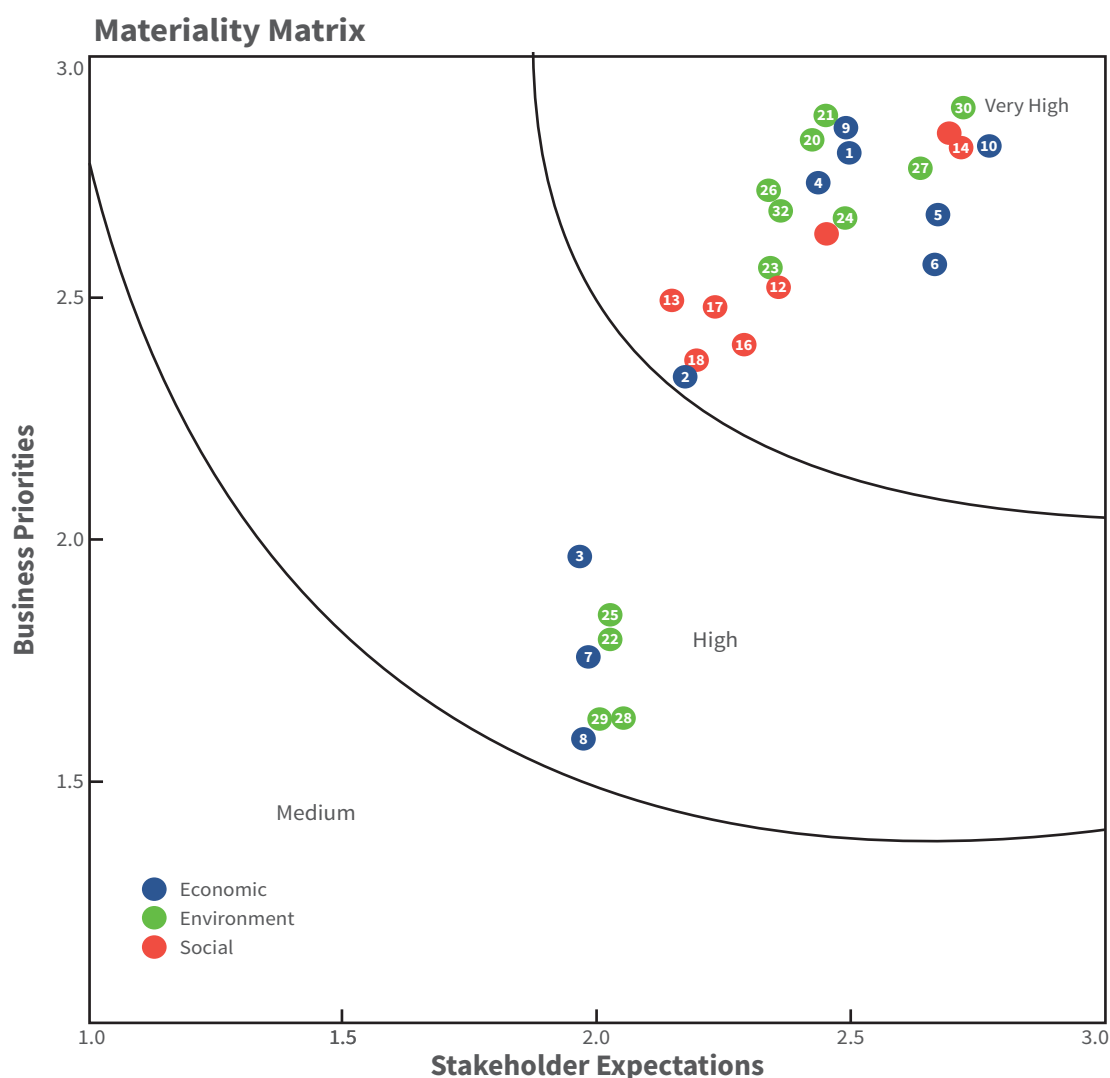
This materiality assessment also included one-to-one interaction with the top management at plants and mines as well as at corporate office in Hyderabad. Through this interaction, we were able to determine the issues which are important from the business perspective of NMDC and issues which are of concern to our esteemed stakeholders. Through this exercise, after identification of material issues, these issues form the focus of this sustainability report and our effort is to address these issues in a transparent and informative manner under GRI G4 "In Accordance Core" frame work. The issues find material are highlighted in the list of aspects given below.





## Materiality Issues and its Linkage with GRI Aspects with Aspect Boundary

Materiality Issues	Linkage with GRI Aspects	Aspect Boundary (Inside or outside the boundary)
Market Share and Competition	Economic Performance	Inside
Customer satisfaction, customer care & Trust	Product & Service Labelling	Inside
State of art mining technologies and mine life extension	Materials	Inside
Domestic consumption growth and exports opportunity	Economic Performance	Inside
Procurement ,Vigilance and Anti - corruption practices	Procurement Practices/Anti-corruption	Inside
Transparency, Corporate governance & ethics	Economic Performance/Anti-corruption	Inside
Compliance to regulatory/statutory requirements including environmental and social aspects	Economic/Environment/Social Compliance	Inside
GHG emission, Climate Change and Renewable	Emissions	Inside
Energy Efficiency improvement/fuel consumption	Energy	Inside
Improvement in air quality	Emissions	Inside
Sourcing of water, Recycling and Reuse of waste water	Water	Inside
Land, Waste Management and Tailings	Effluents and Waste	Inside
Mine closure, Reclamation & Rehabilitation	Biodiversity	Inside
Biodiversity protection post use Eco - restoration of mines	Biodiversity	Inside/Outside
Labour Practices	Labour standards & practices	Inside
Health and Safety	Health and Safety	Inside
Employee Training	Training and Education	Inside
CSR activities	Local Communities	Outside
Human rights	Human rights	Inside/Outside
Relocation and Rehabilitation	Local Communities	Outside



- 1 Market Share and Competition
- 2 Product Price Fluctuations and Government Duties/taxes
- 3 Auctioning of Mines and New projects investment/development
- 4 Procurement, Vigilance and Anti- Corruption practices
- 5 Customer Satisfaction, Customer Care & Trust
- 6 State of Art mining Technologies and Mine life extension
- 7 Business Diversification and Brand image
- 8 Logistics and Distribution
- 9 Transparency, Corporate Governance and Ethics
- 10 Compliance to Regulatory/Statutory requirements
- 11 R&D and Innovation Management, lean ore utilisation
- 12 Domestic Consumption Growth and Exports Opportunity
- 13 GHG emissions, Climate Change and Renewables
- 14 Environment Compliance and Clearances
- 15 State of art Mining Technologies & Mine Life Extensions
- 16 Energy Efficiency Improvement, fuel consumption

- 17 Sourcing of water, Recycling and reuse of waste water
- 18 Biodiversity protection, post use eco-restoration of mines
- 19 Land and Waste management and tailings
- 20 Improvement in Air quality
- 21 Environmental Investments
- 22 Greening of Supply Chain, Transportation
- 23 Mine closure and Reclamation and Rehabilitation
- 24 Labour practices
- 25 Retention of talents
- 26 Employee training
- 27 Health and safety
- 28 Gender equity
- 29 Addressal of grievances
- 30 CSR activities
- 31 Human rights
- 32 Relocation and Rehabilitation



## Corporate Governance

### Governance Structure

A corporate governance structure combines controls, policies and guidelines that drive the organization toward its objectives while also satisfying stakeholders' needs. For NMDC integrity, transparency, accountability, strict compliance to code of conduct, adherence to applicable regulations and law of the land are central to the way it works. NMDC is wholly committed to ethical business practices and high standards of governance. This commitment is based on the rich traditions and the organizational understanding built and reinforced over the decades of successful operations in wide areas of activities. In the framework of Public Sector Enterprise under GoI, NMDC is committed to Corporate Responsibility outlined by Government and Institutions and the same has been reinforced over the years to meet the needs and expectations of stakeholders.

The foremost sets of controls for a corporation come from its internal mechanisms which in turn are shaped and defined by external factors, law of the land, regulations, guidelines from pioneering institutes working for societies and the planet and a host of other inputs. These controls monitor the progress and activities of the organization and take corrective actions when the business goes off track. These controls include smooth operations, clearly defined reporting lines and performance measurement systems. Internal mechanisms include oversight of

management, independent internal audits, structure of the board of directors into levels of responsibility, segregation of control and policy development. NMDC is committed to ensure transparency, ethical practices, disclosures and reporting to ensure strict conformance to applicable regulatory and statutory guidelines to promote ethical conduct of business operations and transactions.

NMDC recognizes that the Board is accountable to all shareholders and that each member of the Board owes his/her first duty for protecting and furthering the interest of the Company. Corporate governance adheres to the provisions as specified in Securities and Exchange Board of India (Listing Obligation and Disclosure Requirement) Regulations 2015. The Board of Directors is guided by the organization's Vision, Mission and objectives. The composition of the Board of Directors comprises of full time Executive and non-Executive Directors selected through Public Sector Enterprises Board which has well-laid out selection procedure. The NMDC Board regularly reviews the performance of the organization on economic, environmental, social and other relevant issues.

The Directors present the annual report of the Company together with audited accounts for each financial year in the Annual General Meeting (AGM). The minutes are prepared for the proceedings of the AGM. These minutes include suggestion, comments and



feedback from the shareholders.

Allegiance to corporate governance agenda is ensured by a number of committees of NMDC Board like Audit Committee, Nomination and Remuneration HR Committee, Shareholders'/Investors' Grievance stakeholders Committee.

There is a Code of Conduct in place applicable to Board Members and members of Senior Management team. There were no instances of non-compliance by the Company and no imposition of any penalty or stricture on the Company by the Stock Exchange or SEBI during last three years.

As on date, the Board of Directors comprises of a full time Chairman-Cum-Managing-Director, 5 Whole Time/Functional Directors, 2 Government Directors and 6 Non-Executive (Independent) Directors.

The Chairman-Cum-Managing Director and Functional Directors are appointed by Government of India for a period of five years or till the age of superannuation or until further orders whichever is earlier. The Directors are initially appointed by the Board as Additional Directors in terms of the provisions of the Companies Act, 2013 and thereafter by the shareholders in the Annual General Meeting. Government Nominee Directors representing Ministry of Steel, Government of India retire from the Board on ceasing to be official of Ministry of Steel, Government of India. Non-Executive Directors (Independent) are normally appointed for a tenure of 3 years by Govt. of India.

Being a Public Sector Enterprise, the nomination and fixation of terms and conditions for appointment as

Director on the Board is made by the Government. The Board has constituted a Nomination, Remuneration & HR Committee comprising of 3 independent Directors for the purpose of finalization of Performance Related Pay (PRP) for the executives of the Company. The Non-Executive Directors (other than Government Nominee Directors) are paid sitting fees for each Board/ Board Sub-Committee Meeting attended by them. The salary and perquisites of the Whole Time Directors is in accordance with the prevailing rules and Guidelines of the Government.

There are structured mechanisms to review and drive issues pertaining to the management of economic, environmental and social areas which are collated, compiled and monitored at different levels i.e. HoDs, Project Heads and Board. The agenda papers along with the status report on the economic, environment and social performances including legal compliances are made with the help of information provided by the various units in advance to all the Board Members before the meeting for review, comments and suggestions during the meeting. The feedback from the board members is analyzed by the top management for business decision-making.

There were no transactions by the Company of any material nature with the Directors or the Management, their Subsidiaries, relatives etc. to prevent any conflict of interest. The Non-Executive Directors received only sitting fees for attending the meetings of the Board/Board Sub-Committee and no other pecuniary benefit was granted to them.



## Board of Directors

### CMD



Shri N. Baijendra Kumar, IAS  
Chairman-cum-Managing Director

### Functional Directors



Dr. Narendra K. Nanda  
Director (Technical)



Dr. T.R.K. Rao  
Director (Commercial)



Shri P.K. Satpathy  
Director (Production)



Shri Devinder Singh Ahluwalia  
Director (Finance)



Shri Sandeep Tula  
Director (Personnel)

### Government Directors



Shri Saraswati Prasad  
Director, NMDC Ltd.  
Additional Secretary, Financial Advisor, MoS



Shri Sunil Barthwal  
Director, NMDC Ltd  
Joint Secretary, MoS

### Independent Directors



Shri A.K. Srivastava  
Director, NMDC Ltd.



Smt. Bhagwati Mahesh Baldewa  
Director, NMDC Ltd.



Shri Rajesh Mangal  
Director, NMDC Ltd.



Shri Pradip Bhargava  
Director, NMDC Ltd.



Dr. Syamal Kumar Sarkar  
Director, NMDC Ltd.



Shri S.M. Nigam  
Director, NMDC Ltd.



Shri Bahram Navroj Vakil  
Director, NMDC Ltd.



Shri Ashok Kumar Angurana  
Director, NMDC Ltd.

## Anti-Corruption

NMDC Vigilance Department guides and facilitates impartial, fair and transparent decision making and gives priority to preventive vigilance, with proactive measures. Department had taken several initiatives during the year. Emphasis was laid on adequate checks and balances in the form of well-defined systems and procedures. Various programmes were conducted for awareness on vigilance matters for the employees of the Corporation. The vigilance functionaries at the projects have conducted regular training classes for the employees on the vigilance matters. Executives of Vigilance Department were nominated for training / workshops being organized in India.

Vigilance Department in NMDC is certified under ISO 9001:2008 conforming to the Quality Management System. Surveillance Audit of Vigilance Department has been conducted by M/s. Integrated Quality Certification Pvt. Limited on 07.02.2017 and recommended for Certification which is valid up to 14.09.2018.

During the year (Apr, 2016 - March, 2017), 92 surprise checks, 107 regular inspections and 15 CTE type inspections were conducted. During period, 61 grievances were addressed in the CPGRAMS Portal. Complaints received were taken up for investigation and necessary disciplinary action wherever required was recommended. Apart from these, the thrust area studies were conducted on following activities:

- Study of Cost Cap - HEM equipment
- Study of Asset Register
- Study of Mining Contracts

As part of implementation of "Leveraging of

Technology for transparency" in all the transactions, information about limited tender enquiries above Rs. 30 lakhs, details of contracts concluded above Rs. 10 lakhs, works awarded on nomination basis, single tender basis above Rs. 1 lakh, information regarding bill payments to the contractors etc., are provided on the Company's website. Efforts to encourage e-procurement, e-tender, e-auction are being made continuously.

NMDC has adopted implementation of Integrity Pact since November, 2007. The threshold limit of Rs.20 crores in case of civil works and contracts and Rs.10 crores in case of procurement is being followed. Till date, the Integrity Pact is entered into 109 contracts with a value of Rs.19,102 crores. As such, more than 90% of the total value of the contracts is covered under Integrity Pact. In addition, procurements through e-procurement and sales are in place.

The Vigilance Awareness Week 2016 was celebrated from 31.10.2016 to 05.11.2016 with the administration of pledge to all the employees by Dr. N.K. Nanda, Director (Technical) on 31.10.2016. The theme for this year was "Public participation in promoting Integrity and eradicating Corruption".

Units of NMDC at Kirandul, Bacheli, Donimalai, Panna, NISP, Nagarnar, Sponge Iron Unit and Regional Offices at New Delhi, Bangalore, Kolkata, Vizag, etc., have observed the Vigilance Awareness Week and similar programmes were conducted there also. CVC's Annual Sectoral Review Meeting with Chief Executives/CMDs and CVOs of Steel and Mines and Defence Sector was held on 1.02.2017 at NMDC, Hyderabad





## Whistle Blower Policy

NMDC being a PSU, the guidelines of Central Vigilance Commission (CVC) are applicable which provides adequate safeguard against victimization of the employees. No person has been denied access to the Audit Committee. The Board of Directors at its 451st meeting held on 20.09.2012 approved the internal Whistle Blower Policy of NMDC. In terms of the said Policy, CVO NMDC has been designated as the Nodal Officer for implementation of Internal Whistle Blower Policy. The Policy aims to achieve the highest possible standards of ethical, moral and legal business conduct and also to strengthen its commitment to open and transparent communication. The Policy has also been uploaded on the intranet of the Company for information of all the employees. As per the terms of Whistle Blower Policy, the Screening Committee will comprise of CMD and Chairman of Audit Committee.

No complaint has been received by the Company under Whistle Blower Mechanism for the year under review. In order to spread awareness about Whistle Blower Policy, awareness programmes were conducted during the Vigilance Awareness Week 2016 at Projects.

## Grievance Redressal

All the provisions of the RTI Act, 2005 are being complied with by the Company. In order to ensure timely disposal of RTI applications, PIOs have been appointed in each of NMDC's Units. A close monitoring of the RTI applications received is done to ensure that the replies are sent in time. The details of RTI applications received in Head Office and all the Units of the Company during the period 01.04.2016 to 31.03.2017 are as follows:

<b>Nos of applications received</b>	<b>241</b>
<b>Information provided</b>	<b>203</b>
<b>Rejected</b>	<b>23</b>

About 77 shareholder complaints have been received in the financial year 2016-17 and all of them have been successfully resolved and no complaints were pending for redressal as on 31.03.2017. During the year, under SCORES, 14 investor complaints were received & resolved and no complaint was pending as on 31.03.2017. There have been nil complaints with regard to child labour, forced labour, involuntary labour, discriminatory employment and sexual harassment in the FY2016-17. There have been Nil

cases of human right violation during the FY 2016-17. There is no case related to any stakeholder against the Company regarding unfair trade practices, irresponsible advertising and / or anti-competitive behavior during the last five years and pending as of end of financial year. There were no significant disputes relating to land use with local communities in the reporting period.

## Industry Associations

NMDC is a member of prestigious bodies and institutions in the areas of trade & commerce, Management, Minerals, Iron and Skill development etc. The engagement with these associations has proved to be value adding to the organization through discussions and insights with eminent persons. This has greatly enhanced our business approach and added value to the shaping of our core vision. NMDC advocates with association in the areas of

sustainable mining practice, energy conservation and inclusive development. The industry association is detailed below.

- Federation of Indian Mineral Industries, New Delhi
- All India Management Association, New Delhi
- Federation of Indian Chamber of Commerce and Industry, New Delhi
- Standing Conference of Public Enterprises, New Delhi
- Confederation of Indian Industry (CII)
- Indian Iron and Steel Sector Skill Development Council
- Federation of Indian Export Organization, Chennai
- The Associated Chambers of Commerce & Industry of India

## Awards

- On 4th April 2016, Shri N.K. Nanda, Director (Technical), NMDC received India Pride Award from Shri Ravi Shankar Prasad, Union Minister for Communications and Information Technology, at New Delhi.
- On 21st April 2016, Shri D.S. Ahluwalia, Director (Finance), NMDC received the “Most Efficient PSU” award from Dr. Mahesh Sharma, Minister of State for Tourism, Culture & Aviation organized by the Dalal Street Investment Journal.
- NMDC has been awarded Ispat Rajbhasha Shield (First Prize) amongst PSUs of Ministry of Steel for implementation of Rajbhasha for the Year 2015-16. It was also awarded Ispat Rajbhasha Protsahan Shield (for implementation of Rajbhasha in “C” region) for the Year 2014-15. The awards were received from Honorable Union Minister of State for Steel Shri Vishnu Deo Sai during the meeting of Hindi Advisory Committee of Ministry of Steel at New Delhi on 16-11-2016.
- On 17th Dec'2016, NMDC received 'Governance Now PSU Award 2016' for strategic performance under financial category from Sri Ram Vilas Paswan, Hon'ble Minister for Consumer Affairs, Food and Public Distribution, Govt. of India, organized by Governance Now Magazine, New Delhi.
- NMDC's three mines Bailadila – 5, 10/11A, Donimalai Iron Ore Mine & Diamond Mining Project, Panna have received Five Star Rating from the Indian Bureau of Mines for their sustainable development practices. The Five Star Certificates were given by Sri Piyush Goyal, Hon'ble Minister of State for Power, Coal, New & Renewable Energy & Mines at a function held at New Delhi on 15.02.2017.
- NMDC received the winner trophy of SCOPE for the Case Study Contest on 'Reinventing HR: Breaking the Mould Globally' at the SCOPE International HR Summit-2017 held at SCOPE Convention Centre, New Delhi on 20th Feb'2017.
- Bailadila Iron Ore Complex awarded FIMI Golden Jubilee Award for excellence in Environment & CSR.
- Kirandul, Bachel, Doniamalai & Panna Projects got Green Tech Award (Silver) in the field of Environment & CSR.
- NIPM Award for Best HR Practices.
- Best CSR Practices Award and Most Caring Company Award by World CSR Congress.
- Global HR Excellence Award for Best HR Strategic Plan by Planman HR.
- Corporate HRD has bagged Green Tech Gold Award in Training Excellence
- NMDC got an award for best CSR practices under 6th Asia Best CSR Practices Award 2016 by CMO Asia
- NMDC got Best Employee Brand Awards (7th edition) for Best CSR Practices by World HRD Congress
- CSR Leadership Award 2017 to NMDC presented by ABP News















## Economic Performance

Indian iron ore production is likely to grow in line with domestic steel production. Going forward, domestic supplies are likely to grow substantially and NMDC is bullish on the growth prospects of India's steel industry with its competitive advantages and the impetus being given by the government to the steel sector.

Production of Iron Ore in India at 190 MT in FY'17 was 22% higher than FY'16. Exports from the country also increased to 24 MT during the year, which was 4 times than FY'16. Most of the export from India was to China of low grade ore (58% Fe and below), which has lower export duty of 10%. Indian iron ore production is likely to grow in line with domestic steel production.

NMDC proposes to augment its production capacity of iron ore to 67 million tonnes by 2021-22. It has also embarked on value addition projects by setting up pelletization plants by utilizing slimes and 3.0 MTPA integrated steel plant in Chhattisgarh. To fulfil the Vision of producing 300 MT of Steel by 2030-31, NMDC proposes to act as a facilitator and developer of green field steel Plants by creating Special Purpose Vehicles (SPVs) in the mineral rich

states of Jharkhand, Karnataka & Chhattisgarh.

NMDC is one of the top profit-making 'Navratna' public sector companies in the country with a net worth of Rs. 22,519 crores (as on 31st March, 2017). It has a strong history of rewarding investors with an average dividend payment of over 800% in the last 5 years.

During the year 2016-17, the paid up Capital was (INR) 316.39 Crore, Total profit after taxes was (INR) 2,589.14 Crore and Total Spending on Corporate Social Responsibility (CSR) was Rs.174.18 Crore (2.17% of average as percentage of profit after tax PBT of three preceding years).

During the reporting year, the Company has recorded turnover of Rs.8,830 crores, achieved PBT of Rs.4294 crores and achieved PAT of Rs.2,589 crores backed by highest ever production of 34 MT.

NMDC being one of the agencies nominated to undertake exploration activities is investing to intensify exploration for mapping of minerals across the country, which could open new avenues for the Company to grow. Some of the highlights in the areas of Resource Planning and Explorations during the reporting year are given below:

## Highlights

### Explorations and Resource Planning 2016-17

- Lease deed of Bailadila Dep-13 executed and Registered on 10.01.2017 over an area of 315.813 Ha after obtaining final F.C. and Lease Grant order.
- Achieved highest ever in-house exploratory drilling of 11,077 mts in the mining tenements of NMDC to establish additional resources (8323 meters in 2015-16).
- Tripartite MoU was signed on 27.10.2016 among GoMP (MRD, through DGM) MPSMCL & NMDC for “Geological and Geophysical exploration in various Districts of M.P.
- MoU was signed on 05.05.2016 between NMDC Limited & NRSC, ISRO, DoS for “Satellite Based Geological Mapping for Mineral Exploration of Iron, Diamond and other Deposits”
- Tripartite MoU was signed on 27.10.2016 among GoMP (MRD, through DGM) MPSMCL & NMDC for “Geological and Geophysical exploration for various Districts of M.P” for a total area of 7288.95 Sq.Km
- MoU was signed on 5th May 2016 between NMDC Limited & NRSC, ISRO, DoS, for “Satellite Based Geological Mapping for Mineral Exploration of Iron, Diamond and other Deposits”.
- Various departments of Osmania University have been engaged for activities like conducting ground geophysical survey for gravity & VLF-EM for iron & Diamond areas in MP, geological mapping, geochemical sampling & mapping in selected blocks of NMDC and technical services for stream sediment sampling, processing & interpretation of indicator minerals for Chhatarpur Diamond Block-2 & Damoh Diamond Block of NMDC

### Research & Development

The main drivers of R& D efforts at NMDC are to meet the challenges in ensuring profitability and that of the fast depleting high-grade iron ore deposits. We understand that in the prevailing conditions, beneficiation of iron ore offers a very high opportunity.

