GRI Sustainability Reporting Standards 2016 in accordance Core option

Corporate Sustainability Report 2017-18

Enhancing Values

स्टील अथॉरिटी ऑफ इण्डिया लिमिटेड
STEEL AUTHORITY OF INDIA LIMITED

Sustainable Development Policy

SAIL recognizes that its business activities have direct and indirect impact on the environment and society. SAIL is committed to continuously promote Sustainable Development encompassing environmental, societal and economic aspects related to its business activities.

Guiding Principles

- Affirm its commitment to contributing towards a clean and sustainable environment and continually enhancing its environment related performance as an integral part of its business philosophy and values.
- Strive to integrate its business values in an ethical and transparent manner to demonstrate its commitment to sustainable development and to meet the interests of its stakeholders.
- Create a positive footprint within the society to make a meaningful difference in the lives of people by continually aligning its initiatives to the goals for sustainable development.
- Regularly interact with stakeholders to assess and achieve sustainability goals associated with its business activities, through constructive dialogue.
- Maintain commitment to business and people for quality, health and safety in every aspect.

Anil Kumar Chaudhary
Chairman

October 2018

Content

Chairman's Message

Dear Stakeholders,

It is my privilege to present our 8th Sustainability Report for the FY 2017-18. Since inception, SAIL has been a front runner in Sustainability Initiatives and this report bears the testimony to our relentless efforts towards Sustainable Development Practices in all spheres of our business opportunities.

The report has been prepared in accordance with the GRI Sustainability Reporting Standards 2016 and intends to highlight key issues, initiatives and achievements pertaining to sustainable and inclusive development, measures undertaken to deal with these issues and also to unfold Company's future plans to all its esteemed stakeholders.

The Company firmly believes in a sustainable approach for its business that is in equilibrium with the three bottom lines-financial, social and environmental. Achieving financial and environmental excellence as well as honouring social responsibility has been the 'key mantra' for SAIL since inception.

With the implementation of National Steel Policy 2017 together with a positive swing in advanced economies, it is expected that there would be a surge in domestic steel demand too in imminent future.

During FY 2017-18, the domestic Crude Steel production was recorded at 102.3 MT, having a growth of 4.5% over the last year, whereas consumption of total Finished Steel stood at 90.7 MT, improvement of about 7.9% over the last year.

I am pleased to share that SAIL achieved its highest ever Hot Metal production of 15.98 Million Tonne (MT), Crude Steel production of 15.02 MT and Saleable Steel production of 14.07 MT during the FY 2017-18. Further, the Company achieved a net sales turnover of ₹ 58,297 crore during the year, for a growth of 19% over previous year due to increase in sales volume by 7% and increase by about 20% in Net Sales Realisation of Saleable Steel of five Integrated Steel Plants. SAIL contributed ₹ 9,295 crore to the exchequer by way of payment of taxes and duties to various government agencies in the FY 2017-18.

The Company is in the last phase of completion of its on-going Modernisation & Expansion Programme and with quantum increase in its production capacity, is also geared up to have a bigger role in the economic development of the Country. During the FY 2017-18, the Company has achieved many milestones such as blowing in of New BF#8 'Mahamaya' and First Heat from Coverter-1 in New Steel Melting Shop at Bhilai Steel Plant. This combines with a substantial increase in potential to supply of rails from the new Universal Rail Mill to the Indian Railways. Similarly, at Durgapur Steel Plant, narrow gauge wheels and high strength structural E350 grade were developed in-house. At Rourkela Steel Plant, new Plate Mill recorded a growth of 48.1% over the previous year and mill exported about 1,27,000 T of CE marked plates to the European Market during the year. Bokaro Steel Plant registered a record production of cast slab and highest ever production of CR Coil in the FY 2017-18.

A capital expenditure of ₹ 5,130 crore has been incurred during FY 2017-18 and CAPEX for FY 2018-19 is planned at ₹ 4,000 crore. During the year, several new products, particularly special steels, having superior product quality attributes were developed and commercialized for addressing stringent application requirement of various markets.

The Company suitably catered to the demand of steel for the projects of national importance like **Dhola- Sadiya Bridge, Sardar Sarovar Project,** etc. and partnered in the **'Make in India'** movement of the Nation. Contributing to the infrastructural architecture of the Country, SAIL has been supplying steel since long and recently we had the privilege to supply steel for **Jiribam-Imphal Broad Gauge Railway Project** in the north-eastern states of India and also for the Country's first smart and green highway - **Eastern Peripheral Expressway (EPE)** passing through the States of Haryana and Uttar Pradesh. The Company has also been supplying steel to various defence projects like indigenously built Anti-Submarine Warfare (ASW), Stealth Corvette INS- Kiltan as well as Chandrayan and Mangalyan missions of the Govt. of India.

The Company has been taking marketing initiatives to not only explore new markets but also reach out to people in the far-flung areas to raise awareness about steel usage. One of the key initiatives to reach targeting the rural markets has been 'SAIL STEEL – GAON KI ORE'. This will also help SAIL to actively contribute towards the targets envisaged in National Steel Policy. Our new range of products will definitely strive to meet the demands for steel from various segments including retail, rural as well as large projects.

In line with the multi-pronged approach that includes development of new mines for ensuring raw material security, diversifying strategic alliances aiming for leadership in technology, the Company has formed various JV Companies in different areas.

Under **'SAIL Uday'**, the turnaround programme initiated companywide during the FY 2016-17, SAIL has come up with a 'Comprehensive Turnaround Roadmap' in October 2017 that contains over 260 recommendations for improvements encompassing various functional areas. The Company is embarking upon implementation of the recommendations in the next phase.

In order to harness the Human Resource Assets of the Company, its biggest capital, various **Large Group Interactions** have been organized in phases, between Management and cross section of Employees. This was done for smooth and faster communication with the employees on Company's priorities and targets. The suggestions from the employees have also been suitably considered for implementation which has contributed significantly towards improvement in performance of the Company.

In order to enhance well-being and prosperity of the employees through the Science of Happiness, **"Kshemalaya"**–Country's First Corporate Training Institute on Science of Happiness was inaugurated by SAIL, in

(102-14, 102-32)

collaboration with IIT Kharagpur, during the year at Management Training Institute, Ranchi making SAIL the first corporate house in the Country to take such initiative.

Raw Material security is a major thrust area for SAIL. The ability to source the entire requirement of iron ore from the captive mines is SAIL's major strength. In order to further expand the capacity of the mines, a number of statutory clearances have been obtained during the FY 2017-18. In case of coking coal, however, the major requirement is being met through imports due to limitation in availability of coal of good quality and required specification within the Country.

Environmental issues have always been a major thrust area for SAIL. The Company continues to make sincere efforts for improving its environmental footprints. Dedicated and concerted actions taken for environment management have resulted in noteworthy improvement of the environmental performance of the Company and best ever results have been achieved for indicators like particulate matter (PM) emission load, specific water consumption, specific CO_2 emission, specific effluent load, etc. During the last five years, PM emission load has reduced by around 14%, specific CO_2 emissions have reduced by more than 4% and specific effluent load has come down by more than 25%. With a determined drive for enhancement of greenery, more than 8.27 lakhs of saplings have been planted during FY 2017-18.

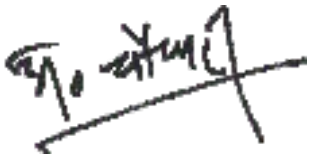
Besides this, meaningful efforts in the field of eco-restoration of mined-out areas, greening of warehouses, etc., renewable energy and other environmental and pollution control projects have been taken up during the year. To promote self-regulation and self -monitoring, towards environmental excellence, we have taken up installation of Online Emission and Effluent Quality monitoring in various units. Most of the SAIL's Units are operating in conformity with various recognized international standards like ISO 14001 for EMS, ISO 9000 for Quality Management Systems, SA 8000 for Social Accountability and OHSAS 18001 for Occupational Health and Safety. SAIL is also a Climate Action Member at World Steel Association and is regularly participating in the Climate Action recognition programme of World Steel Association.

Our community outreach initiatives have had significant contribution in extensively benefitting the communities that we operate with. Our societal initiatives have focused around improved basic & specialized healthcare, provision of modern education, rural infrastructure development, women empowerment & sustainable income generation, sanitation, drinking water, education, support to differently abled and senior citizens, etc. Recently the Company has participated in the **"Swachh Bharat- Swachh Vidyalaya Campaign"** through construction of 672 toilets in schools within the peripherals of SAIL Plants & Units.

We believe in observance and adherence of the highest standards of Corporate Governance by ensuring transparency, disclosure and reporting as required under various laws, regulation and guidelines and this report represents an impartial presentation of Company's economic, environmental and social performance.

In conclusion, remembering the famous saying **"We do not inherit the Earth from our ancestors; we borrow it from our children"**, let us ensure that we will keep the planet safe for the future generation by creating a positive footprint of our business activities and also by making a meaningful difference in lives of people.

With best compliments



Anil Kumar Chaudhary

(Chairman)

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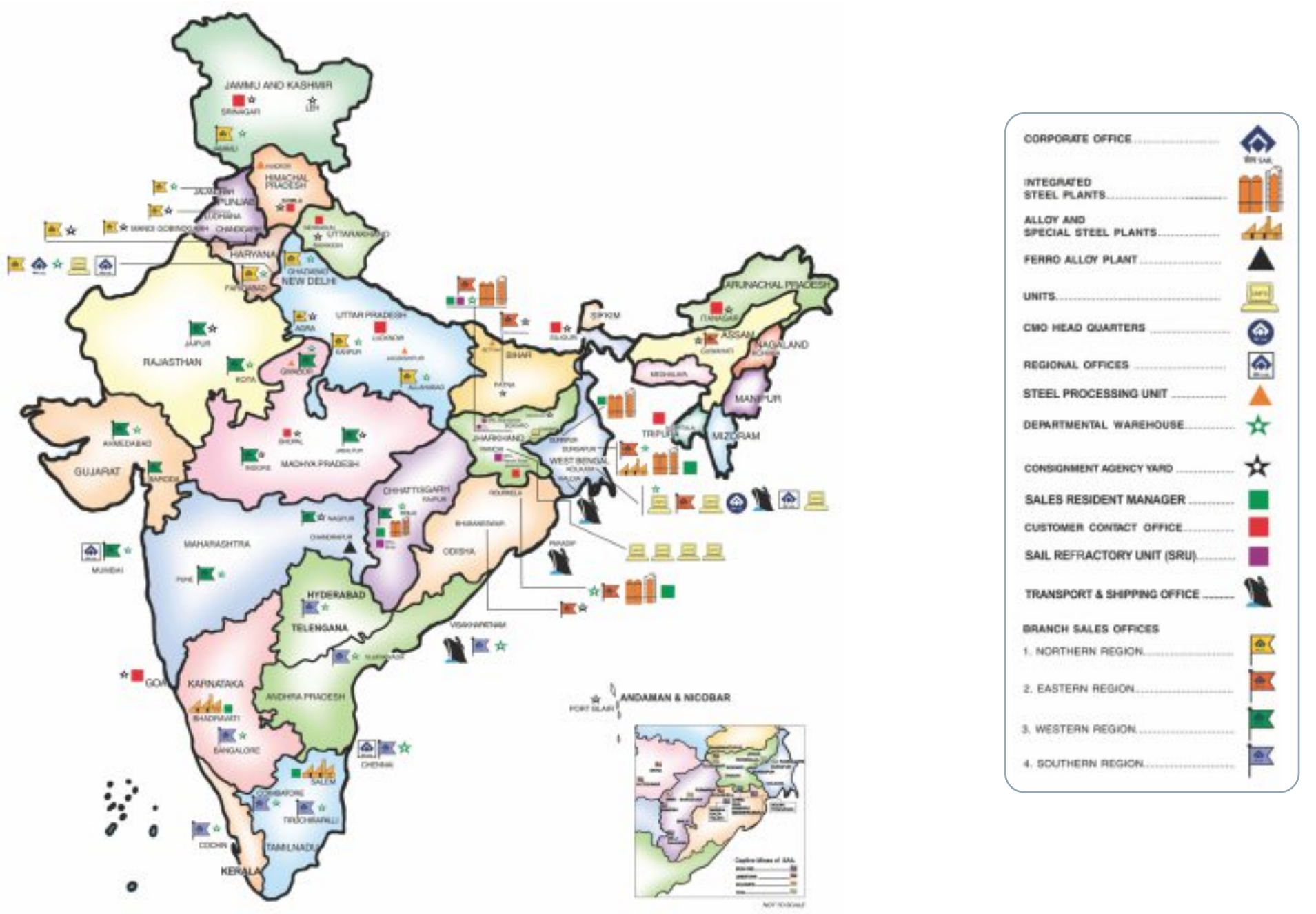
SAIL's Presence across India



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EIGHTH ANNUAL
CORPORATE SUSTAINABILITY REPORT

SAIL Steel Use : Mumbai Airport

Period

SAIL takes pride in presenting its eighth corporate level Annual Sustainability Report, which the Company has been printing since the Financial Year 2010-11. The report is another step in its endeavour to integrate business operations in an ethical and transparent manner while demonstrating commitment towards sustainable development and meeting interests of its Stakeholders. This report covers sustainability performance of SAIL during the period from April 1, 2017 to March 31, 2018. This eighth report is in continuation to the Company's earlier report published for the Financial Year 2016-17.

Framework

All corporate sustainability reports of SAIL have followed the framework set out by the Global Reporting Initiative. The top management has once again decided to continue to use the GRI Standards for this year's report.

This report has been prepared in accordance with the GRI Standards: Core option.

With focus on the principles of materiality and stakeholder inclusiveness, this reports displays the Company's conscious decision to disclose performance not only with regards to Economic but also on Environmental and Social aspects to our stakeholders.

Scope

The details on financial reports in the Economic performance section are drawn from the Annual Report of the Company for the Financial Year 2017-18, ending March 31, 2018. Disclosure on Social and Environmental performances of Plants, Units and Mines has been taken from the respective sections. The boundary of the report covering details on products and services of Plants, Units and Mining operations are shared on Page 10 of the report. No Unit has been shifted, divested or closed during the Financial Year. The Company has been transparent in sharing all significant events of the past, and the projections of their impacts to occur in future. The data quality of the report has been maintained while ensuring accuracy, reliability, timeliness, clarity and comparability of figures and periods that form the base of reporting.

Standards

The Company Law guidelines have been referred to for reporting Financial performance of the Company. International Standards such as ISO 9000, ISO 14001, OSHAS 18001 and SA 8000 are used in reporting Quality, Environment, Health, and Safety management. Statutory audits as well as internal audit checks ensure SAIL's commitment to Economic and Financial systems. They are open to verifications and review by the government authorities. For reporting on Carbon Dioxide (CO_2) emissions for Integrated Steel Plants (ISPs), the Company has followed the World Steel Association (WSA) guidelines and calculation methodologies. Requisite regulations, issued from time to time by the Ministry of Environment, Forest and Climate Change (MOEFCC) and the Factories Act 1948, are being followed for maintaining the Company's work environment and safety regulations. Materiality Assessment has helped SAIL in prioritizing issues pertaining to Economic, Environment and Social aspects of Sustainability and Stakeholder Engagement process. The material aspects, explained in the respective chapter, are also established through this materiality assessment process.

Distribution and Feedback

The full report is written in English Language. The report can be downloaded from SAIL website (www.sail.co.in) and can be requested via email too. Stakeholder feedback on the report shall be reported to the relevant department upon its receipt via email. Any other additional information about SAIL's efforts on sustainable development can be sought at sailsustainability@gmail.com

Assurance

No External Assurance has been carried out for this report by the Company.

(102-10, 102-48, 102-49, 102-50, 102-51, 102-52, 102-53, 102-54, 102-55, 102-56)

SAIL's Achievements

Financial Year 2017-18 witnessed several landmark achievements through ramping up of new facilities and surpassing all previous records in physical performance. The Company achieved its highest ever production of Hot Metal, Crude Steel and Saleable Steel.

The growth momentum started showing upward swing in 2017, with growth in advanced as well as in emerging markets and developing economies. The strong growth momentum is expected to continue during 2018 and 2019, driven mainly by growth in advanced economies, expectation of favourable financial conditions and acceleration in demand. Growth in emerging markets and developing economies is also expected to strengthen further. Some of the performance highlights of SAIL are presented below:

Financial

All values are in ₹ Crore

Key Performance indicators	2015-16	2016-17	2017-18
Turnover	43,294	49,180	**58,297**
Net Sales	38,471	43,866	**56,893**
Profit Before Tax	-7,008	-4,851	**-759**
EBITDA	-2,204	672	**5,184**
Capital Expenditure	6,034	4,939	**5,130**
Total Assets	1,00,340	1,06,539	**1,14,190**
Export Sales	557	1,738	**2,244**
Profit After Tax	-4,021	-2,833	**-482**
CSR Budget	56	29.34	**26**

Production

All values are in MT

Key Performance indicators	2015-16	2016-17	2017-18
Plants			
Hot Metal	15.72	15.73	**15.94**
Crude Steel	14.28	14.50	**15.02**
Pig Iron	0.64	0.50	**0.27**
Total Saleable Steel	12.38	13.87	**14.07**
Semi-Finished Steel	3.05	3.17	**2.61**
Finished Steel	9.33	10.70	**11.47**
Mines			
Iron Ore Production	24.83	26.44	**26.83**
Flux Production	2.26	2.08	**2.05**


Wire Rod Mill Main Stand

The Company monitors performance against environmental improvement programs that are aimed to reduce environmental footprint, minimise emissions, reduce energy consumption, greenhouse gas emissions, incorporating water reuse and recycling, and managing wastes. The Company is meticulously tracking various social impact indicators also such as labour productivity, employee training, and spending on CSR.

Environmental

Key Performance indicators	Unit	2015-16	2016-17	2017-18
Specific CO_2 Emission	t/tcs	2.60	2.61	**2.56**
Particulate Matter Emission Load	kg/tcs	0.81	0.77	**0.74**
Specific Effluent Load	kg/tcs	0.094	0.086	**0.081**
Specific Effluent Discharge	m^3/tss	2.14	1.91	**1.78**
Specific Water Consumption	m^3/tcs	3.51	3.75	**3.62**

Social

Key Performance indicators	Unit	2015-16	2016-17	2017-18
Labour Productivity	tcs/man/year	315	320	**344**
Training	Man-hours/ employee/year	109.60	104.80	**84.80**
Spending on CSR	₹ Crore	76.16	29.05	**25.70**
Female Employees	% of total employees	6.00	6.00	**6.00**

(102-7)

Universal Rail Mill

SAIL

THE NATION'S PRIDE

Business Profile

Steel Authority of India Limited (SAIL), a Government of India Undertaking and a Maharatna Central Public Sector Enterprise, is the premier steel-making organization of India. SAIL is a fully integrated iron and steel maker, producing both basic and special steels for domestic construction, engineering, power, railway, automotive and defence industries and for sale in export markets thereby responsible for driving the industrial revolution of modern India for more than six decades. The Company is among the seven Maharatnas of the Country's Central Public Sector Enterprises. SAIL produces iron and steel at five integrated plants and three special steel plants, located principally in the eastern and central regions of India and situated close to its captive iron ore, limestone and dolomite mines which are domestic sources of raw materials.

Scope of the Report : The following SAIL Plants, Units and Mines are covered in the Scope of this Report.

Plants

Bhilai Steel Plant
Durgapur Steel Plant
Rourkela Steel Plant
Bokaro Steel Plant
IISCO Steel Plant
Alloy Steels Plant
Salem Steel Plant
Visvesvaraya Iron and Steel Plant
Chandrapur Ferro Alloy Plant

Units

Central Marketing Organisation
Research and Development Centre for Iron & Steel
Centre for Engineering and Technology
SAIL Safety Organisation
SAIL Growth Works, Kulti
Environment Management Division
SAIL Refractory Unit

RMD Mines

Iron Ore Mines
Kiriburu
Meghahatuburu
Gua
Manoharpur
Bolani
Barsua
Kalta
Flux Mines
Kuteshwar Limestone Mine
Bhawanathpur Limestone Mine
Tulsidamar Dolomite Mine

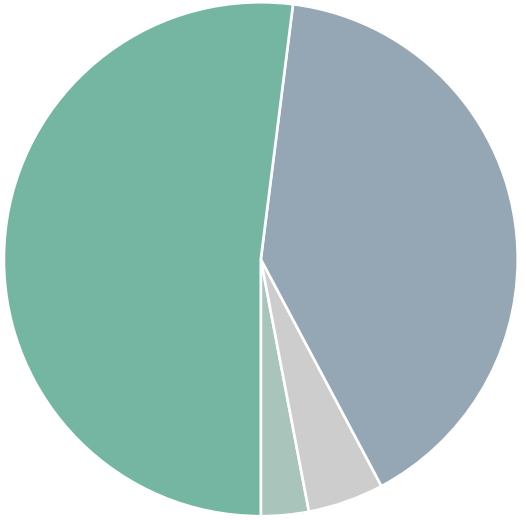
BSP Mines

Iron Ore Mines
Rajhara
Dalli
Jharandalli
Dalli Manual
Mahamaya
Flux Mines
Nandini Limestone Mine
Hirri Dolomite Mine
VISL Flux Mines
Bhadigund Limestone Mine
Kenchapura Dunite Mine

SAIL has the largest marketing network among all domestic steel producers. The vital responsibility of carrying out the marketing activity is taken care of by SAIL's own Central Marketing Organization (CMO) that transacts business through its 37 Branch Sales Offices (BSOs), 10 Customer Contact Offices (CCOs), 25 Departmental Warehouses and 22 Functional Consignment Agency Yards.

Further, the Company's marketing efforts are complemented by a well built dealer network of 1837 dealers, including 409 rural dealers spread across the Country. CMO's domestic marketing efforts are supplemented by its ever widening network of rural dealers who meet the demands of the smallest customers in the remotest corners of the Country.

Sales Value of the Products



Long Products 41%
Secondary Products 5%
Alloy & Special Steel 3%
Flat Products 51%

(102-1, 102-2, 102-3, 102-7, 102-45)

Product Mix

The Company caters to almost the entire gamut of the mild steel business namely, Flat products in the form of Plates, HR coils/sheet, CR coils/sheets, Galvanised Plain/Corrugated Sheets and Long products comprising Rails, Structural, Wire-rods and Merchant Products. In addition, Electric Resistance Welded Pipes, Spiral Welded Pipes and Silicon Steel Sheets form part of Company's rich product-mix.

(102-2, 102-6)

Chairman SAIL visiting Bokaro Steel Plant

SUSTAINABILITY
AT SAIL

Sustainability Approach

SAIL's sustainability framework provides a holistic approach to the management of Business, Health, Safety, Environment and Community issues across its operations. SAIL has a Sustainable Development Policy in place which supports its Operating Model thereby helping the implementation of this framework as well as promoting accountability within the system.

SAIL's sustainability achievements are the result of the dedication and commitment of its people. The business roles and responsibilities of the employees are aligned with mission and values of the Company. The sense of social responsibility facilitates constructive engagement with stakeholders.

