

# Towards a Sustainable Future



Integrated Report &  
Annual Accounts **2016-17**  
**110<sup>th</sup> Year**

# OUR APPROACH TO REPORTING

Tata Steel has been publishing Sustainability Reports following the Global Reporting Initiative (GRI) Framework since 2001. Commencing last year, we transitioned towards Integrated Reporting. This is our second year in the journey of publishing the Integrated Report. Through this Report, we aspire to provide to our stakeholders an all-inclusive depiction of the organisation's value creation using both financial and non-financial resources. The Report provides insights into our key strategies, operating environment, material issues emanating from key stakeholder concerns and the respective mitigation strategies, the operating risks and opportunities, governance structure and the Company's approach towards long-term sustainability.

## Reporting Principle

The financial and statutory data presented in this Report is in line with the requirements of the Companies Act, 2013 (including the rules made thereunder), Indian Accounting Standards, the Securities and Exchange Board of India (Listing Obligations and Disclosure Requirements) Regulations, 2015 and the Secretarial Standards. The non-financial section of the Report is guided by the framework of the International Integrated Reporting Council (IIRC) and encompasses the key performance indicators as per GRI, UN Sustainable Development Goals, Securities and Exchange Board of India and World Steel Association.

In order to optimise governance oversight, risk management and controls, the contents of this Report have been reviewed by the members of the Enterprise Management Council consisting of the Managing Director (India & South East Asia), Group Executive Director (Finance, Corporate & Europe), Company Secretary and other Senior Executives of the Company.

## Reporting Period

The financial information is reported for the period April 1, 2016 to March 31, 2017. Some parts of the non-financial information including Directors' Report are provided as on May 16, 2017. Comparative figures for last 3 to 5 years have been incorporated in the Report to provide a holistic view to the stakeholders.

## Scope and Boundary

This Report is for Tata Steel India, including the Tata Steel plants (at Jamshedpur, Jharkhand and Kalinganagar, Odisha), Raw Material Divisions and Profit Centres.

## Our approach to Materiality

The Report presents an overview of our business and associated activities that help in long-term value creation. The Report also captures imminent issues and their possible impact on our operations, so as to enable investors and other interested stakeholders to make informed decisions with regard to their engagement with the Company.

## Independent Assurance

Assurance on financial statements has been provided by independent auditors Deloitte Haskins & Sells LLP and non-financial statements by Bureau Veritas (India) Private Limited. The certificate issued by Bureau Veritas (India) Private Limited is available on our website [www.tatasteel.com](http://www.tatasteel.com)

## Forward Looking Statements

Certain statements in this Report regarding our business operations may constitute forward-looking statements. These include all statements other than statements of historical fact, including those regarding the financial position, business strategy, management plans and objectives for future operations.

Forward-looking statements can be identified by words such as 'believes', 'estimates', 'anticipates', 'expects', 'intends', 'may', 'will', 'plans', 'outlook' and other words of similar meaning in connection with a discussion of future operating or financial performance.

Forward-looking statements are necessarily dependent on assumptions, data or methods that may be incorrect or imprecise and that may be incapable of being realised, and as such, are not intended to be a guarantee of future results, but constitute our current expectations based on reasonable assumptions. Actual results could differ materially from those projected in any forward-looking statements due to various events, risks, uncertainties and other factors. We neither assume any obligation nor intend to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise.

# Highlights of FY2017

(Consolidated)

## DELIVERIES

**23.88 MnT**

## REVENUE

**₹1,17,420 Cr.**

## EBITDA

**₹17,025 Cr.**

## EMPLOYEES

**70,000+**

## NEW PRODUCTS LAUNCHED

**51**

## NUMBER OF LIVES IMPACTED THROUGH CSR

**1.1 Mn+**

## LTIFR\*

**39% ↓** From FY2010

Jamshedpur Steel Works-

**first and only integrated**

steel plant in India to be rated

**Platinum by GreenCo**

assessment conducted by

**CII-Green Business Centre**

**Steel Industry Leader** in the  
**Dow Jones Sustainability Index**  
for the year 2016.

\* Lost Time Injury Frequency Rate

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# PERFORMANCE HIGHLIGHTS

(Tata Steel India)

## Financial Capital



We generate our financial capital annually in the form of surplus arising from the current business operations and financing activities, which includes restructuring of debts aligned with the market conditions and other investments.

### TURNOVER

**₹53,261 Cr.**

Higher as compared to FY2016, due to commencement of operations at Tata Steel Kalinganagar (TSK), higher production of Chrome Concentrate and Ferro Chrome with improved demand in the international market

### PAT

**₹3,445 Cr.**

Increased by 2.6 times, as compared to FY2016, primarily on account of improved realisations, higher deliveries and lower exceptional charges over previous year

### EBITDA

**22%**

Due to supportive realisations and strong growth in deliveries

### CAPEX

**₹3,173 Cr.**

## Manufactured Capital



We continually invest in our integrated steel plants, consisting of our iron making, steel making and rolling facilities, warehouses, along with the logistics operations, while ensuring safety and reliability of the operations.

### NEW STEEL MAKING CAPACITY COMMISSIONED

**3 MnTPA**

Flat products at Kalinganagar (BF-BOF route)

### TOTAL CRUDE STEEL PRODUCTION

**11.68 MnT**

Target achieved due to stable operation of Jamshedpur plant and ramp up of Kalinganagar plant

### SAVINGS THROUGH IMPROVEMENT PROJECTS

**₹3,400 Cr.**

Across the value chain

### SALES

**7.7 MnT**

Flat Products

**3.3 MnT**

Long Products

## Intellectual Capital



Our thrust on innovation and research is of paramount importance for our product development and it also reinforces our operational efficiency and resource optimisation drive, while adhering to the Standard Operating Procedures. We incorporate customer requirement in our product development. We also collaborate with experts, academia and think tanks for our R&D efforts.

### PATENTS FILED

**870**

(Cumulative till FY2017)

### PATENTS GRANTED

**360**

(Cumulative till FY2017)

### R&D SPEND

**₹681 Cr.**

(Cumulative from 2011)

### REVENUE FROM NEW PRODUCTS

**5%**

(New Products: Products developed in last three years)

## Human Capital



Our people form the core of our operations. We invest in employee welfare and happiness to drive performance excellence. Our work culture ensures safety, health, competency enhancement and overall well-being of our employees.

SAFETY	HEALTH INDEX	DIVERSITY	SKILLED MANPOWER	EMPLOYEES INVOLVED IN IMPROVEMENT INITIATIVES
<b>19%</b>	<b>~2%</b>	<b>15%</b>	<b>~100%</b>	<b>92.5%</b>
Increase in LTIs	Improvement in FY2017 over FY2016, due to focused awareness and intervention programmes	Increase in women workforce as compared to FY2016		
<b>5</b>				
Fatalities				

## Relationship Capital



We believe in building long-term, transparent and trust based relationships with our partners, while adhering to applicable norms and corporate ethics. We also invest in building our partners' capacities and sharing knowledge with them.

SUPPLIERS BASE	CHANNEL PARTNERS	CUSTOMERS	COLLABORATIONS
<b>5,000+</b>	<b>12,000+</b>	<b>81.3%</b>	<b>42</b>
		Customer Satisfaction Index	

## Social Capital



Harmonious presence among our neighbouring communities bears a testimony to the value we place in community development initiatives, while partnering with them in their growth story.

CSR OUTREACH	CSR SPEND
<b>1.1 Million People</b>	<b>₹194 Cr.</b>
Impacted	Consistently higher than the mandate

## Natural Capital



We depend on the stock of natural resources like iron ore, coal and other minerals which constitute our key raw materials. At the same time resources like land and water, are indispensable for our operations. We also manage the impacts of our operations on the natural environment.

ENERGY INTENSITY	WATER CONSUMPTION
<b>1.7%</b>	<b>~ 13%</b>
Improvement over FY2016 (At Jamshedpur Steel Works)	Improvement in Specific Water Consumption over FY2016 (At Jamshedpur Steel Works)



# ABOUT TATA STEEL



Steel Melting Shop, Tata Steel Kalinganagar

# COMPANY OVERVIEW

Established in Jamshedpur in 1907, Tata Steel, a Company that took shape from the vision of Jamsetji N. Tata, is today a global business enterprise having products and services in over 150 countries. Being the world's second-most geographically diversified steel producer, we operate in 26 countries, have commercial presence in over 50 countries and have employees spread across five continents.

Tata Steel is among the top global steel companies with an annual crude steel capacity of 27.5 MnTPA. The Tata Steel Group recorded a consolidated turnover of ₹1,17,420 crore in FY2017.

Tata Steel India has an end-to-end value chain that extends from mining to finished steel goods, catering to an array of market segments. The Jamshedpur facility has an annual crude steel capacity of 10 MnTPA and the Kalinganagar plant has a capacity of 3 MnTPA.

We embrace different skills, celebrate diversity and strive for constant innovation, while continuing to act responsibly in the use of natural resources. Above all, our commitment to give back to the society helps us make our vision of sustainable growth a reality.

## Vision

We aspire to be the global steel industry benchmark for 'Value Creation' and 'Corporate Citizenship'.

## Mission

Consistent with the vision and values of the Founder, Jamsetji Tata, Tata Steel strives to strengthen India's industrial base through the effective utilisation of staff and materials. The means envisaged to achieve this are high technology and productivity, consistent with modern management practices.

Tata Steel recognises that while honesty and integrity are the essential ingredients of a strong and stable enterprise, profitability provides the main spark for economic activity.

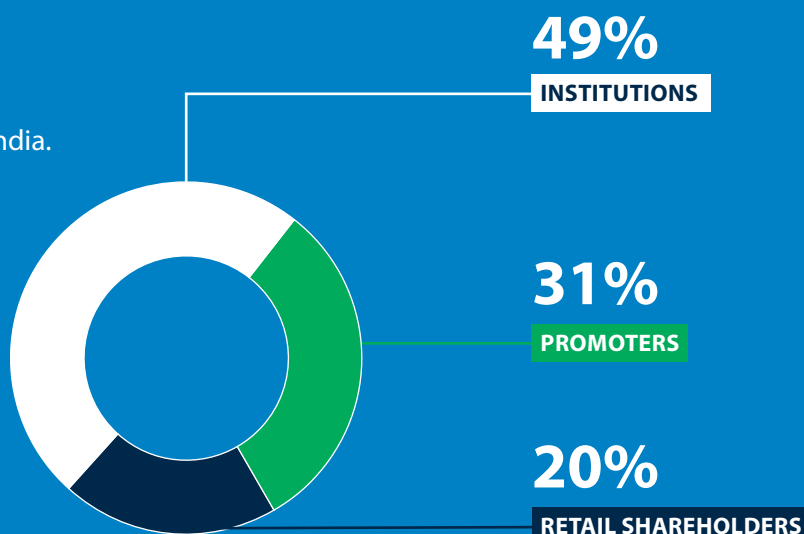
Overall, the Company seeks to scale the heights of excellence in all that it does in an atmosphere free from fear and, thereby, reaffirms its faith in democratic values.