By enhancing the quality of lower-grade raw materials through beneficiation is one the most important element of Sustainable Mining. Significant R&D activities were carried out during the year and the completed R&D projects during the year 2016-17 are shown here.

#### R&D Projects Completed in 2016-17

- MOU Projects signed with Ministry of Steel titled “Improving the screening efficiency of secondary screens in NMDC production units by 3% over previous year”
- Development of an Eco-friendly tailing disposal system by filtration of iron ore tailings and study of issues related to their transportation and storage.
- Preparation of Nano Iron Powder from Iron Ore tailings
- Preparation of Nano-structured TiO<sub>2</sub> from silica based Kimberlite
- Development of mathematical model to predict metallurgical characteristics of iron ore sinter
- Feasibility study on production of TiO<sub>2</sub> slag from ilmenite by using hydrogen gas as reductant and smelting of reduced ilmenite.

### Strategic Management Plan

A long-term strategic management plan (SMP), 'Vision 2025' was formulated in 2015 as per which its Iron ore Mining capacity was envisaged to be increased to 75 million tonnes per annum (MTPA) by 2018-19 and 100 MTPA by FY 2021-22. Taking into account the market scenario, the SMP was reviewed by NMDC in March, 2016 and expansion targets have been re-worked 50 MTPA by 2018-19 and 67 MTPA by 2021-22. Besides the expansion plan, the SMP approved by the Board in June, 2015 also envisaged introduction of systemic interventions in six strategic transformation areas - Business, Operations, Sustainability, Capital Projects, Human Resource and IT. Several initiatives in this respect are under implementation such as, License-to-Operate computer-based model (in which all the statutory approvals will be brought under one umbrella, driving cost reduction and other business-improvement initiatives, etc.

Significant resources are deployed regularly to improve the economic performance through efficient mining, increase in evacuation capacity and Waste mining. In Kumaraswamy Iron Ore Mine a 4.8 kms single flight downhill belt conveyor system being one of its kinds in India for Iron Ore conveying has been commissioned. The slurry pipeline from Bacheli to Nagarnar is a radical step towards cleaner methods of transport leading to positive impact on environment and precious resources. For increasing the rake loading capacity in Kirandul a uniflow system is being planned. This will reduce the rake loading time and turnaround time of rakes.



## Expanding Rail Network

To augment the production and to improve the evacuation capacity from Bailadila Sector, doubling of KK line is being done and this will increase the evacuation capacity of Bailadila sector through railway line from 28 MTPA to 40 MTPA. NMDC is also participating in the Rowghat-Jagdalpur Rail line project as a major stake holder with 43% share along with SAIL, IRCON & Govt. of Chhattisgarh being other stake holders with shares of 21%, 26% & 10% respectively. This line will be helpful in reduction of distance by about 260 kms and facilitate NMDC in the cost competitiveness of Iron Ore supplies in Raipur region. This line will also be helpful for Steel Plant project at Nagarnar for inward & outward traffic and also provide a better customer connectivity for Iron Ore & Steel Customers.

### Projects Completed

- Crushing Plant & Downhill conveyor system of 11B- Kirandul Complex
- Crushing Plant & Downhill conveyor system - Kumaraswamy
- 1.2 MTPA Pellet Plant - Donimalai

## Iron Ore Transport through Pipeline

NMDC has taken up an ambitious project of laying Slurry Pipeline from Bailadila to Jagdalpur and further upto Visakhapatnam. The capacity of the line 15 MTPA and this will be associated with facilities like beneficiation Plant at Kirandul & Bacheli, Pellet Plant at Nagarnar and Vizag. The Slurry Pipeline between Bacheli to Nagarnar is being executed by NMDC and from Nagarnar to Vizag is envisaged to be executed in SPV mode. The works for Bailadila to Jagdalpur segment (140 Km) has been taken up. This project is challenging in terms of obtaining various clearances and permissions from statutory bodies and complexity of the route.

## Promoting New Steel Plants through SPVs

NMDC is promoting Steel SPVs for setting up new steel plants in the state of Karnataka and Jharkhand and jointly with SAIL at Chhattisgarh. This initiative is under a collaborative approach of Ministry of Steel, GoI and respective State Government. The Steel SPVs shall acquire land, seek water and power allocation and iron ore linkage for setting up the Steel plant and then invite a strategic partner to develop and construct the Steel Plant. NMDC shall ensure the ore linkage to the SPVs through JVs with State Mining corporations.

## Implementation of Mine Transport Surveillance System

An MoU was signed between CSIR-CIMFR and NMDC Limited for the following activities at the different projects of NMDC Limited, for a duration of five years:

Phase-I includes field assessment and implementation of Mine Transport Surveillance System. Mine Transport Surveillance System (MTSS) has been chosen for implementation at KIOM Kumaraswami, DIOM Donimalai and Donimalai Pellet Plant and comprises of the following:

- Weighbridge Automation
- Centralized billing and software solution
- In-motion weigh bridge
- Perimeter Surveillance/Virtual Fencing

### Major Projects under Progress

#### Kirandul Complex:

- 5th Screening Line and Up-gradation Of Conveyor 310 at SP-II
- 7 MTPA Rapid Wagon Loading System (RWLS -1)
- 12 MTPA Screening Plant -III to cater to the expanded capacity of both Dep-11B & Dep-14 along with SP-I and SP-II.
- New Crushing Plant & Downhill for Dep-14 and 11C of 10 MTPA capacity each
- Installation of Uni-flow Rail System including siding and RWLS- 2 in 3rd line at MV siding at Kirandul

#### Bacheli Complex:

- 5th Screening line of Deposit 5 Screening Plant and up gradation of downhill conveyor system.
- 2 MTPA Beneficiation plant in Bacheli

#### Donimalai Complex:

- 10 MTPA Screening Plant -II
- 7 MTPA Additional Loading Facility along with Railway Yard

#### Evacuation:

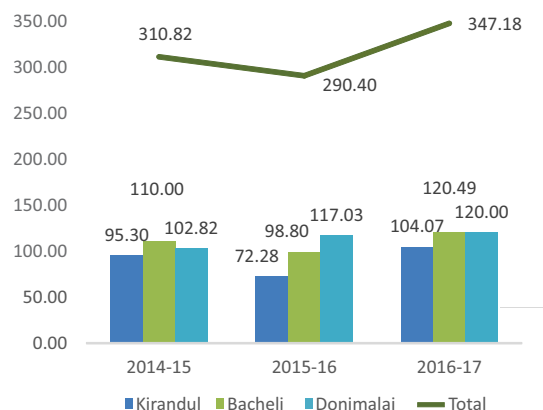
- 15 MTPA Slurry pipeline from Bacheli to Nagarnar
- Doubling of KK line,
- Rowghat-Jagdalpur line

#### Steel Plant & Pellet Plant

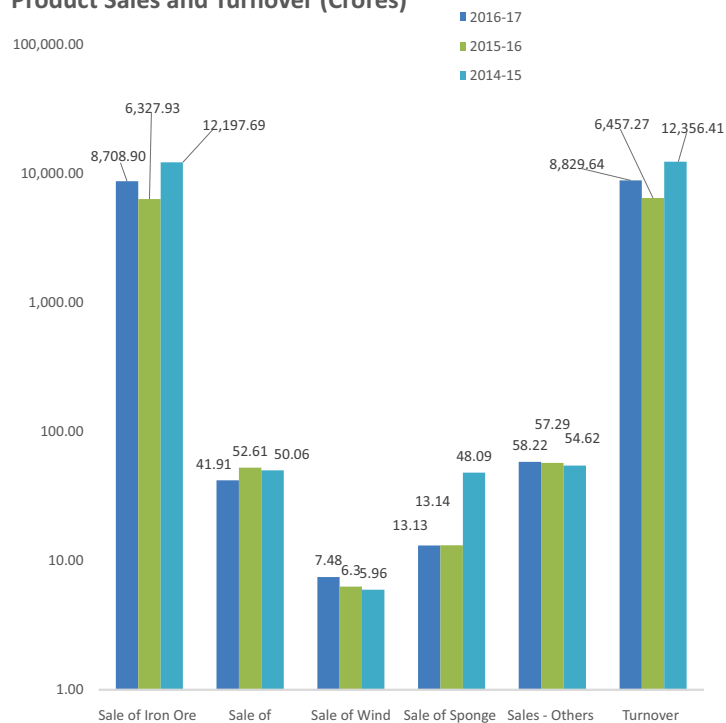
- 2 MTPA Pellet Plant at Nagarnar
- 3 MTPA Steel Plant at Nagarnar

# Production Performance

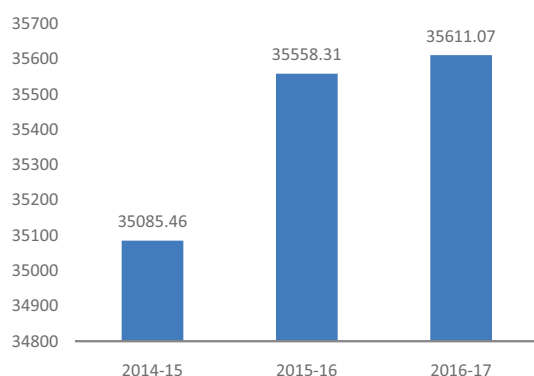
## Run of mines (lakh tonnes)



## Product Sales and Turnover (Crores)



## Diamond Production (Carats)



## Economic Value Generated & Distributed

Particulars(Rs. in Crore)	2014-15	2015-16	2016-17
<b>1.Direct Economic Value Generated</b>			
Revenue from operations(includes export incentive)	12,356.41	6,457.27	8,829.64
Revenue from other sources	2,265.40	1,809.25	9,08.81
Total Economic Value Generated	14,621.81	8,266.52	9738.45
<b>2.Economic Value Distributed</b>			
Operating expenses(excluding employee wages and benefits)	4,040.20	3,342.80	4,559.19
Employee wages and benefits	700.09	646.18	885.58
Payments to providers of capital	3,389.83	4,361.19	9157.15*
Payments to government(Tax on PBT)			
i)Corporate Tax	3,345.98	1,379.80	1,703.78
ii)Dividend distribution tax	679.67	887.84	331.73
Total Economic Value Distributed	12156	10618.06	9109.93
<b>3.Economic Value Retained(1-2)</b>	2,471.87	-2,351.54	-280.29
<b>4.Additional Information on Expenditures</b>			
included in operating expenses ( 2(a) above)			
Community Investment (included in 2(a) above)			
i) CSR expenses	188.65	210.09	174.18
* ii)Horticulture (green belts within and vicinity of the plants)	21.18	16.19	45.21
Total community investment	209.83	226.28	219.39

\*Include Interim dividend of Rs 4.15 and final dividend of Rs 1 amounting to Rs. 1629.39 Crores and buyback of shares amounting to Rs. 7527.76 Crores

\* 1 Crores Rs = 154354.3 USD

## Key Financial Indicators

Particulars	2014-15	2015-16	2016-17
Profit before Tax (Rs. in Crore)	9,767.84	4,092.02	4,292.92
Profit After Tax (Rs. in Crore)	6,421.86	2,712.22	2,589.14
Net worth (Rs. in Crore)	32,326.37	29,117.59	22,518.94
Return on Net Worth(%)	19.87	9.31	11.50
Book value per share (Rs.)	81.54	73.44	71.17
Earnings per share (Rs)	16.20	6.84	7.22

\* 1 Crores Rs = 154354.3 USD

We support state and national economies through the payment of taxes and royalties to the respective governments. We act responsibly in relation to our tax affairs, to be able to provide our host communities with

the best opportunity to benefit from these contributions. Regardless of where we operate, we meet all our tax compliance obligations in accordance with the tax regulations and laws applying in each jurisdiction

## Contribution to State and National Exchequer

Payment to Exchequer(Rs. in Crores)	2014-15	2015-16	2016-17
<b>Payment To Central Exchequer (Other than TDS)</b>			
Dividend To Govt of India	2,300	3,901	984
Service Tax	-	34	36
CGST	-	-	-
IGST	-	-	-
Excise Duty	5	1	1
Export Duty	424	37	94
Custom Duty	0	2	1
Income Tax	3249	1,570	1,638
Income Tax (Under Protest)	-	-	-
Dividend Tax	575	993	267
Insurance Payments To PSU's	-	6	7
Others	129	-	7,528
Taxes & Duties (TDS)	-	112	90
Total (A)	6681	6,656	10,646
<b>Payment to State Exchequer (other than TDS)</b>			
Sales tax CST	112	58	79
Sales tax (VAT)	98	50	158
SGST	-	-	-
Royalty (incl. cess)	982	689	1,042
Entry tax	-	3	2
Vehicle tax	-	1	0
Other taxes & duties	69	255	36
Taxes & duties (TDS)	-	16	15
Total (B)	1,262	1,071	1,332
Grand total (A+B)	7,943	7,726	11,979

\* 1 Crores Rs = 154354.3 USD





## Supply Chain

The core business of our operations creates jobs, provides infrastructure, and purchases goods and services at scale in our host countries through our supply chains. The resources we develop create a global value chain that includes exploration, development, extraction, processing, transportation, marketing and logistics, through which we generate economic value.

NMDC supports and encourages the participation of local and small vendors in procurement of goods and services. During FY 2016-17, NMDC has participated in National and State level vendor development programmes conducted by MSME, DI Institute at Hyderabad. NMDC has also attended Vendor development programmes conducted by MSME at Raipur, Jagdalpur, Bilaspur, Doninlalai, Belgaum, Kolar etc., through our projects, wherein prospective MSME's were explained the requirements of NMDC and invited applications for vendor empanelment from the interested MSEs. In addition to the above,

during FY 2016-17 NMDC has conducted an exclusive vendor meet for MSME SC/ST firms at NMDC Head Quarters, Hyderabad in association with Dalit Indian Chamber of Commerce. To encourage these SC/ST MSMEs, 11 firms from this category were identified and trial orders are under issue.

NMDC always supports and encourages the participation of MSEs and is continuously registering MSE vendors to enhance the vendor base. During the year 2016-17, NMDC has participated in various National and State Level Vendor Development Programmes / MSME Expos for Buyer - Seller meet at Hyderabad, Tirupati, Jagdalpur, Raipur, Bilaspur, Mathura, Belgaum, Kolar, Goa and Donimala wherein MSE's were invited to submit applications for vendor empanelment from the interested MSEs. NMDC has also conducted an exclusive vendor meet for MSE SC/ST firms at Hyderabad in association with Dalit Indian Chamber of Commerce wherein 11 firms from this category were identified for trial orders.

Several vendor meetings were organized in 2016-17 in association with MSME at various locations for promotion of MSME vendors.

## What we do



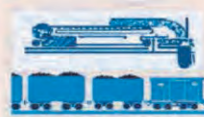
Exploration  
& Estimation



Development  
& Excavation



Processing  
& Benefactor



Loading  
& Dispatch

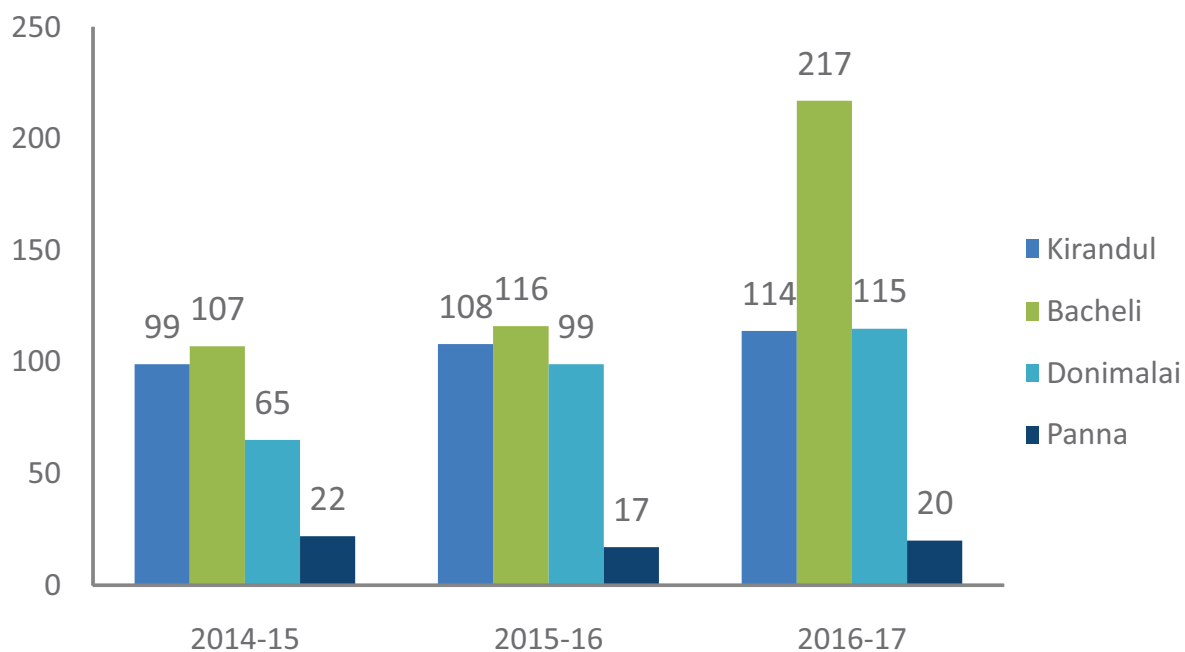


Marketing  
& Sales

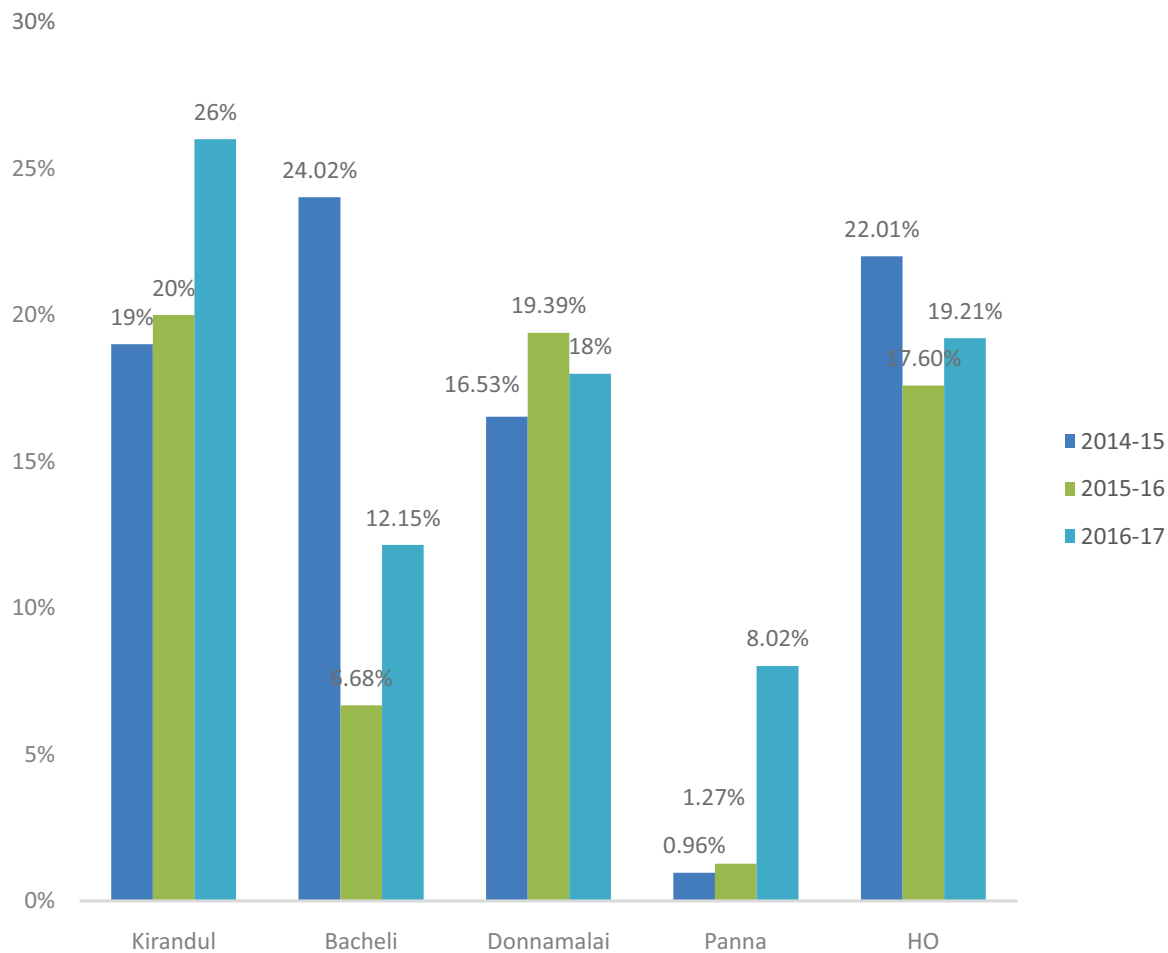


Contributing  
to Society

### Ancillary Units (MSME/SSI) - Nos



### % Order to Local Units (MSME/SSI)











## Environment Performance

NMDC is committed to Environment protection and has deployed Management Systems, processes, R&D, control technologies to minimize adverse impact on environment due to its operations. We have practiced responsible mining to promote environmental protection and to enhance the life of mines by achieving right balance between exploitation of the natural resources and maintaining the desired ecological performance enabled by state of the art technology.

We strive for beyond compliance performance and actively engage with local stakeholders, government bodies and institutions to obtain valuable inputs for decision making in the area of environmental conservation. This equitable commitment of NMDC with others helps conserve flora and fauna. Elaborate measures are taken to control pollution of land, water and air. The environmental management at NMDC is governed by its Corporate Environmental Policy which covers its

subsidiaries and units. The Policy outlines its commitment to prevention and control of environmental pollution, conserve the natural resources, monitor and ensure compliance, continual environmental performance improvement, safeguarding the environment, educating its employees and communities about the environmental commitments and applying proven management practices to prevent or mitigate negative environmental impacts.

All the project sites as a part of impact assessment are subjected to public hearing followed by preparation of management plan duly approved by MOEF. NMDC has structured processes for identifying and assessing potential environmental risks. It carries out Environmental Impact Assessment of operations/activities to identify impacts on the surrounding environment and initiate mitigation measures accordingly. EIA for all its mines and industrial activities has been conducted and mitigation measures have been implemented accordingly. Regular monitoring of environmental parameters is carried out to



ensure the effectiveness of the measures implemented and to comply with the SPCB and CPCB laws. NMDC commits significant resources towards environment protection measures. The details of Environmental expenditure incurred in last 3 years are given below.

#### Environmental Expenditure (Crore)

Projects	2014-15	2015-16	2016-17
<b>Kirandul</b>	9.40	2.43	39.42
<b>Bacheli</b>	11.77	10.35	14.69
<b>Donimalai (DIOM &amp; KIOM)</b>	1.73	2.52	1.37
<b>Panna</b>	0.17	0.19	0.67
<b>Total</b>	<b>23.07</b>	<b>15.49</b>	<b>56.15</b>

\* 1 Crores Rs = 154354.3 USD

There is no show cause or legal notices received from CPCB and SPCB which are pending (i.e. not resolved to satisfaction) as of end of financial year. NMDC project sites are certified to Integrated Management System including Environment Management System ISO 14001 and SA-8000 and in accordance with the requirements of EMS, carries out aspect-impact studies for all the activities and operations for identification of critical activities for setting objectives and targets. The system is audited biannually through third party auditors apart from the periodic audits carried out by certified internal auditors to verify adequacy and effectiveness of the system and to identify changes if any, required in objectives, targets and management plan. All emissions, effluents & wastes generated by NMDC are monitored on a regular basis and are within permissible limits as specified by CPCB and SPCB. Also, the returns are filed regularly to the statutory authorities as per requirement.