The Company's inclusive competitiveness relies on its ability to build long term, mutually beneficial relationships with its customers. The Company also collaborates with its suppliers to improve the contribution of its products to society and limit the impacts of production. The Company is committed towards sharing the benefits of its business with society through well designed community initiatives.

Company's Vision

To be a respected world class corporation and the leader in Indian steel business in quality, productivity, profitability and customer satisfaction.

Company's Credo

- We build lasting relationships with customers based on trust and mutual benefit.
- We uphold highest ethical standards in conduct of our business.
- We create and nurture a culture that supports flexibility, learning and is proactive to change.
- We chart a challenging career for employees with opportunities for advancement and rewards.
- We value the opportunity and responsibility to make a meaningful difference in people's lives

Sustainability Strategic Priorities of SAIL

- To lead the business of Steel
- To protect and improve Market Share by focusing on growth segments
- To conduct financially sustainable business and maintain financial health by the way of efficient asset utilization, cost reduction, productivity enhancement, technological improvement and development of value-added products
- To benchmark operations with the global best practices and achieve excellence across the value chain
- To achieve environmental excellence through adoption of Best Available Technologies
- To accelerate investment in new products and processes to meet the future global and domestic demands
- To keep the business sustainable by adopting multi-dimensional approaches in the areas of cost and financial management, technology upgradation, value addition on products along with addition of new products that align with the future demands
- To carry out interventions to achieve all round functional improvements – Operations (Steel making and Mining), Marketing, Human Resources, Infrastructure & Utilities, Maintenance, Information Technology, Projects, Resource Management, Supply Chain, R&D, Risk Management, Knowledge Management, Automation, Environment, Health and Safety Management, Community Development etc.
- To remain socially responsible Company by committing towards society
- To conduct business with high ethical standards
- To develop a participative mechanism for all our stakeholders

Strengths

- Robust pan India marketing network delivering rich and diversified product mix
- Captive iron ore resources
- Modernized units with newer technology enhancing product portfolio having more value added products through more efficient and environment friendly operations
- Skilled and highly qualified manpower base with well-established systems and procedures
- Multi-location production units
- Renowned in-house research establishment in form of RDCIS
- Availability of Land bank for future expansions

Opportunities

- Fastest growing domestic steel consumption in the world
- Improving product quality, operational efficiency and reducing production cost by leveraging the benefits of MODEX
- Strategic disinvestment of some units
- Options to concentrate on core activities only
- "Make in India" Drive

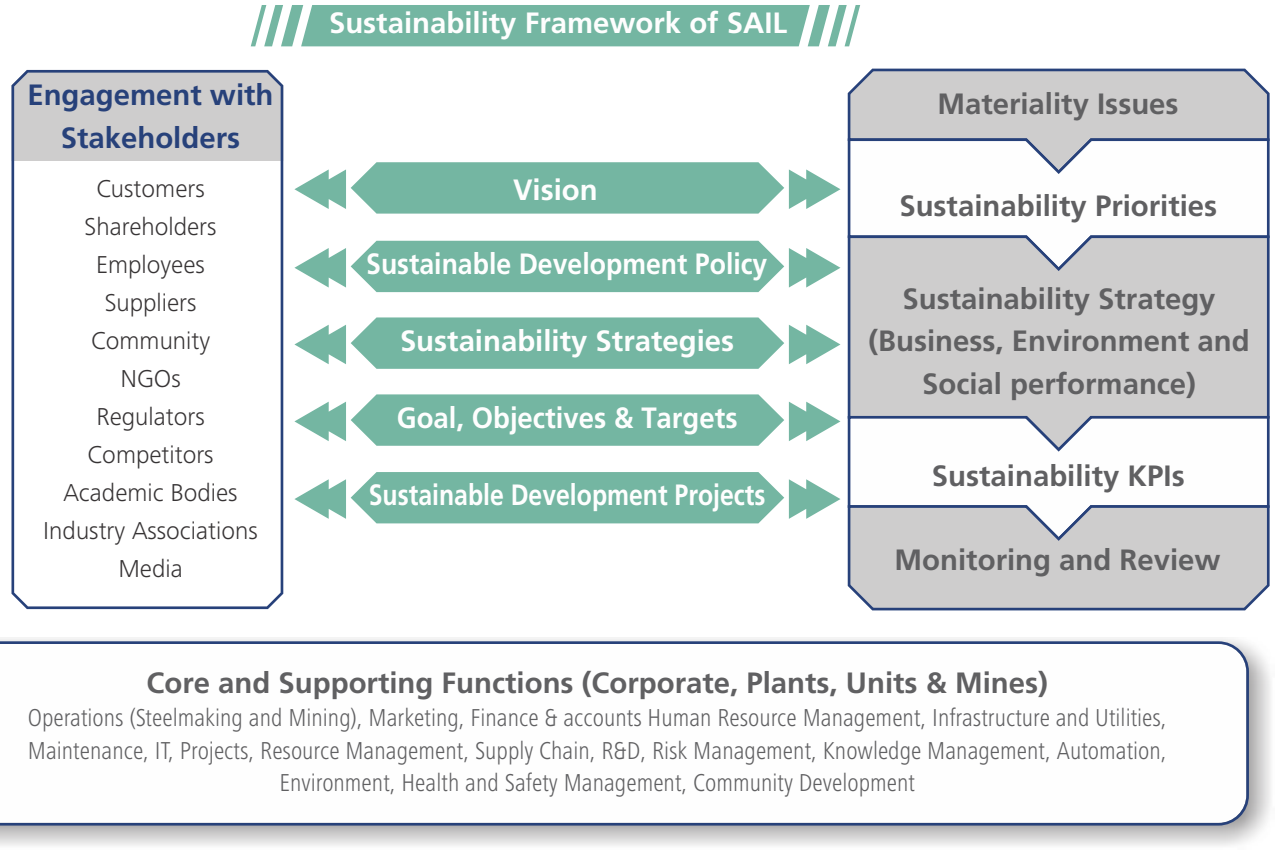
Growth Strategies

- Consolidate leadership position through brown field projects, technology leadership by having strategic alliances, ensuring raw material security by developing new mines etc.
- Enhance focus on value added steel
- Continues improvement in operational efficiencies
- Cost optimization

(102-15)

Sustainability Framework

The Company believes that its stakeholders play a leading role in identification of key sustainability issues. Inputs of the valued stakeholders are used for designing materiality issues which facilitates identification of Company's sustainability priorities. The direction towards the formulation of the Company's vision, goals, policies and strategies are as per the outcome of the materiality assessment.



Implementation, monitoring and review of various sustainability initiatives which results in enhancement of sustainability performance are taken care by core and support function.

Sustainable Development Projects

In line with the Guidelines for Sustainable Development by the Department of Public Enterprises (DPE), Ministry of Heavy Industries and Public Enterprises, Government of India, SAIL has put in place a Sustainable Development (SD) Policy. Taking cue from this Policy, we have engrained Sustainable Development across all our operational locations. In 2017-18, maintenance of ecologically restored Purnapani Limestone & Dolomite Quarry, in collaboration with the 'Centre for Environment Management of Degraded Ecosystem' (CEMDE), University of Delhi, was continued.

Community Support by SAIL

From the very inception, concept of socio-economic development of the neighbourhoods and communities was in-built as one of SAIL's important activities. With prime objective to minimize the inequalities, the Company provides quality education, health care, sanitation, drinking water etc. in its peripheral areas. The Company undertakes many CSR activities at and around periphery of its townships, mines and far flung locations across the Country in conformity to the 'The Companies Act 2013', 'The Companies (Corporate Social Responsibility Policy) Rules, 2014' and CSR Policy. For details of our CSR initiatives, please refer to pages 77-84.

Partnerships, Associations and Memberships

World Steel Association (WSA)

SAIL has been associated with WSA in pursuance of excellence in steel business. As a part of its membership, SAIL has subscribed to WSA principles. The knowledge sharing on sustainable steel production and practices has helped in achieving business prominence over the period. SAIL is committed to use co-products to reduce CO_2 emissions, adopt better operational practices and new technology for enhancing energy efficiency along with focused research for exploring innovative technologies.

Montreal Protocol

SAIL has demonstrated its commitment to Montreal Protocol by successfully phasing out Ozone Depleting Substances (ODS), viz. Carbon Tetrachloride (CTC). Tri-chloro ethylene is used as cleaning solvent in our operations.

UN Global Compact

SAIL business policies and actions are in line with the Principles of UN Global Compact in letter and spirit and are committed to align its operations and strategies with ten universally accepted principles in the areas of human rights, labour, environment, anti-corruption etc.

Stockholm Convention On Persistent Organic Pollutants (POPs)

Under international agreement of Stockholm Convention (SC) the Polychlorinated Biphenyls (PCB) as found in some electrical transformers, has been categorized as Persistent Organic Pollutants (POPs) and are to be disposed/managed in an environmentally sound manner. Understanding the Country's need for managing and disposing of PCB accumulated in the Country SAIL, MOEF&CC and UNIDO have come together to setup a state-of-the-art PCB management facility at Bhilai Steel Plant of SAIL .

Charter on Corporate Responsibility for Environment Protection (CREP)

SAIL's commitment, to the Corporate Responsibility for Environmental Protection (CREP), a charter launched by the MOEF&CC, is one of the voluntarily initiative of the Company affirming to its commitment to go beyond compliance. The charter on CREP was launched with the purpose to go beyond the compliance of regulatory norms for prevention & control of pollution through various measures including waste minimization, in-plant process control & adoption of clean technologies. SAIL is complying with the action points suggested under the charter.

Standing Conference of Public Enterprises (SCOPE)

SAIL has been actively involved in the proceedings of SCOPE, a prominent body of the Central Government of India.

Other Associations & Memberships

- All India Management Association (AIMA)
- All India Organization of Employers (AIOE)
- Associated Chambers of Commerce and Industry of India (ASSOCHAM)
- Centre for Organization Development (COD)

Other Associations & Memberships

- Confederation of Indian Industry (CII)
- Consultancy Development Centre (CDC)
- Delhi Productivity Council (DPC)
- Federation of Indian Chambers for Commerce and Industry (FICCI)
- Forum of Women in Public Sector (WIPS)
- Green Energy Development Corporation of Odisha (GEDCOL)
- Indian Institute of Metals, Kolkata (IIM)
- Indian Institute of Plant Engineers (IIPE)
- Indian Society for Trade and Development (ISTD)
- Indo USSR Chamber of Commerce and Industries (IUCCI)
- Institute of Public Enterprises (IPE)
- Institute of Rail Transport (IRT)
- Project Management Associate (PMA)
- The Energy and Resources Institute (TERI)
- The Indian Iran Chamber of Commerce and Industry (IICCI)
- World Confederation of Productivity Science (WCPS)

Signing of an MoU

(102-12, 102-13)

Key Joint Venture Collaborations

- NTPC-SAIL Power Company Limited
- Bokaro Power Supply Company Limited
- SAIL Bansal Service Centre Limited
- Mjunction Services Limited
- Bhilai Jaypee Cement Limited
- S&T Mining Company Private Limited
- SAIL & MOIL Ferro Alloys Private Limited
- International Coal Ventures Private Limited
- SAIL-SCI Shipping Private Limited
- SAIL SCL Kerala Limited
- SAIL-RITES Bengal Wagon Industry Private Limited
- SAIL Kobe iron India Private Limited
- TMTSAL SAIL JV Limited
- SALSAIL JVC Limited
- SAIL-Bengal Alloy Castings Private Limited
- PrimeGold-SAIL JVC Limited
- VSL SAIL JVC Limited
- Abhinav-SAIL JVC Limited
- N.E. Steel & Galvanising Private Limited
- North Bengal Dolomite Limited
- Romelt-SAIL (India) Limited
- NMDC SAIL Limited
- Bastar Railway Private Limited

Development of Rowghat - Jagdalpur Rail Corridor in the State of Chhattisgarh:

An MOU amongst SAIL, NMDC, IRCON International Ltd. and Government of Chhattisgarh has been singed for development of a rail corridor from Rowghat to Jagdalpur. A Joint Venture Company under the name "Bastar Railway Private Limited" has been incorporated to bring about greater socio-economic development of the backward areas of Bastar region in Chhattisgarh and to further the industrial progress and mining activities of the region. This rail corridor shall be used for both freight and passenger services in the Southern part of Chhattisgarh.

JV with ArcelorMittal for Production of Automotive Steel:

SAIL and ArcelorMittal signed an MOU for setting up an high end steel for automotive industry under a Joint Venture (JV), in Andhra Pradesh. The proposed JV will construct a state-of-the-art cold rolling mill with a capacity of about 1.5 mtpa and other downstream finishing facilities that will offer technologically advanced steel products to India's rapidly growing automotive sector.

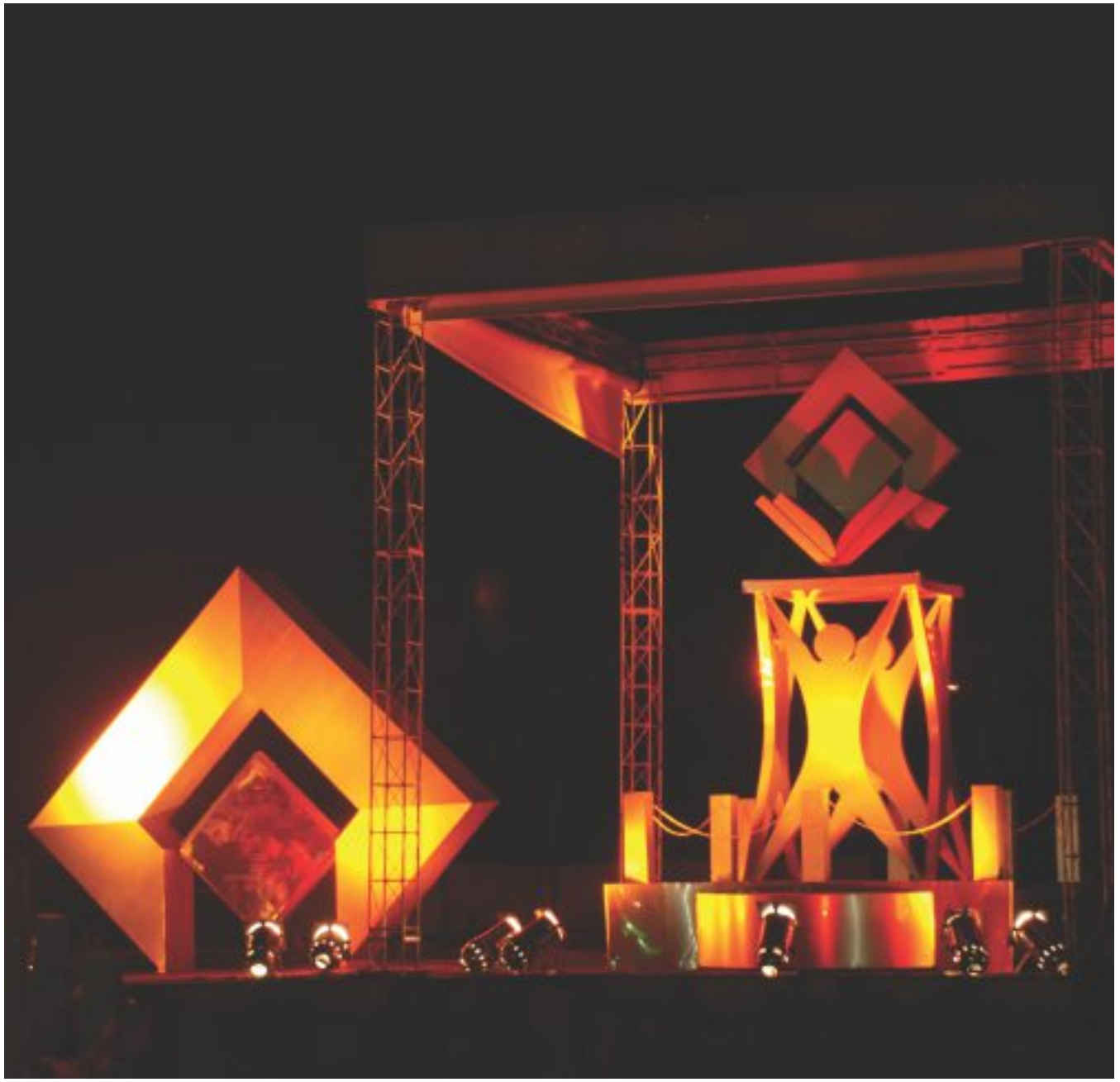
SAIL Steel Use : Lucknow Metro

Awards & Accolades

SAIL

- 3 Prime Minister's Shram Awards (involving 18 employees) for the Performance Year 2015.
- 8 Vishwakarma Rashtriya Puraskar Awards (involving 34 employees) for the Performance Year 2015.
- Gold Trophy of "SCOPE Meritorious Award for Best Practices in Human Resource Management" for the year 2014-15.
- Governance Now Award in the Turnaround (Financial) Category.
- SAIL's "Ispat Bhasha Bharti" received first prize for the best in-house journal for the year 2016-17 of Town Official Language implementation Committee.

Proud Vishwakarma Rashtriya Puraskar Awardees



Awards & Accolades

SAIL Plant & Units

Rourkela Steel Plant

- "Shristi Good Governance Award (G-CUBE Award) - 2017" in the "Manufacturing, Non-metallurgical & Non-process" category.

Bokaro Steel Plant

- GreenTech Environmental Excellence Gold Award in the Metal and Mining for six Consecutive years.
- Third best industry in respect of legal compliances in the Jharkhand State, JSPCB.

IISCO Steel Plant

- Best Performer Award in energy saving in the iron & steel sector under the PAT (Perform, Achieve & Trade) Scheme Cycle I of Bureau of Energy Efficiency (BEE), Ministry of Power, Government of India at New Delhi.

Raw Materials Division

- Kiriburu Iron Ore Mines received 1st prize for its overall commendable performance in Environment Protection and Sustainability Endeavour during 25th Mines Environment and Mineral Conservation (ME&MC) week celebration 2018 by Indian Bureau of Mines at Ranchi.

Alloy Steels Plant

- Best Performance Vendor 2017 Award from Ordnance Factory-Medak (OF-M) for indigenisation, development and supply of import substitute steel plates.

Chandrapur Ferro Alloy Plant

- 5 star (Very Good) rating for keeping stack emission below 50 mg/Nm^3 from the MPCB.

GOVERNANCE

FRAMEWORK

The Governance Mechanism

The Company has adopted a Corporate Governance mechanism that is efficient, transparent and compliant on the one hand and drives the organization towards its business objective, while satisfying various stakeholders' needs on the other. The mechanism conforms fully to laws, regulations and guidelines and promotes ethical conduct throughout the organization. It 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.

Some of Company's robust protocols such as independent internal audit, well-crafted and documented policies, guidelines, procedures, regular review by Audit Committee / Board, CAG Audit of Corporate Governance, Independent Audit by Auditors of Corporate Governance in the Company etc. help in carrying the Corporate Governance in accordance with the Companies Act, 2013, SEBI (LODR) Regulations, 2015 and DPE Guidelines on Corporate Governance.

The Company's Board of Directors is guided by the Company's Vision and Credo and the Board regularly analyses the performance of the Company on economic, environmental and social issues. The Board comprises of full time Executive Directors, Non-Executive Directors and Independent Directors. The Directors present the annual report of the Company together with Audited Accounts for Financial Year in the Annual General Meeting (AGM). The proceedings of the AGM, including the suggestions, comments and feedback from the shareholders are duly recorded. The concern of the shareholders are deliberated at the Board Meeting and after prioritization of these concerns, the management integrates the same in its business decisions.

Adherence to corporate governance agenda is ensured by a number of committees like Audit Committee, Nomination & Remuneration Committee, Stakeholders' Relationship Committee, Corporate Social Responsibility Committee, etc. during the year, constitution of the Board Sub-Committees (BSC) was reviewed and some of the BSCs were merged and reconstituted. At present, besides these Statutory Board Level Committees, various other Board Sub-Committees (BSC) like BSC on Strategic Issues & Joint Ventures; Projects; Operational Issues have been constituted by the Company and all of these are headed by Independent Directors. This robust structure, having valuable and varied experience of Independent Directors, enable the Company to have an independent perception on various governance issues before the same are considered by the Board of Directors. The Company also has a SAIL Risk Management Committee to superintend the risk management function of the Company.

The Code of Conduct is applicable to Board Members as well as the senior management. There were no instances of non-compliance and no imposition of any penalty or stricture from the Stock Exchange(s) or SEBI in the matter related to capital markets or compliances during the year.

The Government of India decides the terms & conditions for appointment and nominations of the Director(s). No other pecuniary benefit is granted to the Non-Executive Directors (other than Government Nominee Directors). They are paid only sitting fee for each Board/ Board Sub-Committee Meeting attended by them whereas the salary and pay scales of the Whole Time Directors are fixed as per the prevailing rules of the Government. The Government of India has exempted performance evaluation of Board, Chairperson and non Independent Directors, except Functional Directors, for Government companies like us.

Various Corporate Office Divisions/ Departments regularly collect, compile and monitor diverse issues pertaining to the management of economic, environmental and social areas. The status reports along with agenda papers, prepared with the inputs provided by the respective Plants/Units, on the economic, environment and social performances including legal compliance are regularly put up to the Board for examination, comments and recommendations. The response from the Board members is analyzed

(102-11, 102-16, 102-18, 102-19, 102-20, 102-21, 102-22, 102-24, 102-26, 102-27, 102-28, 102-29, 102-30, 102-31, 102-33, 102-35, 102-36, 102-37)

by the top management and subsequently considered for business decision-making.

There were no transactions by the Company of material nature with Promoters, Directors or the Management, Subsidiaries, relatives, etc. during the year that may have potential conflict with the interests of the Company at large.

The Company has always been awarded with the highest Grade of 'Outstanding' in compliance of the provisions of Corporate Governance as per the DPE Guidelines on Corporate Governance-2010.

The Government of India owns 75% of the equity and retains voting control in the Company. However, SAIL, by virtue of its 'Maharatna' status enjoys significant operational and financial autonomy.

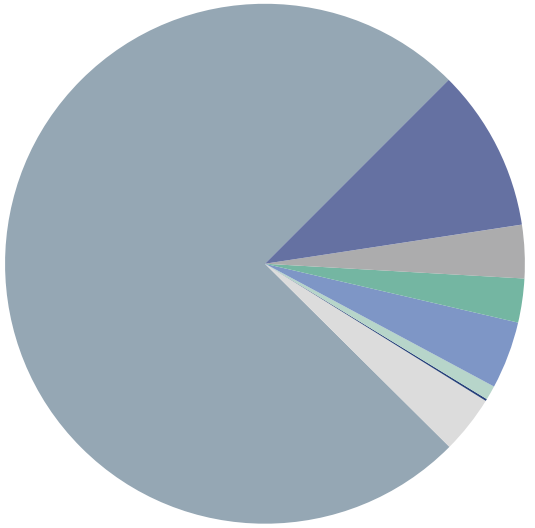
Board of Directors

As on March 31, 2018, the Board of Directors comprised of a full time Chairman, 5 Whole Time Directors (i.e. Executive Directors) and 8 Non-Executive Directors (consisting of 1 Government Nominee Director and 7 Independent Directors) and 11 Board meetings were held during the year.