## Values

**Integrity | Unity | Pioneering | Excellence | Responsibility**

## Ownership Structure

Tata Steel is headquartered in Mumbai, India. Our ownership (as of March 31, 2017) is diversely held as depicted.



## Leadership Structure

We have a well-defined operating structure to ensure that the Company is on track to achieve its vision and strategic objectives. Our executive management rests with Mr. T. V. Narendran, Managing Director for our Indian and South-East Asian operations and Mr. Koushik Chatterjee, Group Executive Director (Finance, Corporate & Europe). Mr. Narendran and Mr. Chatterjee, operationally and administratively report to our Chairman, Mr. N. Chandrasekaran and functionally report to the Board of Directors. The executive team responsible for operations such as Raw Materials, Steel Making, Sales and Marketing among others reports to the Managing Director. Corporate functions such as Finance and Accounts, Legal, Secretarial, Communications and Regulatory Affairs, among others, report to the Group Executive Director (Finance, Corporate and Europe). We have a strong, diverse, highly qualified and richly experienced leadership team with a track record of excellence and passion for performance.





## Financial Performance

Our strong performance is due to supportive realisations and strong growth in deliveries due to ramp up of our Kalinganagar plant. Our plant in Kalinganagar continues to ramp up well both in terms of quantity and quality.

### KEY PERFORMANCE INDICATORS (Tata Steel India)

#### EBITDA/TURNOVER (%)

FY17	22.44
FY16	18.25
FY15	24.18
FY14	31.84
FY13	30.62

#### PBET/ TURNOVER (%)

FY17	11.38
FY16	7.48
FY15	15.84
FY14	23.63
FY13	22.28

#### RETURN ON AVERAGE CAPITAL EMPLOYED (%)

FY17	9.80
FY16	5.57
FY15	8.41
FY14	12.60
FY13	11.94

#### RETURN ON AVERAGE NET WORTH (%)

FY17	6.83
FY16	1.89
FY15	9.73
FY14	10.61
FY13	9.04

#### BASIC EARNINGS PER SHARE (₹ PER SHARE)

FY17	33.67
FY16	8.05
FY15	64.49
FY14	64.21
FY13	50.28

#### NET DEBT/ EQUITY (TIMES)

FY17	0.44
FY16	0.50
FY15	0.40
FY14	0.41
FY13	0.44

\* FY17 and FY16 is as per Ind AS and FY13 to FY15 is as per I GAAP

Our ROCE was **9.8%** reflecting the efficiency with which we use our capital.



# BOARD OF DIRECTORS

(As on May 16, 2017)



**Mr. Ratan N. Tata**  
Chairman Emeritus



Standing (Left to Right)

**Mr. D. K. Mehrotra**  
Non-Executive Director

3 4 5

**Mr. T. V. Narendran**  
Managing Director  
(India and South East Asia)

3 4 6

Sitting (Left to Right)

**Mr. Andrew Robb**  
Independent Director

1

**Mr. Ishaat Hussain**  
Non-Executive Director

1 2 3 4 5

## Board Committees

- 1 Audit
- 2 Nomination and Remuneration
- 3 Corporate Social Responsibility & Sustainability
- 4 Risk Management
- 5 Stakeholders' Relationship
- 6 Safety, Health and Environment

Member    Chairperson



Dr. Peter Blauwhoff  
Independent Director

6

Mr. Deepak Kapoor  
Independent Director

4 6

Mr. O. P. Bhatt  
Independent Director

1 2 3 4

Mr. Koushik Chatterjee  
Group Executive Director  
(Finance, Corporate & Europe)

3 4 5

Mr. Natarajan  
Chandrasekaran  
Chairman of the Board

2

Ms. Mallika Srinivasan  
Independent Director

2

Mr. Aman Mehta  
Independent Director

1

Mr. Parvatheesam K  
Company Secretary



# CHAIRMAN'S MESSAGE



## Dear Shareholders,

It is my privilege to write to you as the Chairman of Tata Steel and I feel honoured to accept the responsibility to Chair the Board. I am happy to present to you the second Integrated Report of Tata Steel for the Financial Year 2016-17.

While the global economy is improving, with global GDP growth projected to pick up from 2.9% in 2017 to around 3.1% in 2018-2020, it remains susceptible to geo-political and other macroeconomic risks.

Meanwhile, India is expected to become the world's fifth largest economy in 2017, surpassing UK and France and the world's third largest economy by 2023, surpassing Japan and Germany. India's GDP is projected to rise from USD 2.2 trillion in 2016 to USD 3.6 trillion by 2020. This augurs well for businesses that are focused on domestic growth in the future.

The global steel industry continues to witness challenging times though the performance of the industry has been better in the Financial Year 2016-17 with improved realisations and a more disciplined supply side response. According to the World Steel Association, global steel output will be tapering in the next year and the slowdown is expected to continue through 2035 as

countries around the world start to rein in output while demand retreats.

Given the current stage of development of the Indian economy and the likely growth path for the country's economy in the next decade, the steel demand in India will witness significant growth in future. While the Steel sector in India is financially stressed currently, the Government of India has outlined its intent for ensuring long-term viability of the sector through the recently announced National Steel Policy 2017.

The consolidated Profit after Tax before exceptional items for Tata Steel was ₹4,020 crore in 2016-17 compared to a loss of ₹1,948 crore in the previous year on the back of improved realisations across geographies, ramping up of capacity in Kalinganagar and restructuring initiatives in Europe.

Going forward, Tata Steel's strategic priorities will be to focus on the Indian market, achieving operational excellence and deliver value-added and differentiated products to its customers. Additionally, Tata Steel Europe is currently pursuing the pension restructuring programme in the UK and is hopeful of concluding it soon.

It will be the endeavour of the Company to continue to improve the performance on year-on-year basis and provide better returns to the shareholders and create a strong Balance Sheet that can fund aspirational growth for the Company.

One of the core elements of Tata Steel Group's operating strategy has been its focus on sustainability and the environment. The Company is committed to minimise its impact on climate change and is continuously working on the strategy to reduce the carbon footprint of the business.

Tata Steel Group has continued its tradition of caring for the communities and stakeholders through its Corporate Social Responsibility programme. There were a number of initiatives undertaken during the year including Samvaad, the national tribal conclave in Jamshedpur and the thousand schools project in Odisha. Tata Steel remains committed to improving the quality of the lives of the communities where it operates.

Finally, I would like to thank you for the unstinted support and unwavering confidence in the Company. I would also like to thank the government, customers, suppliers, lenders for their continued support to the Company and also to the employees, unions and the management team for their deep level of commitment to the Company. I look forward to your continued and valuable support in taking the Company to greater and newer heights in the future.

Yours sincerely,

**Natarajan Chandrasekaran**

Chairman of the Board  
Mumbai, May 16, 2017

# A DIALOGUE WITH MANAGEMENT



**Mr. Koushik Chatterjee**  
Group Executive Director  
(Finance, Corporate & Europe)

**Mr. T. V. Narendran**  
Managing Director  
(India and South East Asia)

## How do you see state of the global economy today? And where does India stand?

The global economy today is confronted with increased geopolitical risks and fast paced disruptions in technology. This trend increases the risks of protectionism, unemployment and global trade war that could have a material impact on global economy and the financial markets. In the year gone by, while the broad economic parameters have shown signs of stability, the underlying fragility of the global economy continues to be very high. Policy makers, regulators and the political eco system both in developing and developed economies will have to address the imminent challenges of inequality, job creation and climate change through sharper and sustainable policy framework. Countries like India with stable and progressive political climate and superior economic performance compared to the rest of the world is seen to be an attractive destination for global capital. The World Bank's annual ranking of business friendliness of countries indicates that India has improved its standing in "Ease of Doing Business" over the last two years.

## Tata Steel Group has shown significant improvement in performance in 2016-17. How would you assess the performance?

Yes, the performance of Tata Steel Group improved very significantly during the year under review on the back of enhanced performance of Jamshedpur operations, ramping up

of capacity in Kalinganagar and very critical restructuring initiatives and performance transformation programme in Europe. Our revenues increased to ₹1,17,420 crore during the year compared to ₹1,06,340 crore in the previous year which was a growth of 10.4% compared to the previous year. The earnings increase was much more significant with the EBITDA for the year at ₹17,025 crore that was 114% over the previous year. During the year under review, the company focused on enhancing operating performance and productivity, undertook several restructuring of the portfolio, introduced new and differentiated products and solutions for the customers and optimised working capital management under volatile market conditions to turnaround the company's performance. We will continue to pursue the performance improvement programme in the future to create a more sustainable, profitable and value creating enterprise across the commodity cycle.

## Where do you both see the future growth of Tata Steel?

We are of the belief that given the current stage of development of the Indian economy and the likely growth path for the country's economy in the next decade, especially in automotive and infrastructure sector, the steel demand in India will witness significant growth in the next decade. While there is currently financial stress in the Steel sector in India, the Government of India and the Reserve Bank of India are deeply engaged to provide a policy enabled structural resolution for the future. Steel is a critical material for the future growth of India and



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It is with great pride that we report to you that the new greenfield Kalinganagar Plant in Odisha is ramping up the operations to its rated capacity within a very short span of time.

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the Indian Steel industry is very well poised to leverage the opportunities and serve the country's needs.

Tata Steel has doubled its India capacity in the last decade and it will continue its endeavour to grow significantly in the future in line with the market demands. The focus will be on delivering value added and differentiated products and solutions to its customers. It is with great pride that we report to you that the new greenfield Kalinganagar Plant in Odisha is ramping up the operations to its rated capacity within a very short span of time. This demonstrates Tata Steel's commitment to execute large and complex projects, its capability to quickly stabilise and scale up operations and the strength of its commercial network to service new customer segments profitably. Apart from potential inorganic growth options in India, Kalinganagar will be one of the most competitive growth opportunities for Tata Steel in the future.

#### How would you analyse the turnaround in Europe?

The European business of Tata Steel showed very significant turnaround in its performance during FY2016-17 compared to the previous year. The EBITDA for the business was ₹4,705 crore compared to a loss of ₹5,218 crore in FY2015-16. This was the result of the significant restructuring undertaken by the company to simplify the portfolio and the hard work by every member of the European team to pursue the profit improvement programme both in the UK and the Netherlands. Tata Steel Europe is currently pursuing the pension restructuring programme in the UK and based on our ongoing assessment of the risks and opportunities of the European portfolio, the company will continue to pursue initiatives to strengthen the business profile of Tata Steel Europe in the European steel industry. We are also investing in improving the asset reliability and product mix especially in Netherlands through the Strategic Asset Roadmap (STAR Programme). This will enable us to focus on creating high strength steel and polymer capability, enhance productivity, strengthen the downstream business and increase the share of high value products.

#### How was the performance of the subsidiary companies of Tata Steel in India and South East Asia?

Most of our subsidiaries in India, including Tata Metaliks and Tata Sponge Iron, and joint venture companies like Tata Bluescope and JAMIPOL have performed very well during the year.

In South-East Asia, both NatSteel Holdings and Tata Steel Thailand also delivered better performance owing to improved realisations, better spread management and cost rationalisation initiatives. The EBITDA in FY2016-17 increased by 138% over the previous FY2015-16.