NMDC employs sustainable mining practices and production processes for all its three products viz; Iron Ore, Diamond and Sponge Iron. It ensures to implement appropriate environmental measures in all its mining operation phases to safeguard the environment in the key areas of air, water, land, noise and biodiversity. NMDC strives to further move ahead on low carbon growth trajectory in its operations. Some of the significant measures taken in this respect include recycle and reuse of water for beneficiation, construction of ameliorative measures like buttress walls, Afforestation in Bailadalia region, secondary waste treatment at Bacheli for recycling of treated water in the process, digging contour trenches and biological reclamation of rock waste dumps to

minimize land erosion and, construction of check dams, effluent treatment plant, sewage treatment plant for treating effluents to avoid water pollution. All the mines have approved mine closure plans by IBM.

NMDC being a signatory to UNGC, it stands committed in encouraging the development of environment friendly technologies in line with its Corporate Environmental Policy. Also, NMDC's research and development centre has earned rare distinction of competence of undertaking technology development mission related to efficient mineral processing.

NMDC believes in optimum consumption of its electricity, fuel oil, lubricant oil and water. It sets targets for specific consumption of water and energy and other consumables. Energy audits for all its project sites have been conducted and the recommendations are under implementation. The energy audits also help to identify and prioritize energy efficient technological measures and savings opportunities. The specific energy consumption at the project sites is continually improving with the implementation of energy saving initiatives. Further efforts are being made to reduce the specific water consumption through measures like secondary waste water treatment at most of the project sites which is treated, recycled and used in the process.

NMDC employs safe, scientific and environmental friendly methods of mining and mineral processing. It strives to apply the 3R policy i.e. reduce, re-use and recycle to its waste management plan with the aim of avoiding potentially harmful environmental and social impacts, during both the operational and post-closure phases. NMDC's mining sites are aims to continually research, develop and implement productivity improvement measures and waste reduction initiatives along with exploring the re-use of by-products. Different lubricants in NMDC mines are disposed off to the agencies duly authorized for recycling. It has also set its target to treat, recycle and reuse its secondary waste water from the mining operations. No artisanal and small scale mining activities take place nearby any of the projects or units of NMDC.

No known incidents of noncompliance in terms of environment protection and standards have been reported during this reporting year.

### Environment Management Highlights of 2016-17

- Environmental parameter studies by recognized laboratories undertaken and all parameters well within the norms.
- Real time recording of ambient air quality started at Bacheli and Kirandul
- Carbon footprint studies conducted
- FIMI engaged to carry out Sustainable Mining Audit at Bacheli and Kirandul.
- Water Audit carried out at all projects of NMDC and recommendations of audit are under implementation
- Studies of ground water showed an increasing trend in the ground water due to measures taken by NMDC.
- Contributed Rs. 25 Cr to Hariyar Kosh for tree plantation

- Sewage Treatment Plant (2 MLD) with advanced technology set up at Bacheli, work in progress at Kirandul (3 MLD) & Donimalai (3 MLD) townships.
- R & R Plan, Waste Dump Management Plan and EMP formulation by engaging institute of repute like M/s ICFRE, Dehradun.

### Future projects for Mines Conservation

- Improving recovery of Iron in slime beneficiation Plant of Donimalai.
- Improve the screening efficiency of secondary screens by 3% .
- Developing dry beneficiation processes for iron ore fines below 1mm.
- Enhancing the separation efficiency of magnetic separation
- Development of cold bonded iron ore pellets.
- Applications for Nano iron / iron oxide particles of Blue Dust and Lean Grade Iron Ore Slimes in Batteries and sensors.







## Sustainable Mining & Mineral Conservation

Mining is a process of extraction of valuable minerals or other geological materials from the earth, usually from an ore body. We need to make a fine balance between socio-economic development and exploitation of natural resources. However there is an urgent need to have optimal utilization of resources to have sustainable environment. Striking a balance with human needs with nature has been a very sensitive need of mining industry. The reclamation and rehabilitation plan of the mine ensures at restoring the damage caused to the environment by mining. Best and latest practices followed globally is adopted by us to make mining environmental friendly.

### Mine Planning and Optimization with Software

Mine Planning and Pit optimization is done through advanced software such as SURPAC, WHITTLE and MINE SCHEDULING. The software have improved accuracy in Geological modeling economic optimization from our mining operations.

SURPAC software records and analyzes exploratory holes sampling data. Block model in SURPAC provides flexibility to store numerous attributes. Mine scheduling helps to design and test different mining

scenarios to ensure maximum output which enables us to develop enhanced production schedules that are immediately responsive to changes in demand, or changes within our mine environment.

Continuous improvement initiatives includes incorporation of Blast hole data into the existing Block model to transfer data from field to Plan. Data is processed by highly accurate Surveying equipments as DGPS, Robotic Total station. These databases have enabled us to meticulously predict the lower benches.

### Major Initiatives towards sustainable mining

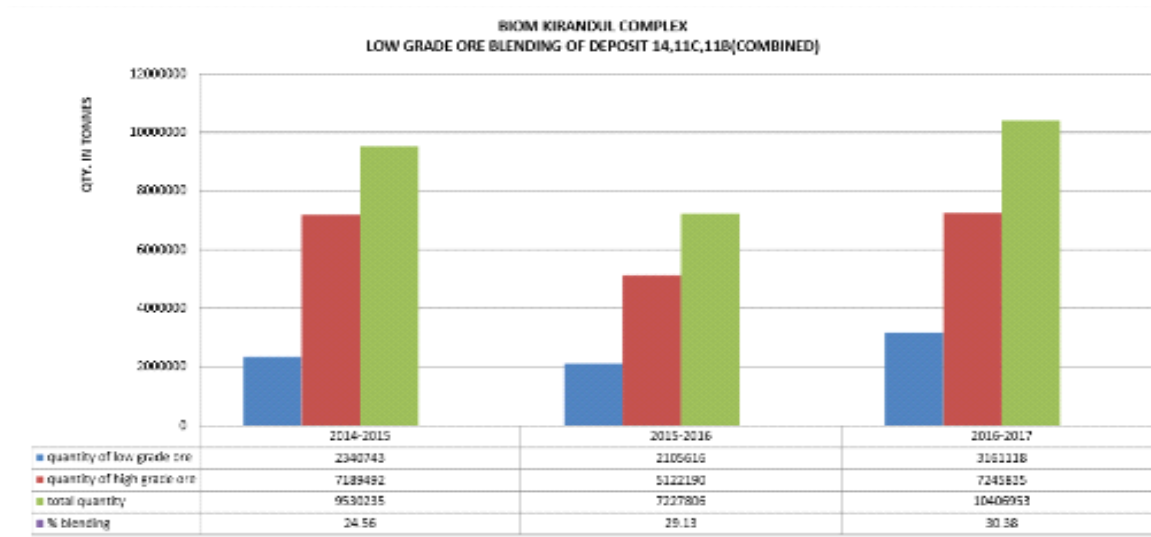
- Blending of low grade ore with high grade ore for producing saleable product at mine level to reduce rejects quantity and to improve life of mine.
- In-pit Sumps for harvesting of rain water are created in the bottommost benches of the mine as a part of conservation of natural resources and to increase ground water level. This also helps to avoid contamination of in and around natural water sources from surface run off
- The entire processing of ore is done in dry circuit which helps in mineral conservation ( no slime loss) and avoid contamination with natural water sources of surrounding areas. Moreover it reduces water requirement in the Project.
- Buttress walls, garland drains to prevent erosion or wash offs going beyond mine area.
- Plantation of local grass species over eroded land to prevent soil erosion during monsoon
- Stacking separately sub grade ore, low grade ore

and waste & rejects which may be useful for future utilization.

- Lead distance of dumpers for hauling of ore and waste is also optimized for fuel conservation and increase production with fewer resources.
- Exploration activities are carried out systematically within lease area in a gridded pattern to help define the ore body boundary and then conceptual pit limits are so designed to avoid re-handling or relocating of dumps/infrastructures

- **Mine Planning:**

- Designing of roads and ramps within active mines to keep the lead distance for Ore to CP and Waste to Dump as minimum as possible.
- Pit designing to balance between total up-hauling and down hauling of loaded dumpers.
- Systematic production planning to minimize degradation of Forest area within lease.



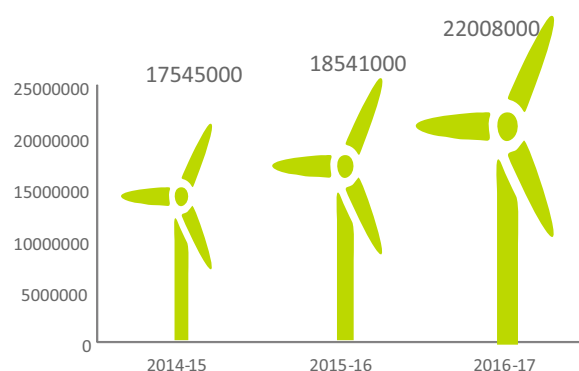
# Energy

At NMDC, our strategic commitment is to reduce specific energy consumption and increase renewable energy share across all the mining locations and the townships. Energy management has assumed a key role in sustainable and inclusive growth at NMDC.

## Energy Saving Areas

- Optimization of fuel consumption in dump trucks and excavators
- Use of High capacity, efficient diesel engine for dump trucks and excavators
- Improvement of maintenance of HEMMs.
- Introduction of energy efficient motors

Donimalai-Wind Power Generation (kWh)



## Energy Purchased (TJ)

Project	2014-15	2015-16	2016-17
Kirandul	210.46	204.49	204.17
Bacheli	234.37	232.54	256.12
Donimalai (DIOM & KIOM)	198.61	207.03	224.29
Panna	12.42	12.51	14.38
Total	655.88	656.59	698.98

## Electrical Energy Consumption (purchased) kWh

Project	2014-15	2015-16	2016-17
Kirandul	22667000	22649000	23476000
Bacheli	26812553	26144110	27550663
Donimalai (DIOM & KIOM)	18952000	20840000	23639631
Panna	242441	218684	200490
Total	68673994	69851794	74866784

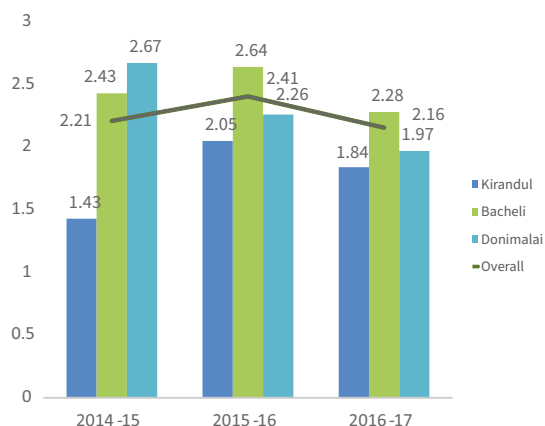
## Wind Energy Generated and Sold (TJ)

Project	Generated			Sold		
	2014-15	2015-16	2016-17	2014-15	2015-16	2016-17
Chikamangloor, Karnataka	63.162	66.74	79.22	63.16	66.74	79.22

Wind Energy	2014-15	2015-16	2016-17
Percentage of electricity generated by wind energy to total electricity consumption (%)	26%	27%	29%

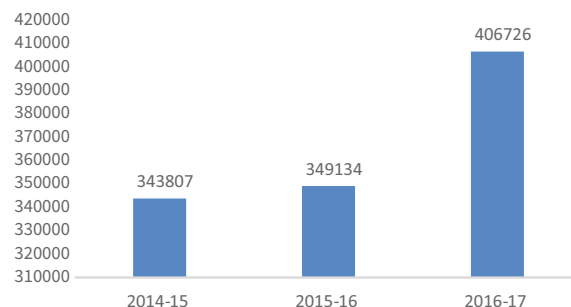


### Specific Electricity Consumption (Kwh/t ROM)

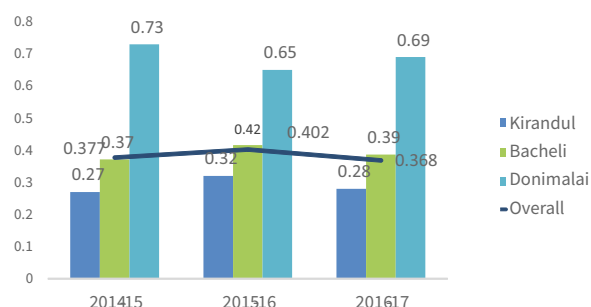


The total specific electricity consumption has been reduced from 2.21 kWh/t ROM in 2014-15 to 2.16 kWh/t ROM in 2016-17.

### Panna-Diesel Consumption(Litres)

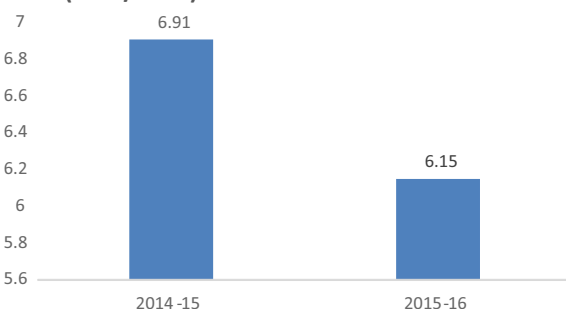


### Specific Fuel Consumption Liters/t ROM



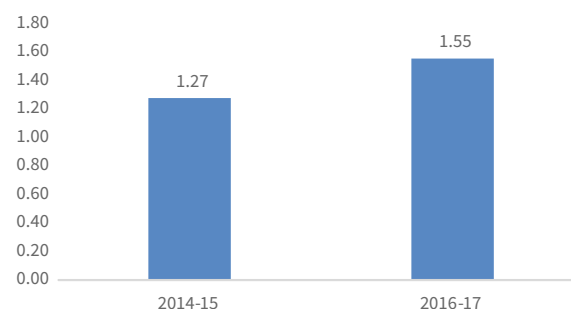
Specific fuel consumption has also reduced from 0.377 Liters/t ROM in 2014-15 to 0.368 Liters/t ROM in 2016-17.

### Panna (kWh/carat)

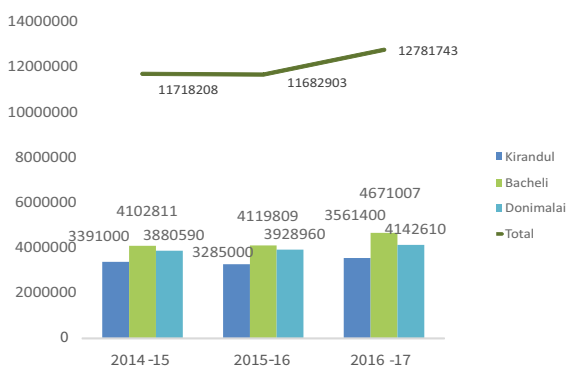


The total specific electricity consumption has been reduced from 6.91 kWh/carat in 2014-15 to 5.63 kWh/carat in 2016-17.

### Panna Specific Diesel Consumption(Liters/Tuff Mining)



### Diesel Consumption (Litres)



Industrial Engineering Department monitors the energy consumption data and prepares reports for review to undertake improvement actions in the key identified areas. NMDC has deployed ISO 14001 across the mining locations to address environmental aspects of energy consumption. Energy Audit by expert agencies and carbon foot print studies are taken to improve organizational performance in the area of energy management and reduction of carbon footprint.

## Energy Saving Measures

Energy Efficient Measures	Investment (in Rs. Lakhs)	Annual Savings (in Lakhs Kwh)	Annual Savings (in Rs. Lakhs)	Pay Back Period
1. Installation of energy efficient Motors for DIOM & KIOM	231.76	14.61	102.27	2 years
2. LED -Street Lights, Downlighters, Bulbs	14.37	7.73	47.92	less then 6 months approx.
1 Lakh = 15435.4 USD				

### Solar Power Projects

With the green energy initiative of Govt. of India focusing more on renewable energies, NMDC has taken up setting up of Solar Power projects (Rooftop & Overland) at its Office premises and at its Paloncha unit.

This includes

- 30 KW rooftop solar power generations at Head Office.
- 1 MW rooftop solar power generation at production units of NMDC.

The rooftop solar power unit at Head office has been commissioned and is in operation. The approval for investment decision for other two solar projects has been obtained and initiated tendering action.

### Improvement in Energy Consumption at Secondary Crusher 13a, Deposit 5 - Bachel

Old 250KW HT motor with 84% efficiency of secondary crusher 13A was drawing 25A current on no load conditions. Due to less efficiency of motor, it was reducing the power factor & specific energy consumption of plant. New energy efficient 250KW HT Motor with efficiency of 0.93% is installed in the secondary crusher 13A against old motor. New energy efficient motor draws less than 10A on no load condition. Thus there is improvement in power factor & specific energy consumption of plant. Resulting of this action, the energy saved in 3 months is about 4892 KWH costing approx Rs. 55,572.00.

### Power factor improvement of SS-1, Bachel

100 KVAR capacitor have been added to HT capacitor bank in SS-1. The current drawn by all HT motors (C-24, C-27 & C-28) in SS-1 is reduced by about 4 Amp. Total KW saved by reducing current of all HT motor in SS-1 is about 1096.704 KWH/ day. Total amount saved from this modification from Sep-17 is about Rs. 95,0810/-.

### Regeneration of Energy in Down Hill Conveyor

NMDC has implemented electricity regeneration in the Downhill Conveyor system at Bailadila and Donimalai. The electricity generated in the downhill conveyors is fed back into the grid, thereby reducing the draw of electricity from the main grid at its projects. When the load is conveyed from higher elevation to lower elevation, the potential energy of the material is available to the conveyor to the conveyor and thus, power is supplied to the conveyor. The power supplied by the conveyor back to the source while dropping the load is called as regeneration.

When the load is dropped down over a level difference, the energy supplied to conveyor forces the motor to act as an alternator, converting mechanical power to electrical power. During this phase, the motor starts feeding current back to the source/grid. This phase is called regeneration.

Electricity Regeneration	2014-15	2015-16	2016-17	Total
Total Regeneration unit KWH	1050581	960125.3	1180113	4026927
Rate Per unit Rs/KWH	8.45	8.29	10.71	
Total Saving in Rs.	8877410	7959439	12639014	38664683
1 Lakh = 15435.4 USD				

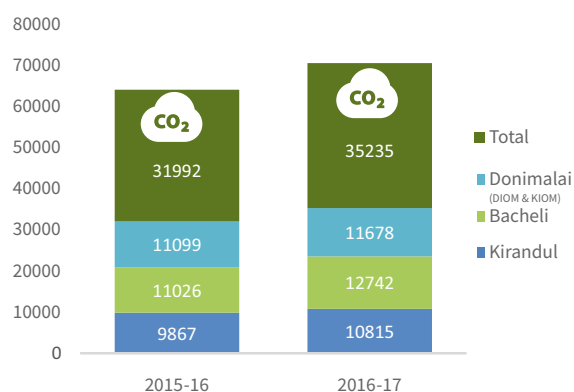


## Climate Change

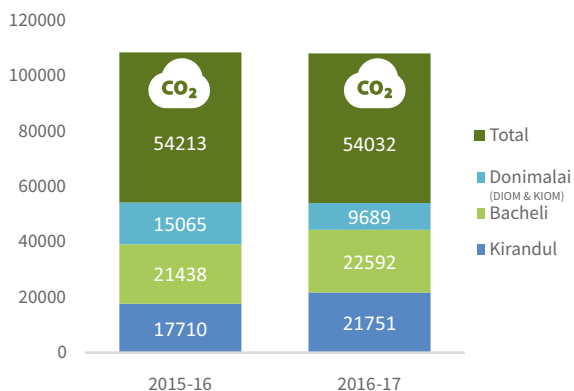
NMDC understands and recognizes the implications that climate change would have on its business, environment and community. NMDC has framed policies around the climate change and other global environmental challenges. It stands committed in promoting greater environmental responsibility in mining and processing of minerals for sustainable development. NMDC believes that Greenhouse gas emissions are one of the key concerns of "cost to environment" for modern business, it wishes to embark on low carbon growth trajectory in its operations. NMDC measures, records, calculate and reports its GHG's every financial year. The possible mitigation measures proposed for the thrust areas of mining, mechanical and electrical services are being looked into for abatement.

Carbon foot print studies were conducted for FY2016-17 and Green House Gas emissions will be disclosed in Carbon disclosure project. Donimalai, Panna Diamond Mining Project, Bailadila Deposit-10 obtained FIVE Star rating from IBM, Ministry of Mines. Sustainable Mining Initiative Audit was carried out for iron ore mines located at Bacheli and Kirandul through FIMI, New Delhi. The recommendations of SMI will be implemented to obtain Five-star rating for Bailadila Deposit-14, 11C, 11B and 5 mines.

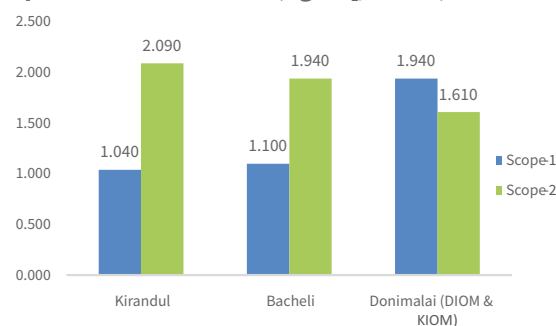
**Scope - 1 GHG emission (tonnes)**



**Scope-2 GHG emission (tonnes)**



**Specific GHG emission (kg CO<sub>2</sub>/t ROM)**



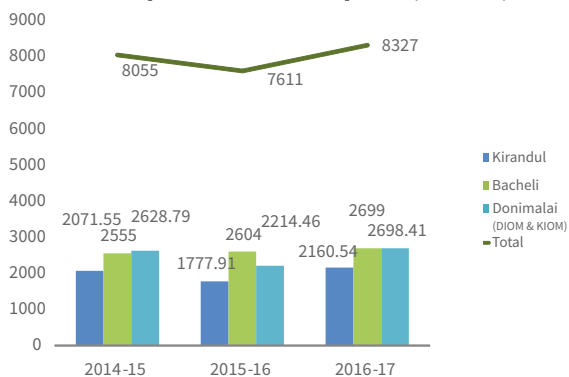




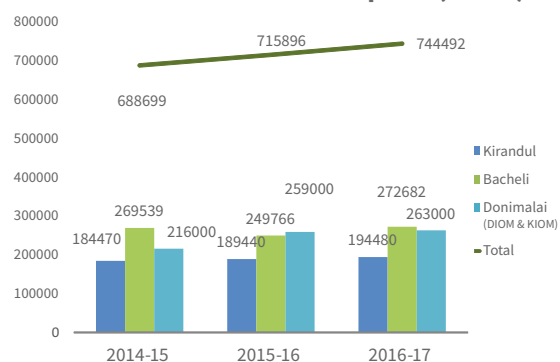
## Raw Material Conservation

NMDC adheres to the principle of resource consumption optimization and we have achieved continual improvement in the area of consumption of various materials required for our operations. The project wise performance of the consumption of major materials is given below:

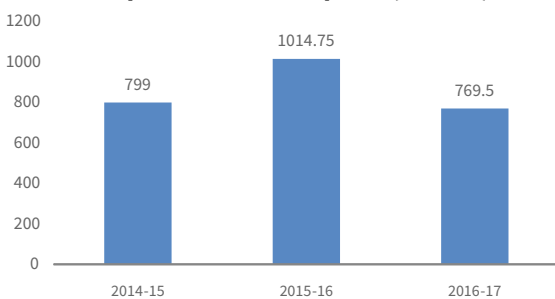
**Iron ore : Explosives Consumption (tonnes)**



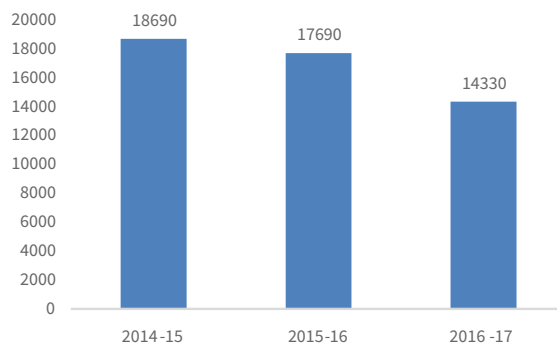
**Iron ore : Lubricants Consumption (Litres)**



**Panna : Explosives Consumption (tonnes)**



**Panna : Lubricants Consumption (Litres)**

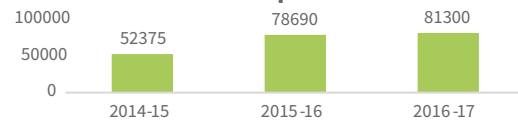




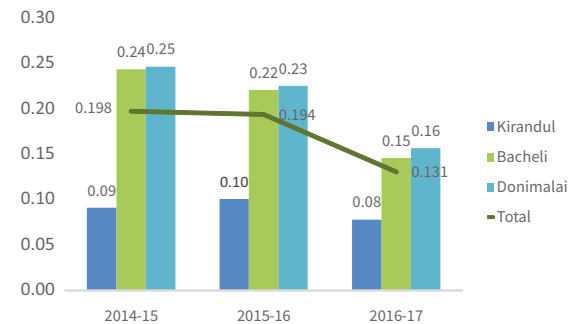
## Managing Scarce Water Resources

NMDC is well aware of the criticality of the water resource and takes various measures to conserve water viz. Water audit, regular physical monitoring of ground water quality & levels, construction of check dams, construction of Sewage Treatment Plants and improving the efficiency of motors, pumps etc. In the era of Sustainable Development, NMDC is committed to take a holistic approach to understand high value water assets by considering the full scope of social, cultural, economic and environmental values at the catchment scale to identify material risks and align operational water management and engagement with communities and government. Various performance parameters on water management are shown below.