There were no complaints pending for redressal as on March 31, 2018. Number of shareholder' complaint received during the year was 9 and all were resolved.

Shareholders breakup for SAIL as on March 31, 2018 (% of Equity)

Shareholders Breakup for SAIL as on March 31, 2018 (% of Equity)



75%	Government of India
10.10%	Financial Institutions
3.37%	Banks
2.69%	Mutual Funds
4.24%	Foreign Portfolio Investors
0.91%	Companies
0.04%	IEPF Authority
3.65%	Individuals

(102-5,102-18,102-23,102-25,102-34)

BOARD OF DIRECTORS

(As on 1st October 2018)

Shri Anil Kumar Chaudhary
Chairman
with additional charge of
Director (Finance)

Shri Saraswati Prasad
Special Secretary & Financial Adviser,
Government of India, Ministry of Steel

Shri Puneet Kansal
Joint Secretary, Government of India, Ministry of Steel

Dr. G. Vishwakarma
Director (Projects & Business Planning)

Ms. Soma Mondal
Director (Commercial)

Shri Atul Srivastava
Director (Personnel)

Shri Harinand Rai
Director (Technical)
with additional charge of Director (RM&L)

(102-18)

Prof. Ashok Gupta
Independent Director

CA Parmod Bindal
Independent Director

Ms. Anshu Vaish
Independent Director

Dr. Samar Singh
Independent Director

Shri Nilanjan Sanyal
Independent Director

CA Kartar Singh Chauhan
Independent Director

Prof. Narendra Kumar Taneja
Independent Director

Chief Executive Officers (Permanent Invitees)

Shri Ashwini Kumar
Rourkela Steel Plant

Shri A. K. Rath
Durgapur Steel Plant

Shri M. Ravi
Bhilai Steel Plant

Shri P. K. Singh
Bokaro Steel Plant

Shri A. Dasgupta
IISCO Steel Plant

(102-18)

Corporate Integrity

Integrity, as a part of Company's Core value, is the foundation of its business ethics. Enabling people to work with integrity, efficiency and impartiality by upholding highest ethical standards has always been on priority at SAIL. This is ensured by a concerted emphasis on preventive and proactive vigilance activities. The Company has established vigilance departments in all Plants/Units with Quality Management System (QMS) to receive and investigate complaints including those relating to corruption as per the Central Vigilance Commission guidelines. A total of 2,490 surprise checks/file scrutiny were conducted in the vulnerable areas/ departments of different Plants/Units.

Several activities such as awareness sessions and workshops are undertaken on periodic basis to create vigilance awareness among the employees on aspects such as Whistle Blower Policy, Purchase/Contract Procedures, RTI Act, Conduct and Discipline Rules, System and Procedures followed in SAIL, etc. In the year 2017-18, 145 such vigilance awareness workshops/trainings were organized at different Plants/Units, covering 2,838 participants. Additionally, the Vigilance Study Circle, Delhi- NCR organised a workshop during April 2017 at SAIL Corporate Office wherein a talk on "Latest practices in preventing fraud in e-procurement" and a presentation on "Reverse Auction" was made.

During the year 2017-18, 743 complaints were disposed off out of 776 received. Out of disposed of complaints, 207 were found as anonymous, 398 were closed on account of no vigilance angle, 122 were closed with recommendations whereas regular departmental actions initiated for 16.

For continual improvement of the prevailing systems for ensuring more transparency, essential inputs are provided to operating authorities by the Vigilance Department. During the year, 13 cases of high value procurement/ contracts were scrutinized comprehensively and necessary recommendations were forwarded to respective departments.

SAIL Vigilance is publishing 'Inspiration- Prerna', an in-house publication having case studies, articles from eminent personalities; conducting quiz on policy matters etc. to enhance vigilance awareness.

Thrust Areas of SAIL Vigilance

- Surveillance in the areas of receipt, sampling & testing of high value raw materials
- Use of analytics from Business Intelligence (BI)/ERP Central Component (ECC) Module while identifying areas of scrutiny of files and surprise checks at Bhilai, Bokaro, Rourkela, Durgapur and Central Marketing Organization
- Scrutiny of projects w.r.t change orders
- Scrutiny of Audit Reports

New Initiatives taken by Vigilance

In an initiative towards maximizing e-procurement systems for all procurements/ contracts to increase transparency in tendering process, it has been advised to incorporate e-procurement in the areas of Contract Cells and Township procurements also. The same has been already implemented in most of the Plants and Units.

To prevent fraudulent activities, CCTV and allied systems have been installed for monitoring and surveillance at certain identified vulnerable points like weigh bridge, dispatch & uploading points, entry & exit points for goods, places of sampling and chemical analysis of received material etc. at Plants/ Units.

It has been decided to introduce GPRS/ GPS systems for monitoring the movement of tippers/ dumpers which are to be used by contractors for transportation of Iron ore to railway sidings. The fleet monitoring system has been introduced in Kalta Mines and is being extended to other mines.

With a view to introduce analytics in the area of procurement & contracting, so as to generate exception alerts and red flags for corrective action/ business improvements, Business Intelligence (BI) modules have been developed in the existing SAP/ ERP systems in ISPs and CMO. Now, the selection of cases for file scrutiny/ surprise checks is based on analysis of the reports generated through BI module.

SAIL Vigilance received two VIGILANCE EXCELLENCE AWARDs, one each for Vigilance Innovation and Excellence in Investigation from the Hon'ble Vice President of India in the inaugural function of igilance Awareness week organized by CVC.

(102-11,102-16,102-17,103-1,103-2,103-3,205-1)

STAKEHOLDER
ENGAGEMENT

Bonding with Stakeholders

Stakeholder Engagement Model

- Identify & Capture Views
- Assess & Evaluate Issues
- Prioritise Issues
- Identify Sustainability Indicators
- Prepare Action Plan
- Implement & Communicate

SAIL is totally committed to excellence in public service delivery through good governance, by a laid down process of identifying citizens, commitment to them in meeting their expectations and communication to them of Company's key policies, in order to make the service delivery process more effective. SAIL's Citizen Charter has outlined commitment of SAIL towards its stakeholders, thereby empowering them to demand better products and services.

SAIL has a well-defined stakeholder engagement mechanism aimed at addressing their feedback and concerns and building trust amongst them. The well framed stakeholder engagement activities provide opportunities to identify risks arising out of the stakeholder concerns and develop strategies to manage them.

At SAIL, any individual or group having interest or concern in the operational or business activities of the Company is understood as a stakeholder.

The business strategy and sustainability vision of the Company helps in identification of stakeholders. It is based on the belief that stakeholders are the main contributors to the success of a Company and their feedback is a reproduction of their expectations. SAIL highly values partnership with its stakeholders and actively seek to strengthen the alliance with stakeholder groups like government, shareholders, mployees, customers, suppliers, community, NGOs, academics, consultants, competitors, financial institutions etc.

The feedback mechanisms at SAIL have evolved and matured over several decades. The frequency of engagement varies with the stakeholder groups ranging from regular everyday interaction with employees to Annual General Meetings (AGM) for shareholders.

Stakeholder Meet

Strategic Stakeholder Priorities

Completeness

- Knowing & Understanding Stakeholders
- Transparent & Balanced Reporting

Materiality

- Assessing Significance to Stakeholders & Management
- Deciding what to report

Responsiveness

- Connecting & Responding
- Providing Access to Information

(102-42)

Stakeholder Engagement Matrix

Stakeholder Groups	Sub-Groups	Engagement Mechanism	Concerns / Perceptions	Accrued Benefits
Shareholders	▪ Government ▪ Institutions ▪ Insurance Companies ▪ Individuals	Annual General Meetings, Quarterly and half- yearly reports to shareholders, Shareholder relation meets, Investor surveys	Profitability of the Company, Creation of wealth, Stock price, Grievances and Complaints	Creation of wealth for Shareholders
Employees	▪ Regular ▪ Contractual	Labour Unions, Bipartite & Tripartite Meetings, Departmental & Zonal Committee Meetings, Various Platforms for Dialogues & Communication, CEO Interactions, Employee Satisfaction Surveys, Annual Appraisals, Internal newsletters, etc.	Safe and healthy working conditions, Good remuneration package, Professional growth, Quality of life, Welfare measures, Training and Career Development	Inspired, encouraged, satisfied and enthused workforce
Suppliers	▪ Ancillaries ▪ Bulk Suppliers ▪ Vendors	Vendor meetings, Meetings with Suppliers, Ancillary Association Meetings, Supplier Relationship Management	Partnership with value creation, Timely payment, Engaging more local suppliers, Supplier satisfaction, etc.	Contented suppliers
Customers	▪ Institutional ▪ Retail	Customer meets, Plant visits, Director's conference with customer groups, Visits to customers and customer satisfaction surveys	Partnership with value creation, Product quality, Delivery compliance, Customer satisfaction, Resolution of complaints, etc.	Long-lasting association, contented customer
Community	▪ Urban ▪ Rural ▪ Indigenous Communities	Community meetings, Interaction with municipalities, Town administrative committee, Involvement in local society functions	Quality of life, Job opportunities, Education, Welfare measures, Medical facilities, Sustainable livelihood	Socio-economic development of the area, Partnership in development
NGO's	▪ Local ▪ National	Visits to Plants, Seminars, Conferences, Interactions, etc.	Environment quality, Human rights, Freedom of association, Compliance to regulations	Safe and healthy labour force, Environment friendly operations, Ethical operations, Compliance to Standards
Regulators	▪ Central Government ▪ State Government ▪ Local Bodies	Meetings with Central & State Government/Steel Ministry / Trade Bodies, Industry Associations, Ministry of Environment, Forests & Climate Change, Other statutory bodies, etc.	Economic, Environmental and Social Compliance, Human Rights, Safety, Compliance to ILO Conventions	Legal Compliance, Beyond Compliance
Competitors	▪ Local ▪ International	Knowledge sharing, Partnership with value creation, Anticompetitive behaviour, Consumer privacy	Fair business, Partnership, Public policy advocacy	Knowledge sharing, Best practices, Ethical Business
Industry Associations	▪ WSA ▪ CII ▪ FICCI ▪ IIM, etc.	Conferences, Workshops, Seminars	Industry Policy, Regulations, Technology, Environment, CSR, Business Excellence	Knowledge sharing, Public policy advocacy, Best practices
Academic Bodies	▪ Institution ▪ Research Labs	Conferences, Workshops, Seminars	Knowledge management, R&D activities, Partnership for value creation	Knowledge sharing, New Technology
Professionals /Consultants	▪ Local ▪ International	Visits to Plants, Seminars, Conferences, Interactions	Partnership with value creation, Training and development	Knowledge building, Value creation, Collaboration
Media	▪ Local ▪ National	Press Meets, Interactions with Plant & Corporate Communications, etc.	Economic, Environmental and Social performance Achievements	Transparency and communication

(102-40, 102-43,102-44)

Feedback from Stakeholders

SAIL engages with its valued stakeholders through diversified modes of engagement and then incorporates their feedback in its strategy and initiatives. Inputs from shareholders help into the strategic plan develop ent and the consequent strategic objective setting. Customer feedback goes into forming basis for product improvement, products and services development necessary for customer retention, market penetration and rowth. Interaction with suppliers allows the Company to recognize focus areas and strengthen relationship with them.

For capturing stakeholder feedback in systematic manner, SAIL has developed metrics. Customer Satisfaction Index and Employee Satisfaction are just some of such metrics used for gauging the stakeholder feedback nd its quantification. SAIL consciously captures the employees' needs and expectations in a structured manner and ensures alignment of organizational policies with their expectations.

Materiality Assessment Process

Materiality Assessment helps in prioritization of issues pertaining to economic, environment and social aspects of Sustainability. SAIL has adopted a structured approach for understanding stakeholder expectations and has done analysis of relevant issues for their professed importance as well as impact on business. The materiality mapping activity incorporates internal & external stakeholders across all operations ensuring inclusivity in the approach.

The materiality assessments have been conducted at SAIL for last eight years. For the present report, the response was sought from valued internal and external stakeholders on GRI Sustainability Reporting Standards 2016. Due effort has been made through this report to connect on the issues identified as having importance to stakeholders as well as those which impact our business.

The Company conducts stakeholder analysis regularly and the last exercise was conducted in 2017 involving internal & external stakeholders from Plants, Units and Mines of SAIL. While developing materiality mapping, it was ensured to adopt inclusivity in the approach and due importance was paid to the views of the stakeholders with regard to sustainability challenges faced by SAIL. For the present report also, the reporting boundary for all aspects has been restricted to the operations of SAIL.

Issues identified during Stakeholder Engagement	Linkage with GRI aspects	Page in Report
Enhancing profitability & growth	Economic Performance	34
Curtailing operating cost and encouraging cost saving	Economic Performance	34
Providing fair and equal wages	Market Presence	69
Managing resources and conserving minerals	Materials	48
Enhancing energy efficiency and adopting renewables	Energy	39
Conserving water by recycling and reusing	Water	44
Conserving biodiversity and land rehabilitation	Biodiversity	48
Reducing greenhouse gas emissions & carbon footprint	Emissions	44
Managing waste by recycling, reusing, recovering and reducing	Effluents & Waste	45, 46
Enhancing employee satisfaction	Labour Management Relations	70
Health and safety of employees, process safety and emergency preparedness	Occupational Health & Safety	59
Enhancing employee productivity	Training & Education	75, 76
Providing healthcare to community	Local Communities	79
Preventing corruption	Anti-Corruption	26
Increasing customer satisfaction	Product & Service Labeling	54

(102-46, 102-47)

Materiality Matrix

High

- Promoting green procurement, green branding and eco-labeling
- Initiatives for employment generation
- Employability training to Community
- Code of Conduct/Ethics
- Talent retention and professional growth
- Gender empowerment amongst employees
- Upholding human rights in operations and supply chain

- Improving profitability & growth
- Restricting operating cost and encouraging cost saving
- Providing fair and equal wages
- Managing resources and conserving minerals
- Improving energy efficiency and adopting renewable
- Conserving water by recycling and reusing
- Conserving biodiversity and land rehabilitation
- Reducing greenhouse gas emissions & carbon footprint
- Managing waste by recycling, reusing, recovering and reducing
- Enhancing employee satisfaction
- Health and safety of employees, process safety and emergency preparedness
- Increasing employee productivity
- Providing healthcare to public
- Averting corruption
- Increasing customer satisfaction

Stakeholder Cocerns

- Research and development in the area of green products
- Reducing use of ozone depleting substances
- Reducing environmental impacts during transportation, packaging and dispatch
- Adopting sustainable sourcing practices
- Collaboration with suppliers for environmental conservation
- Environmental Grievances
- Investment on new process and products
- Investment on research and development
- Enhancing supplier satisfaction
- Spending of CSR activities
- Corporate governance and risk management
- Product related non-compliance
- Community initiatives
- Employee training and skill development activities
- Providing sustainable livelihood
- Supplier and contractors practices
- Product labeling and compliance
- Product Marketing and Communication

- Reducing emissions, discharges and noise
- Recycling and recycled materials utilisation
- Restricting the use of hazardous chemicals
- Reducing the generation of hazardous waste, mining waste management
- Improving process management and technological parameters
- Effective asset and capacity utilisation
- Timely delivery and quality management
- Employees and community grievances
- Customer data privacy
- Security practices
- Biodiversity and land rehabilitation
- Compliance to legal regulations
- Development of value added products and enhancing exports

Low **High**

Business Impact

(102-47)

ECONOMIC
SUSTAINABILITY

As per IMF, the global economic output grew by 3.8% in 2017. The growth in advanced economies as well as in emerging ones was estimated to be 2.3%, whereas for developing economies it was 4.8%. During the same period Global Crude Steel production increased by 3.8% compared to 2016 and reached 1689.4 million tonnes (MT). India, which is currently the world's third largest steel producing nation, increased its annual Crude Steel output by 6.2% to reach 101.4 MT. For India exports of total finished steel increased by 16.7% (9.6 MT) during Financial Year 2017-18 over last year, while imports increased by 3.5% to 7.5 MT.

Consumption of total finished steel in India stood at 90.7 MT in Financial Year 2017-18, up by 7.9% over same period of last year. Further demand for finished steel in India is expected to grow by 5.5% in 2018. The company achieved highest ever Hot Metal production at 15.98 MT, Crude Steel production at 15.02 and Saleable Steel production at 14.07 MT along with all round improvements in operating efficiency parameters such as Coke Rate, BF productivity and Specific Energy Consumption.

Global economic is forecasted to grow by 3.9% in 2018 as well as 2019. World Steel Association has also forecasted an increase of about 1.8% in global steel demand during 2018.

The new National Steel Policy (NSP) 2017 was released with vision – "To create a technologically advanced and globally competitive steel industry that promotes economic Growth". Policy also brings forth the aspirations of the domestic steel industry to achieve 300MT of steelmaking capacity by 2030-31. On per capita basis the steel consumption is expected to increase to the level of 160 Kg by 2030. SAIL being state-owned Company has taken a plethora of measures, including value addition in the product mix, in order to meet the objectives of the Steel Policy.

SAIL products are appreciated by its customers across the world. Company took various initiatives during the reporting period for sustaining and consolidating its position as the leading steel producer of the country by delivering world class products. Strategic actions such as optimizing coal blend, improvement in yields, reduction in coke rate, enhanced concast production, maximizing use of in-house engineering shops resulted in improvement of key economic indicators during the year. The comparative performance of major financial parameters of last three financial years is given below:

Key Economic Indicators (in ₹ crore)	2015-16	2016-17	2017-18
Gross Turnover (Direct Economic Value Generated)	43,294	49,180	58,297
Net Turnover	38,471	43,866	56,893
Cost of Material consumed including bought out goods	17,155	21,126	26,679
Employee Wages & Salaries	9,715	8,948	8,850
Payments to Providers of Capital			
Interest (Finance Cost)	2,300	2,528	2,823
Interest (Capital-Expenditure During Construction)	644	582	669
Dividends	0	0	0
Community Investments (CSR Expenditure)	76	29	26
Contribution to Government / Exchequer	8,496	10,244	9,295
Operating Profit	-4,707	-2,106	2,037
Profit After Tax	-4,021	-2,833	-482
Income Retained in Business	-4,232	-2,833	-482

SAIL manufactures products namely, Flat products in the form of Plates, HR coils/sheet & CR coils/sheets, Galvanised Plain/Corrugated Sheets and Long products comprising Rails, Structural, Wire-rods and Merchant Products and thus addresses to the need of almost the entire gamut of the mild steel business in the Country. In addition, Electric Resistance Welded Pipes, Spiral Welded Pipes and Silicon Steel Sheets forms a part of Company's rich product-mix.

During the year 2017-18, the Company achieved its best ever sales volume of 14.1 million tonnes (MT), registering a growth of about 8% over Last Year Continuing to maintain its presence in international markets, SAIL exported 0.7 MT of steel, a growth of about 4% over the previous financial year. With a focus on small consumers, the Company's retail marketing channel sold 0.8 MT of steel during the Year. To increase awareness about steel, the company organised 114 "Gaon Ki Ore" workshops across 26 States and Uts.

Some of the key economic risks and barriers along with their mitigation strategies are briefly described below:-

Economic Risks

- Increased competition from domestic and overseas steel manufacturers along with dumping of steel from abroad
- Cheap sourcing of steel from countries with whom India has Free Trade Agreement (FTA)
- Low domestic demand and poorer sales realization of products
- Diminishing ore and coal reserves in India leading to dependence on external sources for key input - coking coal and higher royalty rate on Iron Ore
- Delays in ramping up of production from the new Units due to initial stabilization factors
- Elevated manpower cost and poor employee age-mix

Mitigation Strategies

- Market expansion to explore and strengthen presence in new growth segments
- Product innovation to provide cutting-edge solution and retain customers
- Expeditious ramping up of new units, explore the rural markets
- Securing long-term contracts with suppliers and establishing relationship with customers
- Development of new mines and exploring international partnerships
- Rationalization of workforce

(103-1, 103-2, 103-3, 201-1)

SAIL Steel Use : Jawaharlal Nehru Stadium, New Delhi

The various policies of the Government for steel intensive segments such as infrastructure, capital goods and construction has provided the much needed thrust for steel industries to flourish. On account of these the Company foresees many opportunities in its coming future besides risks and thus expects a colossal market position for itself.

SAIL launched a Companywide initiative 'SAIL Uday' involving Boston Consulting Group (BCG) for improving the all-round performance of the Company. In this initiative, both short and long term action plans have been formulated by cross functional teams formed across Plants, Units and Marketing for implementation.

R&D Activities of the Company

In the field of ferrous metallurgy, Research and Development Centre for Iron & Steel (RDCIS) of the Company is India's renowned research organization. SAIL has given thrust for its R&D efforts through this R&D Centre located at Ranchi. The centre undertakes research projects encompassing the entire spectrum of iron & steel starting from raw materials to finished products. In the year 2017-18, 92 projects were pursued and 38 projects completed with substantial benefits to the organization.

Further, in its pursuit for excellence in various research fields, RDCIS enters into collaboration mode of research in specific areas with renowned research institutions and academia. During the year 2017-18, many MOU/ Collaboration agreements have been entered into with institutions such as BIT Sindri and IIT Kharagpur.

As many as 90 technical papers (21 international) were published and 97 papers (24 international) were presented. The RDCIS engineers and scientists have culminated in filing of 25 patents and 29 copyrights (in association with SAIL Plants) during 2017-18.

Modernisation & Expansion

SAIL is in the last lap of implementation of its Modernisation & Expansion Programme (MEP). During the Financial Year 2017-18, Company achieved many milestones. At Bhilai Steel Plant, new Blast Furnace has been blown in and is under regular operation. First Heat from Coverter-1 at new Steel Melting Shop has been taken and Hot trials are in progress. A capital expenditure of ` 5,130 crore was incurred during Financial Year 2017-18 and capex planned for 2018-19 is ` 4,000 crore.

The state-of-the-art facilities installed under the current MEP, has resulted in significant improvement in the techno economics and environmental parameters.

SAIL by supplying steel, partnered with prestigious projects of national importance like Dhola-Sadiya Bridge, Sardar Sarovar Project, JiribamTupul-Imphal new broad gauge railway project, several metro projects at Delhi, Lucknow, Mumbai, Bangalore, Ahmedabad, major airports, country's longest road tunnel connecting Chenani-Nashri in J&K etc. and thus played a pivotal part in the Country's growth story under the ambit of National Steel Policy 2017 and 'Make in India' movement.

Moreover, in addition to supplying steel for various defence projects including indigenously built Anti-Submarine Warfare (ASW), Stealth Corvette INS–Kiltan, SAIL was also associated with iconic projects such as Chandrayan and Mangalyan missions.