#### What is your broad outlook for the coming year FY2018?

The global steel industry continues to face structural overcapacity but we see recovery in developed economies like Europe, gradual improvement in demand in India and better industry condition in China. At the same time, risk of uncertainty is likely to remain at elevated levels due to structural issues like geo-political uncertainty especially in the USA and UK and rising trend of protectionism.

Broadly the prospects for the industry in the financial year 2018 are mildly positive. The steel demand revival is fundamentally dependent on improving private consumption and investment while supply side discipline will also be critical enabler that will determine the future of the industry performance in the near term.

#### What are the new initiatives of Tata Steel Group?

Tata Steel has identified 'Industry 4.0' as strategic imperative to attain 'Smart Factory' status with enhanced productivity, customer centricity and sustainable performance. Our new initiatives across India, Europe and other geographies are aligned to pursue operational excellence through programmes like Shikhar25 in India, Delivering our Future in the UK and Sustainable Profit Programme in the Netherlands. Adoption of digital technology is also one of the key priorities. Our digital marketing initiatives like eShop, Electronic data interchange connections, Industrial By-products Management Division (IBMD) Sahaj and Samadhan (which manages solid waste across the value chain) are also critical initiatives.

At the same time, we are committed to improving our customer service to ensure long term partnership with them by developing new products like rust preventive coating using Graphene based technologies and innovative solutions like 'Pravesh Doors' – steel doors with the elegance of wood. Tata Steel is also investing in new technology like Hlsarna in Netherlands, a more flexible new smelting reduction technology to produce steel from lower grade raw materials without the need for coke making or agglomeration processes and which positively impacts the CO<sub>2</sub> footprint.

Our research initiatives are aimed at developing cutting-edge manufacturing and product technology so as to improve the

**Tata Steel is also investing in new technology like Hlsarna in Netherlands, a more flexible new smelting reduction technology to produce steel from lower grade raw materials without the need for coke making or agglomeration processes and which positively impacts the CO<sub>2</sub> footprint.**

sustainability of steel products through their life cycles like Protact®, a safe packaging material which is infinitely recyclable with no loss of quality. Moreover, Tata Steel's sustainability principles are embedded in its new product development process, which focusses on lowering greenhouse gas emissions over the life cycle of steel and optimises total cost of ownership.

#### **How does Tata Steel view challenges on sustainability & climate change?**

We foresee challenges of climate change are real and will affect everyone in the society including large and small businesses across sectors. Therefore, it is incumbent on us to evaluate the risks and opportunities of climate change to enable us to develop our strategy to future proof our society and businesses. Tata Steel is working actively to reduce the carbon footprints and water intake, switch to renewals to the extent possible and embrace circular economy all of which help in tackling this universal challenge of climate change.

To mitigate the risk of climate change and to be sustainable, Tata Steel is focussing on innovative technologies that can significantly lower emissions over the long-term. The GHG issues and the Company's responses are integrated into the Company's strategy and planning, capital investment reviews, and risk management tools.

Our participation in the Task Force on Climate-related Financial Disclosures formed by the Financial Stability Board has helped us sharpen our focus on the disclosures which are critical to drive efficient allocation of capital and transition to a low-carbon economy.

#### **Finally, can you elaborate a little bit on the Integrated report?**

The <IR> framework helps embed corporate responsibility and sustainability into the business measurement framework. Integrated reporting demonstrates the linkage between an organisation's strategy, governance, financial performance and the social, environmental and economic context within which it operates. The framework also integrates sustainability into a company's core business. The <IR> framework ensures a common understanding of value creation process by reflecting integrated thinking and approach in utilising six capitals (Financial, Manufactured, Intellectual, Human, Social & Relationship and Natural) to create sustainable value to stakeholders. This is a principle based framework that helps companies to focus on the long term and create sustainable value for all its stakeholders.

**Our participation in the Task Force on Climate-related Financial Disclosures formed by the Financial Stability Board has helped us sharpen our focus on the disclosures which are critical to drive efficient allocation of capital and transition to a low-carbon economy.**

# BUSINESS MODEL

## INPUT

Financial Capital	UOM	FY17
Capex	₹ Cr.	3,173
Revenue Spend <i>(Other than ED, Tax and extraordinary items)</i>	₹ Cr.	44,074

Manufactured Capital	UOM	FY17
Crude Steel production capacity	MnTPA	12.7
Inbound raw materials	MnTPA	~40
Outbound finished goods	MnTPA	>11
Pan India Stockyards	Nos.	18
Finished Goods Inventory	Kt	226

Intellectual Capital	UOM	FY 17
Patents filed <i>(Cumulative till FY2017)</i>	Nos.	870
R&D spend <i>(Cumulative since FY11)</i>	₹ Cr.	681

Human Capital	UOM	FY17
Employees on roll	Nos.	34,989
Skilled Manpower	%	~100
Spend on training	₹ Cr.	>50

Relationship Capital	UOM	FY17
Pan India dealers & distributors	Nos.	>12,000
Pan India Sales Offices	Nos.	>25
Application Engineers working jointly with customers	Nos.	~30
Customer facing processes	Nos.	8
Members in customer service teams	Nos.	>100
Supplier base	Nos.	>5,000
Suppliers trained through VCAP*	Nos.	204

Social Capital	UOM	FY17
CSR spend	₹ Cr.	194

Natural Capital	UOM	FY17
Captive Iron Ore	%	100
Captive Coal	%	36
Specific Water Consumption - TSJ	m <sup>3</sup> /tcs	3.83
Specific Water Consumption - TSK	m <sup>3</sup> /tcs	7.66
Energy Intensity - TSJ, TSK	GCal/tcs	5.67, 8.49
Tree plantation	Nos.	4,00,225
Capital Spend on environment	₹ Cr.	605

## BUSINESS ACTIVITIES AND PROCESSES

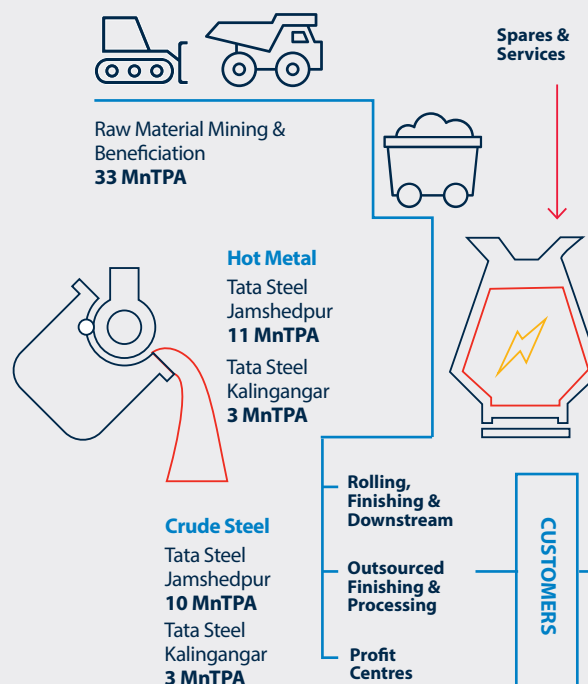
VISION, MISSION, VALUES,  
TATA CODE OF CONDUCT, POLICIES

STAKEHOLDER  
ENGAGEMENT

RISKS AND  
OPPORTUNITIES

STRATEGY AND  
RESOURCE  
ALLOCATION

### KEY WORK SYSTEMS



### SUPPORT FUNCTIONS

SAFETY & ERGONOMICS | CORPORATE ETHICS | HUMAN RESOURCE MANAGEMENT |  
CORPORATE STRATEGY & PLANNING | ENVIRONMENT MANAGEMENT | INDUSTRIAL  
BY-PRODUCTS MANAGEMENT DIVISION | CORPORATE SOCIAL RESPONSIBILITY | FINANCE &  
ACCOUNTS | SHARED SERVICES | INFORMATION TECHNOLOGY SERVICES | PROCUREMENT |  
CUSTOMER SERVICES DEPARTMENT | RAW MATERIAL MANAGEMENT | CORPORATE  
COMMUNICATION | CORPORATE SERVICES | ENGINEERING & PROJECTS |  
RESEARCH & DEVELOPMENT | AUTOMATION | TECHNOLOGY GROUPS



## ACTIONS TO ENHANCE/MITIGATE OUTCOMES

### OUTPUT

HOT METAL PRODUCTION  
**14 MnTPA**

CRUDE STEEL PRODUCTION  
**13 MnTPA**

### KEY CUSTOMER SEGMENTS & PRODUCTS

**AUTOMOTIVE SEGMENT (OEMs & Auto Ancillaries):**  
CR SHEETS, COILS, TUBES, SPRINGS, BEARINGS

**CONSTRUCTION SEGMENT:**  
TMT REBARS, STEEL HOLLOW SECTIONS, GC ROOFING SHEETS

**GENERAL ENGINEERING SEGMENT:**  
CR SHEETS AND COILS, HR SHEETS AND COILS, COATED PRODUCTS

**INDUSTRIAL SEGMENT:**  
HOT ROLLED COILS, WIRE RODS

### BY-PRODUCTS AND THEIR CONSUMERS

**POWER PLANTS, COKE PLANTS, BRICK KILNS:**  
COAL REJECTS, COAL MIDDINGS

**CEMENT INDUSTRY:**  
BLAST FURNACE SLAG, LD SLAG

**CONSTRUCTION SECTOR (ROAD):**  
LD SLAG

### OUTCOME

Financial Capital	UOM	FY17
Turnover	₹ Cr.	53,261
EBITDA	%	22
PAT	₹ Cr.	3,445
Savings from improvement projects	₹ Cr.	3,400
Value from by-products	₹ Cr.	2,882
Revenue from new products	%	5
Revenue through services and solutions business	₹ Cr.	~750

Manufactured Capital	UOM	FY17
Coke Rate	Kg/tonne of hot metal	360
Availability of critical manufacturing units	%	>90

Intellectual Capital	UOM	FY16
Patents granted (Cumulative till FY2017)	Nos.	360
New products launched	Nos.	31

Human Capital	UOM	FY17
Safety - LTI	Nos.	80
Safety - Fatalities	Nos.	5
Health Index	Score out of 16	12.59/16
Employee Productivity (TSJ)	tcs/employee/year	720
Diversity - Gender and SC/ST	%	5.8 and 16.9
Attrition Rate	%	4.83
Employees trained	man-days	3,34,050

Relationship Capital	UOM	FY17
Customer satisfaction	%	81.3
Customer complaints	ppm	759
Brand Equity Index - Tata Shaktee	Score out of 10	7
Brand Equity Index - Tata Tiscon	Score out of 10	6.6
Continuing leadership position in chosen segments (Automotive and Construction)		
Loyal (repeat) customers	%	70
Timely environmental clearances without any major issues		

Social Capital	UOM	FY17
Lives impacted through CSR - Health, Education, Livelihood programmes	Nos.	1.1 Million
Economic Value Distributed	%	95.34
Social licence to operate without any major issues		