**Panna - Water Consumption in m<sup>3</sup>**



**Specific Water Consumption (m³/t ROM)**

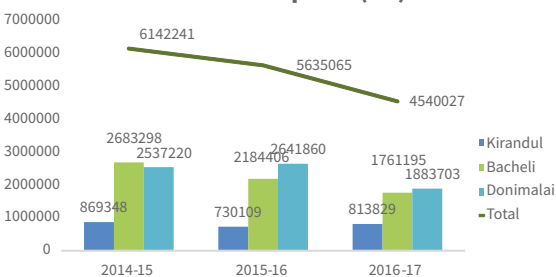


Specific water consumption has considerably reduced from 0.194 m³/t ROM in 2015-16 to 0.131 m³/t ROM in 2016-17.

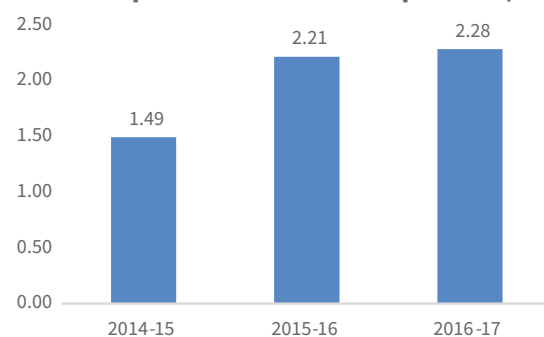
**Surface water withdrawal (m³)**

Particulars	2014-15	2015-16	2016-17	Source
Kirandul	869348	730109	813829	Mallangir Nallah, Intake well, Bacheli source Paika Nalla, Nall No 25, 19A, 19B, tunnel water and Bacheli Nalla Narihalla Lake
Bacheli	2683298	2184406	1761195	
Donimalai (DIOM & KIOM)	2537220	2641860	1883703	
Panna	52375	78690	81300	
Total	6142241	5635065	4540027	

**Iron Ore : Water Consumption (m³)**



**Panna - Specific water consumption m³/Carat**





## Emissions

NMDC is committed to continuously improve the management of atmospheric emissions, and has taken many initiatives to improve processes and adopt technologies and control systems in this area. In mining, the most significant atmospheric emissions are of particulate matter from diffuse sources (fugitive emissions), as traffic on unpaved roads, exposed areas subject to wind, handling of loose materials and rail transport. NMDC has also made proper arrangements to control dust emissions during loading and unloading of the raw material and finished product(s) at the sites. While the transportation is concerned, most of the bulk materials are transported by rail. The particulate matter from these widespread sources is monitored at points jointly defined with environmental department/agencies and seeks to represent the area of the operational unit and surrounding communities.

NMDC seeks to reduce these emissions, adopting measures such as the improvement of spray systems, testing of dust suppression products, enclosure of conveyor belts and transfer houses, wind fences, re-vegetation of slopes, and the improvement of management processes.

Mining operations use explosives regularly for blasting as well as machinery that has to be deployed for mining and vehicular movement and transportation of ore and overburden. We endeavour to keep generating

Particulate Matter (PM), Sulphur Dioxide (SO<sub>x</sub>) and Nitrogen Oxides (NO<sub>x</sub>) within statutory limit and we monitor these parameters on a regular basis so as to ensure that the emissions are within specified limits and standards. We monitor the ambient air quality in and around the mine site on a regular frequency at predetermined locations.

Since mining process includes drilling, blasting, cutting, materials handling, crushing, ore processing etc which creates lot of pollution, NMDC uses latest technology and conveyor for proper material movement. To reduce the emissions, we have deployed water sprinkling at appropriate places. Administrative measures ensured that same workers are not exposed to the environment for long by rotational work routine of employees. The measures taken are based on the environmental management Plans (EMP) already prepared before commencement and enhancement of iron ore production. We ensured proper safety guards are provided to employees who are in the front line of control and directly getting the exposure to dust.

The parameters monitored as required by regulatory authorities are Suspended Particulate Matter (SPM), SO<sub>x</sub> and NO<sub>x</sub>. To ensure compliance across various project units these parameters are monitored. As per the stipulations of MoEF, the monitoring of PM under 10 micron and 100 micron are being done in and around the mine areas, residential and village areas. Value of the parameters are found within the limit of stipulated standards. Continuous Ambient Air Quality Monitoring Stations have been installed at different locations.

Air Quality Performance	PM <sub>10</sub> (µg / m <sup>3</sup> )	PM <sub>2.5</sub> (µg / m <sup>3</sup> )	SO <sub>x</sub> (µg / m <sup>3</sup> )	NO <sub>x</sub> (µg / m <sup>3</sup> )
<b>Standard</b>	<b>100</b>	<b>60</b>	<b>80</b>	<b>80</b>
Kirandul	35.0-76.0	13-49	6.2-18.0	8.3-22.1
Bacheli	32-64	12-28	7.1-10.9	9.2-14.2
Donimalai (DIOM & KIOM)	35-70	14-36	8.3-11.9	10.1-14.9
Panna	53-78	24-36	10.5-15.6	13.4-18.8



## Effluents

Considering that best in class environment management practices requires achievement of zero discharge, NMDC strives for the same and has taken a wide ranging measures in this direction which include construction of check dams, Effluent Treatment Plant, Sewage Treatment Plant for treating effluents from service centers, Auto shops, etc. Sewage Treatment Plant with SBR technology at Bacheli has been constructed for treatment of township domestic waste water and similar STPs are under construction at Donimalai, Kirandul also. Regular monitoring of mine effluent, workshop effluent, and domestic effluent is carried out as per Environment (Protection) Rule and reports are submitted to Statutory Bodies.

very important to ensure sustainability of the operations. We undertake safe disposal of waste even as we keep its effect on local communities in mind. Hazardous wastes such as used oil, used batteries, used filters etc. are managed appropriately and the reports are submitted to the Central Pollution Control Board and State Pollution Control Board. No oil spillage were reported during the reporting year. We have an agreement with third party for proper disposal of hazardous waste and the responsibility of its subsidiaries through the state government ensures no human or environmental impact.

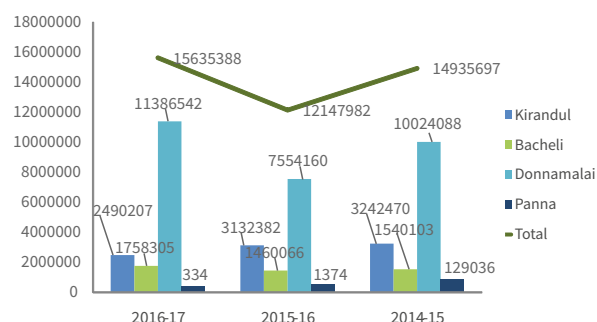
As a drive for waste to wealth management, R&D has taken up new product development through its intensive efforts for production of high-tech and high

## Waste Management

Mining generates a lot of waste due to its operations which has a direct impact on the environment. This is because mining involves removing the top layer of the earth to extract Iron Ore. Once the ore has been extracted, various kinds of wastes such as solid waste, removed top soil, process waste, tailings, sludge, oil spills, etc which should be neutralized through proper channel or dumped for minimal impact of environment.

We recognize that careful management of mine waste is

Overburden (tonnes)



Effluent Quality Performance

Particulars	pH	SS (mg/l)	COD (mg/l)	BOD (mg/l)	O&G (mg/l)	Total Iron (mg/l)
<b>Standard</b>	<b>5.5-9.0</b>	<b>100</b>	<b>250</b>	<b>30</b>	<b>10</b>	<b>3</b>
Kirandul	6.34-7.17	23.32	41.42	14-16	Nil	0.28-0.35
Bacheli	6.08-8.18	12-71	2-96	0-16	0-5.0	0.13-2.7
Donimalai (DIOM & KIOM)	7.36-7.54	46-55	38-52	8-12	1.1-3.9	0.49-1.2

### Hazardous Waste

Particulars	2014-15	2015-16	2016-17
Used Oil(KL)	226.31	272.97	232.23
Used Batteries(nos)	508	813	1164
Used Filters(nos)	2503	2330	2302



## Biodiversity

NMDC gives utmost importance to preservation of biodiversity where it operates. Our strategy aims to mitigate the impacts of land use, recovering and conserving the ecosystem. We have created value and improve lives through sustainable and responsible mining. We take into account relevant ecosystem services associated with flora, fauna, water and habitats in the core and buffer zone of our lease area. At NMDC, we recognize the importance of the biodiversity which bears maximum impact due to our operations. We strive to mitigate the impact through our ethical practices. It is our firm belief that in order to sustain our business, we need to take up tasks for the restoration of our environment so that development takes place on both sides, in a responsible manner. The biodiversity value is retained with no significant affected water bodies or related habitat. Our good practices involve a gamut of activities which have been undertaken for managing our natural capital. These protected areas are out of bounds from mining activities. Areas of high biodiversity value outside protected areas are being maintained with regular gap plantation with indigenous species. We follow the EIA and EMP of the MOEF&CC for keeping track of biodiversity assessments.

### Thrust Areas of Bio-Diversity Conservation Plan

#### Key areas

- Buffer zone area to ensure a habitat development for wildlife.
- Canopy covers management for forest habitat development.
- Conservation plans
- Plans prepared by engaging experts in the field and obtained approval of CWLW

Name of Project	Amount in Rs. Crore	Approved by CWLW
<b>New Projects</b>		
Screening Plant-III, Kirandul	15.50	07/12/13
Bailadila Deposit - 13	08.40	01/04/14
<b>Production Projects</b>		
Bailadila Deposit-14/11C, Kirandul	13.93	04/02/17
Bailadila Deposit-5,10/11A, Bacheli	14.47	04/02/17
Donimalai & KIOM	08.37	----
Total	60.67	



NMDC works in tandem with State Forest Department for conservation of flora and fauna in the nearby forest area. A full-fledged study has been carried out by expert agency to assess the impact on biodiversity and suggest various recommendations for mitigating the impacts on biodiversity. Action plan has been prepared and NMDC provides substantial resources in alignment with State Forest department to implement the action plans. For all the operational units we have a biodiversity management plans, such plans are developed in all stages of a venture's life cycle. They include actions aiming to prevent, control, mitigate and compensate of the impacts of activities, such as ridges to valley, soil and water conservation plans, and construction of buttress walls/check dams.

NMDC do not operate where there is a risk of direct impacts to eco systems that could result in the extinction of an IUCN Red List Threatened Species in the wild. We do not dispose of mined waste rock or tailings into a river. Biodiversity study at all the sites helped in understanding the baseline conditions and prepare action plans on implementing the mitigation hierarchy within our area of influence to avoid, minimise and rehabilitate direct, indirect and cumulative impacts over both the short and long term.

Our sites are required to maintain rehabilitation plans that support life of mines and their closure plans. This includes rehabilitating disturbed areas consistent with the pre-disturbance land use or an alternate use, taking into account regulatory requirement and stakeholder expectations. We also apply compensatory afforestation to set up biodiversity and ecosystems impacted by our activities. Recently two Institutes of repute CIMFR, Dhanbad and ICFRE, Dehradun were engaged in formulation of waste dump management plan, environment management and R&R plan respectively for Kirandul and Donimalai. The recommendations will be implemented at site with an aim to conserve soil, water and resources in the area.

The maintenance of protected areas is one of the initiatives continuously developed to favor environmental balance and the conservation of natural resources and ecosystem services.

The main objective is to study the biodiversity and preparation of conservation plan in all the operational sites of NMDC which includes the study of flora and fauna, terrestrial, aquatic environment, ethanobotanical aspects, faunal species in forest area, amphi-fauna, water regime, land use, demography and

socio-economic structure with respect to qualitative and/or quantitative enumeration & their sociological framework. It also includes the study of ecosystems and habitat characteristics, of which they are part. The scope of the study also covers all these factors along with impact identification and/or prediction and conservation measures. It is supposed that the resilience power of the ecosystem may contribute to a great extent in reconstruction of structural as well as functional aspect of this partially disturbed ecosystem. Apart from mining activities, the other main cause of degradation and depletion of forests and wildlife are the human activity (anthropogenic pressure). The collection of Non-timber Forest Produce (NTFP) in the form of small timber, fuel wood, and fodder by the people living in the surrounding villages in the project area and areas between the village and Reserved Forests are thereby exerting intensive biotic pressures on these resources. There is tremendous pressure on the forests for increasing demand for timber and is growing rapidly. Non Wood Forest Products (NTFP) constitute important source of livelihood for the poor and especially landless. The grazing pressure from livestock puts direct completion for forage availability and reduction in the food availability for herbivores.

None of the species are in the Red Data book of BSI or has been included under the list of Rare and Endangered, Threatened plants.

- Donimalai : One species as per schedule I list rare and endangered totally protected species as per Indian wildlife (Protection) Act, 1972
- Bachel and Kirandul: A list 9 species within Species of High Conservation Significance (REET) category in India.
- Panna: Out of total 149 fauna species recorded from in and around Diamond Mine Core and Buffer zone of the study area, 115 species (i.e. 1 species of Butterfly, 13 species of Fishes, 1 species of Amphibian, 2 species of Reptiles, 78 species of Birds and 20 species of Mammals) are listed in different Schedules of Indian Wildlife (Protection) Act, 1972 and IUCN Red List of Threatened Species.

## Steps to retain Biodiversity

- Biodiversity Conservation Measures during this Phase
- Food chain food web
- Habitat Development Plan
- Identification of invasive species and recovery of susceptible species
- Ethanobotanical, Species of high conservation



- significance, Species of economic importance
- Plantation in degraded forest area
- Gap plantation, check dam, slope stabilization
- Management of overburden dumps
- Animal rescue centre
- Ex-situ conservation and captive breeding of herbivores
- Management of tailing ponds by biological means
- Protection of wildlife from accidental death
- Management of soil erosion control and conservation, Grassland development
- Development of water bodies, existing water shed improvement and reclamation of water schemes
- Artificial Nesting of Birds in project area
- Procurement of DGPS, Satellite Imaginary, laying out of mining boundaries after every 4 years
- Improvement of fodder and pasture development
- Conservation of Tree Fern, Cyathea arborea in Buffer area
- Development of Safety Barrier and Green Belt for Pollution Management
- Biological reclamation after back filling in the mined out pits
- Development of Herbal Garden for ex situ conservation
- Identification of invasive species and recovery of susceptible species
- Ecological monitoring and Creation of Conservation Awareness
- People Biodiversity Registers
- Vigil and Fire Protection
- Wildlife Conservation & Management Cell
- Wildlife Awareness Programme
- R&R plan is under implementation stage which is approved by ICFRE, Dehradun.
- Establishment of Deer Park (47 nos. deer) for in-situ

conservation.

- Sequential Batch Reactor based Sewage Treatment Plant is under installation stage. Hibiscus and Herbal park in township area.
- Plantation in township for live support of wildlife.
- Organic waste convertor for treatment of domestic waste

Land use	Revenue Area(ha)	Forest Area(ha)
Kirandul	0	1704.034
Bacheli	0	1225.699
Donimalai	752.71	1089.73
Panna	201.945	74.01
Total	954.655	4093.473

## Afforestation

The Company has participated in Chhattisgarh Hariyar plantation programme during the year 2016-17 and contributed Rs.25 Crore to Hariyar Kosh for undertaking block plantation in the State of Chhattisgarh. The number and area of tree plantation is given below:



### Afforestation (Nos.)

Particulars	2014-15	2015-16	2016-17	Cumulative
Kirandul	195025		236300	1766483
Bacheli	-	250	15630	1216687
Donimalai (DIOM & KIOM)	20000	20000	20000	563000
Panna	2500	20500	1600	182952

### Afforestation (ha)

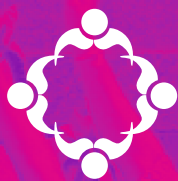
Particulars	2014-15	2015-16	2016-17	Cumulative
Kirandul	96.75		120	1231.21
Bacheli	-	1	10	565.11
Donimalai (DIOM & KIOM)	7	7	7	296.33
Panna	1.5	8.2	64	92.8











## Social Performance

NMDC provides a conducive and harmonious work environment for employees to realize their potential and contribute to its growth. The strong commitment of employees enables the Company to overcome challenging business and economic situations and emerge stronger. We are committed to foster health, safety and career enhancement of employees by building a unique culture of collaborative working. We are also engaged with communities towards social interventions in the identified thrust areas. Our employees are the most valuable resource and this is manifested by a host of organizational strategies in the areas of financial compensation, amenities, capability building, and career enhancements to facilitate realization of their best potential.

The management reviews HR related parameters such as attendance, productivity, training and capability effectiveness, safety, attrition, other issues related to employee

relations in a structured manner. The Company has put in place various communication and feedback seeking forums.

The Company ensures that there is no discrimination against any employee on grounds of race, colour, religion, caste, gender, age, marital status, disability, nationality or any other factors under applicable laws and contemporary practices at the workplace. Recruitment, placement, promotion, transfer, compensation, training and other benefits are based on the merit and competency of the individual and the business needs of the organization.

With a strong focus on talent and making no compromises on the selection process, we hire the right people for the right job. We are an equal opportunity employer and do not discriminate among applicants to our organization. We develop the hired talents to take up larger responsibilities in our businesses, in the future





NMDC has actively fulfilled the social responsibility, and made new efforts and obtained new achievements in aspects of value creation, safe production, environmental protection, science and technology innovation, staff care, community building, and so on. The company values employees as its most valuable resource and this is evident in the organizational strategy towards developing capabilities and realization of best potential of its people. It is needless to say that committed human resources go a long way in providing competitive advantage and NMDC attributes its success to the investment in human capital that are behind every activity, every technology and every innovation.

NMDC's Human Resource agenda is primarily focused on strengthening four key areas: building a robust and diverse talent pipeline, enhancing individual and organizational capabilities for future readiness, driving greater employee engagement and strengthening employee relations further through progressive people practices. The Human Resources department supports the business operations and helps enhance performance parameters for each employee. It has been investing in progressive employee relations practices to ensure that it invests in capability directly at the grass root level. Efforts for skill mapping, skill assessment, performance assessment, gap analysis that enables training plan identification which is customized to each workman basis priority areas are being undertaken on a regular basis.

## Employee Diversity

NMDC is of the firm opinion that diversity in the organization leads to immense benefits as people from diverse backgrounds possess unique abilities and

talents which adds a great value in a large organizational context. This helps in positive impacts in work performance and work environment through superior innovative ideas and better employee engagement. The intent is to ensure that there is no discrimination in compensation, training and employee benefits, based on caste, religion, disability, gender, sexual orientation, race, color, ancestry, marital status or affiliation with a political, religious or union organization or majority/minority group. Given the Socio-Cultural diversity of our country, the recruitment and selection processes are geared towards enabling representation from across regions, ethnicities, religions and different social strata and in line with Government of India guidelines. The ratio of the basic salary and remuneration of Women to Men is 1:1. There is no difference between basic salaries for Male and Female at any position within the organization. The principle of 'Equal Remuneration for men and women workers for Work of Equal Value' is strictly followed in our Company. The Company provides equal opportunity to both men and women employees in all the matters, such as, salaries and payments, career growth, social security measures etc.

### Total number of employees

Total	5572
Male	5292
Female	280
SCs	956
STs	1195
Physically challenged employees	100
<30	719
30-50 Age Group	3334
>50	1519
Minority	441



Category Wise Diversity	Total Emp.	SC	ST	OBC	Women	PH	Ex Ser.
Executives	1483	252	94	288	73	14	4
Jos	181	26	18	32	19	0	0
Workmen	3908	672	1075	682	188	88	7
Grand Total	5572	950	1187	1002	280	102	11

The composition of the Governance body consists of 14 male, 1 female and 1 member from minority group

Age Groups					
New Hires by Gender and Age	Male	Female	Below 30	30-50	50-60
2014-15	65	3	9	58	1
2015-16	266	21	187	92	8
2016-17	56	4	44	15	01

Age Groups					
Resignations by Gender and Age	Male	Female	Below 30	30-50	50-60
2014-15	24	0	21	13	00
2015-16	30	1	19	11	01
2016-17	76	4	75	3	2







## Occupational Health & Safety

NMDC places great value on the health and safety of our workforce, protection of our assets, value to stakeholders and the environment. We have developed a comprehensive safety management system in order to ensure a safe workplace for every employee. As a matter of fact, it is our philosophy that nothing is more important than the safety and health of the employee. This philosophy of ours is demonstrated through the safety and health principles which we have adopted and have embedded in our day-to-day activities to foster health, safety and well-being of employees and build culture of empowerment and enrichment.

NMDC's Occupational Health & Safety policy includes provisions of adopting safe, scientific and environment friendly methods of mining and allied activities and

firmly committing for total compliance of legal & other requirements applicable to Health & Safety; maintain the machineries in safe and excellent condition to ensure minimum impact of their operation on Health & Safety; install, operate and monitor facilities for prevention and control of air, water and noise pollution; promote occupational health & safety awareness among employees, local communities and interested parties through active communication and training; to have emergency preparedness plan in place, remain prepared through regular mock rehearsals & practices and respond effectively to all possible emergency situations.

In India, the operations in metal mines are regulated by the Mines Act, 1952, Mines Rules – 1955, Metalliferous Mine Regulations – 1961 and several other statutes framed thereunder. Directorate-General of Mines Safety (DGMS) under the Union Ministry of Labor & Employment (MOU&E) is entrusted to administer these statutes. The following are the statutes that are applicable in metal mines for occupational Health and Safety (OHS).

### Statute

1. The Mines Act 1952
2. The Mines Rules – 1955
3. Metalliferous Mines Regulation 1961
4. The Mines Rescue Rules – 1985
5. Central Electricity Authority (measures related to safety & supply) Regulations – 2010
6. The Mines Vocational Training Rules – 1966
7. Indian Explosive Act, 1884
8. The Explosive Rules – 2008
9. The Workmen Compensation Act – 2009
10. The Factories Act – 1948 Chapter III & IV

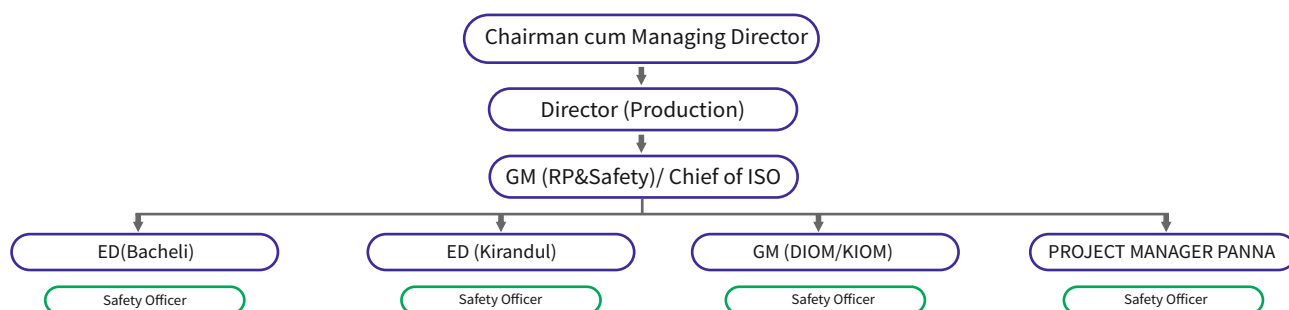
NMDC essentially follows the Occupational Health and Safety & OHS compliances as per DGMS standards which are mandatory for all its mines.