SAIL Steel Use : Connecting Sea Bridge

ENERGY
MANAGEMENT

Energy Efficiency

Infrastructure is the prerequisite for the development of any economy of the world. Moreover, there is a well-defined correlation between the production of iron and steel and a Country's industrial and economic growth. India is no exception to this relationship.

SAIL Steel finds its application in almost all infrastructural development projects of the Country viz. transport (roads, railways, metro, ports and civil aviation), power, irrigation, watersheds, hydroelectric works, scientific research and training, markets and warehousing, communications and informatics, education, health and family welfare and thus played a vital in the development of Indian economy.

The iron and steel industry also presents one of the most energy intensive sectors within the economy of any Country. SAIL has successfully deployed energy efficient technologies such as Pulverised Coal Injection, Coke Dry Quenching and Top Recovery Turbine, Waste Heat Recovery, at its ISPs and SSPs in the Modernization cum Expansion (MODEX) Programme. Research & Development Centre for Iron & Steel (RDCIS) of SAIL is continually exploring different avenues for energy efficiency.

In addition, every Plant of SAIL has dedicated "Energy Management Department" to minutely monitor, analyze the energy consumption of sub-process/operations and to envisage Plant specific energy conservation measures for implementation. The efforts have resulted in significant savings in terms of cost as well as energy.

SAIL recorded the best ever specific energy consumption at 6.49 GCal/tcs for the period 2017-18 owing to continual concerted efforts during the reporting period.

The energy consumption pattern for SAIL Plants and Mines for the period 2017-18 is given below:

Power & Fuel Consumption	Quantity	(TJ)
Purchased Electricity (MWH)	9,443	1,21,343
Generated Electricity (MWH)	1,007	12,940
Coking Coal (MT) Including CDI	15.38	4,33,716
Non Coking Coal (MT)	0.421822	8,015
Furnace Oil ('000KL)	26.803	1,117
Energy Consumption		5,77,131

The efforts have simultaneously proved to be effective, in conservation of natural resources and in lowering GHG emissions intensity, thereby mitigating environmental pollution, global warming and climate change, since conservation of energy is today intrinsically linked to the climate change.

SAIL also is committed for development and usage of renewable power sources. In this direction, a 2MWp capacity of Solar Plants has already been installed and actions are under way for installation of 198MWp solar capacity. Some of the major initiatives towards implementation of renewable energy projects are under consideration:

- 7 MW capacity Solar Power Plant at Bhilai.
- 20 MW capacity Solar Power Plant at Durgapur.
- 2 MW capacity roof top Solar Power Plant on the buildings of BSL.
- 20-25 MW capacity Solar Power Plant at Kulti.
- 17 MW capacity roof-top Solar Power Plant on various buildings of SAIL including warehouses.

Further, the Company has entered into a JV agreement with Green Energy Development Corporation of Odisha (GEDCOL) to set up 10 MW Hydel Power at Mandira Dam of Rourkela Steel Plant, to generate electricity for its steel Plant. In addition various other renewable energy initiatives like use of coal bed methane in re-heating furnaces, bio-diesel in locomotives, agro based fuel in boilers and solar water heating & lighting systems have been taken up across SAIL.

It is worth mentioning that being a responsible corporate, the Company has installed solar street lights, solar trees and have distributed solar lanterns and smokeless chullahs to the rural peoples.

Schemes for Energy Conservation and Technology Absorption

Technology development, absorption, adoption and further improvement are part and parcel of operation that take place continuously in the Company in different areas of Steel making through a definitive technology strategy. A number of new technologies were installed / are being installed as a part of modernization/continuous improvement. Actions are also taken to improve energy efficiency by optimization of operational parameters. Unit wise brief is appended below :

Bhilai Steel Plant (BSP)

- Installation of energy efficient Walking Beam Type Furnace.
- Recovery of sensible heat of Coke by Installation of Coke Dry Quenching System in Coke Oven #11.
- Torpedo Ladle for Hot Metal handling.
- Utilization of waste steam at 10 ata and 18 ata from CDCP boilers of COB-11 as process steam.
- Improvement of CDI rate in Blast Furnaces (1-7).
- Optimization of operational parameters for improvement of coke rate 7 & fuel rate (on dry basis) for Blast Furnaces (1-7).
- Improvement in Specific LD gas recovery, in SMS-2.
- Installation of VVVF drive in ladle drier no. 5, 6, 7 & 8 in ladle preparation bay of SMS-2.

Durgapur Steel Plant (DSP)

- Installation of energy efficient Walking Beam Type Furnace.
- Bell Less Top Charging System in Blast Furnace # 3.
- Optimization of Blast Furnace coke rate to achieve the best ever value.
- Stoppage of idle running of three ID Fans of BOF converters.
- Production through energy efficient caster route.
- Replacement of CBM with CO Gas in gas mixing station for NDP and MSM.
- Optimization of operational parameters to achieve the lowest ever specific boiler coal consumption.

Rourkela Steel Plant (RSP)

- Installation of energy efficient Walking Beam Type Furnace.
- Coal Dust Injection System in Blast Furnace #4.
- Recovery of sensible heat of Coke by Installation of Coke Dry Quenching System in Coke Oven Battery # 6.
- Torpedo Ladle for Hot Metal handling.
- Increased power generation from Back Pressure Turbine Generator (BPTG) to 2.20MW resulting in reduced import power from grid.
- Reduction in coke consumption at BF.
- Hot slab charging in HSM furnace.

(103-1, 103-2, 103-3, 302-1)

Bokaro Steel Plant (BSL)

- Installation of energy efficient Walking Beam Type Furnace.
- Cast House Slag Granulation System.
- Commissioning of Battery #7, thereby improving CO gas yield.
- Commissioning of acid Plant with waste heat steam generation facilities.
- Revival of cooling towers in Benzol Recovery Plant (BRP) to increase the tar yield.
- Replacement of 200 kW motor at quenching tower #4 with energy efficient motor.
- Full repair of 2 no of pits along with recuperators and partial repair of 4 nos. of soaking pits to reduce wastage of fuel.
- Commissioning of new ID fan no-1 with VVVFD in SMS-II.
- Stoppage of 115 nos. of major steam leakages of HP & LP steam network.

IISCO Steel Plant (ISP)

- Installation of energy efficient Walking Beam Type Furnace.
- Coal Dust Injection System in Blast Furnace #5.
- Top Pressure Recovery Turbine System at Blast Furnace # 5.
- Recovery of sensible heat of Coke by installation of Coke Dry Quenching System in Coke Oven Battery #11.
- Torpedo Ladle for Hot Metal handling.
- Improvement in Coke oven and BOF gas yield.
- Improvement in power generation from Top-Pressure Recovery Turbine (TRT) and Coal Dust Injection (CDI).
- Improvement in coke rate at BF#5.
- Installation of LED based lightings in different areas of the Plant resulting in energy savings of 11 MWh/annum.

A Capital expenditure of ₹ 77.38 crore, was incurred during Financial Year 2017-18 towards energy conservation equipment.

ENVIRONMENT

SUSTAINABILITY

Environmental Performance

SAIL, as a responsible corporate citizen, delivers its duties sincerely towards protection of environment both at its Plants/Units and the community in which it operates. The Corporate Environmental Policy of the Company emphasises to 'Integrate sound environmental practices in all its activities'. SAIL gives emphasis on environment along with production and profitability and considers clean environment practice as a must for its every industrial activity.

The Company is committed to improve the environmental footprint, guided by its "vision" to achieve its goal by taking a pragmatic approach towards achieving sustainable solutions. Enhancing environmental awareness and regular monitoring are being fostered to ensure nonoccurrence of any serious environmental incident. Company's commitment to a clean and green environment with sustainable development is embedded in the Corporate Environment Policy of SAIL. The Plants and Mines have proper consent to establish along with valid consent to operate under Air (Prevention & Control of Pollution) Act, 1981(Air Act) and Water (Prevention & Control of Pollution) Act, 1974 Water Act). SAIL has also progressively introduced various management practices like ISO 9001, ISO 14001, OHSAS 18001 and SA 8000, at most of its steel Plants, Mines and Units.

Furthering its commitment to rules, regulations & laws of the land and to ensure that regulatory requirements are duly identified and adhered to, SAIL has initiated various actions that go beyond the statutory compliances. The Company ensures compliance to the conditions stipulated by the statutory authorities in the Environmental Clearances /Consents and the compliance reports are submitted to the respective statutory authorities on regular basis. A system has been developed where any deviation pertaining to the environmental policy and cases of violation of environmental clearance conditions, as indicated by the statutory authorities, are duly reported to the SAIL Board, on quarterly basis.

Some of the key environmental risks foreseen by us and their mitigation strategies are briefly listed:

Environmental Risks

- Increased global concern for climate change prompting adoption of challenging targets by the Regulators
- Operational and Financial risk to the industry in form of carbon taxes, emission caps etc.
- Increasing quantity of waste requiring proper management and disposal
- Deteriorating air and water quality as a result of increasing concentration of industries in the vicinity

SAIL recognizes that its business activities have a direct and indirect impact on society. The Company strives to integrate its business values and operations in an ethical and transparent manner to demonstrate its commitment to sustainable development and to meet the interest of its stakeholders. The Company is committed to continuously improving its social responsibilities, environment and economic practices to make a positive impact on the society.

The technology plan of SAIL lays stress on Clean Technology. The modernization program of SAIL has several projects which envisage progressive installation of energy and environment-friendly technologies. Some of these are coke-dry quenching, waste-heat recovery from blast furnace stoves and sinter machines, secondary emission control from BOF, cast house de-dusting system at blast furnaces etc.

The environmental organization in SAIL has a specialized and multi-layered infrastructure catering to the diverse environmental implications arising from its multifarious operations ranging from mineral extraction to rolling out finished steel. Environment Management Division (EMD) is a corporate unit monitoring and facilitating the environment management and pollution control activities in the SAIL Plants and Mines. Besides this, each Plant and Mine has its own department, manned with qualified officers, for implementation of environmental protection measures and management. EMD is operating as a nodal agency mainly to facilitate the Plants/Mines/Units in maintaining a pollution free environment through a close coordination with all the Environmental Control Departments of Plants and Mines. It also does the liaisoning with the regulatory authorities regarding the environmental issues of the Company. Issues pertaining to Climate Change and matters related to Intended Nationally Determined Contribution (INDC) are also being dealt by EMD.

The Company is committed to contribute towards a clean and sustainable environment and to continually enhance its environmental performance as an integral part of its business philosophy and values. Environmental practices at SAIL address control of pollution through clean-up as well as operation of facilities with the least impact on the environment. SAIL has put in consistent efforts such as regular maintenance and consistent operation of air pollution control equipment, effluent treatment Plants, recycling of solid wastes and adoption of cleaner and environment friendly technologies, to enhance the environmental performance. Emissions of SO_2 are reduced by the use of low sulphur coal and desulphurization of coke oven gas. For controlling NOx emissions, special burners have been installed with the implementation of some process related changes.

Mitigation Strategies

- Regular adoption of clean technologies to reduce CO_2 emissions
- More venturing in environmental protection measures
- Developing strategies for proper handling, recycling and reuse of waste
- Compliance with the norms as well as preparing for beyond compliance scenario

PM Load Emission (kg/tcs)

(102-11)

Carbon Foot Print

As a measure towards achieving higher energy-efficiency, SAIL Plants, in recent past, have adopted various state-of-the-art technologies and pollution control (PC) facilities over the years, mainly during the ongoing expansion cum modernization programme. These clean technologies/ facilities help the Plants in curbing the CO_2 emissions level and thus during the last five years CO_2 emission has reduced by more than 4%. The specific CO_2 emission during 2017-18 was 2.56 t/tcs.

Further to this, we are also participating in the World Steel Association (WSA) CO_2 data collection system through Global Steel Sector Approach.

Conserving Water

Water is a precious natural national resource with almost fixed quantum of availability. Water conservation through optimum use of water and efficient water recycling is one of the primary objectives of the Company. The Company draws water required for industrial use from surface water sources, primarily perennial rivers & streams and internal reservoirs. It does not encourage use of ground water. With this structured management approach, awareness and technological intervention, SAIL has been able to provide better water resources for industrial as well as human use within its operations.

Over a period of time, SAIL Plants and Mines have been taking up various initiatives for reduction in water consumption for its operation. Regular efforts are being made to reuse and recycle the treated effluents to the maximize possible extent in order to achieve minimum effluent discharge and also to minimize the pollution load on the water environment. However, to conserve this precious resource further, water conservation has now become a priority area both in its works and the townships and the society as a whole. This noble endeavour is being continued on sustained basis.

Furthermore, to achieve appreciable reduction in water consumption over the last year and also to develop a holistic perspective on water conservation, both short term and long term time bound implementable action plans were formulated with responsibility matrix, at the Plant and mines level. The short term action plans have already been implemented, as a result of which water consumption has come down and the long term action plans are at different stages of implementation. Much needed improvement have started showing up.

Steel Plants and Units have taken various initiatives to reduce the fresh water consumption that include:

- Connection of one pump to Return water line- of Horizontal Secondary Settling Tanks to reduce overflow from Distribution Chamber of PH # 3 at BSP.
- Frequent monitoring of various Pump Houses of WMD and other shops being carried out for stoppage of overflow, leakage etc. and monitoring of wastage of water at project sites at BSP.
- Installation of 10 Nos Water Level Indicator in RCC Over Head Tanks in Bhilai Township.
- Stoppage of overflow from Coal Handling Fire make up water sump by introduction of online pumping system and stoppage of overflow from raw water sump in Sinter Plant-1 by providing float valve after modification of the inlet pipe line at DSP.
- Installation of automatic level controller in Bloom Caster industrial water inlet sump to stop overflow at DSP.
- Modification in Sprinkler system in RMHP by introducing float valve at DSP.
- Arresting of 56 Numbers of water leakages throughout the Plant at RSP.
- Zero liquid discharge system at OF-1B at BSL.
- Sinter Plant and CHP firefighting sump overflow monitored and controlled at ISP.
- Float valve installed at different shops in overhead drinking water sintex tank at ISP.
- USM fire-fighting network wastage and leakage points arrested at ISP.
- Water floats installed in all water tanks to avoid water spillage at ASP.
- Solenoid valve installed in industrial AC to minimise the use of water at ASP.
- Reuse of DFT Permeate water in CRM-RCPH at SSP.
- Replacement of faulty pipelines and fittings in Plant and Township at CFP.
- Seepage water from effluent pond re-circulated instead of getting discharged outside from Plant boundary at CFP.

Apart from these, other measures are also taken towards conservation of water:

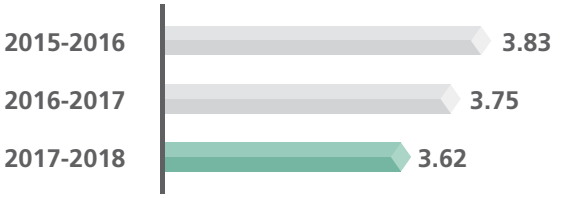
- "Save water" Awareness campaign.
- Periodic inspection of all the water pipelines to avoid the leakage of water from pipelines.
- Plugging of leakages in the taps.
- Rationalization in supply of water in the township.

Initiatives for following ZLD schemes have also been taken up in the Plants:

- Scheme for Zero Discharge of effluent from Outlet B and C at BSP.
- Treatment and recycling of effluent from outfalls to achieve "Zero Discharge" at BSL.
- Scheme for implementation of zero discharge scheme at ISP.

All these efforts have resulted in significant improvement in the specific water consumption

Sp. Water Consumption (m^3/tcs)



Plants/Units	Water Source
BSP	River Mahanadi
DSP	River Damodar
RSP	River Brahmni
BSL	River Damodar
ISP	River Damodar
ASP	River Damodar
SSP	River Kaveri
VISL	River Bhadra
CFP	Groundwater (borewells)
SGW	River Barakar

All Plants and Mines are located strategically to ensure availability of surface water. No negative impacts were observed on the water sources or the nearby water bodies because of the Company's operations.

(103-1, 103-2, 103-3, 303-2, 305-4)

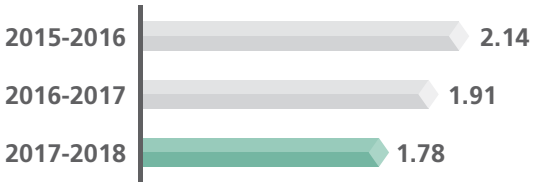
Effluent Treatment

The Steel Industry is one of the most water intensive industries. The Company is concerned about both quality and quantity of water. The main areas of concern are:

- Qualitative: Surface and ground water for Plants and mines.
- Quantitative: Reduction in consumption by bringing in less water intensive technologies and recycling the effluent wherever possible after proper treatment.

The Plants are meticulously maintaining the effluent treatment Plants, improving water re-circulation efficiency and the quality of effluent discharged to the receiving water body. The waste water is adequately and strictly monitored so that the quality of the discharged water conforms to the prescribed standards.

Sp. Effluent Discharge (m^3/tss)



Quantity of Effluent Discharged (Mm^3)

2015-2016	25.57
2016-2017	25.41
2017-2018	24.51

During the year, all the parameters pertaining to standards of effluent discharged from all the Plants were well within the norms.

Effluent Quality of five ISPs during the year

Unit: (mg/l except pH)

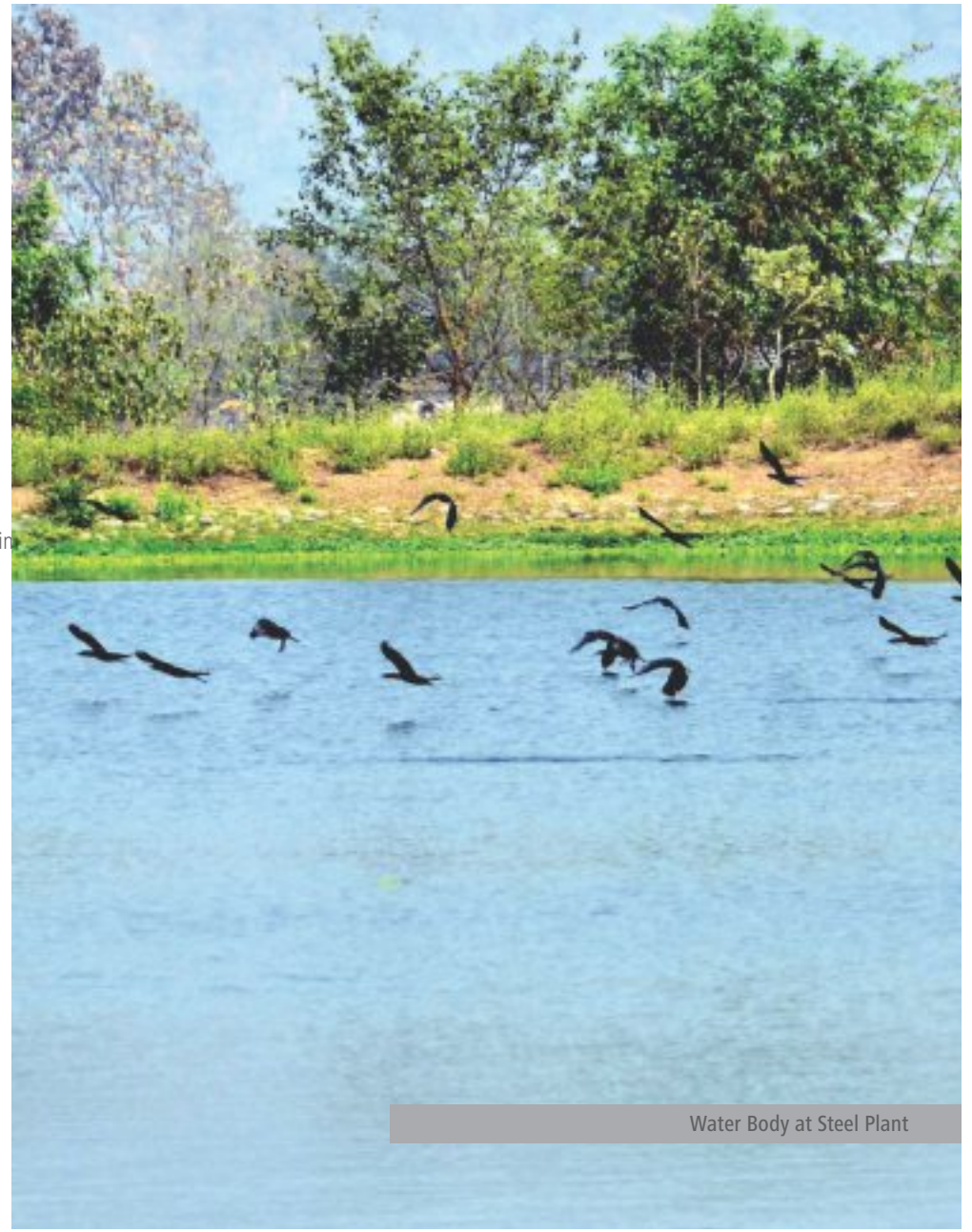
Parameters	pH	SS	BOD	COD	Phenol	Cyanide	Oil & Grease	NH_3N
Norm	6.0-8.5	100	30	250	1.0	0.2	10	50
BSP	7.21-7.88	38-68	13-28	37-77	0.10-0.30	0.07-0.14	1.41-3.23	1.9-21.5
DSP	7.15-8.25	5-80	12-25	118-146	0.25-0.59	0.002-0.185	0.82-5.2	4.14-40
RSP	7.2-8.07	15-38	8-14	31-49	0.10-0.17	0.05-0.11	3-5.75	8-14
BSL	6.47-8.14	23-52	5-13	29-108	0.012-0.168	0.004-0.072	0.18-0.88	1.0-6.0
ISP	7.2-8.2	8-76	5-25	11-110	BDL-0.35	BDL-0.09	<0.1-3.8	1.0-28.0

Effluent Quality of SSPs during the year

Unit: (mg/l except pH)

Parameters	Norm	ASP	SSP	VISL	CFP
pH	5.5-9.0	7.7-8.7	6.54-8.12	7.50	7.70-9.00
Suspended solids	100	4-69	4-24	43-53	30-92
BOD	30	5-8	<2.0-3.0	3.40-4.10	14.5-53.7*
COD	250	6-42	8-16	24.0-24.2	107-242
Fluoride	2	<0.2	0.16-1.43	<0.02	Not Applicable
Iron	3	<0.3	<0.05-0.29	0.41-0.47	0.33-0.64
Oil & Grease	10	<1-7.4	<4	BDL	<4-10

* Norm for BOD at CFP is 100 mg/l



Water Body at Steel Plant

(103-1, 103-2, 103-3, 306-2)

Waste Management

The production of steel is associated with substantial generation of solid wastes like slag, dust, sludge, etc. Thus minimization and utilization of waste through integrated waste management has gained special significance in the present scenario, as these wastes have a wide ranging impact on the environment.