Natural Capital	UOM	FY17
CO <sub>2</sub> emissions - TSJ, TSK	tCO <sub>2</sub> e/tcs	2.29, 3.08
Effluent discharge - TSJ	m <sup>3</sup> /tcs	1.01
Solid Waste Utilisation - TSJ	%	82.4
Dust emissions - TSJ, TSK	kg/tcs	0.44, 1.3

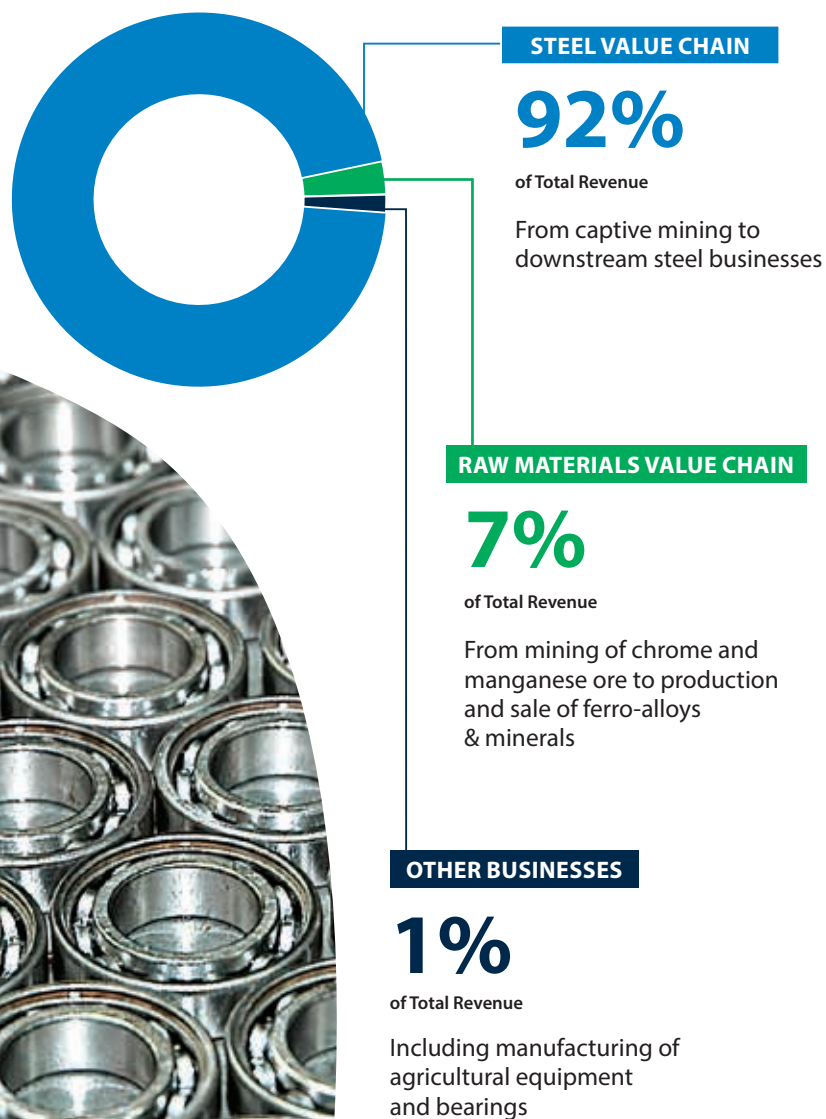
Biodiversity preservation at raw material locations  
In 2016, the Company entered into phase-II of engagement with IUCN, for mainstreaming biodiversity across all our raw material locations. IUCN is helping in roll-out of Biodiversity Management Plans (BMPs). Specific initiatives based on the BMPs have already been identified which are being implemented for enhancing biodiversity, for e.g. 'Bird Niche Nesting Project.'

TSK under ramp-up



# PRINCIPAL ACTIVITIES AND REVENUE STREAMS

As a global and diversified integrated steel producer, we have adopted a holistic business model that looks at the entire value chain. The key revenue drivers of our Business Value Chain are:



## SOME OF OUR LEADING PRODUCTS & BRANDS





## Automotive Sector

We move India



Almost every vehicle model in India's automobile sector has some steel from **Tata Steel**



Every 3<sup>rd</sup> tyre made in India makes use of bead wires from **Tata Steel Global Wires**



3 out of 4 medium and heavy commercial vehicles run on chassis which is made with **Tata Steel Hot Rolled Steel**

## Infrastructure Development

We fortify shelters and the nation



Every 2<sup>nd</sup> major infrastructure project in India uses **Tata Structura - Steel Hollow section**



Two-third of metro rail, flyovers and bridges are built on high-strength wire strands from **Tata Steel Global Wires**



1 out of 3 Galvanised Sheet roofs in rural India is made with **Tata Shaktee**

4 Million Households served by Tata Steel retail brands **Tata Tiscon, Shaktee, Durashine**

## Agriculture

We assist hands that toil hard



Every 3<sup>rd</sup> agri hand tool comes from **Tata Agrico** product range



Every 3<sup>rd</sup> borewell in India uses **Tata Pipes**



80% of India's grapes grow on **Tata Wiron**

## Cylinders

We guard your fuel



1 in every 2 LPG cylinders in India is made from **Tata Steel Hot Rolled Steel**



# KEY MARKET SEGMENTS

	MARKET SUB-SEGMENTS (CUSTOMER GROUPS)	PRODUCTS & BRANDS
 <p><b>Construction</b></p> <p>A comprehensive range of products and techniques to create value for the construction industry and support sustainable development.</p>	<ul style="list-style-type: none"> <li>Individual House Builders (B2C)</li> </ul>	<ul style="list-style-type: none"> <li>Tata Tiscon (Rebars)</li> <li>Pravesh (Doors &amp; Windows)</li> <li>Tata Pipes (Plumbing Pipes)</li> </ul>
	<ul style="list-style-type: none"> <li>Rural Roofing (B2C )</li> </ul>	<ul style="list-style-type: none"> <li>Tata Shaktee (Roofing sheets)</li> <li>Nest-in (Housing, Water ATMs, Ezynest Toilets)</li> </ul>
 <p><b>Automotive</b></p> <p>Automotive applications is one of the focus areas of Tata Steel's Research &amp; Development, aimed at giving the Group a competitive edge in the automotive market.</p>	<ul style="list-style-type: none"> <li>Auto OEMs (B2B)</li> </ul>	<ul style="list-style-type: none"> <li>Hot rolled, Cold rolled, Coated Steel Coils &amp; Sheets</li> </ul>
	<ul style="list-style-type: none"> <li>Auto ancillaries (B2B, B2ECA)</li> </ul>	<ul style="list-style-type: none"> <li>Hot rolled, Cold rolled, Coated Steel Coils &amp; Sheets</li> <li>Precision Tubes</li> <li>Tyre Bead Wires</li> <li>Spring Wires</li> <li>Bearings</li> </ul>
 <p><b>General Engineering</b></p> <p>A range of steel products, encompassing hot rolled and cold rolled sheets, wire rod and wire, sections, plate, bearings and tubes, which serve a multitude of small engineering companies.</p>	<ul style="list-style-type: none"> <li>Panel &amp; Appliances (B2ECA)</li> <li>Fabrication &amp; Capital Goods (B2ECA)</li> <li>Furnitures (B2ECA)</li> </ul>	<ul style="list-style-type: none"> <li>Tata Steelium (Cold Rolled)</li> <li>Galvano (Coated)</li> <li>Tata Astrum (Hot Rolled)</li> <li>Tata Structura (Tubes)</li> </ul>
 <p><b>Industrial</b></p> <p>A range of products to support industrial processes and applications.</p>	<ul style="list-style-type: none"> <li>LPG (B2B)</li> </ul>	<ul style="list-style-type: none"> <li>Hot Rolled</li> </ul>
	<ul style="list-style-type: none"> <li>Welding (B2B)</li> </ul>	<ul style="list-style-type: none"> <li>Wire Rods</li> </ul>
 <p><b>Agriculture</b></p> <p>High quality agricultural implements making it the first choice in India's rural markets.</p>	<ul style="list-style-type: none"> <li>Process industries (e.g. cement, power, steel) (B2B)</li> </ul>	<ul style="list-style-type: none"> <li>Tata Tiscrome (Ferro Chrome)</li> <li>Tata Ferromag (Ferro Manganese)</li> <li>Boiler Tubes</li> </ul>
	<ul style="list-style-type: none"> <li>Agri equipments (B2B)</li> </ul>	<ul style="list-style-type: none"> <li>Bearings</li> </ul>
	<ul style="list-style-type: none"> <li>Fencing, Farming &amp; Irrigation (B2C)</li> </ul>	<ul style="list-style-type: none"> <li>GI wires</li> <li>Agri &amp; Garden Tools</li> <li>Conveyance Tubes</li> </ul>

# OUR FOOTPRINT

We are primarily present in the business of steel making, including raw material and finishing operations. Additionally, we are also present in various value-adding downstream businesses. Our operational footprint has been indicated on the map.

## Steel Business

### Steel Manufacturing and Finishing Mills

LOCATION	NATURE OF OPERATIONS	CAPACITY
1 Jamshedpur	Flat Product Manufacturing	7 MnTPA
	Long Product Manufacturing	3 MnTPA
2 Kalinganagar	Flat Product Manufacturing	3 MnTPA

## Steel Business

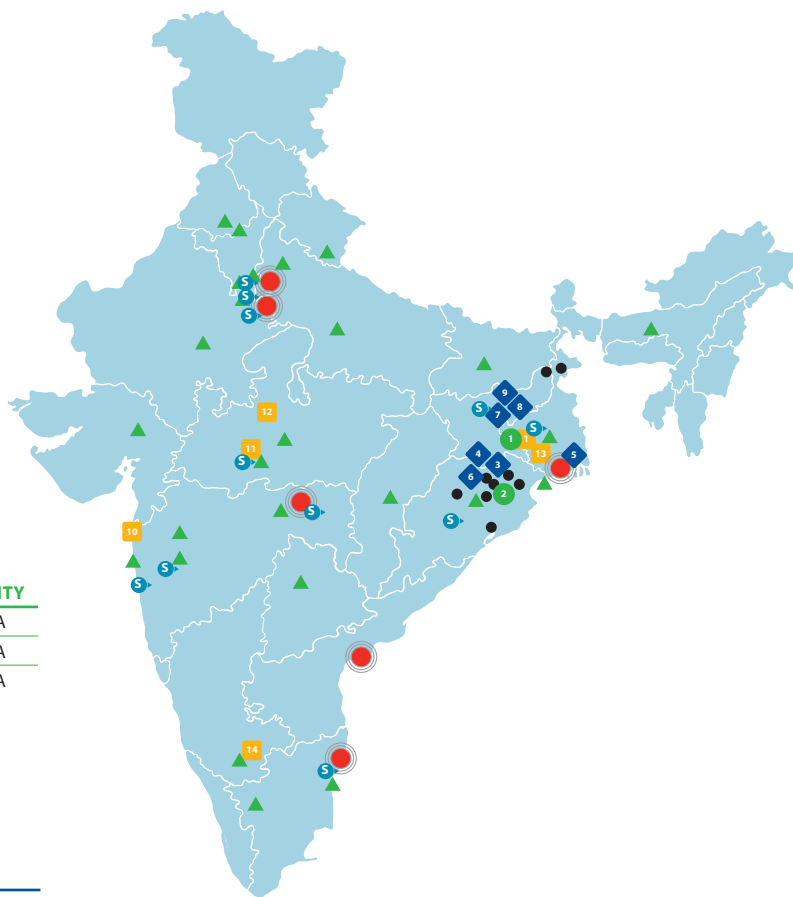
### Raw Material locations

LOCATION	NATURE OF OPERATIONS
1 Noamundi	Iron Ore Mines & Quarries
4 Joda East	
5 Katamati	
6 Khondbond	
7 West Bokaro	Colliery (West Bokaro Division)
8 Jamadoba Group	Colliery (Jharia Division)
9 Sijua Group	