## Safety Governance

It is to be noted that safety is one of the main missions of NMDC. We have given utmost importance to safety of our employees. As a part of it, we are conducting Internal Safety Audit of one project with internal audit team of another project.

Monitoring of the implementation of the safety management plan is being carried out at Project level and corporate level meticulously to achieve high standards of Mines Safety.

Management Plans (SMPs) have been prepared for all the mines of NMDC and control measures suggested thereof are being implemented as a continuous ongoing process. Safety Management system has been implemented in all our mines. Risk Assessment studies are being conducted regularly. Internal Safety Audits are being conducted twice in a year by Project Audit teams and the observations of the audit team are being complied to ensure safe work atmosphere. ISO team comprising of Mining, Electrical & Mechanical Executives also conduct safety audits of Mining (Mine workings, HEMM & Electrical appliances) and OCSL Plant areas.



## Safety Management Plan at NMDC

All the mines of NMDC have their separate Risk Assessment based Safety Management Plan. These plans are prepared by multi-dimensional teams of the individual mines based on the local conditions prevailing there.

Various initiatives taken to enhance Health & Safety in work areas.

To improve the standard of safety, Projects of NMDC have vigorously pursued several new initiatives in the year 2016 to work concurrently with the on-going safety related measures apart from the compliance of statutory requirements for safety, which are given below.

- 1. Internal Safety Organization (ISO):** Continuous monitoring and review of safety status of each and every mine is being done by the multi-disciplinary teams of the Internal Safety Organization (ISO).
- 2. Preparation and implementation of Risk Assessment based Safety Management Plan (SMP):** The Risk assessment based Safety
- 3. Standard Operating Procedure (SOP):** Risk assessment based site specific Standard Operating Procedures (SOP) are formulated and being implemented for various mining and allied operations.
- 4. Safety Audits:** Safety Audit of all producing / operative mines have been conducted by multi-disciplinary inter-company teams.
- 5. Dump / Bench slope stability study:** Assessment of OB dumps and slope stability of benches have been conducted using expertise of CIMFR.
- 6. Guidelines on corrective measures:** After root-cause analysis of the accidents which occurred at different point of time in 2016, several directives / guidelines on corrective measures to be taken for prevention of recurrence of similar type of accidents in future have been issued by the Safety Division of each project.
- 7. Adoption of State-of-the art technology at suitable geo-mining locales:**
  - Deployment of relatively higher capacity HEMM for meeting the production targets.
  - Mechanization of O/C drilling (introduction of Jumbo Drills).
- 8. Steps for prevention accidents in Mines:**

- Formulation and implementation of Mine-specific Traffic Rules.
  - Code of Practices for HEMM operators, Maintenance staff & others.
  - Training of Contractor's Workers involved in contractual jobs.
  - Training on Simulators to dumper operators.
  - Lighting arrangement using high mast towers for increasing level of illumination.
  - Dumpers fitted with Proximity Warning Devices, Rear view mirrors and camera, Audio-visual Alarm (AVA), Automatic Fire Detection & Suppression system etc.
  - Ergonomically designed seats & AC Cabins for operator's comfort.
  - Wet Drilling & water sprinklers for dust suppression.
  - Use of Shock Tubes & Electronic Detonators for control of ground vibration & fly rocks.
9. **Mine Safety Inspection:**
- Round-the-clock supervision of all mining operations by adequate number of competent & statutory supervisors and mine Officials.
  - Periodic mine inspections by Head Quarter and area level senior officials.
  - Regular Inspection by workmen inspectors appointed in each mine.
  - Periodic mine inspections and interactions by the safety committees of mines and areas.
- Regular mine Inspection by officials of Internal Safety Organization.
10. **Safety Training:**
- Risk Management and preparation of "Safety Management Plan".
  - Initial and Refresher training & On-the -job Training as per statute.
  - Training on Simulators for dumper operators
  - Skill up-gradation of all frontline officials.
  - Sensitization training of all employees including members of Safety Committees and contractual workers.
11. **Emergency Response System:**
- Risk based Emergency Action Plans have been prepared for every mine.
  - Mock Rehearsals are conducted regularly to examine the efficacy of the emergency Action Plan.

## Workers participation in Health and Safety Management

The company has formal management – worker health and safety committees and up to 25% of the workforce of NMDC are representing these committees.

The employees of NMDC don't have such high risk for any specified diseases. All the employees of NMDC are part of trade unions and there is formal arrangement with trade unions for health and safety management of employees.

### Accident Details

2016-17	Fatal	Serious	Reportable	Minor	Mandays Worked	Mandays Lost
Kirandul	0	1P	3P	0	343406	107
Bacheli	0	0	5(4P+1AP)	1	358121	84
Donimalai	1C	0	1P	0	238355	5
Panna	0	0	0	0	30465	0
Total	1C	1P	9(8P+1AP)	1P	970347	196

2015-16	Fatal	Serious	Reportable	Minor	Mandays Worked	Mandays Lost
Kirandul	0	2P	0	0	346383	42
Bacheli	0	6(3P+2C+1AP)	8P	0	410405	283
Donimalai	0	0	2P	1P	254519	25
Panna	0	0	0	0	29381	0
Total	0	8(5P+2C+1AP)	10P	1P	1040688	350

2014-15	Fatal	Serious	Reportable	Minor	Mandays Worked	Mandays Lost
Kirandul	0	0	3P	1P	335659	33
Bacheli	0	4(2P+2C)	6P	0	432084	99
Donimalai	0	1C	2P	0	273279	18
Panna	0	1C	0	0	29715	0
Total	0	6(2P+4C)	11P	1P	1070737	150

P- Permanent Employee

C- Contractual Employee

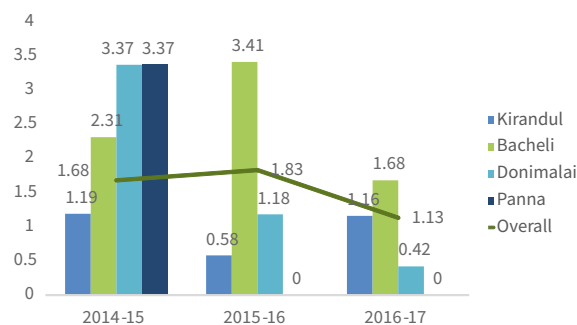
AP – Apprentice

Severity Rate (SR) – Mandays Lost per 1000 Mandays worked.

Injury Frequency Rate (IFR) =  $(50 \times \text{No. of Fatal Accidents} + \text{No. of Serious Accidents} + \text{No. of Reportable Accidents} + \text{No. of Minor Accidents}) / \text{Total Mandays Worked}$



**Frequency Rate (Nos of accidents per million manhours worked)**



This improvement in mine safety in NMDC is attributed to the following contributing factors:

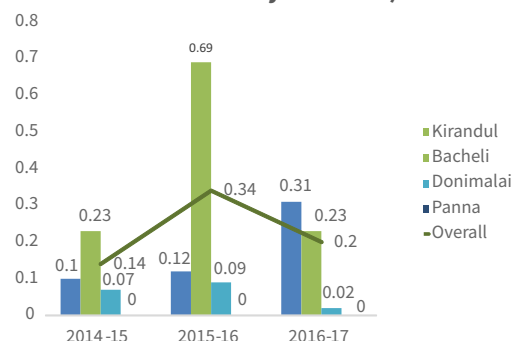
- Collective commitment and synergetic collaboration of the Management, Employees, the Regulator (DGMS) and Trade Unions.
- Use of state-of the -art technology in the field of Mining Methods, Mining Machineries and Safety Monitoring Mechanism.
- Continuous improvement in knowledge, skill and responsiveness of workforce through imparting quality safety training and relentless safety awareness drives.
- Constant vigil, round-the-clock supervision and assistances from various quarters.

## Safety Training

*Safety of the employees has always been paramount at NMDC.*

NMDC has its training centers in all its projects. They are equipped with infrastructure as required under Mines Vocational Training Rules. These centers cater to the needs of basic training, refresher training and training for skilled workers and also for those injured on duty. There has always been an effort to continually improve and instill a culture of safety within every employee. At NMDC, the focus is always on establishing safe working practices through comprehensive risk assessment and constructive dialogue. The company encourages safety training and re-training of workmen including contractor's workers and supervisors through safety awareness programs, regular safety drives and safety weeks, frequent publication of posters at public and gathering places, etc. All employees are given training as per Mine Vocational Training Rules-1966 (MVTR-1966). We have a dumper simulator for training of dumper operators. Training of Shovel, Dumper & Drill operators is being done through e-learning modules.

**Severity Rate (Mandays lost per 1000 mandays Worked)**



Training on Dumper Simulator:

BEML make Dumper Simulator has been installed at BIOM, Bacheli Complex. Dumper operators of all Projects are being trained on dumper simulator for the year 2016.

Projects	Dumper Operators Trained
Kirandul	21
Bacheli	03
Donimalai	18
Total	42

**Training of Operators / Mechanics through E-Learning Modules for the year 2016**

Projects	Shovel	Dumper	Drill
Kirandul	11	0	08
Bacheli	02	21	01
Donimalai	21	16	17

## Internal Safety Audits of Projects by Project Safety Audit Teams

Internal Safety Audit Teams have been formed at each project. Team of one project conducts safety audit of other project as fixed by the Internal Safety Organization (ISO).

Six safety audits have been conducted in the year 2016. Observations by the audit team are given to the Safety Officer of the project audited for compliance and is being monitored by ISO. The records of internal safety audits reports and action taken reports are being maintained. ISO team also conducts Mining / Mechanical / Electrical audits of Projects. Internal safety auditors have been given safety audit training at M/s

## OHS

Occupational Health Centers have been provided with adequate manpower and infrastructure and are functioning in full-fledged manner at all the projects. OHS Centers are headed by Qualified Doctors trained in OHS at Central Labour Institute, Mumbai. To identify and manage occupational health following steps have been taken:

- Initial Medical Examination is being conducted for all persons to engage in any working in the mines.
- Preparation of Questionnaire for proper diagnosis.
- Including Uric acid test in addition to the medical examination suggested as per the statute.
- Comprehensive digitization of all the records.
- Periodical Medical Examination is being conducted (Up to 45 years – once in every 5 years, above 45 years – once in 3 years) for all persons working in the mines. All the results are computerized and individual files are being maintained.
- Pre- retirement Medical Examination (within 1 year before retirement) is being conducted for all employees working in the mines.
- Eye refraction test is being conducted once in a year for employees engaged in driving and operation of Heavy Earth Moving Machineries in the mines.
- Sputum for AFB and chest radiograph once in a year and stool examination once in every six months is

being conducted for all persons engaged in food handling and preparation & handling of stemming material.

- Regular practice of Yoga & health improvement techniques.
- Control on addiction of tobacco and alcohol
- Regular monitoring of air and noise level are carried out at various places of mining and plant by external agencies to control noise and dust within the permissible limits.
- All HEMM are procured with AC cabin in addition to automatic fire suppression system. In dumpers rear view camera have been provided
- Dust suppression systems have been provided at different locations in plant. In mines regular water sprinkling is done by water sprinklers.
- All control rooms are sound proof. Apart from this sound proof cabins have been provided at various locations in plant. CCTV cameras are also provided in order to reduce the exposure of employees to noise and dusty atmosphere.
- Rubber screens are used to minimize noise.

## Initial & Periodical Medical Examinations of Employees

Initial & Periodical Medical Examinations of Employees (Permanent & Contractual) is being carried out as per the statute. Project wise, number of Initial / Periodical Medical Examinations of employees for the year 2016 is given below.

Project	Initial Medical Examination		Periodical Medical Examination	
	Departmental	Contractual	Departmental	Contractual
Kirandul	90	247	124	00
Bacheli	57	198	215	00
Donimalai	62	694	167	16
Panna	03	036	023	00
Total	212	1175	529	16

Project	Basic Training		Refresher Training	
	Departmental	Contractual	Departmental	Contractual
Kirandul	38	356	159	0
Bacheli	49	419	151	0
Donimalai	62	769	102	16
Panna	03	75	22	0
Total	152	1619	434	16

Particulars (percentage)	Safety Training Percentage	Skill Upgradation Training
Permanent Employees	22.35	42.52
Permanent Women Employees	11.27	22.07
Casual / Temporary / Contractual Employees	82.62	4.06
Employees with disabilities	26.32	7.37

## Integrated Management System (IMS)

All the NMDC Mines including R&D Centre are accredited with Integrated Management System (IMS) i.e. comprising of Quality Management System - ISO 9001:2008; Environmental Management System - ISO 14001:2004; Occupational Health & Safety Management System - OHSAS 18001:2007 & Social Accountability - SA 8000 Certification Standards. Circulation of SA 8000 guidelines to the contractors, material suppliers including canteen vendors have been done.

### Best practices in NMDC Mines

- In each mining project of NMDC sufficient number of workmen inspectors are nominated/appointed for mining operations, mechanical and electrical installations as per statutory requirements.
- Mine Level Tripartite Safety Committee Meetings have been conducted in each of the operating mines. This meeting is conducted once in a year at project level with senior officials, Union Representatives and DGMS Officials in which Safety Performance and its appraisal are made and the recommendations are implemented.
- Corporate Level Tripartite Safety Committee Meetings are being held regularly once in a year at Head Office.
- Safety Committees have been constituted in every operating mine and pit safety meetings are held every month discussing the safety matters and corrective actions related to work atmosphere.
- Safety Management system has been implemented in all our mines. Risk Assessment studies are being conducted regularly. Internal Safety Audits are being conducted twice in a year by Project Audit teams and the observations of the audit team are being complied to ensure safe work atmosphere. ISO team comprising of Mining, Electrical & Mechanical Executives also conduct safety audits of Mining (Mine workings, HEMM & Electrical appliances) and OCSL Plant areas.
- RO plant and Aqua Guards are provided at Projects for supplying good drinking water at required places.
- One-way traffic for HEMM plying in the mines is provided wherever applicable for ensuring safety.
- Big size convex mirrors are provided at blind curves for ensuring visibility of objects/vehicles.
- Air mist dust suppression system is provided at Crusher point and ore transfer points. Dust

suppression on haul roads is being done by water sprinkling. Automatic water sprinkling arrangement is provided in some of the permanent haul roads.

- Wet drilling is being practiced.
- Additional mirrors have been provided on dumpers for view of blind zones. Rear view camera has been provided on all dumpers. Proximity warning device has been provided in some dumpers. Automatic Fire Suppression system is provided in all the HEMM.
- CCTV Cameras have been provided in OCSL plant areas for observing the critical items.
- AC cabins are provided in HEMM and OCSL Plant for comfort of operators.







## Employee Benefits

The employees of NMDC have demonstrated sincere commitment towards the organization and remained true partners in its success. NMDC has always considered employees as part of one extended family and has supported them during service as well as post-superannuation. Retirement plans in NMDC are based on both defined benefit plans and defined contribution plans. NMDC Pension Scheme has been implemented creating a financial security to its retired employees. All retirement plans currently followed are mandatory for all regular employees. Benefits and management are as per statutory Provident Funds & Miscellaneous Provisions Act, 1952, Payment of Gratuity Act, 1972 and Employee Pension Scheme, 1995. NMDC manages a large PF and Gratuity Fund.

## Medical Facilities at NMDC

NMDC provides comprehensive Medical and Health care facilities to its employees and their dependants. The main objective of the Company Health Policy is “To promote and maintain a healthy work-force right from Induction to Post Retirement”. NMDC is maintaining a strong medical setup with state of the art technology. For treatment not available at NMDC Hospitals, the employees (& their dependents) are referred to

### Benefits

- Provident Fund (12 % of the employer's contribution + 1.36% Administrative charges)
- Cafeteria Allowance
- Benevolent Fund
- NMDC Contributory Pension Scheme (8% of the basic)
- Leave Encashment (30 days in a year)
- Long Service Awards (On completion of 20, 25, 30, and 35 years of completed service)
- Long Service Awards
- Medical benefits
- Post-Retirement Medical benefits
- Furniture Allowance
- House Building Allowance
- Scholarship for Children of Permanent employees
- Performance Related Pay
- Multipurpose Allowance
- Annual reward scheme
- Accidental Insurance Cover to all employees
- Subsidised canteens (subsidised rates for eatables)
- Gratuity (as per prevailing statutory law)
- Employee Family Benefit Scheme (EFBS)

Hospitals located pan-India as per rules and requirement.

For the city based employees and their dependents where NMDC does not have its own hospital, employees are provided comprehensive medical facilities in

empanelled hospitals and they are also reimbursed medical expenditure as per the policy for treatment availed at non-empanelled hospitals / consultations availed in private clinics.

## Employee Engagement

Several initiatives have been taken to ensure that the development of employees and the organization is a mutually inclusive. As a direct result of a vibrant work culture, duly supporting flexibility and learning opportunities, employees have charted out challenging career opportunities to scale up their professional ladder.

NMDC has been conducting various programs that are based on the concept of fair personnel management so that its employees can carry out their jobs with a long-term commitment and with a sense of security and enthusiasm.

Communication with employees at various levels on a wide range of issues impacting the Company's performance as well as those related to employees' welfare is done in a structured manner across the Company. Mass communication campaigns are undertaken at Senior Officers' level involving structured discussion with large group of employees. These sessions help employees to align their working with the goals and objective of the Company leading to enhanced productivity and employee's belongingness to the company.

## Building a Rewarding Career

As part of Employee friendly Company there is an HR policy where the involvement of all employees in innovation, production and productive work environment are given a major thrust. Regardless of gender, caste, religion or marital status, new employees are recruited and given equal opportunities. Whenever there is requirement to change the duty hours, the management informs representatives of employees and contractual worker in advance. An employee is required to serve notice period of 3 months prior to release on resignation.

All full time employees enjoy the Benefits like Life Insurance, Health care, Disability/ invalidity coverage, Maternity Leave, Retirement Benefits etc.

NMDC has provided various social benefits to its

employees in the form of housing, education, civic amenities, sports & recreation and social welfare. NMDC developed full-fledged townships over the years at all its Projects locations with the modern infrastructural facilities along with premier schools, specialty hospitals, shopping malls, clubs, parks, gymnasium, stadiums etc.

Together with corporate governance, collective bargaining is part of an overall framework that contributes to responsible management. It is an instrument used by interested parties to facilitate collaborative efforts to enhance the positive social impacts of an organization. All employees of NMDC are covered by collective bargaining agreements.

## Knowledge Management

Knowledge Management Initiative in NMDC is christened as "Gyan Ka Dhan" to create seamless knowledge organization that incubates and promotes innovation, creativity and excellence. An Apex Committee consisting of Director (Production) and Director (Personnel) along with Heads of the Project, Important HODs, Head of HRD & Head of (C& IT) are members of Apex Steering Committee for the Knowledge Management Framework. All HODs of Project Level and HO are the key facilitators of the Knowledge Management System in their respective areas. A team consisting of senior executives and different departments are formulated as a Knowledge Management Facilitation Group. The initiative aims at the generation of Knowledge Management Assets in the form of articles, videos, case studies etc. that have potential of use in the company in their respective areas from other areas (Present or Future). The IT based KM Portal has been envisaged to gather and disseminate knowledge assets.





## Labour Practices

NMDC has an established system of workers' participation at different levels right from Corporate level up to shop-floor level. Some of these forums are functioning for a long time and are sufficiently empowered to address different issues related to wage, safety, and welfare of worker, makes the work environment more conducive.

Each Project has designated Labour Welfare Officers who also interact with government labour machinery to deal with any statutory labour matter. There is no discrimination towards any section/category of employees in NMDC. This is ensured by the Personnel department which regularly monitors fairness in activities and services. Freedom of Association, as enshrined under the Constitution of India and envisaged in the Trade Union Act, is also ensured. There are no such operations in NMDC where right to exercise the Freedom of Association and Collective Bargaining is at risk.

NMDC supports the freedom of association of employees. It is supported by the fact that multiple unions exist at different projects and units. NMDC has maintained its glorious tradition of building and maintaining a conducive and fulfilling employee relations environment. The healthy practice of sorting

out and settling issues through participative discussions with trade unions/workers' representatives enabled the Company in ensuring a peaceful industrial relationship. NMDC stands committed to the protection of freedom of association among its employees. NMDC has three layers of employees: workmen, supervisors and executives. All our permanent employees (100%) are members of their respective recognized employee association. Workmen, who are mostly location specific, have their own Unions. More than one Union are functioning in each of the main units. Besides their affiliations to national bodies, cutting across such affiliations to central organizations, majority of the Unions at project level have formed an independent apex body called All-India NMDC Workers' Federation (AINMDCWF) positioned at the corporate office at Hyderabad. Supervisors have their own association (NMDC Supervisors' Association) at unit level and at corporate level. Executives have their own association (NMDC Officers' Association) at unit level and at the corporate level. All these Unions have been given assistance by the Management as considered necessary for their functioning. The details of such affiliated Unions, unit-wise, are given below:

### **Bailadila Iron Ore Mine, Kirandul Complex**

- Samyuktha Khadan Mazdoor Sangh (SKMS) affiliated to All India Trade Union Congress (AITUC).
- Metal Mine Works Union (MMWU) affiliated to Indian National Trade Union Congress (INTUC).

### **Bailadila Iron Ore Mine, Bacheli Complex**

- Samyuktha Khadan Mazdoor Sangh (SKMS) affiliated to AITUC.
- Metal Mine Workers Union (MMWU) affiliated to INTUC.

### **Donimalai Iron Ore Mine**

- Donimalai Iron Ore Project Employees Association (DIOPEA) affiliated to AITUC.
- Metal Mine Workers Union (MMWU) affiliated to INTUC.

### **Diamond Mining Project.**

- Panna Hira Khadan Mazdoor Sangh (PHKMS) affiliated to BMS.
- Madhya Pradesh Rashtriya Heera Khani Mazdoor Sangh (MPRHKMS) affiliated to INTUC.

NMDC is totally committed to workers' participation in the management. In pursuit of such commitment, Committees/Councils, both statutory and non-statutory, are functioning at the shop level, project level and at corporate level with equal number of representatives of the management and the Unions. Supervisors and Executives have their own associations at unit level and at the corporate office. Actions Decisions related to workmen such as wage settlement, incentives, bonus, line of promotions, working conditions, welfare measures, etc are taken in consultation with the representatives of unions/Associations, both at the unit level and at the corporate level. All the workmen are subject to collective bargaining agreements and the supervisors and executives are governed by understanding/consultations. No man days were lost during the year because of rift or strike by employees due to the effectiveness of Collective Bargaining. The unanimous decisions taken at the Joint Committees are implemented and monitored.

As regards notification prior to the implementation of significant operational changes, all the necessary operational changes required in the interest of the Corporation are discussed in Bipartite Forum as well as in Project Level Committees.

## **Child Labour**

As a responsible Corporate Citizen, we recognize the importance of children's rights and have a clear stance on the issue of child labor. As per The Mines Act, 1952, the employment of children below 18 years of age in a mine is prohibited. We follow proper checks and audits as per the Act. All our contracts are in written form with various contractors. This ensures that no children get employed in our mines.

The SA 8000 clause on child labor that includes employment of persons of age 18 and above as a precondition to partnering with NMDC, and that, in the event of any kind of violation by vendors within or outside the Company premises, liabilities for the education of the child until the completion of high school will accrue to the defaulting party. This aspect is communicated to all the vendors and suppliers while engaging with them.

NMDC stands committed not to engage any child labour and do all that it can to abolish it from its surroundings. For appointment in the Company, the minimum age prescribed and scrupulously followed is 18 years. Age verification is done with reference to approved documents in accordance with the practices prescribed by the Government of India.