SAIL has adopted the "4Rs Policy" (reduce, recover, recycle and reuse) across all its processes. The concept of zero waste is continuously becoming relevant for steel sector. The slag being a major portion of the solid wastes generated, granulated Blast Furnace (BF) slag is used for cement making while Basic Oxygen Furnace (BOF) slag is used internally for sinter making and also as material for road base, internal rail track ballast, etc. Other wastes like, BF flue dust, mill scale, lime/dolo fines and refractory wastes are used internally and also sold to outside agencies. Through our concerted efforts, 83% of solid wastes have been utilised during the year.

The Company does not transport any type of waste, whether hazardous or non hazardous outside India. There were no significant spills during the reporting period.

Initiatives towards enhancing the utilisation of slag

Enhancing the utilisation of BF Slag

- In the Integrated Steel Plants most of the Blast Furnaces are equipped with on-site Cast House Slag Granulation Plant (CHSGP) where the BF slag is granulated and sold to the cement manufacturers. Installation of the CHSGPs is in progress for the BFs which do not have this facility at BSL. After the commissioning of the CHGSPs, nearly 100% utilisation of BF slag shall be achieved.
- The portion of BF slag which is not granulated is called Air Cooled Blast Furnace Slag (ACBFS) which exhibits excellent properties to be used as aggregate in construction sector .In recent past, the R&D wing of SAIL, initiated a project to get the detailed study carried out by the Central Road Research Institute (CRRI). Based upon the CRRI study report, RDCIS executed a project successfully to construct cement concrete road through utilisation of ACBFS within the RDCIS Complex, Ranchi.

Enhancing the utilisation of BOF Slag

Achieving 100% utilisation of BOF slag in sustainable manner is a matter of concern for steel industry. R&D plays an important role to identify recycling opportunities and scientific method of waste management, BOF slag in particular. SAIL has recently taken up the following R&D initiatives towards effective utilisation of BOF slag:

- SAIL has taken up a project to use the weathered BOF slag as rail track ballast, since its physical properties meet the specification required for use as track ballast, to reduce the exploration of quarries for production of natural stone ballast. A field trial for assessing the suitability of processed weathered BOF slag for use as rail track was carried out in association with the South Eastern Railway at Ispat Nagar Railway Yard, Bokaro for a period of two years. The inspection reports of trials undertaken are being scrutinised at the Research Designs & Standards Organisaion (RDSO) of Indian Railways.
- An R&D project for "Development of process for steam maturing of BOF slag" at BSL, has been taken up. The pilot study is aimed at the steam ageing of BOF slag, which is under progress.
- A Laboratory Scale Study on Development of Technology for Dry Granulation of BOF Slag (Hydro-Mechanical Study)" was assigned to the Indian Institute of Technology, Kharagpur. Final report of first phase has been submitted by IIT Kharagpur. Dry granulated BOF slag would be utilized for cement manufacturing, apart from the other advantages of heat recovery and water conservation from the process.

Solid Waste Generation and Utilisation at the ISPs

Type of Waste	Generation (T)	Utilisation (%)
BF Slag	59,06,852	90.5
LD BOF Slag	17,49,020	59.8
THF Slag	87,211	13.2
BF Flue Dust	1,45,015	89.0
BF Sludge	85,966	8.8
LD /BOF Sludge	1,09,833	22.8
Mill Scale	2,68,589	106.4 (from stock)
Lime/Dolo Fines	2,76,597	88.7
Refractory Wastes	24,540	115.6 (from stock)
TOTAL	**86,54,291**	**83.2**

Solid Waste Generation and Utilisation at the SSPs

CFP	Generation (T)	Utilisation (%)
FeMn Slag (Fines + Granulated)	0	>100 (from stock)
Si Mn Slag (Fines + Granulated)	51,571	98.2
MCFeMn Slag	4,415	0.0
Mn Ore Fines	9,569	168.5 (from stock)
Coke Fines+Charcol Fines	8,151	16.2
Quartz Fines	325	0.0
Flux Fines	148	0.0
Iron Ore Fines	240	0.0
GCP Sludge	3,659	0.8
Total	**78,078**	**189.6**

(103-1, 103-2, 103-3, 306-2)

at Rourkela Steel Plant

VISL	Generation (T)	Utilisation (%)
BF Slag (Granulated)	0	>100 (from stock)
Coke Breeze	1,209	23.3
Refractory waste	168	0.0
TOTAL	1,377	>100

SSP	Generation (T)	Utilisation (%)
Neutralized Pickling Sludge	269	0.0
Diatomaceous Earth	34	0.0
ARS Metal Oxide Powder	112	0.0
SGL Swarf	26	0.0
Salt from DFT Evaporator	14	157.8 (from stock)
Boiler Ash	2,281	0.0
Steel Shot Dust	453	221.7 (from stock)
Mill Scale (HRM & APL)	1,372	363.5 (from stock)
SMS Slag	32,988	19.8
EAF Dust	1,411	0.0
AOD Dust	2,246	0.0
Grinding Swarf & Dust	172	0.0
Torch Cutting Bag house Dust & Caster Scale Pit	110	0.0
Other Wastes	4,580	0.0
Refractory Wastes	5,400	0.0
TOTAL	51,468	24.4

ASP	Generation (T)	Utilisation (%)
EAF / AOD Dust	209	227.8 (from stock)
EAF Slag	2,470	0.0
Grinding Dust	419	100.0
Mill Scale	1,366	0.0
Refractory Bricks	660	71.5
TOTAL	5,124	26.7

(306-2)

Solid Waste Generation from Mines ('000 T)

Mines	Overburden	Tailings
BSP	7,156.0	611.0
RMD	12,276.1	288.3
VISL	0.0	0.0
Total	**19,432.1**	**899.3**

Apart from the above mentioned solid wastes, some wastes which are hazardous to nature by reasons of their physical and/or chemical characteristic are also generated. Inventorisation and quantification of the hazardous wastes have been done at the Plants/Units and the identified wastes are being managed as per the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016. These wastes are safely disposed either in the Secured Landfill Facility or through the authorized agency dealing with Treatment, Storage and Disposal of Hazardous Wastes. Hazardous Waste Generated at the ISPs during the year was 1,41,093 T.

Material Management

Conservation of raw materials is becoming increasingly important for steel makers, to ensure their availability in the long term while sustaining useful natural resources. Increasing the recycling of wastes has reduced the consumption of coal, iron ore and flux materials like dolomite and lime stone, thus optimizing the use of raw materials. The following details furnish a consumption pattern of raw materials at the SAIL Plants, recycling of steel scrap and use of other wastes generated within the operational Units.

Raw Material Consumption (MT) in SAIL for 2017-18

- **Iron ore** (25.87)
- **Coal** (15.38)
- **Dolomite** (2.91)
- **Limestone** (4.29)

Explosive Consumption (T) in SAIL Mines for 2017-18: 5,259.6

Scrap Utilization (T) in SAIL ISPs for 2017-18

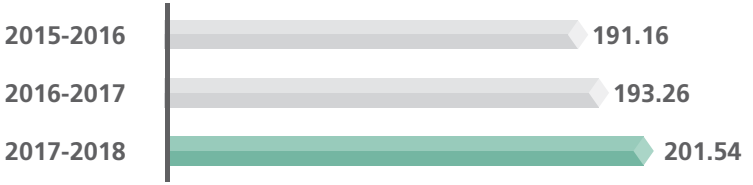
Scrap utilization	BSP	DSP	RSP	BSL	ISP
Iron Scrap	36,660	7,440	13,094	54,899	4,151
Steel Scrap	6,10,229	2,23,157	1,35,017	4,61,232	1,20,966

Efforts for Ecological Restoration

The issue of environment assumes special significance in this age of global warming. To give nature its due, extensive Plantations are carried out all across SAIL Plants and Mines depending on availability and prevalence of local species, local soil characteristics and prevailing meteorological conditions. Several species of flora and fauna are also preserved in zoological and botanical parks maintained by SAIL in its townships. The greenery developed by afforestation adds to the aesthetic environment, which becomes dust and noise barriers and also natural absorbers of CO_2. None of the operations of SAIL are in the vicinity of protected areas. There are no IUCN red list of national conservation species with habitats in areas of operation.

More than 8.27 lakh saplings were planted all across during the FY 2017-18. Approximately, 201.54 lakh trees have been planted since inception. The tree plantation during the last three years is given below:

Cumulative Plantation in Plants and Units (No. Lakh)



For the purpose of reduction of CO emission and sequestration of the generated carbon back into the system, SAIL is assessing its carbon footprint in one hand and potential of sequestration of CO, through its existing biotic resources, on the other. A project on carbon sequestration through afforestation has been taken up at the site of Rourkela Steel Plant. M/s Tropical Forest Research Institute, Jabalpur, has been engaged as the sequestration partner to carry out the project in February 2014. The project will continue till March 2019.

Minimisation of the direct and indirect impact of mining operations, promotion of biodiversity conservation and reclamation & rehabilitation of mined out areas have always been a priority area for SAIL. In view of this, the Company took up restoration and rehabilitation of degraded ecosystem for maintaining and enhancing bio-diversity as well as replenishing the eco-system at Puranpani Limestone & Dolomite Quarry through the Delhi University. Long term maintenance of ecologically restored 250 acres Lime Stone mined out area at Purnapani Lime Stone & Dolomite Quarry is a five year project towards sustainability of the restored ecosystems while providing ecological services and goods to the local communities.

Land Area of Mines (in Ha)

	Lease Area	Land for Mining	Waste Dump Area	Waste Dump Rehabilitated
RMD Mines	15,041.1 0	3,835.84	316.28	191.58
BSP Mines	6,592.06	605.88	251.08	96.92
VISL Mines	44.57	22.50	2.50	2.00

Environment Management System (EMS)

Over and above the efforts for safe-guarding the environment in and around the Plants and Mines, Environmental Management System (EMS) is a management tool with a systematic framework to manage the immediate and long term environmental impacts of an organisation's products, services and processes. This

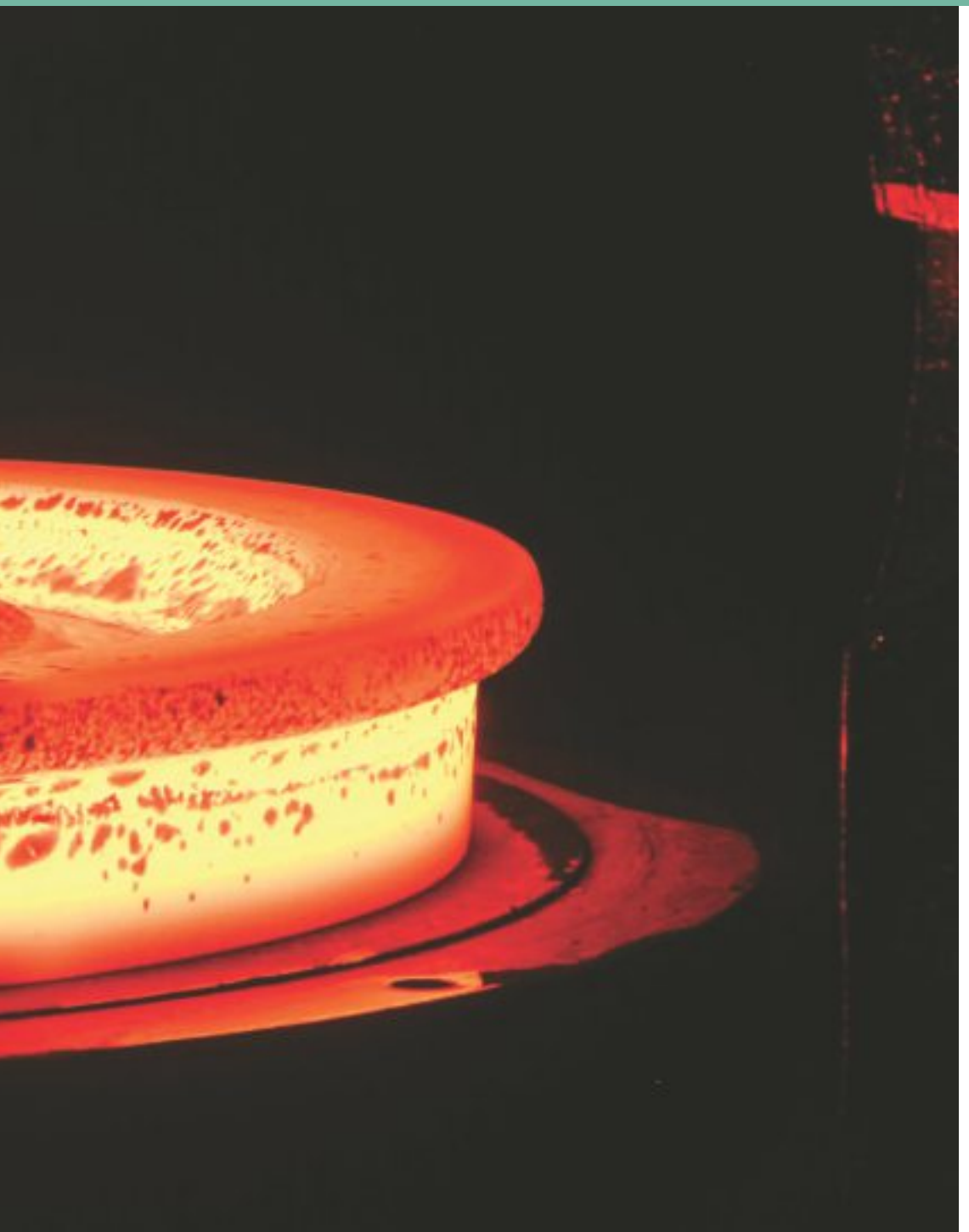
(103-1, 103-2, 103-3, 301-1, 304-1, 306-2)

management system provides a guideline for adoption of environmental management best practices which in turn helps organisations to minimise their environmental footprint, diminish the risk of pollution incidents, provide operational improvements, ensure compliance with relevant environmental legislation, and develop business in a sustainable manner. Most of the Plants, Mines and Warehouses have been accredited with EMS (ISO 14001) Standard. SAIL is taking up the implementation of EMS at the remaining Units, progressively.

SAIL Units accredited to EMS -ISO 14001

Plants/Unit	Certification Status
BSP	Entire Plant & Township
DSP	Entire Plant
RSP	Silicon Steel Mill, Sinter Plant-II, Hot Strip Mill, Plate Mill, ERW Pipe Plant, SW Pipe Plant, Special Plate Plant, Environment Engineering Department and RSP Township
BSL	Entire Plant
SSP	Entire Plant & Township
ASP	Entire Plant
VISL	Entire Plant
CFP	Entire Plant
CMO	Warehouses at Faridabad, Dankuni, Kalamboli, Chennai, Hyderabad, Ahmedabad, Ghaziabad, Delhi, Durgapur, Bangalore, Bokaro and Vizag and Kanpur Transport and Shipping BTSO Vizag
MINES	
Dalli Iron Ore Mine	Entire Mine
Kiruburu Iron Ore Mine	Entire Mine
Megatuburu Iron Ore Mine	Entire Mine
Bolani Ores Mines	Entire Mine
Kuteshwar Limestone Mine	Entire Mine
Barsua Iron Ore Mine	Entire Mine

PRODUCT
LEADERSHIP



Product Stewardship

To align itself with the customer priorities and to remain competitive in the global market, the Company is regularly re-engineering its products/ services. Being a customer oriented organization, product development and product improvement are constantly undertaken with a view to improve product performance and customer satisfaction. The Company has added special grades having features such as resistance to earthquake, light weight, corrosion resistant TMT rebars etc. to our existing portfolio. These additions have helped the industry in India and contributed for a valuable infrastructure development & boost to "Make in India" drive.

The Company's R&D arm- RDCIS, has been regularly contributing in producing value added steel products at a competitive price with its technological inputs and leading the way to strategic product leadership initiative of SAIL. The centre has earned credentials of being as one of the globally premier R&D centre in the field of ferrous metallurgy. The centre works in tandem with Plants and CMO to reduce product cost, develop value added market centric products and demonstrate the application of SAIL products amongst the customers. Several new products, particularly special steels having superior quality, have been developed and commercialized to cater market segments having stringent application requirement.

These days, industry as well as society is quite conscientious towards the origin and usage of material and product. The principle of sustainability and responsible sourcing in the entire supply chain are to be constantly safeguarded. The Company has ensured that robust Quality and Environment policies are in place for production of safe and sustainable products. SAIL products comply with the quality norms of the Bureau of Indian Standards or with the specific customer requirement depending upon the application.

The Company has well-established systems and procedures to ensure compliance with requirements related to product labeling, marketing, communications and customer privacy.

Product Development and Improvement

The Company has laid down a 'Master Plan for Research & Development' for ensuring acquisition and development of apposite technologies for sustainable growth. The plan for product development is oriented towards emerging market demand, such as steel for supercritical thermal and nuclear power generation, defence, renewable energy, high strength steel for high rise buildings with seismic and fire resistance, light weight high strength steel in its focus. As per the said Master Plan, Centres of Excellence (CoEs) have been set up at the Plant level that focus on various product development and improvements in collaboration with key customers and technology suppliers. The RDCIS is the umbrella organization that oversees both centralized R&D and the Plant-level CoEs.

During the year, 20 new products for construction, railways, defense, etc., having a crucial role in the growth and development of economy, have been developed by the RDCIS. Out of these, 12 products have been developed through the newly commissioned production facilities at various SAIL Plants. Recognizing the opportunities available for reducing the weight of steel, the Company oriented its research capabilities to develop light weight high strength steel thereby facilitating significant reduction in environmental impacts during their usage in vehicle body's fabrication. The Company believes in regular interaction with its customers through customer feedback systems and uses the same as valuable inputs for product development with a view to further improve customer satisfaction.

(103-1, 103-2, 103-3)

Product and Service Labelling

Two key principles- Quality and Transparency are followed during delivery of SAIL's products. SAIL's detailed product information is available on its website. The product catalogues contains all the details on grade, size and application. The Company strictly adhere to physical dimensions, chemical composition and technical delivery conditions for the associated specifications during production and dispatch of its various products. Test certificates are duly issued along with the deliveries to the customers so that the material can be rightly identified and quality assurance can be offered to the customer. There are no reported non compliance with respect to regulations and voluntary codes concerning product and service information & labelling.

Brand Management

In present challenging and dynamic business environment, management of Brand is a vital task. Branding is not only a marketing strategy but a vital tool for a sustainable business. The businesses necessitate constant advocacy and brand management as factors like heightened competition, regulations, supply chain issues and manufacturing costs constantly influence them. In order to address internal and external factors across multiple locations, the brand management practices need to be flexible, acquiescent, growth -oriented as well as eloquent.

The Corporate Affairs Division (CAD) of SAIL is engaged in reputation/ corporate brand management of the Company while the product related branding is managed by the CMO. The dealers are the main points of proliferation of Company's branding initiatives because of their mass outreach.

Customer Satisfaction

In today's competitive domestic steel industry, a resolute focus on customer satisfaction is necessitated as it is unswervingly related with the company's profit. SAIL, being a customer oriented organization, gives highest importance to its customers whose loyalty helps it in maintaining a leading position in the domestic steel market. SAIL's Marketing Division, the Central Marketing Organization (CMO), is entrusted for reaching out to all the customers. The Company has a well defined Key Account Management (KAM) for customer relationship management that captures the specific requirements of key customers, and these requirements along with the customer feedback are reviewed monthly in the Plant-CMO meetings. Outcomes of these meetings and orders received from customers help in finalization of the product schedule.

Customer satisfaction is measured in the form of Customer Satisfaction Index (CSI) for Key Accounts which is computed every month based on the feedback collected from identified Key Customers on parameters pertaining to Product Quality, Service and Price. Average CSI Index for both LP & FP Group as regards to five integrated SAIL Plants is around 95% on a scale of 100%. A new revamped Key Account Management is being launched. Highest level of customer satisfaction is ensured by the CMO's field setup as well as by holding direct customer contacts by executives of different level.

Health & Safety of Customers

The Company has developed and implemented best practices and procedures to ensure high standards of customer health and safety. Measures for preserving customer health and safety during the use of steel products are not specifically required as usage of these are environment friendly and do not create any health or safety hazard. However, material handling is always a safety concern for the customers and use of safety appliances is mandated in the warehouses accordingly. All SAIL warehouses are equipped with modern material handling equipment and follow prescribed safety norms during delivery of material to customers.

Communication and Media Relations

The job of building a positive image of the organization among various Stakeholders– both internal and external is entrusted with Corporate Affairs Division (CAD). Through this nodal agency of the Company, sharing and dissemination of Company's information to various stakeholders is carried out. The Chief of Corporate Affairs is the official spokesperson of the Company who also keeps a regular touch with the media houses. The Company has always proactively taken its brand name forward with the support of corporate communication activities.

The Company recognized the need to evolve new and innovative ways to engage with its workforce and has conducted a series of large group interactions at its Plants and Units. In these interactions, the Chairman and Directors of the Company held two-way communication with employees thereby apprising them of the challenges before the Company and encouraging them towards better performance. In addition to this, the Company followed an inclusive approach in its communication initiatives for internal communications through Messages, Intranet,

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Communication Exercise at SAIL

Newsletters etc. The Company's intranet shares all important and valuable information pertaining to the Company with its workforce and provides interactive forums to partake in various competitions/quiz's and lets them share their feedback.

The Company also publishes newsletter 'SAIL News' which serves as a major source of encouragement and motivation for SAIL personnel and Collaterals such as SAIL Calendar and Diary which help disseminate the Company's credo, mission and vision through texts and visuals. The CAD also regularly monitors news regarding the steel industry to keep abreast of any latest developments in the steel sector.

For building Company's brand image, promoting its products and their applications, highlighting its role in nation building, Make in India drive and to effectively communicating with external stakeholders, SAIL participates in various events and exhibitions, releases advertisements, maintains its website and presents itself on social media, sponsors various events, etc. SAIL website serves as an important source of information to our investors and other important stakeholders. SAIL has also been successfully participating in India International Trade Fair (IITF), regularly for over two decades. The 'SAIL Lion'-a figurine specially crafted out of SAIL Salem Stainless steel, showcasing different products and applications of steel, was a major draw at IITF-2017.