## Steel Business

### Downstream Operations

LOCATION	NATURE OF OPERATIONS
1 Jamshedpur	Tubes Manufacturing
	Industrial By-products Management Division
	Tata Growth Shop
10 Tarapur	Wire Manufacturing
11-12 Pithampur & Killa, Indore	
13 Kharagpur	Bearings Manufacturing
14 Bengaluru	Cut & Bend (Rebar – tailor-made shapes and size)
Across the country through Agrico Processing Partners (APP)	Agricultural tools & equipment manufacturing




### Raw Materials Revenue Stream (Ferro Alloys & Minerals)

LOCATION	NATURE OF OPERATIONS
Joda, Bamnipal and Gopalpur	Ferro Alloys Plant
Sukinda	Chromite Mine
Joda West, Bambebari, Malda, Manmora & Trinpahar	Manganese Mines
Gomardih	Dolomite Mine

NATURE OF OPERATIONS	NOS.
Zonal Hubs	6 [Delhi, Faridabad, Chennai, Vijayawada, Nagpur, Kolkata]
Stockyards	18 [not on map]
Distributors	79 [not on map]
Dealers	12,000+ [not on map]
Steel Processing Centres	19 SPCs across 11 locations [Jamshedpur, Kalinganagar, Chennai, Kolkata, Faridabad, Manesar, Pune, Mumbai, Indore, Delhi, Nagpur]
Sales Offices	26

# OUR APPROACH TO VALUE CREATION

At Tata Steel, we recognise that our stakeholders expect us to be transparent about our value creation approach.



Ferro-Chrome Plant, Gopalpur, Odisha

This section aims to present a view of the value we create for our stakeholders. Our vision, mission, values, along with our systems, processes and relationships form the very core of our business operations.

## Supplier of Choice

While, we supply high-quality steel to our customers across segments, our endeavour is to be the supplier of choice for our products and services, in both the flat and long segments. We deliver value to our customers through an integrated supply chain - from mining of raw materials, production of crude steel of various grades, to manufacturing of customised steel products. The mining and manufacturing activities are also focused on cost competitiveness, enabled in part by efficiency in raw material use and increased recycling, resulting in lower specific consumption of materials. We maintain our competitive position through differentiating strategies based on cost-competitiveness, value-added products and services, technology and innovation.

## Environment Conscious

While we cater to the needs of our customers, we are cognisant of our responsibility towards the environment. We focus on water consumption, CO<sub>2</sub> emissions and waste management. Over the years, we have adopted the best available technologies and practices for improvement of our processes. Our Jamshedpur Steel Works is the national benchmark in CO<sub>2</sub> emission intensity and specific energy consumption within the steel sector. Our Kalinganagar plant has state-of-the-art equipment and facilities to ensure minimum impact on the environment.

## Sustainable Operations

We have been one of the first companies in India to undertake a biodiversity study on our iron ore mines by the International Union for Conservation of



Nature (IUCN). A biodiversity action plan has already been deployed in line with the recommendation made by the IUCN study. Subsequently, biodiversity studies have been commissioned for all our raw material locations to ensure that there is no ecological damage due to our mining operations. More than 10 lakh trees have been planted in our areas of operation in the last three years in order to mitigate the impact of our mining operations. In fact, Tata Steel's Noamundi and Joda East mines have received a five-star rating from the Government of India for sustainable mining.

### Impacting Communities

Our growth has been inclusive, with a focused commitment towards positively impacting the lives of the communities in which we operate. In our journey spanning over a century, we have moved from being a 'provider' to an 'enabler' - with our focus on creating self-sustained communities. During the year, we spent close to ₹194 crore in various community development activities, with a thrust on education, livelihood, health and infrastructure. The activities have impacted lives of 1.1 million people living in both urban and rural areas adjoining our steel plants at Jamshedpur and Kalinganagar, as well as, our mining locations across Jharkhand and Odisha.

We have various initiatives for learning and development, on-the-job training, performance management and succession planning.

### People Centric

Our prime focus has always been safety, health and well-being of our people. We have various initiatives on learning and development, on-the-job training, performance management and succession planning. We also take adequate steps to ensure that the work place is diverse and inclusive.

### Trusted Investing Partner

We have had long association with our investors and are privileged to have their trust and unstinted support. Our constant endeavour has been to deploy capital appropriately and generate long-term sustainable value for them.

### Partnering with Government

We maintain healthy relationships with the Government authorities in places where we operate, with industry and professional bodies, our business partners and the civil society at large.

At Tata Steel, we believe in continually learning and addressing the concerns of all our stakeholders. We do this through engagement forums - prioritising our stakeholders' top concerns based on the impact on our business, society, and the environment. Apart from responding to their concerns through our various actions, their inputs also form the basis for innovation in our products and processes.

Tata Steel's Noamundi and Joda East mines have received a five-star rating from the Government of India for sustainable mining.



Industrial Training Institute, Tamar, Jharkhand



# STAKEHOLDER ENGAGEMENT

The Company has robust stakeholder engagement process. In its pursuit to build strong relationships, improve decision-making and accountability, the Company engages with all stakeholders to understand their concerns and devise mechanisms to resolve such concerns.



## Customers

The Company engages with customers through various forums like customer meets, ASK Expert Camp, Suraksha (Safety) meets, Distributor Force Gurukul, Retail Runs and social media. The issues raised by the customers at these forums were relating to improvement in resource efficiency, support in time to market, steel requirement for green products like solar panels and enhancing Service Capability & Consumer Experience.

The Company has taken various initiatives to address these issues. It has strengthened its product portfolio for advanced automotive steel, offered unique value propositions in chosen segments, formed cross-functional customer service teams, initiated new product development programme. The Company has also offered tailor-made value propositions and ready-to-use steels for emerging corporate accounts (B2SME), launched Value analysis and Value Engineering (VAVE) to support automotive customers' requirement for cost-effective & low weight solutions to reduce fuel consumption. Further, the Company is entering into new segments like steel for solar panels.



## Community

The Company strives to be the neighbours of choice in the communities in which it operates and works towards contributing to their equitable and inclusive development. The Company engages with the community through public hearings, meetings with tribal leaders and CSR Advisory Council.

Health, education, livelihood and public infrastructure were the key issues that were identified at these forums. The Company has launched projects to ensure access to primary healthcare, improved quality of education, training for farmers and rural women, and has augmented community infrastructure projects in its operating areas.



## Employees

The Company is committed to its employees who are instrumental to its success. It engages with them through various forums such as MD Online, General Dialogue, Employee Engagement Survey, Employee Happiness Study, Joint Management-Union Forums and Breakfast Chats with Senior Leadership.

To address the employees' concerns, the Company has adopted policies like five-day work week, work from home, satellite office operations, paternity leave. The Company has formed Diversity & Inclusion Council (MOSAIC) that has helped to increase focus on hiring women, people from SC/ST community and specially abled people. Several Health & safety measures have also been undertaken by the Company to ensure safe working environment for its people.



## Suppliers

The Company ensures a strong relationship with its suppliers by engaging with them at Vendor meets. The Company has also conducted Vendor Satisfaction Survey, launched Supplier relationship management programme and Vendor Capability Advancement Programme for value-creating partnerships.

Issues relating to ease of doing business, delay in payment and speed of contracting have been resolved by automating the vendor registration process and using digital interventions.



## Government and Regulatory Bodies

The Company constantly endeavours to engage with the Government, Regulatory Authorities and professional bodies through regular dialogue and meetings to ensure timely sanctions, approvals and clearances.

Various steps have been taken by the Company to overcome the challenges in compliance to environmental/regulatory requirements. The Company has also enhanced its focus on regional issues like health, sanitation, drinking water, etc. in partnership with the Government.



## Investors

The Company is committed to excellence in governance and in creating long-term sustainable value. The Company engages with investors through investor meets, conferences and analyst calls. The dialogue is mostly around the Company's strategy, operational and financial performance and outlook. The Company has articulated various steps to address these matters in the Directors' Report and in the Strategy Section of this Integrated Report.

# INTERLINKAGE BETWEEN STRATEGIES & CAPITALS

## CAPITALS

### Financial



Financial Capital refers to a pool of funds used to create value through conversion into other forms of capital. This capital is raised through financing (equity, debt), operations and investments.

### Manufactured



Manufactured Capital represents physical objects that are available to an organisation for use in the production of goods or provision of services.

### Intellectual



Intellectual Capital represents organisational knowledge-based intangibles.

### Human



Human Capital represents people's competencies, capabilities, experiences and their motivation to innovate.

### Social & Relationship



Social and Relationship Capital represents co-operative ties between a company and different communities and stakeholder groups that engage with each other for societal welfare.

### Natural



Natural Capital represents all renewable and non-renewable environmental resources such as water, land, minerals, forests, biodiversity and ecosystem health.