All contractors are forbidden to engage child labour. Government enforcement agencies like Inspectors from Labour Department inspect the sites of construction to check for employment of child labour. Those found guilty are liable for punitive action by the Government. Records of the labourers engaged by the contractors are kept at worksites. No child labour was employed by NMDC. No child labour was allowed to be employed by the contractors working for NMDC. NMDC does not promote trade with organisations engaging child labour

## **Forced Labour**

NMDC stands committed not to resort to any form of forced and compulsory labour. No employee is required to deposit any sum of money for employment in NMDC. Any employee joining the Company should declare that he or she is not an insolvent. Actions Appointment orders issued by the Company very specifically state the various important conditions of appointment.

Printed copies of Service Regulations and other rules are distributed to all Units for reference and use by every employee. The workmen in particular are given a copy of the certified Standing Orders precisely containing their general terms and conditions governing service conditions. The Personnel Manual is available in the Intranet site for reference. Employees are given incentives for achieving higher levels of output. Workmen have the additional facility of overtime payment for working beyond the prescribed working hours. During the year 2016-17 no form of forced or compulsory labour was resorted to.

## Anti-Discrimination

NMDC, by itself and as a Government Company, stands committed to follow the policy of nondiscrimination in all matters - recruitment, employment opportunity, promotion, etc.

- The Constitution of India, under Article 15, unambiguously prohibits discrimination on grounds of religion, race, caste, sex or place of birth.
- As a Government Company, NMDC is bound to follow the Government directives, which are abundantly clear against any discrimination in any matters.
- As a measure of protecting and improving the conditions of the downtrodden, special provisions have been made in terms of the Government directives in respect of candidates belonging to Scheduled Caste, Scheduled Tribe and Backward class, both in recruitment and promotion.
- NMDC Recruitment and Promotion Rules provide for qualifications, skill and experience required for candidates for recruitment and promotion at various levels.
- The grievance procedure in the Company is designed in a very simple and easy to handle way for the employees to get grievances, if any, to be resolved quickly.
- Unions and Associations representing the various levels of employees have easy access to the management to discuss and resolve discriminations, if any, quickly and effectively
- The Company periodically assesses and evaluates job contents and job requirements.

## Human Rights

We are fully committed to abide by the rules on Human Rights across our operations and this reflects in our dealing with our different stakeholders. All suppliers, contractors and vendors who undertake to provide services enter into a comprehensive formal agreement with NMDC, which contains stipulations and conditions requiring them to ensure the compliance of various applicable labour statutes in respect of their employees or workers. These include the Payment of Wage Act - 1936, the Minimum Wages Act - 1948, Equal Remuneration Act - 1976, the Industrial Dispute Act - 1947, the Employees State Insurance Act - 1948, the Mines Provident Fund and Misc. Provisions Act - 1948, the Child Labour (Prohibition and Regulation) Act - 1986 and the Contract Labour (Regulation & Abolition) Act - 1970. NMDC ensures that the contractor's labour is treated fairly as per the law. The contractors are advised to pay the wages to its workers through bank and settle

the issues in accordance with the law. We are also committed to the principles of the United Nations Global Compact on Human Rights.

NMDC strongly believes in protection of Fundamental Rights described in the Constitution of India. There was no recorded case during the reporting year on any violation of human rights. NMDC includes human rights related clauses in its new contracts. Periodic checks are being done with respect to various suppliers/contractors on compliance of human rights.

## Grievance Redressal Mechanism for Employees

NMDC has well-articulated Grievance Redressal procedures for different segments of employees which includes Executives, Non-executives, women and other categories of employees. At NMDC employees are considered as the most valuable resource of the company and all efforts are made to minimize occurrence of employees' grievance. Wide spread awareness is created among employees regarding their rights, code of conducts and organizational commitment to fair and equitable treatment of employees. The Grievance redressal process provides a time bound mechanism for addressing grievances which are detailed below for different categories of employees.

### Non-Executives Grievance Redressal Mechanism

The Non-executives Grievance redressal procedure is followed strictly as per Industrial Dispute Act, 1947. The grievances of workmen with respect to their service conditions or any other employment related matters are also attended to in various forums such as works committee, Bi-partite forums, wherein Union & management representatives resolve grievances timely & amicably.

### Executives Grievance Redressal Mechanism

Employees at NMDC are encouraged to communicate freely in the bottom-up communication. Accordingly, If an Executive believes that he or she has been discriminated against, harassed or have not been given equal opportunities at work, he is encouraged to submit a complaint to his or her higher ups. The aggrieved individual is supposed to intimate verbally to superior officer about the problem and if not satisfied he/she may submit written application to HOD. If the grievance still persists he/she may approach Head of Project who can constitute Grievance Committee and accordingly expeditious actions are taken to resolve the grievance.



In case grievance being addressed to the satisfaction of the aggrieved party, the concerned employee is counseled with reason of non-action.

The Grievance Redressal Machinery in NMDC is headed by a General Manager in the Head Office and by Head of Projects in each project which has been working satisfactorily. It may be mentioned here that the volume of grievances handled is very low. Public dealing in the organization being minimal, however, as and when any Public grievance (including in the press) is received, the same is promptly attended to. The details of grievance during the reporting period are given below:

1. Ms Usha Singh, General Manager (BD&CP)
2. Secretary, Mineral Eves Club Hyderabad
3. Ms MR Viswashree, AGM (Fin)
4. Ms TR Sithamani, PA (Materials)
5. Ms AR Maya, Sr. Stenographer Gr.I

Likewise, Internal Complaint Committee under the act is constituted in all projects of NMDC. In 2016-17, No case of Sexual Harassment is reported

#### Grievance Status

Category	Grievances outstanding on 01.04.2016	No. of Grievances received during the year (2016-17)	No. of cases disposed off (2016-17)	No. of cases pending as on 31.03.2017
Staff Grievances	Nil	85	85	Nil
Public Grievances	18	71	89	Nil

## Prevention for Sexual Harassment at Workplace

NMDC strictly followed the Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act ("POSH") in 2013 for protection, prevention, and redressal of sexual harassment against women at workplace. NMDC mandates for zero-tolerance towards sexual harassment against women at workplace.

Each Project of NMDC has created respective Grievance Panels in the manner mentioned below, to investigate and address complaints of suspected Sexual Harassment of any Aggrieved Person at the Workplace. It is hereby clarified that for the purposes of the Sexual Harassment Act, each Panel constituted in accordance with the terms of Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act ("POSH") in 2013 & is considered as an Internal Complaints Committee.

Following are the names of members of Internal Complaint Committee constituted under the act at Head Office, Hyderabad:-



## Human Resources Development

An ever changing highly competitive business landscape necessitates NMDC to place significant thrust on harnessing the potential of the people within the organization as a key differentiator for sustained growth. The Human Resources Development (HRD) function at NMDC is an integral part of the business, aimed at actively conceptualizing and implementing focused and customized HR policies, practices and initiatives in line with organizational Vision and Mission. Human Resources Development at NMDC strives for creating a robust HR ecosystem by establishing strong linkages between its people, systems & processes by adopting novel high impact HR Initiatives in areas like Leadership Development, Culture Building, robust Performance Management, Skill Development and Employee Engagement.

The Performance of all Executives & Non Executives is managed through Online Performance Management System(PMS). The training needs are mutually identified by the employee & his reviewer. Apart from the regular training activities, some of the major initiatives are described below:

### Capability Building Programs

The HRD Team has crafted initiatives include core programmes straddling various dimensions of Leadership, Capability Enhancement and Skill

Development along with customized programmes that address diverse capability-building needs at various levels of the organization. These programmes cover not just functional competencies but behavioral inputs as well, to ensure comprehensive development of our human resources. Training is delivered both internally and via external bodies to meet the specific requirements of roles or to target professional development. Such training ensures that employees are aware of their personal and Company obligations related to their workplace, safety and environment standards, as well as industry and international standards. Corporate HRD has Organized 24 Nos of Customised In House Training Programmes covering 690 Executives during 2016-17, 193 Nos of External Training Programmes covering 483 executives on various subjects, and 28 Nos of Executives deputed abroad for Foreign Training Programmes under AMP.

**Project Navachetana** is an NMDC's initiative towards Leadership Capability Building and Succession Planning. NMDC has placed a significant thrust on harnessing the potential of the people within the Organization as a key differentiator for sustained growth. As a result, succession planning becomes a crucial management activity for the development of NMDC's Senior Executives to occupy key positions by emphasizing on performance and potential of those executives working in this Organization. Accordingly, NMDC has carried out Assessment Centre for Gradation of Executives in the level of E-7 to E-9 as to identify them as successors in Key areas which is part of Succession Planning in our Organization. All the 46 Executives have undergone ADC and 15 Functions are Identified succession layer out of this initiative. As a part of this

initiative, to create & sustain leadership pipeline, programmes like AMP, GMP & tailor-made customized interventions on leadership development are organized. 8 senior Executives are nominated for AMP and 53 Executives are imparted Training in GMP and Other Leadership development Programmes held during 2016-17.

**Bhavishya Nirman** – A High Potential Leadership Development Programme (HI-POs) for AGMs/DGMs has been initiated by Corporate HRD which is a progressive intervention for creating a robust leadership pipeline by taking High Potential Leadership Development Programme for middle level Managers covering around 258 Executives. It will bridge the gap in pool of leaders in near future and also will create the necessary efficient leadership pipeline in long term for better business results.

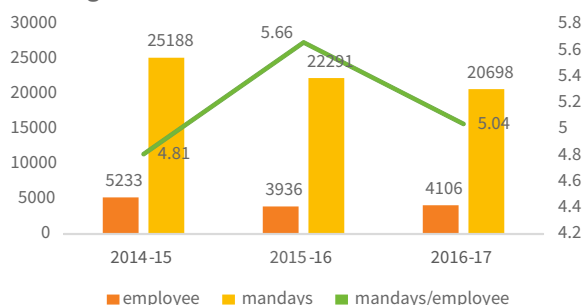
- Conducted ADC and Psychometric Assessment for 241 Executives out of 258 Executives available in the E-5 and E-6 Grades.
- Prepared Merit List based on ADC, Psychometric assessment and Performance Rating for three Years and submitted to Top Management for Approval.
- Identified 28 Coaches and trained them under Coaching Skills Workshop.
- Detailed IDP and Training Plan is envisaged for identified high potentials.

**AAROH-II** is a Strategic Orientation Workshop (HR Conclave) for Management and Trade Union Representatives is organized on 3rd & 4th April 2017 at Kodaikanal covering Management Representatives and Trade Union Representatives

Project Management/Risk Management is a key intervention where 25 Nos of Executives in the level of E-5 & E-6 have been imparted 6 Days Training in “Project Management”. HRD has continued its thrust on Mentoring & Coaching programme which is an essential element for developing executives within the Organization. 24 Nos of Senior Executives are imparted Training on Mentoring and Coaching during 2016-17.

To further strengthen the Quality Circles Movement in NMDC, HRD has given more thrust on Quality Circles activities by adding 5% more QCs this year. 43 nos. of Quality Circles (QCs) are formulated and working in various conventions.

**Training Details**



Expert Institutes and Knowledge bodies have been roped in to provide best in class training in different areas. Accordingly NMDC has forged partnerships with leading institutes such as ASCI, IITs, IIMs, CSIR laboratories etc. to impart high level of training to its employees.

**Training Details**

Year	Category	Kirandul			Panna			Bacheli			Donimalai		
		Employees trained	Total Man days	Mandays /emp	Employees trained	Training Man-days	Mandays /emp	Employees trained	Training Man-days	Mandays /emp	Employees trained	Training Man-days	Mandays /emp
2014-15	Executive	412	1034	2.5	170	305	1.79	522	1293	2.48	256	715	3.64
	JOs	71	296	4.2	16	37	2.31	92	185	2.01	33	154	2.33
	Workman	1349	7928	5.9	196	333	1.69	1229	8225	6.69	544	3244	3.46
	Total	1832	9258	5.1	382	675	1.77	1843	9703	5.26	837	4113	3.43
2015-16	Executive	507	1747	3.4	123	270	2.19	290	866	2.99	280	914	4.66
	JOs	70	313	4.5	4	7	1.75	22	175	7.95	29	147	2.22
	Workman	905	5548	6.1	117	418	3.57	819	7705	9.41	485	3207	3.42
	Total	1482	7608	5.1	244	695	2.85	1131	8746	7.73	794	4268	3.56
2016-17	Executive	343	1682	4.9	75	247	3.29	330	869	2.63	416	1765	7.6
	JOs	44	178	4	7	31	4.43	12	44	3.67	34	146	4.1
	Workman	886	4639	5.2	106	398	3.75	686	6071	8.85	584	2912	3.2
	Total	1273	6499	5.1	188	676	3.59	1028	6984	6.79	1034	4823	4.2





## Corporate Social Responsibility

Post-Independence task of reconstructing the newly independent India was shouldered mainly by PSUs by laying strong foundation for socio- economic development of the country with a higher focus on nation building activities ahead of profits and shareholders' wealth maximization. Thus NMDC, a Navratna PSU, has been one of the original practitioners of Corporate Social Responsibility principles. NMDC takes pride in transforming people and societies through community engagement, assets building, creating massive educational infrastructure and providing health services. More importantly, the efforts directed by NMDC towards providing education, health services and employment opportunities to people in the surrounding locations have provided a direct stimulus in contributing to the economic growth through manpower development and management of natural resources.

NMDC has been steadily building high impact and perpetually value adding CSR interventions through well-articulated strategies that create societal value by leveraging the decades old stakeholder relationships, sound economic performance and institutionalized partnerships with state governments and other agencies. The successful outcomes that achieve meaningful scales are replicated and sustained with schemes covering all major aspects of Human Development Indices viz. Education, Health, Skill Development, Drinking water and creation of

infrastructure etc.

NMDC has been continuously refining the CSR Policy and Strategy to meet the ever changing needs of the stakeholders and the aspirations of the country to become a fully developed society. NMDC has documented a comprehensive CSR Policy which outlines its commitment through Vision, Mission, Objectives, Scope, Guiding Principles, Coverage, Mechanism, Process, Focus areas, fund allocation & expenditure, Planning & implementation, Monitoring & Evaluation and Reporting & MIS. The Policy Document is uploaded on the NMDC website (<https://www.nmdc.co.in/Docs/CSR/CSR%20Policy.pdf>) for a transparent and effective communication on various facets of its CSR activities to the stakeholders, partner organizations and all the concerned individuals or agencies.

### CSR Vision

To strive for excellence in promoting Sustainable Development and improvement in quality of life of surrounding communities through CSR initiatives, based on ethical, transparent, accountable and sound governance practices.

### CSR Mission

To emerge as a responsible corporate leader in Sustainable CSR Initiatives through innovative partnerships/programmes, strategic collaborations and stakeholders engagement in order to promote inclusive community growth.



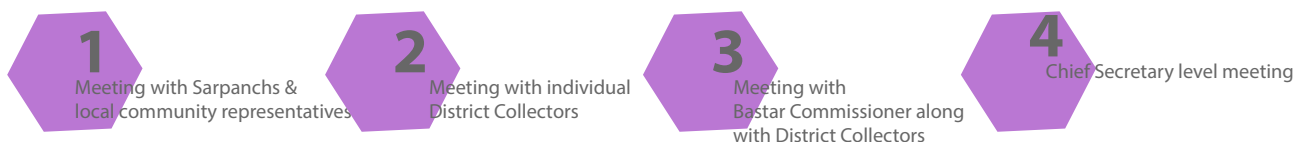
The CSR Policy approved by the Board, provides a guiding framework to achieve the overarching Vision to serve the National Priorities and Sustainable Development Goals. Key societal challenges are identified through extensive stakeholder engagement including representatives of rural population, different levels of state government, which facilitates collaborative designing and implementation of programs leading to high value addition with meaningful outcomes. The Board Sub-Committee on CSR and Sustainability is in place to provide strategic direction, implementation aspects, review and monitoring mechanism, and ensures that CSR movement of the Company is well on track.

The dedicated Board level subcommittee on CSR & Sustainability, headed by an Independent Director, meets regularly to review progress of the major CSR activities vis. a vis. the plans. CSR proposals, are examined by the CSR and Sustainability Committee of Directors, and their recommendations are put up for approval of the Board. A separate Monitoring &

Evaluation framework has also been put in place to ensure timely completion of the planned interventions.

## Stakeholder & Community Engagement mechanism

NMDC has institutionalized a multi layered stakeholder engagement mechanism covering the entire range of stake holders. The involvement of stakeholder's starts at the grassroots community level, followed by District level interaction and culminating in coordination with State Governments has ensured conceptual clarity, effective implementation and proper monitoring of the CSR Programs in NMDC. We are of the view that the focus of its CSR and that of the state government merge when it comes to the development of the local population. Accordingly NMDC has forged a synergetic partnership with state government agencies and the engagement mechanism has been institutionalized. Dept. of Public Enterprises, Govt. of India has recommended NMDC's stakeholder consultation mechanism for other CPSEs for emulation. The multilevel stakeholder mechanism is shown below.



# Suggestions from Bastar & Southern Region Development Authority (BSRDA)





Based on decades of extensive CSR and community development work done in the past NMDC gets support and encouragement from authorities and local population that is reflected in expeditious clearances. Land acquisition for setting up NISP – The only successful land acquisition for a green field project in the last decade of Indian Corporate History, was facilitated mainly by sincere CSR efforts of NMDC over the years.

## Implementation, Monitoring and Impact Assessment

NMDC has a three pronged approach to CSR Program implementation i.e. directly by NMDC, in partnership with State Governments and through reputed and experienced Non-Governmental Organizations/Service Providers or fellow Public Sector Enterprises. This has enhanced the effectiveness of the programs and value to the stakeholders. The monitoring of the schemes is carried out through a system of Joint Inspections with the concerned partner's i.e. relevant service providers, NGOs, State Government Officials. The review is carried out at various levels in the organization and by the CSR and Sustainability Committee at the apex level.

An Impact assessment of two major Flagship CSR initiatives i.e. the Integrated Village Development Programme & Hospital on Wheels (Mobile Medical Unit) of the Company have been carried out by National Institute of Rural Development & Panchayat Raj (NIRD&PR), Hyderabad in 2016-17.

NMDC has been regularly conducting impact assessment of some of its major CSR initiatives and is

now moving towards conducting impact assessment of all the major initiatives under taken by the Company. Reports of the impact assessment studies undertaken in recent years are uploaded on the website of the Company.

## Thrust & Focus

NMDC has extensively engaged with the local community and its representatives ever since its inception which has led to understanding and insight into the key requirements of the local society in its journey of development. Based on this knowledge NMDC has defined the thrust and focus area to achieve impactful outcomes. The thrust areas include health, drinking water, infrastructure, education and skill development which are shown below:

### Education: 'Prayas -A Pursuit to Education'

**'Prayas - A Pursuit to Education'** the situation was marked by significant percentage of children residing in communities around NMDC Projects not having access to even primary level of education, high dropout rates among school going children, lack of access to technical/ professional education due to economic & various other social factors and lack of quality educational infrastructure in the region. The prevalence of above difficult situation was more marked among the female student population who had very few facilities to continue or pursue higher education. In backdrop of this, NMDC initiated various programmes/initiatives to promote the cause of education which are listed hereunder:



Activity Name	Details	Reach	Location
Support to Anganwadi (Pre Primary) Centres	Providing Nutritional Support & pre primary training	49 Anganwadi Centres with 543 children	Dantewada Dist. Chhattisgarh
Support to Primary Schools students	Providing Nutritional & Academic support	45 schools with 1000 children	Dantewada Dist. Chhattisgarh
Education Improvement Programme	Program to address the issue of high dropout rate and improve grade specific learning levels	84 schools & 4367 children including 2027 girl students benefitted from the intervention	Dantewada Dist. Chhattisgarh
Free Transport Facility	Free facility to students from villages surrounding NMDC Projects to help them attend schools and colleges	350 students approx.	Donimalai (Karnataka), Bailadila Projects (Chhattisgarh), Panna (MP)
Mid Day Meal Scheme	Providing nutritious and wholesome meal to school students	8000 children in 38 schools since 2008-09	Bellary Dist. Karnataka
Education City, Dantewada	Island of Educational facilities located in Dantewada Dist. Chhattisgarh & consisting of initiatives viz. Astha Gurukul, Saksham, Polytechnic, Auditorium etc.	Benefitting around 5000 students	Dantewada Dist. Chhattisgarh
Education City - 'Astha Gurukul'	Residential school for children affected by Left wing extremism	919 students from Class I to VIII	Dantewada Dist. Chhattisgarh
Education City - 'Saksham' (I & II)	For disabled students - 100% Disabled friendly school	Student strength - 206	Dantewada Dist. Chhattisgarh
Residential School, Nagarnar	Residential school for children from remote tribal hamlets. Most students are 1st generation school goers of their families.	513 students till class IX. One class being added every year	Bastar Dist, Chhattisgarh
Shiksha Sahayog Yojana	Providing educational scholarships to economically backward students for pursuing education from 8th class upto Graduation level	18000 scholarships provided every year	Bastar Division (comprising six districts) Chhattisgarh, eight villages around Donimalai Project (Karnataka)
Balika Shiksha Yojana	Sponsoring Tribal girl students for professional Nursing Courses at Apollo College of Nursing, Hyderabad	Till date, 258 students benefitted	Bastar Division, Chhattisgarh
ITI, Bhansi	Promoting technical education among local students of Bastar Dist	Total Intake: 76 (12-welder & 16 each -other trades)	Dantewada Dist. Chhattisgarh
ITI, Nagarnar	Promoting technical education among local students of Bastar Dist	Total Intake: 28 (12-welder & 16-Mason Trade). Trades - Welder & Fitter, Diesel Mechanic, Electrician & Motor Vehicle Mechanic	Bastar Dist. Chhattisgarh
Polytechnic, Dantewada	Promoting technical education among local students of Bastar Division	Total Intake: 126 (63 in each discipline) Trades: Mechanical & Electrical	Dantewada Dist. Chhattisgarh
Construction of Aakar Bhavan	School for differently abled from economically backward sections of society	Capacity: 100 each for Boys & Girls	Sukma Dist, Chhattisgarh
"Choo Lo Asman"	To help students of Dantewada Dist to help 400 science students prepare for technical competitive exams	400 students	Dantewada Dist. Chhattisgarh
Ujjar - 100	Help 100 bright students to pursue higher education	100 students	Dantewada Dist. Chhattisgarh

**‘Prayas - A Pursuit to Education’** is nearly two decades old, from modest beginnings it has acquired the shape of a game changer for local communities.

NMDC follows a multi pronged implementation strategy w.r.t ‘Prayas - A Pursuit to Education’ initiative whereas for the implementation of the grassroots level segment of the initiative is being implemented through NGO’s and Govt’s anganwadi staff, the subsequent higher segment is being implemented by NMDC directly by way of novel schemes such as Shiksha Sahayog Yojana and the higher level segment of the initiative is implemented in partnership with Service providers, State Authorities and in some cases all the three partners put together.

The roles of the partners vary from segment to segment. At the grassroots level the NGO supplements the effort of the State Govt. staff, whereas in the middle segment NMDC takes on the role of financier as well as that of an implementer. At the higher educational level, service providers and the State Authorities play the role of implementing partners & NMDC dawns the role of funding agency.

**‘Prayas - A Pursuit to Education’** initiative has had a far reaching impact. NMDC strongly believes in assessing the impact of its initiatives from time to time and for course correction wherever required. Studies by independent agencies provide a positive feedback on the various segments of the Initiative.

Studies reveal that

- Intervention for providing nutritional and academic support to Pre primary & primary students is giving desired results in terms of better school attendance and healthy growth indicators of Children.
- Segments like Shiksha Sahayog Yojana are contributing to reduction in drop outs by motivating children to continue studies by monetarily supporting their educational efforts.
- Infrastructure created for school & Post school level education has provided much needed facilities for otherwise backward region and spawned higher aspirations and better employment opportunities for local youth.

This has encouraged NMDC in continuing its unstinted efforts for promotion of education. The initiative has had a significant impact in the lives and standard of living of the surrounding communities in terms of literacy, education, awareness, aspirations and standard of living. However, as in all endeavors there is

always scope for enlargement, as so much has been done and there is so much left to do.