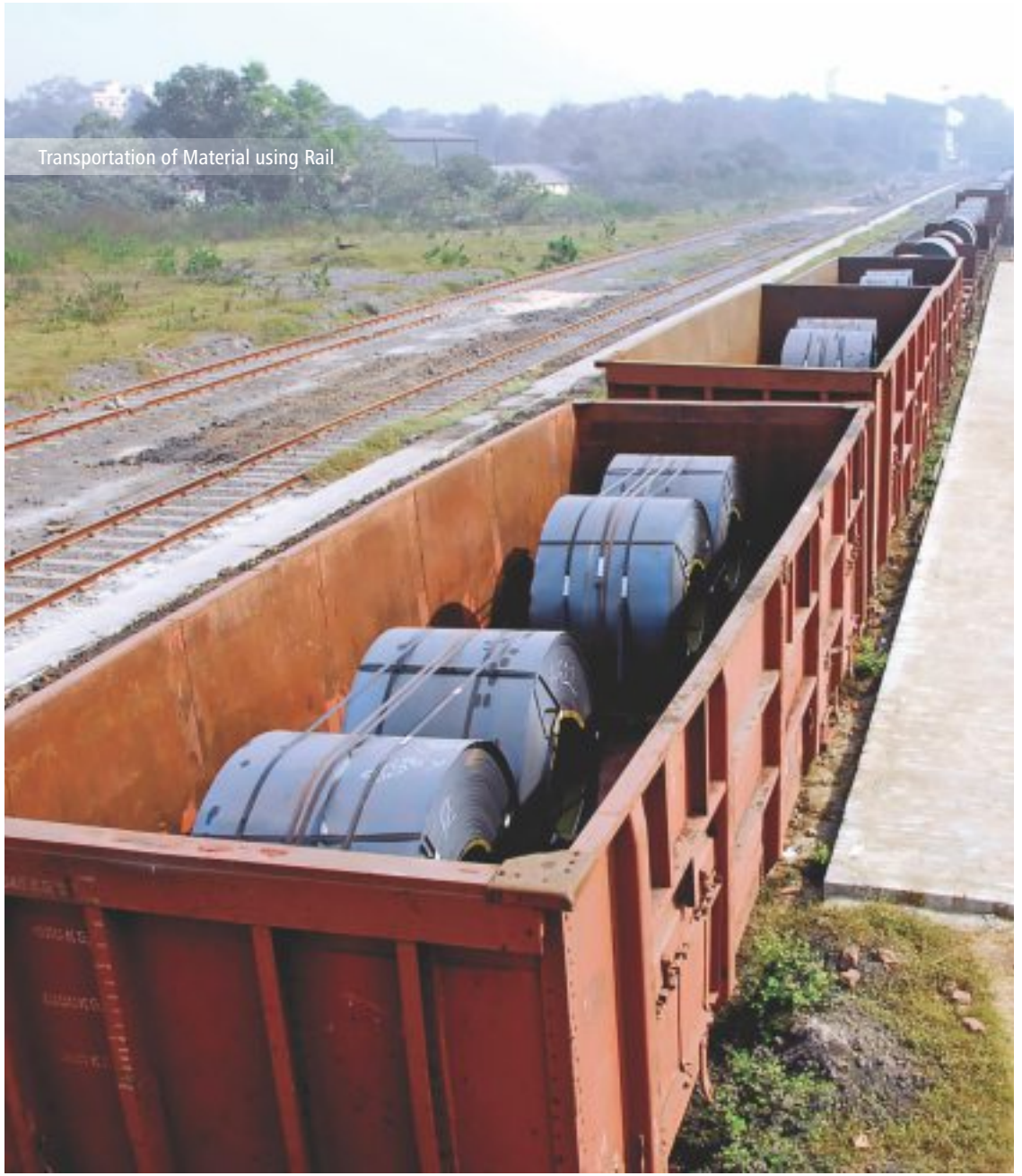
The Company has produced crisp, trendy and emotional connect generating advertisements which successfully conveys the meaning of 'Brand SAIL' to society at large as well as commemorate Company's 60th year of production. These provide visibility to the Company across different formats such as print, electronic, online, mobile, etc. The organization's rural marketing initiatives are supported by having rural focus in the advertisements. SAIL's retail sales gets boost with SAIL's "Gaon Ki Ore" campaign. The Company has also created and showcased a number of films on various subjects like steel making, safety, swachhta, vigilance, steel applications, environment conservation initiatives, etc.

The Company is actively engaged in digital & social media and efforts have been undertaken to strengthen the Company's brand image through our presence at Facebook, Twitter, Flickr and Instagram. The Company has also actively participated in furthering GoI's initiatives such as Swachh Bharat, World Environment Day, Yoga Day, and Rashtriya Ekta Diwas through several mediums.

Online Publication and Data Privacy

SAIL recognizes its duty towards protecting the information collected during the course of its business, from its various stakeholders and endeavours to maintain the privacy of such sensitive information. The Company's corporate policies on data privacy, confidentiality and security are suitably designed to maintain the trust of the individuals and organizations who share their information.

Further, in order to conserve paper, the digital version of all PR publications has been initiated at the Company. No incident has been reported on noncompliance with regulations and voluntary codes concerning marketing communications, including advertising, promotion and sponsorship. No fine has been imposed on us for noncompliance with laws and regulations concerning the provision and use of products and services during the year 2017-18.


Transportation of Material using Rail

Supply Chain Management

SAIL as a large integrated family consist not only of the Iron and Steel Plants but also the forward linkages like suppliers and other important stakeholders. This extended family helps the Company in keeping the environment clean and green. All those involved in the product lifecycle actively participate towards sharing responsibility for maximizing the overall value and minimizing any negative impacts across commercial, social and environmental attributes that result from the production, use and disposal of the product. SAIL products have a long processing-cycle and life-cycle; therefore the Company has taken up several integrated programmes to ensure that all materials, processes, goods and services are managed throughout the life in a socially and environmentally responsible manner. The Company is aware of its responsibility towards environmental conservation even outside its operational boundaries. Railway is an important mean of logistics for the Company; not only for reception of raw material at its facilities, but also for dispatch of finished goods to the godowns or the end customers. The Company prefers rail over roads for transportation of material, as there is enormous amount of raw materials and finished products being handled. This meticulous planning has not only improved the operational efficiency but also the environment in general as rail is considered as environmental friendlier option. However, in order to cater to market demands, SAIL also engages road transportation from its warehouses to customers' sites. The Company has taken necessary measures towards compliance of regulations and voluntary codes concerning health and safety impacts of products and services during their life cycle. Care has been taken to ensure that the products do not have any adverse effect on the environment.

Striving Towards Zero Effect on Environment

Steel is 100% recyclable and has no adverse impact on the environment. Yet, the Company assesses all its products, processes as well as associated services in this regard. SAIL warehouses have been accredited with ISO 14001 as an effort towards mitigation of environmental impacts and till now 13 no. of warehouses have been accredited. Maintenance of proper road and hardstands, replacement of wooden railway sleepers with concrete sleepers, recycle/ reuse of used oil, afforestation drive, conversion of vacant plots into flower gardens, use of energy efficient lightings, hygienic toilets, rain water harvesting mechanism, DG Sets with acoustic covers, etc. are some of the measures that have been taken in this regard. The Company regularly educate and propagate use of environment friendly and energy efficient processes to local SSI/ MSME vendors based around each Plant. All handling equipment are checked for periodical maintenance to ensure a healthy & safe environment within warehouses. Packaging materials are usually dispatched to customers along with consignments in good condition. Subsequently, packing materials recovered in loose conditions after dispatching finished products are disposed-off sustainably from warehouses at regular intervals. Except for pollution resulting from deployment of vehicular traffic like trucks & trailers in the warehouses, no significant negative environmental impact is noticeable in supply chain. All vehicles get checked for compliance with respect to pollution control.

SAFETY & HEALTH
MANAGEMENT


Programme
on
Electrical
Safety

Safety and Health

Safety and health are encapsulated in SAIL's core belief. Utmost importance is given to maintain a safe and healthy work environment in its all processes and operations. Following this, SAIL has been continually improving its safety and health management with an aim to have safe and healthy workplace. A safe, healthy and eco-friendly approach is always on the main focus in all operations of SAIL thus ensuring a sustainable business. Safety & Health issues are monitored from the apex level of management i.e. our Board/ Board Level Sub-committee and all pertinent issues are discussed and deliberated as opening item at all appropriate forums.

The organizational commitment is manifested in the form of well defined Corporate Safety Policy at the organisational level and fully aligned with this, the individual Plants are having their respective OH&S Policy also. The safety & health objectives of the Company are successfully achieved through its well established OH&S management programmes.

Minimization of human exposure and safety of workforce along with surroundings are ensured by including safety in design stage and adoption of the state-of-the art technology & installation of the latest equipment that also result in efficient operations.

The Company's safety performance was enhanced as a result of necessary emphasis that is duly given to safety during execution & commissioning of new projects by incorporating safety in their design & development phase. SAIL's Safety Policy and Safety Vision Statement aim for providing a safe and conducive work environment to all of its workforce - including regular and contractual employees engaged within its works area as well as neighbouring society at large. In order to spread awareness and inculcate safe working practices, various initiatives and drives are undertaken periodically on continuous basis. Bi-partite forums like Central/ Apex Safety Committees, Departmental Safety Committees etc. exist with involvement of Company's top management, trade union representatives & employees. Meetings of these Committees are held regularly in which all health and safety issues are deliberated for ensuring improvement of the OH&S Standards. The Committees also facilitate the monitoring & re-assessment of various activities undertaken and ensure adoption of OH&S agenda across the Company.

Joint Committee on Safety, Health & Environment in Steel Industry (JCSSI), a unique bipartite forum at national level with representation from major central trade unions and management of major steel producers of the country jointly evolve recommendations/action plans for ensuring safe & healthy work culture and acts as a common bridge for enhancing safety in the steel industry. For recognising and rewarding distinguished safety performance of the member organisations, annual meetings of the Committee and award functions are organized at Ranchi as well as at member plant locations. With a thrust on sharing and learning, best practices of the participating steel producers are shared through various Seminars/ Workshops. Sharing of information among members is also facilitated through the website of JCSSI- www.jcssi.com. Some of the activities of JCSSI are:

- Analysis of causes of accidents and sharing views on corrective measures.
- Scrutinizing key issues on Safety, Occupational Health & Environmental pollution.
- Spreading awareness among Committee members by sharing of best practices through seminars, meetings, workshops etc.
- Supporting and encouraging participation of workforce in Safety, Health & Environment.
- Printing and publishing information material like booklets, manuals, films etc. on Safety, Health & Environment.

The Company has achieved a noteworthy growth in Safety and Occupational Health parameters by establishing far-sighted systems, procedures and superior work practices. Health & safety drives/ operations are effectively ensured by perpetual involvement of the management and work force. The Company also considers views of bi-partite forums for reviewing / revising its Hazard Identification and Risk Assessment (HIRA) documents and approach towards Occupational Health and Safety. The management as well as representatives of workers reiterate the pledge to implement and maintain best standards for Safety, Occupational Health and Environment protection - the OHSAS 18001, ISO 9001 and ISO 14001. A MoU with National Safety Council, Mumbai for mutual engagement and collaboration in the areas of Safety Audits, Training etc. has also been signed by the Company.

The Company has an effective emphasis on adherence to Safe Commissioning Procedures for its new and upcoming facilities, identification of each associated hazards and assessment & control of work area risks, strict observance for approved protocols / work permits & SOPs/ SMPs/ SWPs, organising training on Fatality Risk Control and Behavioural Based Safety for risk mitigation.

Safety Setup

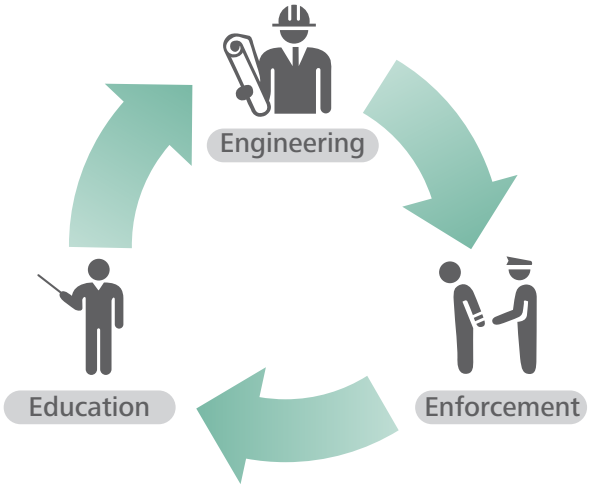
As SAIL is committed for a safe & accident-free working and prevention of occurrence of mishaps in its operations, safety performance across all of the operations is regularly monitored at the highest level of management i.e. Board, Chairman and Directors' level as well as by the Chief Executives & Executive Directors of respective Plants & Units. The efforts of the Company for achieving a safe and healthy environment are guided and monitored by a Board Sub Committee. SAIL Safety Organisation (SSO) coordinates, monitors and guides the Safety and Fire service activities at the Corporate level. At Plant/ Unit, respective Safety Engineering Deptt. (SED) functions to ensure operational safety. Similarly Fire Services Deptt. remains readily available for meeting various requirements, monitoring fire prevention related aspects etc. The SEDs carry out awareness generation drives and campaigns in their Plant/ Unit at regular intervals. In each department/ shop, adherence to laid down standards & safe working procedures is ensured by Departmental Safety Officer (DSO) & Safety Steward/ Captain of the Plant/ Unit who monitor safety aspects on day-to-day basis and works in close coordination with the Plant's/ Unit's SEDs. In Project & expansion areas, Zonal Safety Officers (ZSOs) are deployed to monitor safety during various phases of work.

Safety Pledge Being Taken

(103-1, 103-2, 103-3)

Systems and Procedures

The 3 E's of Safety Management i.e. Engineering, Enforcement & Education are given adequate importance in all spheres of working. Adherence to necessary technological discipline and statutory rules & regulations are fully ensured by the Company's well designed SOPs, SMPs & WIs which also have safety aspects incorporated in it.



These documents, which serve as vital guidance documents, are reviewed periodically with changing technology / process requirements and updated accordingly. These updated documents are made available on respective Plants' web portals /KM portals and can be easily accessed and referred by all employees.

'Permit to Work' & 'Protocol' Systems, having safety provisions, are religiously followed and strictly adhered to during execution of hazardous & critical jobs involving multiple agencies. The practice of taking extra precaution during major capital repairs/ shut down jobs through safety surveillance & intensive monitoring ensures a safe completion. 'Inter Plant Standards in the Steel Industry (IPSS)' in the area of safety also help in augmenting safety standards of the Company. IPSS 1:11 - Standards Committee on Personnel Safety Appliances and Procedures, formulates new standards as well as reviews and updates existing standards by utilizing knowledge & experience of domain experts as well as core safety professionals. The standards developed are uploaded on IPSS portal which is available in the SAILNet as well as open domain i.e. internet and accessible for the benefit of common user.

Workers' Involvement in Safety Management

A sustainable health and safety culture is maintained by the Company's Health and Safety Committees that has joint representation of management & workers. All of the employees are covered by the formal joint management-worker Health and Safety Committees at Plant/ Units and are duly engaged and conversed on Health & Safety issues. These committees are normally called for meeting once a month in all the departments where every issue related to health & safety, maintenance of good health, safe working environment, welfare, security of the Plant/ Unit etc. are discussed jointly.

A compulsory safety and work environment related training is duly provided to every contractual worker before their deployment on any job. Employee engagement initiatives are regularly undertaken to ensure commitment of every employee in enhancement of a safety culture and aiming for achieving 'zero accident' in his respective workplace, department and Company as a whole. As a new initiative, Hazard Analysis Competition at whole SAIL level is organized by SSO wherein good safety performance of the employees is identified and suitably rewarded.


Mock Drill

(103-1, 103-2, 403-1)

Safety Training & Education

Out of the 3 E's education being an important element of Safety Management System, is taken care of by regularly organising training on safe working, accident prevention and risk-control etc. for Company's regular & contractual employees thereby equipping them with requisite skills & knowledge. Skill enhancement and awareness on occupational health & hygiene, first aid, stress management, preventive care for occupational diseases, HIV/ AIDS etc. are also taken care of by carrying out various trainings/ workshops. For different work zones/ areas such as Iron & Steel, Rolling Mills, Maintenance Wing & Support Services etc., 'Learning from Each Other (LEO)' workshops covering salient issues of concern with participation of other Indian steel producers, 'Large Group Interactions' etc. are organised for effective learning. Behaviour Based Safety (BBS) approach is practiced to inculcate positive safety culture.

For each contract worker, Induction training of two days duration followed by job specific training covering area specific hazards & associated risks as well as control measures is imparted before engaging on the job. To assess learning level, post-test is conducted after the training and accordingly, re-training is conducted as well. For undertaking height, roof sheeting jobs etc., competence of the workers is assessed on training rig, especially fabricated for the purpose. Workforce is regularly imparted with job specific safety training and for better learning, customised trainings such as for working at height, for roof sheet changing etc. are also provided. Safety related information, to larger cross-section of people at Plant townships, is also broadcast by respective Plant TV networks. Training on safety is also imparted to Central Industrial Security Force (CISF) workforce who is deployed for ensuring security in and around the Plants. O&HS related training is also provided to the other security staff. All CISF personnel are trained on Human Rights aspects at their individual training camps as per standard training procedure of the GoI for security personnel. As a result of its consistent efforts, a safe & healthy working environment has been achieved by the Company for all of its employees and those living in the neighbourhood.

Practicing IT Based Systems

IT tools & systems have been deployed by the Company in the area of Safety & Health also. Safety related information is shared amongst wider cross section of employees through online safety portals developed and maintained by the SSO as well as Plants. These web portals are an effective tool in sharing information across the organisation. Employees can put forward safety suggestions for bringing improvements in safety standards as well as submit near miss cases through these online systems.

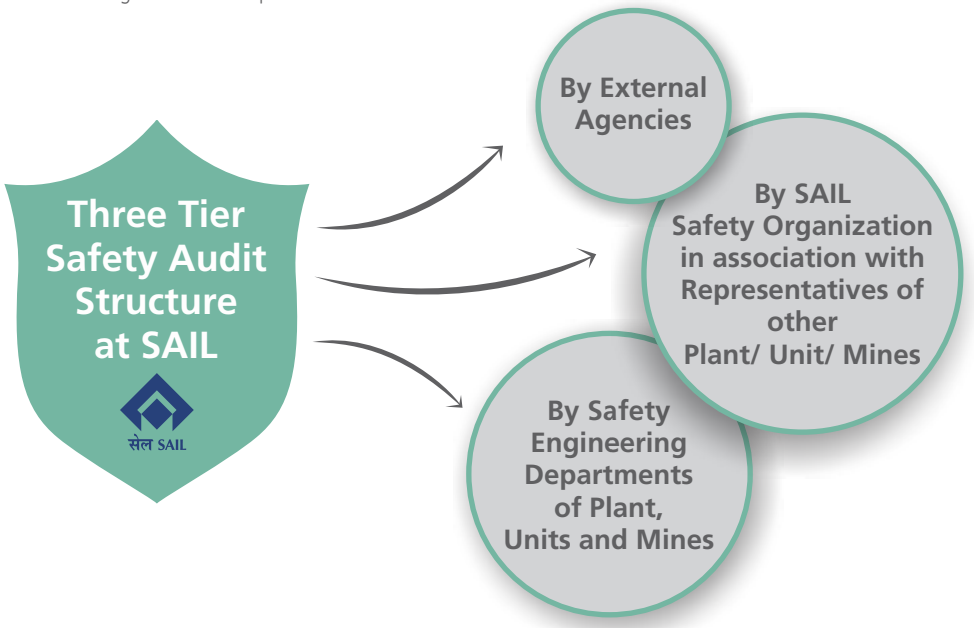
SSO & Plants/ Units regularly bring out publications, electronic newsletters/ magazines etc., that have wide range of useful information pertaining to Safety & Health from experts across the steel sector.

Safety Audits & Review

Safety Audits are conducted on regular basis as per IS 14489:1998 i.e. 'Code of Practice on Occupational Safety & Health Audit' at major departments of all plants/ units including Mines and Warehouses to assess the effectiveness of prevailing OS&H systems, compliance to regulatory requirements etc. and identify areas for improvement. Emphasis is laid on identifying issues of concern and carry out safety system-based audit. Compliance audits are also conducted to verify implementation status of suggested measures. Besides this, inspections, walk-around surveys etc. are also conducted to identify gaps and action plans are drawn to bridge the gaps.

Periodic review of safety performance is made at top management level of respective plants/ units. Structured review meetings are conducted by SSO through scheduled Heads of Safety, Heads of Fire Services & OHS heads meetings of all SAIL plants /units. Issues of concern are discussed and strategic action plans are drawn on priorities for action to bring continuous improvement. Such meetings also serve as an experience sharing platform to the concerned professionals through Learning from Each Other (LEO) approach. Good practices of other plants/ organizations are also shared to promote benchmarking. The decision points are followed up for timely implementation. Of late, Video Conferencing (VC) as modern communication tool is being increasingly utilized for such review meetings and interactions. This helps in efficient resource utilization & better communication.

Three tier Safety Audits are being conducted at plants & units as mentioned below:



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During 2017-18, Safety Audits conducted by SSO in BSP (BBM, CCD, EMD, SED, Projects); DSP (Oxygen Plant, Traffic, Merchant Mill, SED); RSP (Oxygen Plant, Sinter Plants, CRM, BFs); BSL (SED, CRM, Sinter Plant, BFs); ISP, Burnpur (SED, RMHP, Power Plant, EMD, Oxygen Plant), CFP (Whole Plant); Mines (Dalli Mine under BSP). Subsequently compliance audits conducted for checking implementation status of recommendations of fatal accidents & safety audits at BSP, DSP, RSP, BSL, ISP & ASP.

Salient Good Safety Initiatives & Practices

- Training programmes organised on Defensive Driving, Scaffolding, Safety in Mining, Warehouses, Risk Analysis and Preparation of Safety Management Plan & LEO workshops on Safety in Iron Making, Steel Making, Coke Making & Coal Chemicals, Rail movement.
- Induction training duration for Contract Workers was standardised to two days in plants.
- DGMs/ Senior Officers were appointed as DSOs to improve safety management.
- Gas Management System was reviewed for DSP by the committee of experts from EMD constituted by SSO.
- MoU renewed with National Safety Council (NSC) for a period of one year to develop, maintain and implement the high standards in OS&H and Environment through technical co-operation exchanges between the two organisations for strengthening activities in the field of Safety, Health and Environment (SHE).
- World Steel Safety Day celebrated across various Plants & Units.
- Safety exhibitions held at various Units with display of working models on safety theme.
- CCTV cameras installed at different busy roads for monitoring traffic & road safety violations.
- Special campaigns conducted for Road Safety. 'Road Safety Week' celebrated by organising activities like Heavy Vehicle Checking/ Bike Rally/ Road Show/ Safety Skit in township including Crash Helmet checking/ Counselling, Essay, Drawing & Slogan & Speech Competition for employees and School children.
- National Safety day, Road Safety Week, National Fire Services Week,

Education on Safe Practices

Bhopal Gas Tragedy Remembrance day, Chemical Accident Prevention day etc. observed.