## KEY INPUTS

- Cash from business operations including working capital changes (₹11,131 crore)
- Current investments, cash balances ₹6,318 crore

- Plant with a crude steel capacity of 13 MnTPA with infrastructure for environmental excellence
- Inbound & outbound logistics facilities
- Integration with channel partners
- Support infrastructure (like Maintenance, IT and Automation)

- Technically skilled and experienced talent
- Collaborations with external agencies
- Spend on R&D

- 34,989 collaborative and committed workforce
- Policies and strategies for health, safety, diversity, engagement and well-being
- Collaboration and partnerships with industry bodies and institutions for capability building

- Mutually respectful relationship with customers
- Sustained contribution to community activities
- Strong engagement with community leaders
- Healthy relations with unions and workforce
- Candid communication with suppliers, contractors, investors and media
- Amicable relationship with Government and regulatory authorities

- Coal (11.2 MnT)
- Iron ore (21.6 MnT)
- Ferro alloys (0.155 MnT)
- Water (TSJ-3.83 m<sup>3</sup>/tcs; TSK-7.66 m<sup>3</sup>/tcs)
- Spend on environmental projects: (₹605 crore)

## OUTCOMES

- EBITDA/Turnover – 22%
- Return on Average Capital employed – 10%
- Dividend on ordinary shares – ₹10 per share
- Increase in market capitalisation to ₹46,876 crore

- Produced 11.68 MnT of crude steel translating to ₹53,261 crore revenues
- Leadership position in Automotive and Construction segment

- One of the leading patent filer in manufacturing industry in India
- Fast ramp-up of Kalinganagar Plant
- Revenue contributed by new products
- Operational excellence across value chain resulting in cost savings

- Engaged and happy workforce
- Improvement in Health Index
- Improvement in diversity and inclusion
- Uninterrupted industrial harmony

- Leader in chosen segments
- Positive impact on the society
- Social Licence to operate
- No industrial unrest
- Sustained confidence from stakeholders
- Timely receipt of environment clearances and approvals for continuity of operations

- CO<sub>2</sub> emissions: TSJ-2.29 tCO<sub>2</sub>/tcs (National benchmark); TSK-3.08 tCO<sub>2</sub>/tcs
- Energy Intensity: TSJ-5.67 GCal/tcs (National benchmark); TSK-8.49 GCal/tcs
- Effluent Discharge: TSJ-1.01m<sup>3</sup>/tcs
- Dust Emissions: TSJ-0.44 kg/tcs, TSK-1.3 kg/tcs
- Waste generation- solid waste, hot gases
- Impact on biodiversity in mining areas

## ACTIONS TO ENHANCE OUTCOMES

- Taking measures to preserve cash, strengthen the balance sheet by reducing debt and re-positioning the business

*(Refer to the Directors' Report and financial statements)*

- Ramp up capacity in existing facilities to focus on high-end product mix for chosen markets
- Focus on resource efficiency

*(Refer to operational efficiency and customer focus strategies)*

- Forge new technical collaborations
- Enhance external participation in innovation through platforms like 'Mind Over Matter' and 'Connect & Collaborate'
- Use patent and technology intelligence to capture emerging trends in technology

*(Refer to innovation and operational excellence strategies)*

- Committed to Zero
- Focus on Diversity and inclusion
- Focus on Health, well-being and engagement of workforce

*(Refer to people strategy)*

- Enhance further impact and reach of community activities through collaborations with Government, NGOs, medical institutions
- Initiatives to sustain the employer of choice status
- Interventions to create long-term sustainable value for investors
- Enhanced partnerships through policy advocacy
- Delight the customers through new product development and value-added products

*(Refer to responsible behaviour, people, growth and customer focus strategies)*


- Climate change strategy to reduce CO<sub>2</sub> and water footprint and move towards circular economy
- Biodiversity management action plans in mining locations
- Embedding Integrated approach in key work processes

*(Refer to operational efficiency and responsible behaviour strategies)*



# OUR STRATEGY

Tata Steel Kalinganagar

An aerial night photograph of the Tata Steel Kalinganagar industrial complex. The image is dominated by several tall, cylindrical chimneys with alternating red and white horizontal stripes, which are illuminated from below. The industrial landscape is filled with various structures, including large rectangular buildings, smaller workshops, and a series of circular tanks or cooling ponds in the foreground that are glowing with an orange light. The entire scene is set against a dark night sky, with the industrial lights creating a vibrant contrast. A large, solid blue shape overlaps the top left corner of the image, serving as a background for the title text.

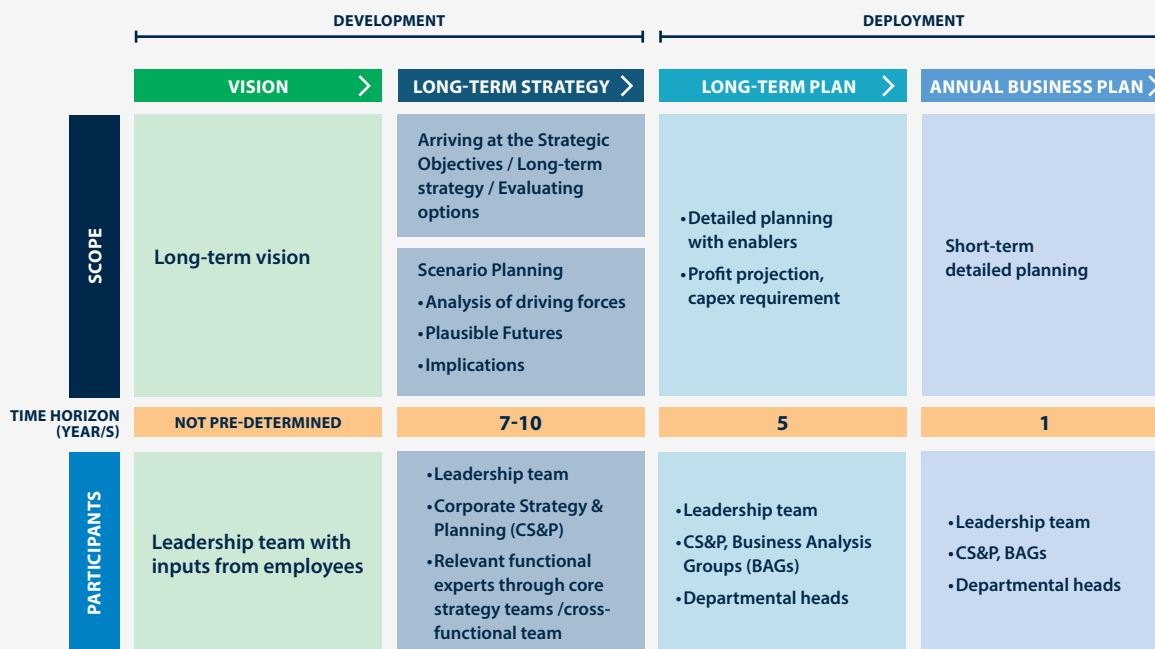


# STRATEGY PLANNING AND DEPLOYMENT

Our strategy is linked to our Vision, Mission and Values. The planning process takes into account both external and internal business environment and factors in risks, opportunities, challenges and past learnings. Our overall strategy and plans are cascaded down to individual divisions/departments with clearly defined responsibilities across all employee levels.

## INTEGRATED STRATEGY PLANNING PROCESS

for Strategy Formulation and Resource Allocation



Our long-term strategies and annual business plans are formulated as an outcome of this process. Our capital provisions are thus formulated, having been aligned with strategies at the beginning of the year. These include:

- Annual and five-year capital expenditure plans
- Corpus for small capital expenditure schemes related to safety, environment and other improvement projects
- CSR and R&D budgets

Projects & partnerships with stakeholders (customers, suppliers, industry bodies and communities) and technological collaboration with academia and technology partners are identified and/or reviewed for implementing the identified strategies. Functional teams take suitable actions to ensure the availability of resources through their respective plans. These are cascaded to individual key result areas comprising following elements:

- Individual contribution for meeting strategic objectives in the respective functions
- Identifying the training needs for the year
- Cross-functional projects

# DRIVERS FOR GROWTH

(In FY2017)

Our business environment is influenced by global macro-economic conditions, developments in steel and allied industries and the ever-evolving technological landscape. Apart from this, the social context in the areas we operate in (legislative, regulatory and political) affect our overall ecosystem.

Tata Steel India is well placed to capitalise on India's growth. Though FY2017 was a challenging year, India is poised for a 5-6% increase in the steel demand compared to the previous year.

## MACRO-ECONOMIC

### 3.1%

#### Global GDP Growth

Overall global recovery in manufacturing and global trade

### 7.1%

#### Indian GDP Growth

In India services continued to support growth

## STEEL DEMAND

### 1,515 MnT

#### Steel Demand Globally

Global Steel demand grew by 1% mainly due to recovery in China

### 78 MnT

#### Indian Steel Demand

Indian steel demand saw a modest growth of 3% due to low growth in construction sector and impact of demonetisation coupled with decline in imports

## RAW MATERIAL

### CFR - 64 \$/t

#### Iron ore contract price

Came down compared to FY2016 due to continued oversupply, high demand in China and delay in operationalisation of new mines

### FoB - 165 \$/t

#### Coking coal - QBM Price

Went up compared to FY2016 due to disruption in mining operation in Australia and reduction in number of working days in China



Tata Steel Jamshedpur

# RISKS AND OPPORTUNITIES

## Risks

We are exposed to risks arising out of the dynamic macroeconomic environment as well as from internal business environment. These could adversely affect our ability to create value for our stakeholders.



### MACROECONOMIC

- Over capacity and over supply in steel industry
- High levels of imports
- Consolidation among competitors
- Local circumstances of geographies we operate in



### FINANCIAL

- Volatility in financial markets and fluctuations in exchange rates
- Downgrading of credit rating of Company's securities
- Substantial amount of debt
- Restrictive covenants in financing agreements



### REGULATORY

- Predatory pricing
- Non-renewal of mining leases
- Non-availability of protective trade measures
- Regulatory and judicial actions



### OPERATIONAL

- Highly cyclical industry
- Inability to implement growth strategies
- Inherently hazardous industry
- Volatility in raw material prices
- Hostilities, terrorist attack or social unrest
- Failure of Information Technology Systems



### MARKET RELATED

- Competition from alternate materials
- Product liability claims



### CLIMATE CHANGE

- International and domestic regulations relating to Green House Gas emissions



### PEOPLE

- Continued services of Senior Management
- Unanticipated labour unrest

For a detailed narrative on Risks and Opportunities, please refer to the Management Discussion and Analysis.

## Opportunities

Setting benchmarks in the sector, we monitor and leverage opportunities presented by the external and internal environment.

**Capitalising the demand growth, due to urbanisation and needs of a young demography in India, and developmental needs of other emerging economies**

**Leveraging Supportive schemes of the Government such as the "Make in India" initiative**

**Securing raw-material supplies by investing in mines which are in close proximity**

**Innovating and adopting new technologies through Company-wide mobilisation of resources, implementation of pilots and capacity development**

**Value realisation of by-products by exploring new areas of application, collaboration and potential customers**

**Creating differentiation through acceleration of new product development, growing revenue from services & solutions and the B2C segment**



With our concerted  
efforts towards employee  
welfare, we have 89 years  
of harmony within the  
workforce

PEOPLE



## Health & Safety

### STRATEGIC FOCUS AREA

**Safety - Committed to Zero**

### STAKEHOLDERS

**People working at our sites**

### OUR GOAL

**'Committed to Zero'  
Zero LTI**

### ENABLERS

**Build Leadership Capability**

**Competency development for hazard  
identification and risk management**

**Management of contractor safety**

**Focus on process safety**

**Improvement in occupational health  
and industrial hygiene**

### CAPITALS IMPACTED



### UN SDG

**3 - GOOD HEALTH & WELL-BEING**



Safety and Health Excellence  
Recognition 2016 in 'Leadership'  
Category By World Steel Association

## Committed to Zero

'Committed to Zero' is our top priority, with the target of having Zero Lost Time Injuries (LTIs). Our senior leadership believes in promoting a safe working environment across the organisation and has taken the onus of being a role model to showcase paramount importance of workplace safety, which is embedded as a core value in our culture. We were conferred the Safety and Health Excellence recognition 2016 in 'Leadership' category by the World Steel Association.

During the year, we saw an increase of 19% in LTIs over FY2016 and 5 fatalities in different divisions. These incidents have been investigated and corrective actions are in progress. Safety of our work force is our utmost priority and we draw lessons from these unfortunate incidents. We continuously strive towards achieving our goals of zero fatalities at work place and eliminating injuries and occupational diseases across the organisation.