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The initiative has had a significant impact in the lives and standard of living of the surrounding communities in terms of literacy, education, awareness, aspirations and standard of living. The Prayas initiative is raising the bar with the start of another Education City in Bijapur District in partnership with State Government. .



## Shiksha Sahayog Yojana

Shiksha Sahayog Yojana is a one of its kind initiative in the Country, which NMDC has been implementing since 2008-09, wherein SC/ST students who are natives of the Bastar Division (which is presently divided into seven Districts) in Chhattisgarh State and residents of 8 peripheral villages around Donimalai Project in Bellary District, Karnataka State and whose family income is less than Rs.6,000/- per month are provided educational scholarships. This initiative was introduced in the backdrop of a high dropout rate among Students hailing from the local tribal communities, despite the efforts of the Government's Sarva Shiksha Abhiyaan. This was primarily due to the inadequate educational facilities for Students near their immediate neighborhood, which discouraged Students from continuing their education beyond 8th class and parents also had no incentive to send a helping hand, who was supplementing their efforts in agriculture or other avocations. NMDC has adopted the process of direct crediting of Scholarships into the Bank/Post Office accounts of the beneficiary Students. It would not be out of place to mention that this was a pioneering practice introduced by NMDC's CSR Programme way back in 2009-10. The scheme has been enriched with innovative activities like debate competitions, sports events, study tours, science exhibitions etc. to give opportunity for overall personality development of the students. Study conducted by NMDC shows that the scheme has encouraged students to continue their studies. The scheme has also helped in improving attendance in schools and ensured better results.

## Balika Shiksha Yojana

Balika Shiksha Yojana is a novel CSR initiative having a triple purpose of assisting girls from socioeconomically disadvantage sections of society to pursue professional education, contribute to empowerment of women and also help in addressing the situation of acute shortage of Medical & Paramedical Staff in Bastar Division. This program was initiated by NMDC in the year 2011-12. Initially, 25 girl students from socio-economically disadvantaged background were sponsored by NMDC for B. Sc (Nursing) and GNM Courses at Apollo Institute of Nursing at Hyderabad, the education arm of Apollo Hospitals. The success of the program led to the enhancement of the number of students sponsored from 25 to 40. As on date 32 students are being sponsored for the 3 year GNM course and 08 students are being sponsored for the four year long B.Sc Nursing program. Till date 225 students have been sponsored under the scheme. This scheme has been framed

directly in response to the needs of the Communities surrounding NMDC Projects. The need was assessed based on interaction with the local District Administrations who had voiced their concerns about lack of adequate trained Nursing Professionals in the local Hospitals/Public Health Centres, where only 33% of the requisite Nursing Staff was available to render medical services to the local communities. Added to this was the concern about the inability of local Tribal girls to pursue the professional courses in Nursing, etc. due to socio-economic constraints. All the students of the first two batches who have passed out have been gainfully employed.



## Mid Day Meal Programme

Mid day meal is a unique programme of the Govt. of India which aims at addressing the dual problem of malnutrition as well as the issue of absenteeism and drop out among school children. NMDC has been supporting the mid day meal programme in surrounding areas of the Donimalai Project in Karnataka in partnership with Akshaya Patra Foundation since 2008-09 by providing monetary support to the mid day meal scheme to provide nutritious and wholesome meal during the school hours which includes items like chapatti, eggs etc. in the menu and has also contributed two dedicated vehicles for meal distribution. As many as 8,000 school children in 38 schools of Sandur taluk in Bellary dist. are getting benefitted from the scheme.





## Education Improvement Program (EIP)

It was observed that in the rural areas of Bastar region, the dropout rate in primary schools was as high as 50%. At the same time the learning levels of a 5th std student was equal to grade specific learning expected of 1st std student. In order to address this, NMDC initiated a project called "Education Improvement Programme". The objective was to reduce the dropout rate and improve the education standard. It also aimed at bringing back the drop out students back to schools by involving the local community. In order to achieve these objectives, the program operated academic centers to ensure quality learning. Similarly, creative learning centres were operated for out of school children. The program covered 84 Govt. primary schools in Dantewada Block, Dantewada Dist. 4367 children benefitted out of which 2027 were girl students. Improvement in Grade specific learning was also recorded apart from reduction in dropout.

**Free Transport Facility** - NMDC provides free transport facility to the students from nearby villages around Donimalai (Karnataka), Bailadila (Chhattisgarh) and Panna (M.P.) projects to help them attend schools.

## Residential School at Nagarnar, Bastar, Chhattisgarh

Remote village locations, tough geographic terrain and various socio economic reasons often prove to be a hindrance for acquiring education. As a result, many children from remote and backward villages of Bastar Division do not get chance to study. In order to address this issue and provide local tribal children in Bastar region with a conducive learning environment, NMDC established a residential school at Nagarnar in year 2010-11. Teams of NMDC employees, both male and female visit remote hamlets in the left wing extremism affected villages of Bastar Division and counsel the parents of children of school going age, convincing them to send their children to school. Consequently, most of the students who were admitted in the school were 1st generation school goers from their families from the deep jungle hamlets. NMDC has engaged the services of DAV Institution for operation of the school. At present the school strength is 513 students up to class IX with one higher class being added every year to expand the school upto 10+2 in future. The initiative has created

a positive impact in the area and admission to the school has become very much sought after amongst the local community.

## Technical Education

Bastar region in Chhattisgarh has traditionally lagged in having professional institutes which provide job oriented technical skills to the local youth. This is one of the main reasons that many local youth find it hard to gain meaningful employment in the job market. At the same time, it is difficult for the organizations working in the region to get technically trained personnel at the local level. In order to fill this void, NMDC has been working to establish technical institutes in the region which aim at imparting job oriented technical education to the local youth. The objective is to create trained workforce at the local level which is equipped with sound knowledge as well as practical exposure on specific trades which are commonly in demand.

Continuing with its efforts to provide technical education to the local youth, NMDC has established a Polytechnic College at Dantewada in year 2010-11 within the premises of Education Hub. Plans are afoot to initiate new trades in the institute, which currently has an intake of 126 students per year in Mechanical and Electrical Streams. The college has been granted exemption from central counselling to encourage professional technical education among students from Dantewada District/ Bastar Division.

The only 'Polytechnic College' in Chhattisgarh which is totally operated by a PSU without any financial contribution from the State Govt. of Chhattisgarh

## ITI at Bhansi, South Bastar Dantewada District, Chattisgarh

An ITI was established in Bhansi in the year 1999-2000. The courses offered in the institute are Welder & Fitter, Diesel Mechanic, Electrician & Motor Vehicle Mechanic. Tribal students requiring monetary support are also provided a monthly Scholarship. The institute has been able to bring trade level Technical Education to the door-step of Dantewada District thereby helping interested students from the district to pursue formal technical education.

ITI Nagarnar, Bastar District, CG has been established by NMDC in 2010-11 to further extend the facility of gaining technical education especially for the local tribal youth in the Nagarnar region. The institute has commenced

operations initially with courses on welder and mason trades. The institute also aims to impart employable skills to all the eligible wards of land losers of NISP Project for eventual absorption in NMDC apart from other local youth.

These are the only two ITI's being run in Chhattisgarh which is totally established and operated by a PSU without any financial contribution from the State Govt.

## Education City

Factors like difficult geographic terrain coupled with prevailing law and order situation have seriously hampered the chances of local children to get quality professional and technical education over the years. In wake of this reality, Govt. of Chhattisgarh came up with a solution for establishing an Education City at Geedam, Dantewada Dist with institutions ranging from Primary school to professional institutions like polytechnic in a single campus. The objective was to provide conducive environment to the local children for overall intellectual and physical development by providing them with quality educational facilities NMDC has partnered actively with the State Govt. in this unique initiative and is supporting it in several ways. Hon'ble Prime Minister during his visit to Education City had all the praise for the initiative. Some of the initiatives supported by NMDC in Education City are as follows:

Astha Gurukulis a residential school primarily for children affected by naxalite related violence apart from SC/ST/OBC and other underprivileged students from the local communities. NMDC has funded creation of physical infrastructure and facilities viz. Academic block, residential complex, staff quarters in Astha Gurukul. NMDC also supports regular operations of the school.

Construction of 1000 seater hostels for boys and girls respectively has been funded by NMDC in the Education City. Polytechnic College at Dantewada has been established and operated by NMDC within the premises of Education City.

Saksham is a residential school which has been established for children with special needs. The idea is to educate and train them at all levels and facilitate their schooling with appropriate aids and materials. NMDC has been supporting Saksham by bearing the regular operational expenditure of the school and has also financially contributed towards creation of the physical infrastructure. Saksham Campus is 100% disabled friendly campus for visually impaired, hearing impaired, physically handicapped, and mentally

retarded students. Saksham is the only educational institution in the country to have 100% barrier free access for disabled children.

## Education City at Bijapur

NMDC has partnered with the Govt. of Chhattisgarh for establishing an Education City in one of the most backward districts of the country - Bijapur. This Education City would be established on the lines of the one at Geedam in Dantewada District of Chhattisgarh and would provide wide range of educational facilities for the local children.

NMDC has partnered with Govt. of Chhattisgarh for establishing Aakar Bhavan, a school for differently abled students from economically backward section at Sukma district in Chhattisgarh.

## Supporting talent

Choo lo asman - NMDC has supported "Choo lo asman" which is an initiative for the students of Dantewada District to help them prepare for technical competitive exams like PET/PMT entrance examinations and providing career guidance.

Ujjar 100 - NMDC has provided financial assistance to tribal students for pursuing higher education under the scheme called 'Ujjar 100' in Dantewada Dist Chhattisgarh. Under the scheme, support is provided for student for education course of 4 years duration.



**Transforming and brightening lives through the power of education..**

#### **Anjan Kumar Poyami - The Insightful Charmer**

Anjan was born in the remote village of Eramantri; born with a disability, his poor parents could not imagine a cure for their son. However, Anjan is a specially abled child in the truest sense of the term. A visually impaired child, he is unable to see the look of wonder and amazement on listeners' faces when he entrances them with his spells of music and melody.



Anjan is a student of 'Saksham,' the residential facility for children with special needs, run by the Dantewada district administration. Anjan truly has an angelic voice; a natural to the stage, he has entranced many dignitaries with his music, including the Hon'ble Prime Minister and the Hon'ble Chief Minister. Anjan is the centre of attraction at programs organised at the district level, where he continues to enchant listeners with his melodies.

#### **Sushila Tarma - My Ability Is Stronger Than My Disability**

Sushila belongs to the remote village of Jangla; she was born a dwarf and has special needs. However, her talent is also special. She is another student of 'Saksham,' studying in class XIIth in the Agricultural Science stream. In spite of her physical disability, she has the ability to mesmerize people with her song and dance performance; she is also an excellent typist. Sushila aims to become an Agriculture Engineer; kudos to her aspirations and dedication, and to the path she has carved for herself.



#### **Maheshwari Nag - Breaking Barriers to Knowledge**

Kumari Maheshwari is another student of 'Saksham,' who belongs to the far flung Kuakonda village. Her vision has been impaired since childhood. A student of the VIIth standard, her talent was noticed and nurtured by faculties at 'Saksham.' She studies passionately through the medium of Braille and is a veritable treasure trove of knowledge. She has memorised numerous Sanskrit hymns and Slokas, and mesmerises people by reciting the same.



Her ambition is to become a teacher, so that she can illuminate and guide others by sharing her knowledge.

#### **Tulsiram Lekam - Dare To Follow Your Dreams, Even In The Face Of Odds**

Tulsiram hails from the remote village of Jodatarai in Dantewada district and is the son of a very poor farmer; no one in his family knows how to read or write. Tulsiram completed his primary education from the village school and then moved to a nearby village for further studies. After completing his graduation from the Government College, he prepared for the CGPSC from the Lakshya Academy, an initiative by the Dantewada district administration, supported by NMDC to facilitate deserving youth from poor families in preparing for competitive examinations. Tulsiram put his heart and soul into preparing for the examination and has been successfully selected for the Accounts Service.



#### **Baman Mandavi - Igniting Minds**

Baman Kumar Mandavi fulfilled his mother's dream when he got selected for admission in one of India's premier engineering colleges, National Institute of Technology (NIT), Agartala. Baman belongs to a



financially weak family and lost his father when he was just 10 months old. After that, his mother earned her living and paid for his education by collecting and selling firewood from the forest. Their hardship knew no limits and Baman got an opportunity to excel when he was admitted to the Choo Lo Aasman Institute. He worked hard to crack the JEE examination, and was ultimately able to achieve his mother's dream through sheer hard work and perseverance.

In his own words, Baman wants to serve his country and his mother by becoming an engineer.

#### **Atul Nag - Breaking the Barriers**

Atul Nag who hails from Tudaparas, a remote village is currently pursuing studies in medicine from the Baliram Kashyap Medical College, Jagdalpur. Born in a poor family, Atul's is a story of achievement against immense odds. Atul was preparing for the medical entrance examination at the Choo Lo Aasman Institute, an institute run by the district administration of Dantewada and funded by NMDC. He received news of his father's death just one week prior to the entrance examination; after performing the last rites, his young shoulders were too burdened to take up the challenge of the examination. After being counselled by the faculties at the Choo Lo Aasman Institute, he was able to crack the entrance examination and the rest is history. His studies are financed under the Ujjar 100 scheme of the Dantewada district administration which is supported by NMDC aims to fund higher education of the top 100 students.



**Glimpse of Bastar Art**



## Health: 'Niramaya -Towards Healthy Life'

The genesis of NMDC's Niramaya Programme lies in the situation which prevailed in the villages around NMDC Projects, which was marked by near absence of basic medical facilities including health infrastructure for the local communities which included an overwhelming majority of tribals. The prevalence of above difficult situation was compounded even more due to the remote nature of the Project locations along with Left wing extremism activities which resulted in near absence of any medical facilities for the local population. In light of the situation prevailing, NMDC under its CSR Programme took some initiatives for providing medicare facility to the local communities. Such initiatives have developed into a full fledged programme which aims at providing medicare and health facilities

'Niramaya – Towards Healthy Life' is a unique programme providing a mix of preventive as well as curative healthcare and includes component of creating awareness among the local communities and mobilizing them on issues related to personal hygiene, safe sanitation and cleanliness. In this backdrop, NMDC has undertaken various programmes/initiatives to promote the cause of health which are listed here under:

Activity Name	Details	Reach	Location
Free treatment at Project Hospital	Providing free treatment to local tribals at NMDC Project Hospitals	Out-patient – 1,00,000 per annum	Chhattisgarh, Karnataka,
Medical Camps	Organizing medical camps for local tribal population	In-patient – 10,000 per annum	Madhya Pradesh Chhattisgarh,
Hospital on Wheels	Providing medicare facilities in remote villages through mobile medical vans	Nearby villages Covers 37 villages	Karnataka Chhattisgarh

Providing free medical treatment to local tribals has been the earliest CSR initiative of the Company. The facility has been available to the local communities as soon as the facility was made available to the Company employees.

Apart from the above mentioned regular initiatives, NMDC has also taken other initiatives to promote the cause of healthcare facilities which include:

- Financial contribution for establishment of Medical College at Jagdalpur
- Strengthening of Primary Health Centres (PHCs) in Bellary Dist, Karnataka by upgrading / equipping them with necessary medical equipments. Similarly, 10 PHCs were supported in Bijapur Dist, Chhattisgarh
- Contribution to Sanjeevani Kosh of Govt. of Chhattisgarh for referring poor tribal patients for specialist treatment to higher medical centres
- Construction of Drug Warehouse at Bijapur District,

Chhattisgarh for storing medicines and other essential drugs.

- Construction of 14 Primary Health Centres (PHCs) in villages in Dantewada District

The Health initiatives of NMDC extend to preventive care also, the Company is taking proactive steps to enhance awareness on personal hygiene and sanitation amongst communities in villages. In this regard, a dedicated campaign is being undertaken in 16 villages around NMDC Projects in Dantewada Dist. Chhattisgarh. The programme has been successful in motivating villagers in constructing 937 household toilets in convergence with Swachh Bharat Mission Grameen scheme. The programme aims to construct 2450 toilets by 2019 & make these villages open defecation free.



### Bhimraj Karti – Reducing pain and suffering

At times, an instant can change someone's life forever. Gloom prevailed amongst his family and friends, when Bhimraj Karti, a young boy got electrocuted while playing. He suffered severe burns on almost three-fourths of his body, and required urgent medical attention. Under guidance from the district administration, he was immediately admitted to the district hospital. Under the NMDC supported Sanjeevani scheme, Bhimraj was provided medical attention and stabilised before being admitted to the Kalra Hospital, Raipur where he underwent cosmetic surgery. Due to the dedicated efforts of doctors, the district administration and NMDC, Bhimraj looks and moves almost the same as before his accident.



### Infrastructure: 'Prakalp -Creating Infrastructure'

NMDC CSR Programme has always laid strong emphasis on creating infrastructure in & around the Project location since its initial days. This was necessary due to the extremely remote nature of the NMDC Project locations. Over these years, the thrust on creating sound infrastructure has continued and is facilitating mainstreaming of the local communities and the entire region. NMDC has been mainly undertaking infrastructure activities in partnership with local State Authorities. These initiatives extend from creating roads to creating school buildings, health infrastructure to community centers.

Some other infrastructural initiatives include:

- Construction of 100 seater Ashram at Jagdalpur
- Construction of Hostels in 10 schools in Bastar District, Chhattisgarh
- Construction of 14 hostels in Narayanpur District, Chhattisgarh
- Construction of Boys & Girls Hostel in Sukma District
- Construction of 10 community Bhawans in 10 villages of Sukma District
- Similar initiatives have been undertaken in Project locations in other States



### Drinking Water: 'Payjal -Providing safe drinking water'

NMDC has undertaken measures to provide clean drinking water to the communities around its projects

- Apart from the above mentioned initiatives, NMDC has installed about 350 hand pumps/ bore wells and dug around 40 open wells in Dantewada Dist
- Hand pumps have been installed in villages around Donimalai Project in Bellary Dist of Karnataka
- Initiative has been taken for providing clean drinking water through installation of storage tanks and laying of pipeline for distribution of water to nearby communities
- Installation of 39 water purification plant buildings in Bellary Dist, Karnataka
- Providing clean drinking water to surrounding villages around DMP, Panna Dist Madhya Pradesh



Activity Name	Details	Location
Construction of Gaurav Path Jagdalpur Bypass	4 way lane in Dantewada District.	Dantewada
High level Bridge	19.4 km long bypass for Jagdalpur Town.	District
Construction of Culvert, Bridge & BT Road at Kaknar	Construction of High level Bridge over Dankini River	Bastar District
Tribal Haat Bazar at Katiyaras	Construction of Culvert, Bridge & BT Road at Kaknar	Dantewada
Construction of Palnar-Same-li-Aranpur Road	Tribal Haat Bazar at Katiyaras	Bastar
Electrification works in Kuakonda & Katekalyan Blocks	Construction of Palnar-Sameli-Aranpur Road	Dantewada
	Electrification works in villages	Dantewada

Activity Name	Details	Reach	Location
Nal Jal Yojana	Providing Piped drinking water to households	6 villages	Bastar
Group Water supply scheme	in villages Clean drinking water to villages	32 villages	Dantewada

### Skill Development: 'Kaushal -Skilling People'

Skill Development initiatives have been undertaken to provide opportunities for local tribal youth and women in order to gain meaningful employment and for livelihood generation.

Skill development trainings for tribal women have been conducted in trades such as broom making, vegetable cultivation etc.



is to transform these villages into model villages through a host of developmental activities. The canvas of developmental work undertaken in these villages range from healthcare, education, infrastructure development to income enhancement by promoting agriculture and non-agriculture based livelihood opportunities. Specialized NGO's have been engaged to support execution. Detailed assessments were conducted to identify the gaps and prepare village specific action plan for village development. The initiatives under the IVD component have been successful in touching every aspect of the rural life and have started to show positive results in the direction of transforming these villages as model villages. The key components include women empowerment, agriculture and livelihood support services, education and Health services.

### Sustainable Livelihood through support to Agriculture

#### Mochobadi

Farmers in the south Bastar Region were entirely dependent on single crop cultivation i.e. paddy. The yield was very much dependent on monsoons, more over the stray cattle/other animals meandered in their fields which eventually destroyed the cultivated crop. Keeping the problem in mind District Administration, Dantewada and NMDC Ltd. thought of an initiative called 'Mocho Badi'. This initiative includes Barbed Wire Fencing of farming fields, and other initiatives like digging of Tube well and water lifting pumps.

Now, about 1300 farmers have been benefitted by 'Mocho Badi' scheme. These farmers are cultivating

Activity Name	Details	Reach	Location
Kaushal Vikas Karyakram	Improving competitive capabilities and	100 participants	Dantewada
Skill Devt Prog in Mining sector	employability by imparting general & technical	covered	Dantewada,
Skill Devt Prog in Steel sector	skills	1200 youth	Bellary
Skill Devt in Bamboo, Bell Metal & Tumba Art	Skill Devt on Mining sector related skills	400 youth	Bastar
Skill Devt in tailoring, broom making & Non timber Forest Produce	Skill Devt on Steel sector related skills	300 women	Bastar
	Skill Devt in tailoring, broom making & Non timber Forest Produce	116 women	Dantewada

## Integrated Village Development

Realizing the need to improve the overall socio economic profile of the tribal villages which have historically been marked by isolation and lack of development, NMDC took an initiative in 2009 to bring a change in the overall profile of these village by taking up varied and multi-dimensional developmental initiatives. Together these initiatives have been termed as Integrated Village Development. The idea behind IVD

various crops around the year. Due to the initiative, yield of beneficiary farmers has multiplied many times and income of these farmers has gone up by 600% (Approx.).Due to its success, 'Mocho Badi' scheme has become very popular in South Bastar region, hence thousands of farmers are demanding the 'Mocho Badi' scheme for themselves

Jailal Naga Safeguarding "My Farm, My Future"

The story of Jailal is one of self transformation and



acting as a change agent for others in his village leading to inclusive growth.

Jailal started cultivating vegetables, realising the economic potential, almost a decade back. However, he could cultivate only a small patch of land, owing to lack of fencing. Without proper fencing, his agricultural produce was always susceptible to damage by free roaming cattle.

Then the transition came with the 'Mochobadi' scheme of district administration. 'Mochobadi' which stands for 'My Farm', is an initiative by the district administration to fence the lands of the farmers, with CSR support from NMDC. Due to such fencing, crops stay safe from cattle which go astray after Kharif season. Under the scheme Jailal got his farm of 3 acres safeguarded, and his production of vegetables grew manifold. He now earns Rs. 7000 to 8000 per month.

Jailal did not stop here. He motivated other residents. Of the village to adopt the 'Mochobadi' scheme and get benefitted. Today, he is an example for farmers everywhere.

#### **Distribution of Farming Implements & Equipments**

The agricultural practices in the region needed support

and hand-holding to boost the yield and enhance agricultural produce. The farmers were not having requisite implements for carrying out agricultural activities which was a major reason for low farm produces.

NMDC partnered with District Administration, Dantewada for procurement and distribution of agricultural equipment (s) viz. Escort/equivalent Tractor, Hydraulic Trolley, Cultivator, Dozer attachment Plough, etc. to nearby selected Gram Panchayats. The aim of supporting this initiative is to introduce new farming techniques and strengthen agriculture practices and provide requisite support to the farmers in the hinterlands of the state. An initiative under CSR was undertaken for strengthening infrastructure and ensuring capacity-building of the farmers for livelihood enhancement.

#### **Swachh Bharat**

Under the Swachh Vidyalaya initiative, 2089 toilets blocks have been constructed across Schools which did not have toilets in Six Districts of Bastar Division in Chhattisgarh viz. Dantewada, Bijapur, Sukuma, Bastar, Kondagaon, Narayanpur & in Panna District of Madhya Pradesh along with construction of 70 additional toilet complexes in Sukma District of Chhattisgarh.