- A Tableau based on the theme 'Rail-Road Safety' displayed during the grand Republic Day Parade - 2017 at Jayanti Stadium, Bhilai and was awarded First Prize (BSP).
- Senior Official (Next to HOD) of the Deptt. has been deputed as 'Safety In-charge' (BSP).
- Weekly safety review (every Saturday) with new DSOs by ED(W) in addition to safety review during weekly co-ordination meeting (DSP).
- New Safety Excellence Centre (SEC) has been developed by SED. It has communication hall, changing cum PPEs room and Model Room (DSP).
- Safety film for visitors prepared. It is played at SEC after imparting safety talk thru' PPT (DSP).
- First day of the month as 'Felt Leadership on Safety' introduced. All GMs / HODs conduct safety surveys in their work areas and work exclusively and give thrust on safety (DSP).
- Suraksha Chakra award scheme 'Abhaya' launched for rewarding 10 Chakras on quarterly basis and one of them being judged as ED(W) Suraksha Chakra Samrat (RSP).
- Online Speed detector camera installed in Plant Plaza Road (BSL).
- Implementation of 'Safety Suggestion' Month for employees' participation in different shops to improve work environment & habit of safe working (BSL).
- Behavior Based Safety (BBS) Awareness Programme for GMs / HoDs & new DSOs. March month declared as BBS month (BSL).
- Implemented awards for Zero Accident and Safety Excellence Award for the departments on yearly basis (ISP).
- Surprise checking being done at night inside Works area since May'17 (ISP).
- Structural stability test of PBS#2, BF#5, BOF-CCP, Old SMS & Old Oxygen Plant completed (ISP).
- Continuous inspection and supervision of electrical system through CCTV has been installed in Mills area sub-station, MRS and other various areas (ASP).
- Online Gas Detection System at all the BF Gas generation & utility locations has been commissioned and working satisfactorily (VISL).
- Public Address System installed at Security Gate & FAD building for addressing Safety instructions & generating awareness (CFP).
- HAZOP study of gas network carried out by team of executives (CFP).
- Height rig commissioned for conducting test of contract workers who perform height jobs (CFP).
- Structural stability test and Non Destructive Test (NDT) test for static & mobile installations and equipments have been done through CMERI (for various Mines).
- Pit safety committee meeting was held as per schedule on monthly basis in all Mines.
- Annual Mines Safety Week Celebrations were held for 2017 and different prizes were won by various Mines.
- Regular PME & Eye Refraction test of all employees and HEMM drivers / Operators was conducted successfully for all mines.
- A workshop on 'Risk analysis and preparation of Safety Management plan' was organized with faculty support from Coal India Ltd. at BSP Mines.
- Electric siren has been fitted in OT Hill area for blasting purposes at Gua Ore Mines.
- High wattage HPSV Light fittings have been fitted to improve the illumination level of Mines & Plant at Gua Ore Mines.
- As per DGMS guidelines, Safety Management Plan for Bolani Ore Mines was prepared and submitted to DMS for approval.
- All the dumpers have been provided with audio visual alarm, fog lights and seat belts & Anti-collision devices at Bolani Ore Mines.
- Before starting of extraction of each long wall panel thermo compositional study was done by CIMFR at Chasnalla Colliery.
- Training on Strata Monitoring and Special Method of Mining for thick & Incline Seam at Chasnalla Colliery.

- Mock rehearsals / drills were conducted to measure the effectiveness of Emergency Response Plan which is prepared for the Mine as per the DGMS guidelines & circulars.
- Use of mobile phones by Contract Workers at workplaces have been totally banned (CMO).
- Solar Power Plant at Kanpur warehouse and small solar power units installed at some of the warehouses (CMO).
- Swachh Bharat Abhiyaan' and Health & Eye Camps organized at warehouses.
- Nearly 4,000 saplings planted at warehouses across the country.
- Revamping and Developmental activities undertaken at warehouses, wherever required including replacement of CCTV cameras (CMO).

Occupational Health Management

SAIL is committed to deliver a comprehensive, multidisciplinary and multidimensional health promotional programme at works through Occupational Health Services (OHS). The priority of OHS is 'to promote and maintain the physical, mental and social well being of our employees at the highest possible level'. As a result of the committed services, the OHS in all plants have become an integral part of its production system and shown its efficiency to prevent illness & disability as well as to protect and promote the health of employees.

The Company has established full-fledged and well equipped OHS centres with modern healthcare equipment at all its Plants & Mines. The Company is committed to giving priority for improving workers' health by covering 100% employees under OHS programmes. BSP's multi-disciplinary, multi-dimensional OHS centre has emerged as the National OHS Centre for SAIL and functions as a Central Nodal Agency to monitor Occupational Health activities in different SAIL Units.

Collection, compilation, analysis, retrieval and dissemination of necessary information is successfully carried out by a computer based software tool-Health Information System (HIS).

An integrated approach towards comprehensive health care is provided for preventive, curative, promotive and rehabilitative health services and maintaining a conducive work environment in line with the requirements of OHSAS 18001 & SA 8000 Certifications is taken.

Celebration of special days World Health Day, International Yoga Day, Occupational Health Day, Doctors' Day, AIDS Awareness Day, World TB Day, Diabetes Day, World Kidney Day, World Malaria Day, International Women's Day etc. help in promoting health awareness across the Company. Various programmes focused on regular and contracted female employees are also organised. Every year, experience sharing seminars, workshops such as All India Steel Medical Officers' Conference (AISMOC) are held where good performers in the area of OHS are recognised and deliberations on important issues are carried out among doctors/ medical professionals from the steel hospitals. The SSO organises annual meetings of OHS heads wherein individual good practices being followed and issues requiring concern at different units are discussed.

Infrastructure & Facilities

Preventive: Periodical Medical Examination (PME), shop floor based health & hygiene survey, Departmental health check-up (DHC), Hazard Identification & Risk assessment (HIRA) at shop-floor, fundamental research on occupational health and several programme on health education, Occupational Medicine Clinic, Industrial Hygiene Survey setup, Computerized Health Information System (HIS).

Promotive: Awareness programme, Training on Ergonomics & work design, Occupational health hazards, Industrial Hygiene, Use of PPEs for dust & noise, First Aid and Emergency care, Stress Management, Yoga at OHS centre, AIDS Control, Life Style Diseases, Special programmes for working women, Celebration of Special Days.

Curative: General OPD, Pharmacy, Plant Casualty services with Disaster Management facilities. Round-the-clock Ambulance services, Eye wash Fountains, Minor OT.

Rehabilitative: Disability assessment following any work injury through Disability Medical Board, Redressal of complaint cases from work places / departments, Job rotation based on deviation found in PME & recommendations of DMB being implemented by redeployment Committee, documenting follow up & feedback.

Facilities: Lung Function Test, Biochemical investigation, Clinical Pathology, Digital X-Ray, Vision Test, Health Education & Training, OHS Library, ECG, Psychology, Health Information System, Audiometry etc.

Occupational Health Research: Fundamental research in various areas of occupational health is considered to be one of the prime activities of OHS centres. Several scientific papers have been published and presented in the National and International Journals & Conference proceedings on Occupational health & Ergonomics. Apart from that several National Institutes and Universities have a close coordination with OHS centres and many post-graduate students have already done their Master's thesis under the guidance of OHS professionals.

Salient Activities Undertaken By OHS Centres

- Periodic Medical Examination of 44,871 employees, Vision testing of 40,551 employees (including vertigo test for crane operators) working in works areas and Occupational Hygiene Survey in 526 locations conducted.
- Under Health Education, 256 nos. training programmes conducted at all plants/ units.
- Medical boards meetings for different purposes held – 166 nos.
- Special Days like World Day for Safety & Health at Work, International Yoga Day, World Malaria Day, International Women's Day, National Occupational Health Day, World No Tobacco Day, World Diabetes Day & World AIDS Day celebrated.
- Evaluation of Musculo-skeletal Disorders and Ergonomics rectification through postural corrections and work place modifications.
- Practice of Yoga and relaxation exercise for all employees, attending OHS centre for PHC.
- To increase the fitness, cycling was encouraged among Employees (VISL).
- The measurement of Waist Hip Ratio was introduced (VISL).
- Green initiative was taken by planting greeneries around OHSC (VISL).
- A free Cardiac check up camp was conducted for Retired employees (VISL).

Safety Statistics (Plants and Mines)

Year	Injury Rate (per 2,00,000 hours worked)
2015	0.058
2016	0.070
2017	0.110

Year	Mandays Lost*
2015	4,576
2016	1,729
2017	2,080

*Excluding Mandays lost on account of fatal accidents

Accidents by Category (Nos.)

Year	Regular Employees	Contractor Worker	Total
2015	59	57	116
2016	84	46	130
2017	127	70	197

Accidents by Type (Nos.)

Year	Fatal	Reportable	Non-Reportable
2015	20	53	43
2016	11	31	88
2017	16	34	147

Total Nos. of Safety Training Imparted

Year	Total Nos. Trained
2015	1,74,543
2016	1,31,143
2017	1,45,385

Learning Safety Skills


भिलाई
इस्पात
संयंत्र
Bhilai
Steel
Plant
MAINGATE
PROHIBITED
AREA

HUMAN RESOURCE
MANAGEMENT


सेल SAIL

SAIL recognizes contribution of its Human Resources in providing it the competitive advantage. The Company has achieved its present level of excellence through investment in its human resource, where skill and knowledge constitute the basis of every initiative - be it technology or innovation. Developing skills and capabilities of employees to improve manpower utilization and labour productivity is the key thrust area of Human Resource Management in the Company.

SAIL provides an environment conducive for learning, encourages adoption of best practices in every area and nurtures creativity and innovation among employees. Human Resource initiatives in SAIL are focused on developing team spirit, employee empowerment and their involvement in various improvement activities. Strategic alignment of Human Resource Management to business priorities and objectives has facilitated smooth transition to state-of-the-art technology in the Modernization and Expansion Projects.

SAIL has adopted a structured and transparent recruitment process as part of the well-organized manpower planning. The Company believes in inclusion of local people in various kinds of jobs. It is taken care by the regular recruitment process. SAIL provides equal and uniform benefits to its esteemed workforce. Wages of all employees, irrespective of gender, are based on negotiated agreement under National Joint Committee for the Steel Industry (NJCS)/as per Government Guidelines, and are above the minimum wages. The contractors make payment to workers engaged by them over and above the minimum wages fixed by the respective State Government for that location, without any gender differentiation. Contract labours are engaged by the contractors in the composite Job Contracts awarded to them by Plants and Units of SAIL for jobs of specialized and intermittent nature as well as for various project activities.

By the end of Year 2017-18, the total number of employees in all the Plants, Units and Mines of SAIL across India was 76,870. The ratio of employees in the gender category (Female/Male) is 6:94. The percentage of employees in minority groups is around 8.41%.

Closing Manpower of SAIL

Year	2016-17	2017-18
Executive	12,840	11,718
Non-Executive	70,124	65,152
Total	**82,964**	**76,870**

Gender Profile of SAIL Closing Manpower

Gender	2016-17	2017-18
Male	78,182	72,454
Female	4,782	4,416

Age Profile of SAIL Closing Manpower

Age (Yrs.)	2016-17	2017-18
<30 (Upto)	9,304	8,057
31-50	38,503	35,884
>51 (above)	35,157	32,929

Minority Representation in SAIL Manpower

	2016-17	2017-18
Total Minority Employees	7,022	6,462
Total Employees	82,964	76,870
%	**8.46**	**8.41**

Contractual Workers in SAIL

	2016-17	2017-18
Closing Nos.	59,606	66,186

	SC	ST	OBC
2016-17	13,604	12,018	10,578
2017-18	12,632	11,310	10,201

Gender-wise Recruitment in 2017-18

Plant/Unit	Male	Female	Total
BSP	138	21	159
DSP	25	5	30
RSP	24	9	33
BSL	158	9	167
ISP	48	4	52
SSP	1	1	2
RMD	8	4	12
SRU	4	0	4
Collieries	6	0	6
Total	**412**	**53**	**465**

Recruitment & Attrition during the year 2017-18

	Recruitment			Attrition
Plant/Unit	Executive	Non-Executive	Total	
BSP	6	153	159	114
DSP	0	30	30	48
RSP	0	33	33	33
BSL	0	167	167	54
ISP	21	31	52	110
ASP	0	0	0	7
SSP	0	2	2	3
VISL	0	0	0	3
RMD	0	12	12	12
CFP	0	0	0	5
SRU	0	4	4	3
Collieries	0	6	6	1
RDCIS	0	0	0	1
CET	0	0	0	1
CMO	0	0	0	9
SSO	0	0	0	0
Corp. Office	0	0	0	1
SAIL (Total)	**27**	**438**	**465**	**405**

(102-7, 102-8, 103-1, 103-2, 103-3, 202-1)

Ensuring Cordial Work Place

The Human Resource Policy of the Company gives utmost importance to innovation, involvement and creative work culture. The Company believes in providing equal employment opportunities at work place irrespective of gender, caste, religion or marital status. The Company also believes in informing its employees, their representatives for smallest modification as part of Human Resource Policy.

Engaged Work Culture

SAIL has maintained its glorious tradition of building and maintaining a conducive and fulfilling employer-employee relations environment. SAIL has adopted collective bargaining vigorously for maintaining the participative culture in the organization; hence it has become an integral part of an overall governance framework that contributes to responsible management. All employees are covered by collective bargaining agreements. Collective bargaining for non executive employees is taken care by the NJCS which is a unique bipartite forum consisting of workers representatives from major Central Trade Union Organizations, representatives from recognized Unions of SAIL and RINL and Management Representatives of SAIL & RINL.

The Company believes in workers participation and hence recognized unions for non-executive employees exist in all Plants/Units. The Steel Executives' Federation of India (SEFI) - the apex body representing the executives in SAIL, carries out the collective bargaining in case of Executives. Peaceful industrial relation ambience with trade unions/workers' representatives is maintained by a healthy practice of sorting out and settling issues through participative discussions. Bipartite forums like NJCS, Joint Committee on Safety, Health & Environment in Steel Industry (JCSSI), etc. with representation from major Central Trade Unions as well as representative Unions of Plants/ Units meet periodically and jointly evolve recommendations / action plans for ensuring a safe & harmonious work culture.

HR System and Processes

Monetary and non monetary benefits are an essential part of compensation and no Company can deny their importance to its work force. Workers' participation at SAIL, at different levels, right from

Steelforce at work

(102-41, 103-1, 103-2, 103-3)

National level up to shop-floor level, is ensured through an established system. NJCS, which is a bipartite forum comprising of members representing both the employers as well as employees, decides wages and benefits of non-executive employees. All regular non-executive employees are covered under the purview of this collective bargaining body. Fair dealing & compliance on labour issues are ensured by the designated Labour Welfare Officers of the respective Plant/Unit/Mines.

The Personnel Department regularly monitors fairness in activity and services as the Company doesn't encourage any discrimination towards any section/category of employees. The Company encourages Freedom of Association, as enshrined under the Constitution of India and envisaged in the Trade Union Act in addition to the Right to exercise the Freedom of Association and Collective Bargaining in all operations.

SAIL religiously encourage protection of Fundamental Rights as described in the Constitution of India. The Company always try to protect the human rights of its employees. Efforts have been made to successfully manage succession planning and career development aspects of all employees. Regular performance and career development reviews are done for all the employees.

The importance of communicating to employees on a regular basis is well understood at SAIL and hence 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 Chief Executive Officer / Senior Officers' level involving structured discussion with large group of employees. These interactive sessions help employees to align their working with the goals and objective of the Company leading to not only higher production and productivity but also enhance the sense of belongingness of the employees. The well structured exit policy of SAIL, where employee has to serve 3 months notice period after putting in the resignation, is one of those example of well defined HR system in place.

SAIL firmly believes in the philosophy of providing quality of work life for maintaining harmony at workplace and outside; hence appropriate leave policies are available for the employees. All regular employees enjoy benefits like Health care, Disability / Invalidity coverage, Maternity Leave, Retirement Benefits, etc. Maternity leave up to 180 days and 730 days Child Care leave are also provided to women employees. Workmen engaged by the Contractors in establishments of SAIL, are covered under the ESI Benefits. As a responsible corporate, various social benefits to employees are also given in the form of housing, education, civic amenities, sports & recreation and social welfare. Full-fledged townships have been developed over the years at all Plant locations with modern infrastructural facilities along with premier schools, super specialty hospitals, shopping malls, multiplexes, parks, gymnasium, stadiums, etc.

Aspects of human rights are also communicated to all our vendors & suppliers through implementation of SA 8000. The Company arranges for training & awareness workshops for employees on different aspects of SA 8000 pertaining to child labour, forced labour, non-discrimination, freedom of association, safe work environment and health & safety. The SA 8000 clause on child labour includes employment of persons of age 18 and above as a precondition to partnering with SAIL, and 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 accrue to the defaulting party. This aspect is clearly spelt to all our vendors and suppliers during engagement with them.

The Company avails the inclusive support and services of Central Industrial Security Force (CISF) for ensuring security in and around its Plants and Mines. Training on aspects of safety and human rights is duly provided to CISF personnel.

Grievance Redressal Mechanism

Effective internal grievances redressal machinery has been evolved and established in SAIL Plants and Units, separately for executives and non-executives. Joint grievance committees have been set up at Plant/Unit level for effective redressal of grievances.

SAIL Plants/Units are maintaining 3 stage grievance handling mechanism and employees are given an opportunity at every stage to raise grievances relating to wage irregularities, working conditions, transfers, leave, work

Grievance Redressal

(103-1,103-2,103-3, 402-1)

assignments and welfare amenities, etc. Majority of grievances are redressed informally in view of the participative nature of environment existing in the steel Plants. The system is comprehensive, simple and flexible and has proved effective in promoting harmonious relationship between employees and management.

Against 376 staff grievances received during the Financial Year 2017-18 with 16 grievance pending from previous year, 366 staff grievances have been disposed off during the year, achieving 97.34% fulfilment.

There are no known cases of discrimination as well as any violations of human rights in SAIL.

Well Being of Employees

SAIL has always tried to make consistent efforts towards the holistic health of its employees and this philosophy is visibly reflected through well defined medical policies, which are available to all workforce even post retirement. The employees are considered as part of one extended family and SAIL believes in supporting them during service as well as after superannuation.

Provident Fund, Gratuity & Employee Pension Scheme

The total contribution made by the Company to SAIL Gratuity Trust up to 31st March 2018 was ₹3,349 crore. The fund size has grown to ₹6,309 crore as on 31st March 2018, net of settlement done towards payment of Gratuity. The gratuity liabilities of the employees are valued by a professional Actuary at the end of each Financial Year and based on the actuarial valuation, the contribution to the Gratuity Trust is made. The PF and Employee Pension is being paid as per the statutory requirement.

Medical Facilities to Serving Employees

SAIL, being a conscious corporate entity, believes in taking care of its employees at the time of need. The Company firmly believe in extending world class medical facilities to its manpower along with their entitled dependent family members. The Health Policy of SAIL states that: "SAIL, the largest steel producer of India, in its endeavour to maintain a healthy workforce shall focus on promoting and maintaining the health of its employees by providing them a conducive and healthy environment to work, and an efficient and advanced health care system with a balance of preventive, promotive and curative measures." SAIL has a huge medical setup comprising of 18 multi-specialty Hospitals and more than 33 Primary Health Centres, located across its Plants/Units. For treatment not available at SAIL hospitals, the employees (& their dependants) are referred to hospitals located pan-India as per rules and requirement. For the city based employees and their dependents, where SAIL's own hospital is not available, employees are provided comprehensive medical facilities in empanelled hospitals. The facility of reimbursement of medical expenditure is also permissible for expenses incurred in non-empanelled setups as per rules & approved provisions. Total medical expenditure incurred during FY 2017-18 was around ₹558 crores.

Medical Facilities to Retired Employees

The Company takes care of its employees even after retirement and hence is seen as a champion of best practice of after retirement benefits. The Company provides medical benefits and health care benefits for all employees and their spouses even after their superannuation. Medical facilities are extended to ex-employees and their spouses at Plant Hospitals at par with serving employees, free of cost. In addition, the Company has also been operating a Mediclaim Scheme for all retired employees and their spouses since 1991. The premium applicable to the said scheme is highly subsidized by the Company. SAIL's Mediclaim Scheme is considered as amongst the largest group Mediclaim Schemes in India and at present covers more than 1.17 lakh members located pan-India.

Extension of Employees Deposit Linked Insurance (EDLI) Scheme, 1976

Monetary benefits applicable under the statutory Employees Deposit Linked Insurance (EDLI) Scheme, 1976 have been provided with a top-up of ₹2000/- per case and such benefits are also extended to employees who separate on account of Permanent Total Disablement (PTD) in addition to cases of death of an employee while in service.

Employee Family Benefit Scheme

As a champion of best human resource practices, the Company believes in taking care of its employees at the time of distress. According to this scheme, in cases of death of an employee while in service or on account of Permanent Total Disablement, an amount equal to his last drawn Basic Pay + DA is paid to his/her nominee or the employee (as the case maybe), on monthly basis till his notional date of superannuation. Benefits are extended if the nominee/employee deposits an amount equivalent to his/her PF and Gratuity amount with the Company. This amount is returned back to nominee/employee after attainment of notional date of superannuation.

SAIL Employees Superannuation Benefit Fund (SESBF)

SAIL Employees Superannuation Benefit Fund (SESBF) also exhibits the Company's commitment towards its employees even after their retirement. SAIL employees are contributing @ 2% of their Basic Pay plus DA towards SESBF. The SESBF Fund is managed by a Trust representing Unions, SEFI and Management.

TRAINING
& DEVELOPMENT

On-site Training

Training and Development

The employees of the Company are the driving force for the organization and SAIL takes pride for having human resource capital which has constantly challenged the limits and excelled in their area of work. Human Resource Policy of SAIL ensures competence and committed team engaged in building a culture of learning to achieve excellence in performance and employee satisfaction through innovation and continual improvement.

To continue excellence in our work-force, we have inculcated a policy of providing training to add to the knowledge of every employee at least once in three years. Based on this, Annual Training Plan (ATP) is prepared for each Plant/Unit under the following major categories:

- New Entrants
- Competence Enhancement
- Workshops and Special Areas and
- Other Areas

All policies and procedures of the Company abide by the statutory norms and ensure that none of the practices override the basic human rights. The training functions are validated by the apex referral body known as TAB (Training Advisory Board), which is headed by the Chairman, SAIL, and has all the Directors of the Company as its members. The Directors take their respective agenda points from the TAC (Training Advisory Committee), which is attended by zonal and departmental heads, and chaired by the respective CEOs. These bodies generate several organizational learning needs and thrust areas which are included in the annual plans. The training department is also covered under QMS and EMS.

For the newly recruited Management Trainees (MTs) in the Company, the Central Induction Programmes with the support of Plant HRD Centres are organised. At SAIL, we follow a system of mentoring while imparting training, as it helps not only in building confidence in MTs but also aids in delivering managerial excellence in their field of operations. In addition, suitable training programmes are crafted and continually updated to bridge competence gap of the employees based on their training needs.

Every shop has its own training coordinator who is responsible for imparting training in various areas along with the identified trainers. The

(103-1, 103-2, 103-3, 404-2)

work profiles of all the roles/positions are analysed and any gap between the job requirements and employee skills is identified and minimized through training programmes. This mechanism keeps them on the move to update their knowledge and chase excellence. In addition, training needs for the thrust areas like multi-skill training, training for new units coming under modernization/expansion, training in critical skills etc. are reviewed at apex level.

Annual Training Need Assessment (TNA) for executive level employees is done through online Executive Performance Management System (EPMS). The executives get to choose the required technical and managerial training in order to meet their KPAs as per the demands of their jobs.