During the year, we further mechanised some of our operations, implemented rigorous safety line walks, recalibrated on managing redundant assets, strengthened the deployment of contractor safety management and embraced digital intervention to reduce human interface.



## INITIATIVES AND IMPACT



01

## FELT LEADERSHIP

## MITIGATION STRATEGY

- Felt leadership training imparted to a large section of officers, front line supervisors and union members at all locations of Tata Steel India
- Leadership team have challenged themselves by targeting Zero in all key safety performance parameters.

## IMPACT

**2,959 Officers**  
**2,173 Non-Officers**

Trained



02

## COMPETENCY &amp; CAPABILITY DEVELOPMENT

- Supervisors' training on hazard identification and risk management
- Quarterly safety campaigns conducted for the below mentioned categories which were the major contributors for Loss Time Injury (LTI)

*Categories - Slip/ Trip/ Fall & Hit/ Press by object, Material Handling, Rail & Road Safety and Moving Machinery*

**2,173 Frontline Employees**

Trained

The campaigns helped identify and mitigate hazards in the identified categories



03

## CONTRACTOR SAFETY RISK MANAGEMENT

- Deployed safety capability assessment system
- Launched vendor assessment based on a star rating system for high risk jobs
- Conducted independent Audit for Contractor Safety Management

**852 Vendors**

Assessed

More than 50% vendors achieved star rating of 3 thereby demonstrating safe work practices

## KEY PERFORMANCE INDICATORS

## FATALITY (NOS.)



## LTIs (NOS.)





#### ROAD & RAIL SAFETY

- Focus on rail & road safety initiatives such as 'Safe Drive' Training Programme, Mass transport facility engaging contract partners, etc. were launched

**Zero fatality on road for last 2 years**



#### PROCESS SAFETY MANAGEMENT

- Standard for Management of Change
- Centre of Excellence (COE) setup for increased sensitisation on process safety and horizontal deployment initiated

**No fatality in Jamshedpur Works in FY2017**



#### OCCUPATIONAL HEALTH / INDUSTRIAL HYGIENE (OH/IH)

- Implemented 4 pilots on Qualitative Industrial Hygiene to facilitate identification of occupational health hazards and risk analysis
- Launched focused awareness and intervention programmes like Doctor@Doorstep, Doctor Online and observance of health days

Improvement in Health Index of Tata Steel India from 12.37 in FY2016 to 12.59 in FY2017

52% reduction in number of cases from High risk to Moderate or Low risk

#### LTIFR (RATE)

FY17	0.37
FY16	0.23
FY15	0.31
FY14	0.50
FY13	0.48

#### HEALTH INDEX (SCORE OUT OF 16)

FY17	12.59
FY16	12.37
FY15	12.21
FY14	12.80
FY13	12.64

## Employer of Choice

### STRATEGIC FOCUS AREA

#### Employer of Choice

### STAKEHOLDERS

#### Current and Prospective Employees

### OUR GOAL

To be in the top quartile ranking in India across industries

### ENABLERS

Attract and nurture a diverse workforce

20% women in workforce

Improve workforce engagement and happiness

### CAPITALS IMPACTED



### UN SDG

8 – DECENT WORK & ECONOMIC GROWTH



Our people practices are aimed at developing a culture of care, commitment, engagement and harmony across the workforce. There is increased focus on encouraging diversity, through inclusion of women, underprivileged sections of the community and people who are specially abled. At the same time, we strive to increase productivity while containing wage cost. This continues to be a challenge, making it imperative for us to rationalise, upskill and redeploy workforce without disturbing the industrial harmony that has been the bedrock of our organisation.

### GARNERING TALENT

We conducted a variety of on-campus programmes like 'Mind Over Matter' for technology schools and 'Steel-a-thon' for business schools. We aim to achieve an 80% conversion rate on our pre-placement offers to suitable candidates.

### DIVERSITY & INCLUSION

In order to improve employee work-life balance, among others, we rolled out the following policies like paternity leave, increased maternity leave, work from home, etc.

### Satellite Work Operation

Aimed at providing flexibility, this policy enables employees to work from any location where the Company has presence other than the employees' base location for a specified period of 1 or 2 years.

### Women of Mettle

One of the first programmes in the manufacturing industry in India, Women of Mettle goes beyond providing scholarships. The programme gives women from select engineering colleges the opportunity to work with Tata Steel and experience real-life technical challenges in the steel industry. The programme also gives students the opportunity to interact with senior leadership who act as tutors and mentors.

### ENABLERS AND IMPACTS

#### KEY ENABLERS

Culture of union and management working together through joint consultative process to address issues related to collective bargaining

Focus on Diversity and Inclusion

Employee capability building through structured training & development programmes

Innovative and attractive voluntary separation scheme

#### IMPACT

89 years of industrial harmony

15% increase in the women in the workforce over FY2016

The SC/ST Community forms > 16% of our workforce

3,34,050 man-days of training imparted during FY2017

Increase in Employee Productivity by ~3% over FY2016





## KEY PERFORMANCE INDICATORS

### EMPLOYEES TRAINING (MAN-DAYS)

FY17	3,34,050
FY16	2,63,050
FY15	2,31,177
FY14	1,77,656
FY13	1,74,505

### TRAINING PER EMPLOYEE (MAN-DAYS)

FY17	2.19
FY16	5.70
FY15	6.20
FY14	8.39
FY13	9.50

### INVESTMENT IN EMPLOYEE TRAINING AND DEVELOPMENT (₹ CRORE)

FY17	52.55
FY16	43.07
FY15	42.99
FY14	41.51
FY13	41.34

### EMPLOYEES INVOLVED IN IMPROVEMENT ACTIVITIES (%)


FY17	92.50
FY16	85.30
FY15	89.40
FY14	82.00
FY13	79.00

### PERCENTAGE OF SKILLED MANPOWER (%)

FY17	99.99
FY16	93.90
FY15	91.10
FY14	69.60
FY13	NA*

\* Not measured in FY13



A photograph of a car manufacturing plant. In the foreground, a silver car chassis is partially visible. In the background, another silver car chassis is on a blue conveyor belt. The factory has a high ceiling with many fluorescent lights and various mechanical structures.

Our growth is aimed to  
create enhanced value for  
our customers

# GROWTH & CUSTOMER FOCUS



## Delighting Customers through Growth

### STRATEGIC FOCUS AREA

Growth to meet customer requirements and create value

### STAKEHOLDERS

Customers  
Investors

### OUR GOAL

Ramp-up capacity

Preferred choice of supplier in the chosen segment

### ENABLERS

Ramp-up and stabilise new facilities

Value-added products, services & solutions

Reduce defects to <100 ppm

### CAPITALS IMPACTED



It is imperative for us to keep pace with the growing needs of our customers across sectors, primarily, the automotive and construction sectors. We aim to deliver enhanced value for our customers through our customised services and solutions and our value-added products. To insulate our business interests from cyclicity of the industry, we are foraying into new lines of business.

Tata Steel's Greenfield plant at Kalinganagar in Odisha (the largest in the country) commenced commercial production from May 2016 with a capacity of 3 MnTPA in its first phase. The plant produces world-class flat, lighter, high-tensile strength steel and has augmented our Indian crude steel production to around 13 MnTPA. It has helped the organisation expand its portfolio to high-grade flat products to cater to a range of sectors including ship-building, defence equipment, energy and power, infrastructure building, aviation and lifting and excavation. Seven new product licences and nine higher grades in existing product licence have also been granted by the Bureau of Indian Standard for products manufactured at our Kalinganagar plant.

**15%**  
higher deliveries  
enabled by ramp up

**>3,000**  
people employed

**~₹100 Cr.**  
CSR spend in  
Odisha

### UN SDG

8 – DECENT WORK & ECONOMIC GROWTH



Tata Steel Kalinganagar has achieved the fastest ramp-up in a Greenfield project in India. Crude steel production in FY2017 was 1.68 MnTPA. The crude steel capacity was ramped up to 88% with the Coke plant & Hot Strip Mill reaching 100% capacity in FY2017.



Tata Steel Kalinganagar

## Value Creation through Services & Solutions

Our goal is to achieve 20% of the revenues from services and solutions business. In the last three years, we have built a pipeline of solution concepts that will reach consumers progressively in the coming months and years.

Some of the services and solutions launched/scaled-up in FY2017 are:



**Ready Build Cut & Bend Bars**  
Hassle-free, superior quality and wastage-free solutions for construction sites



**Shaped Blanks**  
Reducing wastage of automotive customers by providing customised blanks



### Pravesh

Steel doors with wood finish offering benefits of strength, corrosion resistance and aesthetics to the consumer

**INNOVENT**  
Conceived in 2013, INNOVENT places a thrust on incubation of new business concepts. The team works closely with customers, captures insights, builds solution and tests the business model viability. Successful models are then passed on to business units for scale up.



### Superlinks & Footings

Quality stirrups (application for construction steel components) and foundation to provide strength to Reinforced Cement Concrete (RCC) structure.



### Nest in (EzyNest Modular toilets)

Turnkey, robust, durable, light-weight, secure, one-stop sanitation solution (toilets) targeted towards communities (aiding Government's Swachh Bharat campaign)

**ATW (All Time Water) Kiosk**  
Steel-based All-Time Water Kiosks for upcoming smart cities and for corporate CSR programmes. The unit is supplied with a RO+UV filter.