### **The Journey of Triple Bottom Line Excellence Continues**

It is NMDC's committed stand that the first beneficiary of its success ought to be the community in whose midst it undertakes its mining related activities. Corporate Social Responsibility has been an area of high priority ever since inception and it is ingrained in its very DNA. We have been relentlessly striving to change the face of the very backward areas where we operate. It is a matter of great satisfaction as a Navratna Company and as a respected Corporate Citizen that we have been able to make a meaningful difference in the lives of local population through consistently and ever improving initiatives in a collaborative manner. This approach has ensured that NMDC becomes a good support in their lives - from helping them in their income generation efforts, to providing basic amenities and going beyond to providing them quality education and helping them to realize their aspirations.

NMDC is determined to scale new heights in the areas of Economic, Environment and Social by leveraging its rich legacy in triple bottom line excellence for more than six decades and aspires to become a respected world class mining behemoth by adhering to the principles of Sustainable Development and stakeholder engagement. The initiation of Sustainability reporting will further sharpen the focus on Sustainable Development and will surely facilitate the achievement of NMDC Vision, Mission and Objectives.

## GRI G4 CONTENT INDEX



The table below provides the linkage between the material aspects identified through our materiality assessment exercise and the GRI G4 aspects, followed by the GRI G4 content index

General Standard Disclosures		Page	External Assurance
<b>Strategy &amp; Analysis</b>			
G4-1	Statement from the most senior decision-maker of the organization.	4-6	-
G4-2	Description of key impacts, risks, and opportunities.	15-16	-
<b>Organizational Profile</b>			
G4-3	Name of the organization.	10	-
G4-4	Primary brands, products, and/or services.	11	-
G4-5	Location of organization's headquarters.	10	-
G4-6	Number of countries where the organization operates, and names of countries with either major operations or that are specifically relevant to the sustainability issues covered in the report.	10	-
G4-7	Nature of ownership and legal form.	10	-
G4-8	Markets served (including geographic breakdown, sectors served, and types of customers/beneficiaries).	12	-
G4-9	Scale of the reporting organization.	8	-
G4-10	The total number of employees by employment contract and gender	13	-
G4-11	The percentage of total employees covered by collective bargaining agreements	13	-
G4-12	The organization's supply chain	45	-
G4-13	Significant changes during the reporting period regarding size, structure, or ownership.	7	-
G4-14	Whether and how the precautionary approach or principle is addressed by the organization	7,8	-
G4-15	Externally developed economic, environmental and social charters, principles, or other initiatives to which the organization subscribes or which it endorses	4, 12	-
G4-16	Memberships of associations (such as industry associations) and national or international advocacy organizations	36	-
<b>Identified Material Aspects &amp; Boundaries</b>			
G4-17	All entities included in the organization's consolidated financial statements or equivalent documents	29	-
G4-18	The process for defining the report content and the Aspect Boundaries	29	-
G4-19	All the material Aspects identified in the process for defining report content	30,31	-

G4-20	For each material aspect, whether the Aspect is material within the organization	30	-
G4-21	For each material aspect, whether the Aspect is material outside the organization	30	-
G4-22	The effect of any restatements of information provided in previous reports, and the reasons for such restatements	-	This is the first report for NMDC. So, no comparison as no previous report exist.
G4-23	Significant changes from previous reporting periods in the Scope and Aspect Boundaries	-	This is the first report for NMDC. So, no comparison as no previous report exist.
<b>Stakeholder Engagement</b>			
G4-24	List of stakeholder groups engaged by the organization	26,27,28,29	-
G4-25	Basis for identification and selection of stakeholders with whom to engage	26,27,28,29	-
G4-26	Organization's approach to stakeholder engagement, including frequency of engagement by type and by stakeholder group,	26,27,28,29	-
G4-27	Key topics and concerns that have been raised through stakeholder engagement, and how the organization has responded to those key topics and concerns, including through its reporting	26,27,28,29	-
<b>Report Profile</b>			
G4-28	Reporting period (such as fiscal or calendar year) for information provided	7	-
G4-29	Date of most recent previous report (if any)	7	-
G4-30	Reporting cycle (such as annual, biennial)	7	-
G4-31	The contact point for questions regarding the report or its contents	9	-
G4-32	The 'in accordance' option the organization has chosen, the GRI Content Index for the chosen option, the reference to the External Assurance Report, if the report has been externally assured	8	-
G4-33	Organization's policy and current practice with regard to seeking external assurance for the report	9	-
<b>Governance</b>			
G4-34	The governance structure of the organization, including committees of the highest governance body	33,34	-
G4-35	Process for delegating authority for economic, environmental and social topics from the highest governance body to senior executives and other employees	33	-
G4-39	Whether the Chair of the highest governance body is also an executive officer	33	-
G4-40	The nomination and selection processes for the highest governance body and its committees	33	-
G4-41	Processes for the highest governance body to ensure conflicts of interest are avoided and managed	33	-
G4-42	The highest governance body's and senior executives' roles in the development, approval, and updating of the organization's purpose, value or mission statements, strategies, policies, and goals related to economic, environmental and social impacts	33	-
G4-51	The remuneration policies for the highest governance body and senior executives	33	-
G4-52	The process for determining remuneration	33	-
<b>Ethics &amp; Integrity</b>			
G4-56	The organization's values, principles, standards and norms of behaviour such as codes of conduct and codes of ethics	34,35,36	-



Material Aspect	Indicator	Description	Page	External Assurance
Category: Economic				
Economic Performance	G4- DMA		40	
	G4-EC1	Direct economic value generated and distributed, including revenues, operating costs, employee compensation, donations and other community investments, retained earnings, and payments to capital providers and governments.	43	
	G4-EC3	Coverage of the organization's defined benefit plan obligations.	74	
Market Presence	G4-DMA		66	
	G4-EC5	Range of ratios of standard entry level wage by gender compared to local minimum wage at significant locations of operation.	66	
Procurement Practices	G4-DMA		45,46	
	G4-EC9	Proportion of spending on local suppliers at significant locations of operation	45,46	
Category : Environmental				
Materials	G4-DMA		58	
	G4-EN1	Materials used by weight or volume.	58	
Energy	G4-DMA		53,54	
	G4-EN3	Energy consumption within the organisation	53,54	Yes
	G4-EN5	Energy intensity	55	
	G4-EN6	Reduction of energy consumption	55	
Water	G4-DMA		58	
	G4-EN8	Total water withdrawal by source.	58	
	G4-EN9	Water sources significantly affected by withdrawal of water	58	
Biodiversity	G4-DMA		61-63	
	G4-EN11	Location and size of land owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	61-63	Yes
	G4-EN12	Description of significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas	61-63	
	G4-EN13	Habitats protected or restored	61-63	
	G4-EN14	Number of IUCN Red List species and national conservation list species with habitats in areas affected by operations, by level of extinction risk.	61-63	
Emissions	G4-DMA		56	
	G4-EN15	Direct greenhouse gas emissions (Scope 1)	56	
	G4-EN16	Energy indirect greenhouse gas emissions (Scope 2)	56	
	G4-DMA	GHG emissions intensity	56	
Effluents and Waste	G4-DMA		60	
	G4-EN22	Total water discharge by quality and destination	60	
	G4-EN23	Total weight of waste by type and disposal method.	60	

Employment	G4-DMA		67-68	
	G4-LA1	Total number and rates of new employee hires and employee turnover by age group, gender, and region	68	Yes
	G4-LA2	Benefits provided to full-time employees that are not provided to temporary or part-time employees, by major operations	75	
	G4-LA3	Return to work and retention rates after parental leave, by gender	75	
Labour/Management Relations	G4-DMA		75	
	G4-LA4	Minimum notice period(s) regarding significant operational changes, including whether it is specified in collective agreements	75	
Occupational Health and Safety	G4-DMA		70-71	
	G4-LA5	Percentage of total workforce represented in formal joint management-worker health and safety committees that help monitor and advise on occupational health and safety programs.	71	Yes
	G4-LA6	Rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities by region and gender.	72	
Training and Education	G4-DMA		81-82	
	G4-LA9	Average hours of training per year per employee by gender and by employee category	82	Yes
	G4-LA10	Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings.	81	
	G4-LA11	Percentage of employees receiving regular performance and career development reviews by gender and employment category	81	
Diversity and Equal Opportunity	G4-DMA		67	
	G4-LA12	Composition of governance bodies and breakdown of employees per employee category according to gender, age group, minority group membership, and other indicators of diversity.	68	
Equal Remuneration for Women and Men	G4-DMA		68	
	G4-LA13	Ratio of basic salary of men to women by employee category, by significant locations of operation	68	
Non-discrimination	G4-DMA		78-79	
	G4-HR3	Total number of incidents of discrimination and corrective actions taken	80	
Freedom of Association and Collective Bargaining	G4-DMA		78	
	G4-HR4	Operations and significant suppliers identified in which the right to exercise freedom of association and collective bargaining may be at significant risk, and actions taken to support these rights	78	
Child Labour	G4-DMA		78	
	G4-HR5	Operations and significant suppliers identified as having significant risk for incidents of child labour, and measures taken to contribute to the elimination of child labour	78	
Forced and Compulsory labour	G4-DMA		78	
	G4-HR6	Operations and significant suppliers identified as having significant risk for incidents of forced or compulsory labour,	78	

		and measures to contribute to the elimination of all forms of forced or compulsory labour		
Local Communities	G4-DMA		83-96	
	G4-SO1	Percentage of operations with implemented local community engagement, impact assessments, and development programs	83-96	Yes
	G4-SO2	Operations with significant potential or actual negative impacts on local communities	83-96	
Anti-Corruption	G4-DMA		36	
	G4-SO3	Percentage and total number of business units analysed for risks related to corruption and the significant risks identified	36	
	G4-SO4	Communication and training on anticorruption policies and procedures	36	
Product and Service Labelling	G4-DMA		13	
	G4-PR5	Results of surveys measuring customer satisfaction.	13	

	DMA and Indicators	Page	External Assurance
MM1	Amount of land (owned or leased, and managed for production activities or extractive use) disturbed or rehabilitated	56	Yes
MM2	The number and percentage of total sites identified as requiring biodiversity management plans according to stated criteria, and the number (percentage) of those sites with plans in place	61	Yes
MM3	Total amounts of overburden, rock, tailings, and sludges and their associated risks	60	
MM4	Number of strikes and lock-outs exceeding one week's duration, by country	78	
MM5	Total number of operations taking place in or adjacent to indigenous peoples' territories, and number and percentage of operations or sites where there are formal agreements with indigenous peoples' communities	38	
MM6	Number and description of significant disputes relating to land use, customary rights of local communities and indigenous people	27	
MM9	Sites where resettlements took place, the number of households resettled in each, and how their livelihoods were affected in the process.	51	



# Independent Assurance Statement

## Introduction and Engagement

National Mineral Development Corporation Limited (hereafter 'NMDC' or 'the Company') commissioned TUV India Private Limited (TUVI) to conduct the independent assurance of NMDC's sustainability report (hereinafter 'the Report'), which includes "limited assurance" of NMDC's sustainability information as a whole within the sustainability information for the applied reporting period. This assurance engagement has been conducted against the GRI G4 Sustainability Reporting guideline for verification of the Report. The verification was conducted in March 2018 at "NMDC, "Khanij Bhavan", 10-3-311/A, Castle Hills Masab Tank, Hyderabad - 500 028". NMDC opted for external assurance for the 1<sup>st</sup> time for the reporting period. The Report covers NMDC's sustainability information from 1<sup>st</sup> April 2016 to 31<sup>st</sup> March 2017.

## Scope, Boundary and Limitations of Assurance

The scope of the assurance includes the Environmental and Social disclosures in the Report as per "Core" option required in GRI G4 Guidelines. In particular assurance engagement included the following

- Verification of the application of the Report content, and principles as mentioned in the GRI G4 Guidelines, and the quality of information presented in the Report over the reporting period (01<sup>st</sup> April 2016 to 31<sup>st</sup> March 2017);
- Review of the policies, initiatives, practices and performance described in the Report;
- Review of the disclosures made in the Report against the requirements of the GRI G4 Guidelines with in accordance criteria "Core";
- Verification of the reliability of the GRI G4 Guidelines disclosures (as identified under materiality test);
- Specified information is selected based on the materiality determination and needs to be meaningful to the intended users;
- Confirmation of the fulfillment of the GRI G4 Guidelines; 'in accordance' with the Core criteria, as declared by the management of NMDC

The reporting boundary is based on the internal and external materiality assessment covering below mentioned sites. The scope of this Sustainability report covers NMDC and its fully owned subsidiaries in India as below.

- Bailadila Iron ore Mines –Kirandul Complex
- Bailadila Iron ore Mines –Bacheli Complex, Chhattisgarh
- Donimalai Iron Ore Mines & Kumarswamy Iron ore Mines –
- Donimalai Complex, Karnataka
- Diamond Mining Project –Panna, Madhya Pradesh
- Pellet Plant –Donimalai, Karnataka
- Nagarnar Iron & Steel Plant – Jagdalpur, Chhattisgarh
- NMDC Corporate Office – Hyderabad, Telangana

Our engagement did not include an assessment of the adequacy or the effectiveness of NMDC's strategy or management of sustainability related issues. During the assurance process, TUVI did not come across the limitations to the scope of the agreed assurance engagement. The financial disclosures in the Report are based on the audited financial statements issued by the Company's statutory auditors. Further, Tax transparency report was not discussed and referred in the Report and was not included in the scope and boundary of verification and assurance. The verification of financial data taken from the annual report is not within the scope of our work. No external stakeholders were interviewed as a part of the sustainability engagement for the period FY 2016-17.

## Verification Methodology

This assurance engagement was planned and carried out in accordance with the GRI G4 Guidelines (Core option). The Report has been evaluated against the following criteria:

- Adherence to the principles of Stakeholder inclusiveness, Materiality, Responsiveness, Completeness, Neutrality, Relevance, Sustainability context, Accuracy, Reliability, Comparability, Clarity and Timeliness; as prescribed in the GRI G4 Guidelines;
- Application of the principles and requirements of the GRI G4 Guidelines for its 'in accordance' Core criteria

During the assurance engagement, TUVI adopted a risk-based approach, concentrating on verification efforts on the issues of high material relevance to NMDC's business and its stakeholders. TUVI has verified the statements and claims made in the Report and assessed the robustness of the underlying data management system, information flow and controls. In doing so:

- TUVI reviewed the approach adopted by NMDC for the stakeholder engagement and materiality determination process. TUVI performed limited internal stakeholder engagement to verify the qualitative statements made in the Report;
- TUVI verified the sustainability-related statements and claims made in the Report and assessed the robustness of the data management system, information flow and controls;
- TUVI examined and reviewed the sample documents, data and other information made available by NMDC for the reported disclosures including the Disclosure on Management Approach;
- TUVI conducted interviews with key representatives including data owners and decision-makers from different functions of the NMDC during site visit;
- TUVI performed sample-based reviews of the mechanisms for implementing the sustainability related policies, as described in NMDC's Sustainability Report;
- TUVI verified sample-based checks of the processes for generating, gathering and managing the quantitative data and qualitative information included in the Report for the reporting period.

## Opportunities for Improvement

The following is an extract from the observations and opportunities for improvement reported to the Management of NMDC and are considered in drawing our conclusions on the Report; however they are generally consistent with the Management's objectives.

Opportunities are as follows:

- NMDC can develop the Risk Heat Map (sensitivity analysis) for all material aspect to envisage the mitigation plan. NMDC can strategize an ESG risk heat map for linkage to Enterprise Risk Management.
- NMDC can plan for calculating all relevant scope 3 emissions in coming years along with third party verification of GHG data.
- NMDC can opt for web based portal solution for capturing the Sustainability data for all sites within boundary.
- Benchmarking at micro level esp. electricity, water, diesel shall be established for all locations.
- NMDC can accelerate the application of renewable energy (solar energy) at each Site.
- Organization can develop the scientific tool to calculate the annual sustainability budget by considering the scale of impact on environment and social aspect.
- NMDC can plan for water recycle and reuse at all residential colony, whereas watershed management at each site. Rain water harvesting shall be explored.
- Biodiversity Study shall be conducted on regular basis and develop mitigation plan.
- NMDC shall develop the Environmental Grievance mechanism within organization.

## Conclusions

The Sustainability Report 2016-17 is prepared based on GRI G4 Reporting Principles & Standard Disclosures for 'in accordance' GRI G4 Core. In our opinion, based on the scope of this assurance engagement, the disclosures on sustainability performance reported in the Report along with referenced

information provides a fair representation of the material aspects, related strategies, performance indicators & meets the general content & quality requirements of GRI G4- Core option.

- General Standard Disclosures: TUV are of the opinion that the reported disclosures generally meet the GRI G4 reporting requirements for 'in accordance' Core reporting
- Specific Standard Disclosures: TUV are of the opinion that the reported disclosures generally meets the GRI G4 reporting requirements for 'in accordance' Core based on GRI G4 covering generic Disclosures on Management Approach (DMAs) & Performance Indicators for identified material Aspects as below:

<b>Energy</b>	
<b>EN3</b>	Energy consumption within the organisation
<b>EN5</b>	Energy intensity
<b>EN6</b>	Reduction of energy consumption
<b>Water</b>	
<b>EN8</b>	Total water withdrawal by source
<b>EN9</b>	Water sources significantly affected by withdrawal of water
<b>Biodiversity</b>	
<b>EN11</b>	Location and size of land owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas.
<b>EN12</b>	Description of significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas.
<b>EN13</b>	Habitats protected or restored.
<b>Emissions</b>	
<b>EN15</b>	Direct greenhouse gas emissions (Scope 1)
<b>EN16</b>	Energy indirect greenhouse gas emissions (Scope 2)
<b>EN18</b>	GHG emissions intensity
<b>EN21</b>	NO <sub>x</sub> , SO <sub>x</sub> , and other significant air emissions by type and weight.
<b>Employment</b>	
<b>LA1</b>	Total number and rates of new employee hires and employee turnover by age group, gender, and region
<b>Occupational Health and Safety</b>	
<b>LA5</b>	Percentage of total workforce represented in formal joint management-worker health and safety committees that help monitor and advise on occupational health and safety programs.
<b>LA6</b>	Rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities by region and gender.
<b>Training and Education</b>	
<b>LA9</b>	Average hours of training per year per employee by gender and by employee category.
<b>Local Communities</b>	
<b>SO1</b>	Percentage of operations with implemented local community engagement, impact assessments, and development programs.
<b>Mining and Metal Sector Supplement</b>	
<b>MM1</b>	Amount of land (owned or leased, and managed for production activities or extractive use) disturbed or rehabilitated
<b>MM2</b>	The number and percentage of total sites identified as requiring biodiversity management plans according to stated criteria, and the number (percentage) of those sites with plans in place

Limited Assurance Conclusion: On the basis of the procedures we have performed, nothing has come to our attention that causes us to believe that the information subject to the limited assurance engagement is not prepared, in all material respects. TUVI found the sustainability information is reliable in all material respects, with regards to the reporting criteria ("Core") of GRI G4 Guideline.

TUVI did not perform any assurance of procedures on the prospective information, such as targets, expectations and ambitions, disclosed in the Sustainability Information. Consequently, TUVI draws no conclusion on the prospective information. This assurance statement has been prepared in accordance with the terms of our engagement. Limited level assurance engagement with respect to sustainability related data involves performing procedures to obtain evidence about the Sustainability Information. The procedures performed depend on the practitioner's judgment, but their nature is different from, and their extent is less than, a reasonable level assurance engagement. It does not include detailed testing of source data or the operating effectiveness of processes, internal controls and consequently they do not enable us to obtain the assurance necessary to become aware of all significant matters that might be identified in a reasonable level assurance engagement.

TUVI has evaluated the Report's adherence to the following principles with respect to the requirements of the GRI G4 Guideline.

**Stakeholder Inclusiveness:** Stakeholder identification and engagement is carried out by NMDC on a periodic basis to bring out key stakeholder concerns as material aspects of significant stakeholders. In our view, the Report meets the requirements.





**Materiality:** The materiality assessment process has been carried out, based on the requirements of the GRI G4, considering aspects that are internal and external to the Company's range of businesses. The Report fairly brings out the aspects and topics and its respective boundaries of the diverse operations of NMDC. In our view, the Report meets the requirements.

**Responsiveness:** TUVI believes that the responses to the material aspects are fairly articulated in the report, i.e. disclosures on NMDC's policies and management systems including governance. In our view, the Report meets the requirements.

**Completeness:** The Report has fairly disclosed the General and Specific Standard Disclosures, including the Disclosure on Management Approach, covering the sustainability strategy, management approach, monitoring systems and sustainability performance indicators against the GRI G4 Guidelines, 'in accordance' Comprehensive option. In our view, the Report meets the requirements.

**Reliability:** The majority of the data and information was verified by TUVI's assurance team at NMDC's head office and found to be fairly accurate. Some inaccuracies in the data identified during the verification process were found to be attributable to transcription, interpretation and aggregation errors and these errors have been corrected. Therefore, in accordance with the GRI G4 Guidelines and limited level assurance engagement, TUVI concludes that the sustainability data and information presented in the Report is fairly reliable and acceptable. In our view, the Report meets the requirements.

**Neutrality:** The disclosures related to sustainability issues and performances are reported in a neutral tone, in terms of content and presentation. In our view, the Report meets the requirements.

TUVI expressly disclaims any liability or co-responsibility for any decision a person or entity would make based on this Assurance Statement. The intended users of this assurance statement are the management of NMDC. The Management of the Company is responsible for the information provided in the Report as well as the process of collecting, analyzing and reporting the information presented in the web-based and printed Reports, including website maintenance and its integrity. TUVI's responsibility regarding this verification is in accordance with the agreed scope of work which includes non-financial quantitative and qualitative information (Sustainability Performance – environmental and social indicators) disclosed by NMDC in the Report. This assurance engagement is based on the assumption that the data and the information provided to TUVI are complete and true.

## TUVI's Competence and Independence

TUVI is a global provider of sustainability services, with qualified environmental and social assurance specialists. TUVI states its independence and impartiality with regard to this assurance engagement. In the reporting year, TUVI did not work with NMDC on any engagement that could compromise the independence or impartiality of our findings, conclusions and recommendations. TUVI was not involved in the preparation of any statements or data included in the Report, with the exception of this Assurance Statement. TUVI maintains complete impartiality toward any people interviewed during the assurance engagement.

For and on behalf of TUV India Private Limited

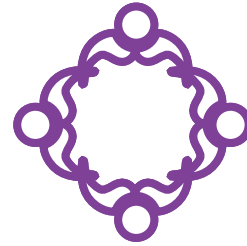
Manojkumar Borekar  
Project Manager and Reviewer  
Head – Sustainability Assurance Service  
TUV India Private Limited

Date: 21/03/2018  
Place: Mumbai, India

[www.tuv-nord.com/in](http://www.tuv-nord.com/in)



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Thinkstep Sustainability Solutions Private Limited (TSSPL) has facilitated NMDC in its endeavour to take the Sustainable Development to greater heights. TSSPL is associated in carefully crafted measures towards implementation of Sustainability Practices in NMDC viz. preparation of maiden Corporate Sustainability Report for 2016-17 as per Global Reporting Initiative (GRI) G4 guidelines, third party Assurance, obtaining the GRI Content Index Service from GRI Amsterdam and formulation of key elements of the successful implementation of Sustainable Development. These elements include sustainability strategy, functions, goals, KPIs and sustainability projects. TSSPL is a proud partner of NMDC journey towards a globally respected Sustainable Organization enabled by its strong culture of pursuit of excellence and the core value of being a responsible and committed organization to its stakeholders.

TSSPL, a subsidiary of thinkstep AG, Germany is the leading sustainability consulting and software company in India engaged in providing services, software solutions and data related to corporate and product sustainability to prestigious business organizations, both private and public. Some of the key services offered by TSSPL include Development of Sustainability Strategy, Sustainability Report preparation, Carbon Foot Printing, Life Cycle Assessment, Benchmarking.

TSSPL has also world class software for sustainability monitoring and assessment. It has two best in class software namely 'GaBi' for carrying out Life cycle assessment and performing eco-design while 'SoFi' for design and deployment of enterprise sustainability management tool in large organizations. TSSPL having offices in Mumbai and Bhilai has been supporting sustainability focused companies across various sectors such as mining, metal, construction, cement, energy, FMCG, automobile, chemical etc. since 2009 in India.



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