The line managers are responsible for identification of training needs of non-executive employees at the shop floor with the help of Training Engineers. This assessment is done through:

- Competency Mapping
- Skill-Gap Analysis and
- Requirement for Multi-skill training

The Company gives adequate thrust in providing training to its non-executive employees. For the non-executive employees and frontline executives, special Performance Improvement Workshops (PIWs) involving root cause analysis, brain storming and building an action plan regarding issues like production and productivity, cost reduction, maintenance, housekeeping and safety are planned every year at the respective areas/shops. At least one-third of employees every year are provided training at various locations. For development through knowledge sharing, technical and managerial journals are widely published and shared with every employee via. Company portal, in-house magazines etc.

The training programmes are designed to provide lifelong learning and skill development, support our employees during their career in SAIL, as also in their retired life. Specialized technical training and vocational training programme for college students are also organised every year.

Types of Training Hours Breakup for the Year 2017-18

Average Hours of Training	Executive	Non-Executive	Total
External Training (including MTI/CPTI)	77,064	17,416	94,480
Foreign Training	608	128	736
Specific Areas	35,760	1,12,128	1,47,888
Managerial Competence Enhancement	33,768	11,488	45,256
Technical Competence Enhancement	95,544	5,03,016	5,98,560
Fresh/New Entrants	9,640	54,72,720	54,82,360
Other Areas	17,600	6,73,296	6,90,896

Performance Indicator	2017-18
Percentage of employee trained	49.8%
Training man-hours per employee	84.8
No. of employees trained	41,355

Happy Learning

(103-1, 103-2, 103-3, 404-2)

SOCIAL
SUSTAINABILITY

SAIL's focus on social responsibility remains firm as the Company continuously improves its social responsibilities, environmental and economic practices in order to make a positive impact on the society. SAIL accepts its social obligation towards the communities in which it operates and thus has carried out several developmental activities in the thrust areas falling in line with Schedule-VII of the Companies Act-2013 namely, education, medical and health care facilities, village development, access to water facilities, infrastructural development in peripheral rural areas, environment conservation, women empowerment, assistance to people with disabilities, sustainable income generation through self help groups, promotion of sports, art, culture & heritage conservation, etc.

SAIL proudly upholds its Credo "Making a meaningful difference in people's lives"

CSR initiatives taken up at SAIL with immense outreach have enabled numerous small rural neighbourhoods translate into large industrial centres. The Company focuses on the holistic development of local communities by ensuring 100% engagement with them in its CSR programmes.

The CSR initiatives of the Company have always been undertaken in conformity to the Companies Act-2013, Companies (Corporate Social Responsibility Policy) Rules, 2014 and CSR Policy.

Various Social Challenges associated with the operations of the Company and their adopted mitigation strategies are listed below:

Social Risks

- To carry out social responsibilities in sync with Plant/Units/Mines activities
- To maintain ethical transactions across supply chain
- To motivate employees and retain talent
- To ensure outreach and significance of development programmes in villages

Mitigation Strategies

- To carry out appropriate need assessment and community engagement programmes
- To adhere to ethical business practices
- To focus on professional growth
- To engage in social up-liftment by investing on community and its development

CSR Initiatives

The Company undertook the following significant activities in various fields during the year 2017-18:

Healthcare

Good health contributes to a better economic growth, as healthy populations live longer and are more productive. Keeping this in mind, the Company has been providing specialized and basic healthcare to people living in the vicinity of its Plants/Units through extensive & specialised Healthcare Infrastructure. During 2011-2018, around 1.70 crore people were benefitted. In order to deliver quality healthcare at the doorsteps of the needy, regular health camps in various villages on fixed days were organized for the people living in the periphery of Plants/Units, Mines and far-flung areas. During the Financial Year 2017-18, about 4,130 Health Camps were organized benefitting over 76,000 villagers. 7 Mobile Medical Units (MMUs) running in the Plant's peripheries benefitted 44,000 villagers at their doorsteps.

27 Primary Health Centres at Plants exclusively provided free medical care and medicines to 3.43 lakh villagers during the Financial Year 2017-18.

(103-1, 103-2, 103-3, 413-1)

Education

SAIL understands the value of education which leads to a lifelong learning. SAIL is supporting around 77 schools which are providing modern education for around 40,000 children in the steel townships. 19 Special Schools (Kalyan & Mukul Vidyalayas) are benefitting over 4,270 BPL category students at integrated steel plant locations with facilities of free education, mid-day meals, uniform including shoes, text books, stationary items, school bags, water bottles, and transportation in some cases, are running under CSR.

The Company in association with the Akshya Patra Foundation is providing mid-day meals to 68,000 students of over 630 Government schools in Bhilai and Rourkela.

SAIL has adopted tribal children who are getting free Education, Accommodation, Meals & Uniforms, Textbooks, etc. at Saranda Suvan Chhatravas, Kiriburu; RTC Residential Public School, Manoharpur; Gyanodaya Chhatravas, BSP School Rajhara, Bhilai; Kalinga Institute of Social Sciences, Bhubaneswar; and at Gyanjyoti Yojna, Bokaro.

Women Empowerment and Sustainable Income Generation

For sustainable income generation, the Company provided vocational and specialised skill development training to 600 youths and 1,468 women of peripheral villages in areas such as Nursing, Physiotherapy, LMV Driving, Computers, Mobile repairing, Welder, Fitter & Electrician training, Improved agriculture, Mushroom cultivation, Goatery, Poultry, Fishery, Piggery, Achar/Pappad/Agarbati/Candle making, Screen printing, Handicrafts, Sericulture, Yarn weaving, Tailoring, Sewing & embroidery, Gloves, Spices, Towels, Gunny-bags, Low-cost-Sanitary Napkins, Sweet Box, Soap, Smokeless chullah making, etc. 845 youths have been sponsored for ITI training at ITCs Bolani, Bargaon, Baliapur, Bokaro Pvt. ITI and Rourkela, etc. and 31 youths in Plastic Engineering through Central Institute of Plastics Engineering & Technology (CIPET) at Bokaro.

Water Facilities and Connectivity in Rural Areas

Over 79.03 lakh people across 450 villages have been connected to mainstream by SAIL since its inception by constructing and repairing of roads. Over 8,100 water sources have been installed during last five years, thereby enabling easy access to drinking water to 50 lakh people living in far-flung areas.

Support to Divyangs (Differently-abled) & Senior Citizens

SAIL has been supporting Divyang children/people through provision of equipment like- tricycle, motorized vehicles, callipers, hearing aids, artificial limbs, etc. The Company also supports various schemes and centres at Plants under CSR like

- "Sneh Sampada", "Prayas"and 'Muskaan" at Bhilai
- "Schools for blind, deaf & mentally challenged children" and Home and Hope" at Rourkela
- "Ashalata Viklang Kendra" at Bokaro
- "Durgpaur Handicapped Happy Home" at Durgapur and
- "Cheshire Home" at Burnpur

Programs like "Handicapped Oriented Education Program" (Hope) at Durgapur are also being conducted by the Company. Support has also been provided to NGOs working in this field like TAMANNA, DEEPALAYA, etc. Old age homes are being supported at different Plant townships like "Siyan Sadan" at Bhilai, Acharya Dham and Badshah at Durgapur, etc.

Promotion of Sports, Art & Culture

SAIL supports all major national sports events & tournaments by regularly organizing inter-village sports tournaments. SAIL also supports and provides coaching to the aspiring sportsmen and women through its residential sports academies at Bokaro (Football), Rourkela (Hockey)- with world class astro-turf ground, Bhilai (Athletics for boys), Durgapur (Athletics for girls) and Kiriburu, Jharkhand (Archery).

Cultural events like Chhattisgarh Lok Kala Mahotsav, Gramin Lokotsav, Gramin Nritya Pratiyogita are organised every year.

Innovative CSR Projects at SAIL

Environment Conservation

Over 3 lakh trees have been planted and maintained at Bhilai, Bokaro, Rourkela & Mines areas. A bio-diversity Environment Theme Park 'VASUNDHARA' with a water body in 409 acres has been developed at Durgapur. The park has plantation of 400 varieties of trees, medicinal plants, rainwater harvesting facility and supports soil conservation for maintaining ecological balance. The park is enriching the environment with approximately 75,000 natives year on year.

Maintenance of parks, water bodies & botanical gardens in its townships and plantation & maintenance of over 5 Lakh trees at various locations have also been undertaken by SAIL during 2017-18.

Further, to promote use of renewable sources of energy, solar street lights have been installed in rural areas. Solar Lanterns and smokeless chullahs have also been distributed among the rural people of Saranda and other locations.

SAIL has supported setting up and operation of 100 KW Capacity Solar Power Plant at Jari, Gumla in Jharkhand.

Swachh Bharat Abhiyan-Swachh Vidyalay Abhiyan

SAIL had achieved 100% compliance by construction of 672 toilets in schools without toilets/having dysfunctional toilets falling within the peripherals of SAIL Plants & Units acknowledging the Hon'ble Prime Minister's ambitious drive for promotion of sanitation and hygiene in remote areas, under "SwachchVidyalay Campaign".

Saranda Forest Development

In an effort to bring the marginalized masses to the mainstream of development, SAIL initially established an Integrated Development Centre (with 26 shops/offices) at Digha village. A hostel facility has been setup viz. Saranda Suvan Chhatravas wherein 24 Tribal children have been adopted, accommodated and facilitated with free of cost education, accommodation, meals & uniforms, textbooks, etc. An Ambulance/MMU is running and providing healthcare at doorsteps of villagers in Saranda forest.

Model Steel Villages

SAIL Plants/Units are located mostly in backward areas that inhabit majority of disadvantaged, vulnerable, marginalized SC, ST and minorities. For the upliftment of such populace, SAIL has developed 79 "Model Steel Villages" located in peripheral backward areas and these are maintained regularly.

Ladies Cricket Coaching Club, Bolani

Ladies Cricket Coaching Club has been set up by RMD. About 30 young tribal ladies who were daily wage-earners working as 'load-lifters', devoid of basic amenities, have been motivated, counselled, provided free of cost healthy food, cricket coach and sports kits/tools and training/practice sessions, etc. Today, the Champions are representing Odisha & Jharkhand states in National, State and District level cricket tournaments, wherein their performance has been adjudged as 'Women of the Tournament', etc.

Drinking Water and Sanitation Facility

SAIL has extended its CSR endeavours by developing sustainable tap water source and constructing useable toilets for each of the 1,854 households in 19 villages of Kuarmunda block, Rourkela in a comprehensive manner. Village level committees have been formed for long-term sustenance of the project.

Bolani Ore Mines is also facilitating drinking water supply and sanitation facility for 300 local people.

Monitoring Mechanism

In SAIL, every Plant / Unit is having a high level Committee headed by senior EDs/GMs, which recommends the CSR projects to be taken up by the respective Plant / Unit. The same Committee monitors the progress and execution of these projects as well as undertakes audit of social benefits achieved from CSR initiatives undertaken.

In addition, SAIL has a strong internal mechanism to monitor the activities/ initiatives undertaken under CSR & Sustainability. The Board Sub-Committee on CSR reviews/ monitors CSR & Sustainability activities on regular basis.

Reporting on CSR

The Annual Report of SAIL for FY 2017-18 includes reporting on CSR as per the format prescribed under the Companies (Corporate Social Responsibility Policy) Rules, 2014. The Annual Report is shared with stakeholders and is also available on the Company's Website.

Impact Assessment of SAIL CSR Projects

The CSR quality in SAIL is measured both by Professional Agencies and by internal evaluation on a regular basis.

CSR Scorecard

(Unit: in numbers)

Model Steel Villages developed	**79**
People given specialized and basic healthcare during 2011-2018	**1,70,00,000**
Health Camps during 2017-18	**4,130**
Water Resources installed during past five years	**>8,100**
Beneficiaries provided with access to drinking water	**50,00,000**
Villages connected by construction and repair of roads since inception	**450**
Schools supported by the Company	**77 (with over 40,000 students)**
Govt. Schools being provided assistance through Mid Day Meals in association with Akshya Patra Foundation	**>630 (with about 68,000 students)**
Special Schools (Kalyan/MukulVidyalayas) exclusively for BPL families	**19 (benefitting over 4,270 students)**
Tribal children adopted and accommodated at Saranda Suvan Chhatravas	**24**
Youths provided with specialised skill development training during 2017-18	**600**
Women provided with specialised skill development training during 2017-18	**1,468**
Rural Youths sponsored for ITI training during 2017-18	**845**

GRI
CONTENT INDEX

GRI Content Index

Content Index Steel Authority of India Limited Jan 2019 Service

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For the GRI Content Index Service, GRI Services reviewed that the GRI content index is clearly presented and the references for all disclosures included align with the appropriate sections in the body of the report.

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	102-39 Percentage increase in annual total compensation ratio		Not applicable as remuneration policies for the highest governance body and senior executives are fixed as per guidelines issued by DPE on the terms and conditions as fixed by the Government of India
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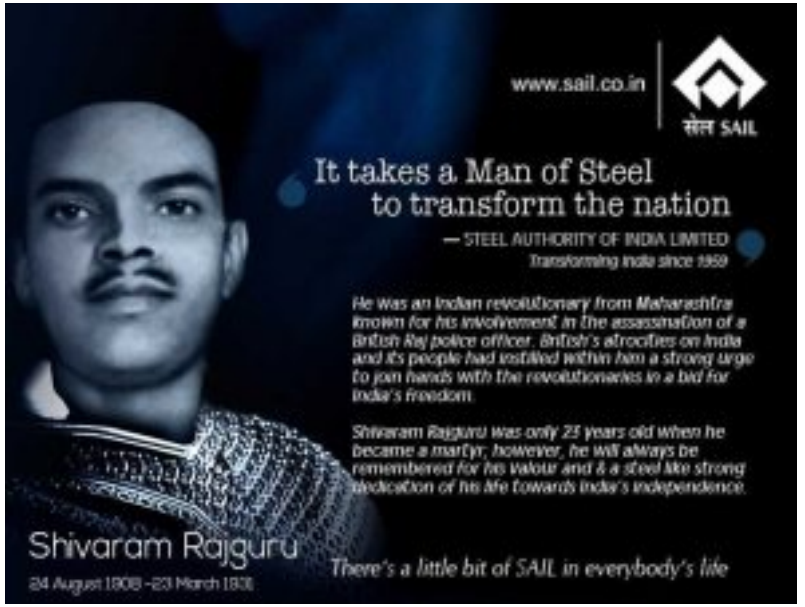
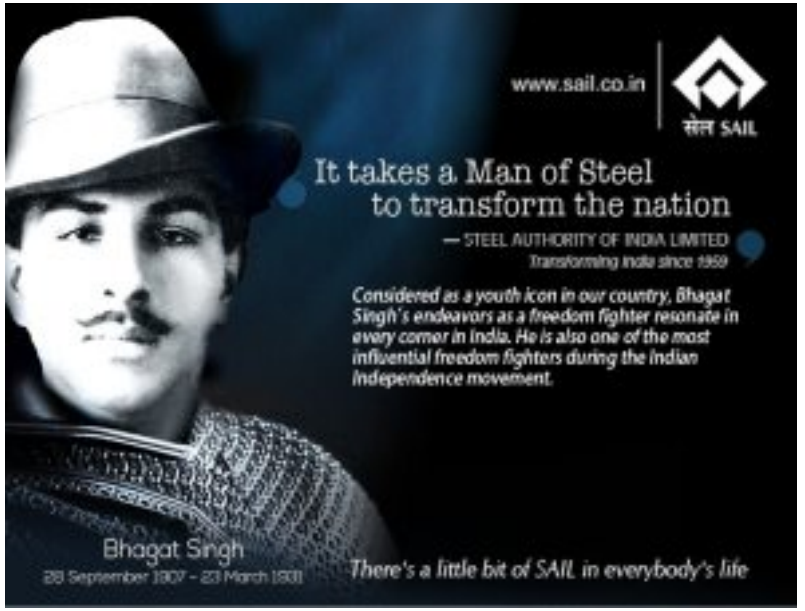
Abbreviations

AGM	Annual General Meeting
AIDS	Acquired Immune Deficiency Syndrome
AIMA	All India Management Association
AIOE	All India Organisation of Employers
AOD	Argon Oxygen Decarburization
ARS	Alizarin Red S
ASP	Alloy Steels Plant
ASSOCHAM	Associated Chamber of Commerce and Industry of India
ATP	Annual Training Plan
BDL	Below Detectable Level
BF	Blast Furnace
BIS	Bureau of Indian Standards
BOD	Biochemical Oxygen Demand
BOF	Basic Oxygen Furnace
BPL	Below Poverty Line
BPTG	Back Pressure Turbine Generator
BSC	Board Sub-Committee
BSL	Bokaro Steel Plant
BSO	Branch Sales Offices
BSP	Bhilai Steel Plant
CCO	Customer Contact Offices
CCTV	Close Circuit Television
CDC	Consultancy Development Centre
CEMDE	Centre for Environment Management of Degraded Ecosystem
CEO	Chief Executive Officer
CET	Centre for Engineering and Technology
CFP	Chandrapur Ferro Alloy Plant
CII	Confederation of Indian Industries
CISF	Central Industrial Security Force
CMERI	Central Mechanical Enginnering Research Institute
CMO	Central Marketing Organisation
CO	Coke Oven
CO_2	Carbon Dioxide
COD	Chemical Oxygen Demand
COE	Centre of Excellence
CPP	Captive Power Plant
CPTI	Central Power Training Institute
CR	Cold Rolled
CREP	Corporate Responsibility for Environment Protection
CRM	Cold Rolling Mill
Crore	Ten Millions
CSI	Customer Satisfaction Index
CSR	Corporate Social Responsibility
CTC	Carbon Tetra Chloride
CVC	Central Vigilance Commission
DGMS	Director General of Mine Safety
DMB	Disability Medical Board
Dolo	Dolomite
DPC	Delhi Productivity Council
DPE	Department of Public Enterprises
DSP	Durgapur Steel Plant
EAF	Electric Arc Furnace
EBITDA	Earnings Before Interest, Tax, Depreciation and Amortization
ECG	Electrocardiography
ED	Executive Director
EMD	Environment Management Division
EMS	Environment Management System
EPMS	Executive Performance Management System
FICCI	Federation of Indian Chambers for Commerce and Industry
FP	Flat Product
FTA	Free Trade Agreement
GCal	Giga Calorie
GCP	Gas Cleaning Plant
GD	Growth Division
GHG	Green House Gas
GM	General Manager
GoI	Government of India
GRI	Global Reporting Initiative
HAZOP	Hazard & Operability
HEMM	Heavy Earth Moving Machineries
HIRA	Hazard Identification and Risk Assessment
HIS	Health Information System
HR	Human Resource
HRD	Human Resource Development
HRM	Hot Rolling Mill
HSM	Hot Strip Mil

IEPF	Investor Education and Protection Fund
ICVL	International Coal Venture Limited
IICCI	The Indian Iran Chamber of Commerce and Industry
IIM	Indian Institute of Metals
IIPE	Indian Institute of Plant Engineers
IISCO	Indian Iron & Steel Company
IIT	Indian Institute of Technology
IITF	India International Trade Fair
ILO	International Labour Organization
INDCs	Intended Nationally Determined Contributions
IPE	Institute of Public Enterprises
IPSS	Inter Plant Standard - Steel
IRT	Institute of Rail Transport
ISO	International Organization for Standardization
ISP	IISCO Steel Plant
ISPs	Integrated Steel Plants
ISTD	Indian Society for Trade and Development
ITI	Industrial Training Institute
IUCCI	Indo USSR Chamber of Commerce and Industries
IUCN	International Union for Conservation of Nature
JCSSI	Joint Committee on Safety, Health and Environment in the Steel Industry
JV	Joint Venture
JVC	Joint Venture Company
KAM	Key Account Management
KL	Kilo Litres
KPI	Key Performance Indicators
kWh	Kilo Watt Hour
Lakh	Hundred Thousand
LD	Linz Donawitz
LMV	Light Motor Vehicle
LODR	Listing Obligations and Disclosure Requirements
LP	Long Product
MEP	Modernization and Expansion Programme
MKWH	Million Kilo Watt Hour
MODEX	Modernisation-Expansion
MOEFCC	Ministry of Environment, Forest and Climate Change
MoU	Memorandum of Understanding
MSME	Micro, Small & Medium Enterprise
MSVs	Model Steel Village
MT	Millions Tonnes
MTI	Management Training Institute
MTPA	Million Tonnes Per Annum
MTs	Management Trainees
MWp	Megawatt peak
NGO	Non-Governmental Organization
NJCS	National Joint Committee for the Steel Industry
NMDC	National Mineral Development Corporation
NOx	Oxides of Nitrogen
NTPC	National Thermal Power Corporation
OBC	Other Backward Class
ODS	Ozone Depleting Substances
OH&S	Occupational Health & Safety
OHF	Open Hearth Furnace
OHP	Ore Handling Plant
OHS	Occupational Health Service
OHSAS	Occupational Health and Safety Management System
OPD	Out Patient Department
OT	Operation Theatre
PAT	Profit After Tax
PCB	Polychlorinated BiPhenyls
PIWs	Performance Improvement Workshops
PM	Particulate Matter
PMA	Project Management Association
POPs	Persistent Organic Pollutants
PPEs	Personal Protective Equipments
PSU	Public Sector Undertaking
QMS	Quality Management System
R&D	Research & Development
RDCIS	Research & Development Centre for Iron & Steel
RH	Reheating
RINL	Rashtriya Ispat Nigam Ltd.
RITES	Rail India Technical and Economic Service
RMD	Raw Materials Division
RMP	Refractory Material Plant
RSP	Rourkela Steel Plant
RTI	Right to Information

₹	Rupees
SA	Social Accountability
SC	Scheduled Caste
SCL	Steel Complex Limited
SCOPE	Standing Conference of Public Enterprises
SD	Sustainable Development
SEBI	Securities & Exchange Board of India
SED	Safety Engineering Department
SEFI	Steel Executives Federation of India
SESBF	SAIL Employees Superannuation Benefit Fund
SGL	Shot Grinding Line
SGW	SAIL Growth Works, Kulti
SMPs	Standard Maintenance Practices
SMS	Steel Melting Shop
SOP	Standard Operating Practices
SP	Sinter Plant
SRU	SAIL Refractory Unit
SS	Suspended Solids
SSO	SAIL Safety Organization
SSP	Salem Steel Plant
ST	Scheduled Tribe
SWP	Safe Work Procedure
tcs	Tonnes of Crude Steel
TERI	The Energy and Resource Institute
TFRI	Tropical Forest Research Institute
THF	Twin Hearth Furnace
TJ	Tera Joule
TMT	Thermo Mechanically Treated
TRT	Top Pressure Recovery Turbine
tss	Tonnes of Saleable Steel
UNIDO	United Nations Industrial Development Organisation
VISL	Visvesvaraya Iron and Steel Plant
VVVF	Variable Voltage Variable Frequency
WCPS	World Confederation of Productivity Science
WIPS	Forum of Women in Public Sector
WMD	Water Management Department
WSA	World Steel Association
ZLD	Zero Liquid Discharge



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