## KEY PERFORMANCE INDICATORS

### PAN INDIA DEALERS & DISTRIBUTORS (NOS.)



### CUSTOMER SATISFACTION INDEX (%)



### QUALITY COMPLAINTS (PPM)



### BRAND EQUITY INDEX-TATA TISCON (score out of 10)

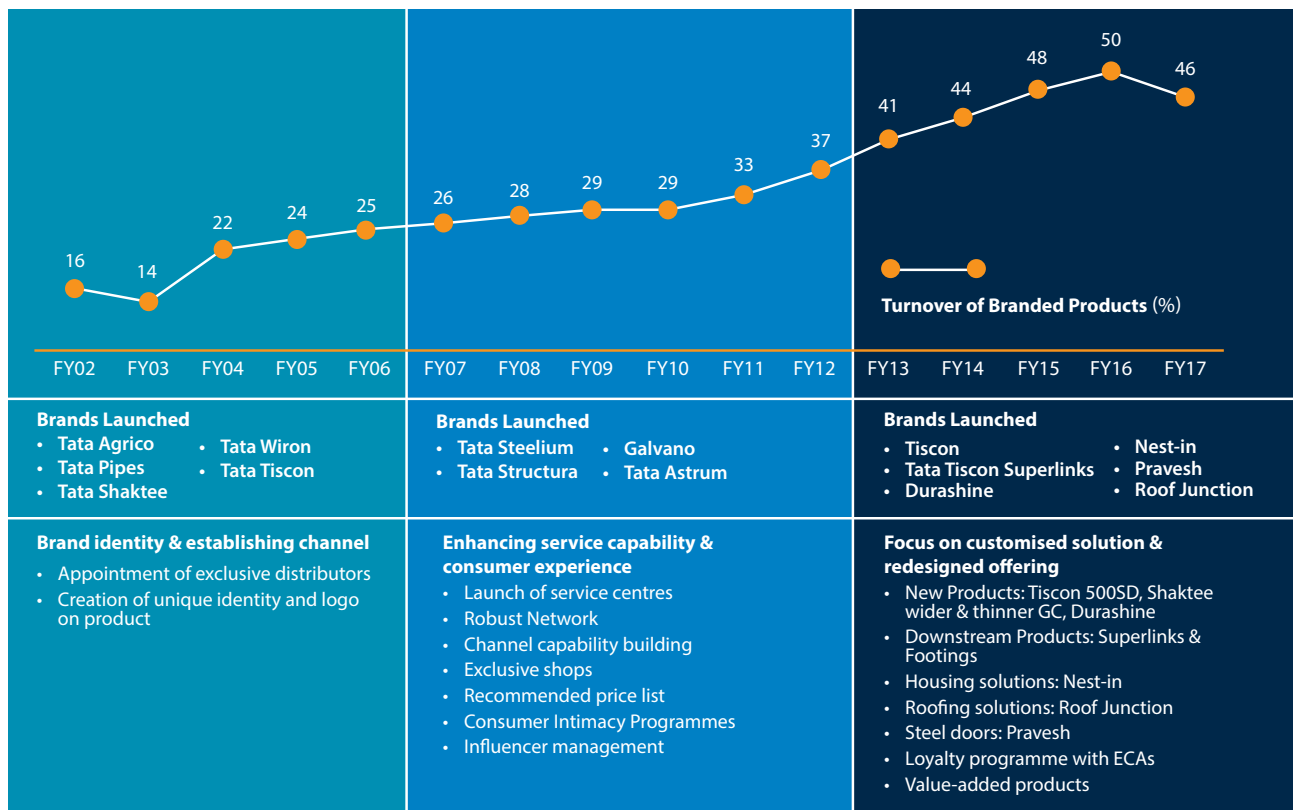


### BRAND EQUITY INDEX-TATA SHAKTEE (score out of 10)





## CONTINUOUS DE-COMMODITISATION OF STEEL HAS BEEN THE CORNERSTONE OF TATA STEEL INDIA BRANDING JOURNEY



Note: Drop in FY17 as new greenfield project at Kalinganagar is in the ramp-up Phase.





**We aim to retain our position  
as one of the lowest cost steel  
producers in the world through  
greater operational efficiencies  
and business excellence.**

# OPERATIONAL EXCELLENCE



## Operational Excellence

### STRATEGIC FOCUS AREA

**Cost Leadership and Business Excellence**

### STAKEHOLDERS

Investors  
Suppliers  
Customers

### OUR GOAL

To become the lowest cost steel producer

### ENABLERS

Widen scope and maintain rigor of improvement initiatives through SHIKHAR

Reduce procured raw material and services cost

Enhance captive coal production

Double employee productivity

Improve efficiency of material use and Increase recycling.

### CAPITALS IMPACTED



### UN SDG

8 – DECENT WORK & ECONOMIC GROWTH



We aim to retain our position as one of the lowest cost steel producers in the world through improved operational efficiencies and business excellence. We have a long value chain spanning across mining, iron-making, steel making, casting, rolling, finishing and delivering finished steel products to the customer. While this makes it a complex business, it also offers opportunities for improvement across the value chain. Our main focus areas are achieving superior steel properties, higher efficiency in iron ore & coal beneficiation, lower carbon rate in iron making, optimised product mix, reducing waste generation, energy efficient processes and higher material utilisation.

To expedite projects related to operational excellence across the value chain, in FY2015, we launched the Shikhar25 programme. It aims to identify and accelerate improvement projects across the value chain and achieve benchmark levels while building institutional capability. A total savings of ₹3,400 crore was achieved in FY2017 as a result of all improvement initiatives.



## KEY ACHIEVEMENTS

## RAW MATERIALS



## KEY ENABLERS

Own captive coal throughput increase was prioritised to replace imported coal.

The key initiatives were:

Coal yield optimisation

Debottlenecking of rail and vessel logistics and raw coal evacuation

Maximisation of West Bokaro washeries utilisation

## IMPACT

Higher **By-product value realisation**

Arresting **By-product waste**

Reduction in **oversize raw coal to improve fines circuit yield**

Implementation of **analytical tool "Sathi" to monitor lead indicator and take proactive action**

**1.2%** improvement in yield

## IRON-MAKING



Reduction in Coke rate and hot metal Silicon

Increase in net sinter production through process stabilisation and reliability improvement

Improving performance of Pollution control equipment

**Lowest ever blast furnace Coke rate** in FY2017 (~10% reduction over FY2016) and hot metal Silicon (0.74%)

Sinter plant crossed **8 MnTPA net sinter production milestone** (Indian benchmark).

It is the only sinter plant in India with Stack Emission **<40 mg/Nm<sup>3</sup>**

Consistently maintaining **>46% Sinter in Blast Furnace Burden**

Savings due to blast furnace fuel rate **₹118 crore**

## STEEL MAKING



Reduction in transition losses using optimisation models at steel making shop - LD2.

The model identifies best possible grade/chemistry to be produced, checks the order availability, and guides the steel maker to modify the plan accordingly

This model has helped in reducing the transition losses by **~40-50%** thus increasing the utilisation of available capacity

Total savings of **~₹30 crore** was achieved in FY2017

## LOGISTICS



Reduction in landed logistics cost by 12% compared to the previous year

Restructuring of legacy contracts with key suppliers at ports

Reduction of idle freight across mines, collieries, ports and HMC by Installation of IR certified in-motion weigh bridge, Load cells in pay-loaders, increased height of loading in coke wagons

Consolidation of cargo with third parties and trans-shipment

**Increased stacking capacity** at Dhamra Port at lower cost

**Reduction in demurrage** at ports

Increased parcel sizes to achieve **lower ocean freight**



## KEY PERFORMANCE INDICATORS

### OPERATIONAL EXCELLENCE

#### EMPLOYEE PRODUCTIVITY - TSJ (TCS/ EMPLOYEE/ YEAR)

FY17	720
FY16	701
FY15	623
FY14	597
FY13	513

#### COKE RATE (KG/ TONNE OF HOT METAL)

FY17	360
FY16	380
FY15	443
FY14	455
FY13	479

#### ENERGY INTENSITY- TSJ (GCAL/ TCS)

FY17	5.67
FY16	5.77
FY15	6.01
FY14	6.02
FY13	6.12

TCS: Tonnes of Crude Steel



Blast Furnace, Tata Steel Kalinganagar

**We leverage our technological capabilities to reduce our carbon footprint, optimally use inferior raw materials, improve yield, utilise solid waste and move towards a system of zero water discharge**

A woman in a lab coat is looking through a microscope. In the background, another person is also working with a microscope. The image is overlaid with a semi-transparent dark grey layer. A thin purple line curves across the top left. A thick red horizontal bar is at the bottom.

# **INNOVATION**

## STRATEGIC FOCUS AREA

### Technology & Innovation

## STAKEHOLDERS

Customers  
Suppliers

## OUR GOAL

To be one of the top 5 steel technology companies in the world

## ENABLERS

Commercialisation of Graphene and creation of new materials business vertical

Technological initiatives in the areas of process efficiency and product development

Creating value through digitalisation

## CAPITALS IMPACTED



## UN SDG

9-INDUSTRY, INNOVATION & INFRASTRUCTURE



Apart from leveraging our technological capabilities to address inferior quality of indigenous raw material and the variability of domestic ore compared with imported raw materials, we continuously aspire to be at the high end of technological capabilities and strive to meet high-quality product requirements as and when the evolving demand for newer, high-strength grades of steel arises.

Our focus is on reducing our carbon footprint, optimally use inferior raw materials, improve yield, utilise solid waste and move towards a system of Zero Water Discharge. Our efforts in innovation can be broadly classified into four categories: New Product Development, Process Technology, Digitalisation and Advanced Materials.

## 01 New Product Development

We are pursuing new products to be developed under the two categories:

**Platform products:** We are working towards improvement in strength and reduction in the number of surface defects, to narrow the technological gap with advanced mills. Especially, for sectors such as automotive, lifting and excavation, oil and gas, infrastructure and capital goods.

**Differentiated products:** We are developing high-anticorrosion steel, super-hydrophobic steel and cost-effective ultra high-strength steel. Additionally, we will increase our capabilities in downstream value-added products by entering into new segments such as defence, lifting and excavation.

Development of Hot Rolled Dual Phase (DP) Steel, characterised by high-strength and high-formability, is a major step towards meeting the expectations of automotive wheel manufacturers. To address the issues related to automotive wheels with a higher fatigue-life, we developed hot rolled Dual Phase steel with a minimum 600 MPa strength (DP 600) for the first time in India. Apart from high-strength, the grade showed enhanced formability compared with other existing High-Strength Low Alloy steels (HSLA) of similar strength.

Our in-house R&D team achieved this by using advanced thermo-mechanical

simulator Gleeble 3800 for hot rolling simulations, by adopting innovative cooling strategies in our Thin Slab Casting and Rolling (TSCR) mill and by making use of longer Run out Table (ROT) with higher cooling capacity. DP steel has cleared stringent requirements of corner fatigue tests that have been conducted at customers' facilities. Another variant of DP 600 steel was developed with low silicon content to achieve superior surface quality. Both the grades have been accepted by our customers and commercialised by us. Two patent applications have also been filed.



## 02 Process Technology

One of the key enablers of sustainable mining and lower-cost of liquid iron has been the utilisation of high gangue iron ore in our sinter making process. The high gangue material (with iron content of ~55%) requires significant area for stacking as well as the addition of flux (pyroxinite) for the removal of gangue from metal during the sintering process. Earlier, the flux used to be imported, driving up costs considerably. A new process was developed to use high siliceous gangue material in the sinter using a locally sourced material as flux. Consumption of imported flux decreased by 5.5 kg/tonne with no adverse impact on sinter quality. This led to savings of ₹12.5 crore per annum.

Some of the other examples of process improvement are:

- For utilisation of low-grade chromite ores for sustaining standard concentrate production, a new method of operational philosophy established in the chromite ore beneficiation plant at Sukinda.
- Increase in clean coal production from reflux classifier by changing the feed regime and rectifying machine-related issues at West Bokaro Washery #3.
- Utilisation of BF slag as flux in chromite pelletising along with improvement in pellet property.
- Reduction in water consumption (0.2 m<sup>3</sup>/tcs) in Jamshedpur Steel Works through multiple recycling of water in high temperature processes.
- 5% use of non-coking coal in Haldia Met Coke to minimise blend cost and reduce import of coal.



## 03 Digitalisation: Leveraging Digital Technology

We appreciate the disruptive potential of Industry 4.0 and are actively seeking opportunities to redefine existing processes and systems by leveraging digital technologies. The year saw a significant upgrade in the discourse around digitalisation along with a rich project pipeline created for delivering business value in the coming years.

During FY2017, we identified opportunities for value creation worth ₹700 crore using digital technologies. The projects include Predictive Asset and Quality Management at process plants, Digitalisation of Customer Decision Journey in the Retail Segment as well as developing Smart-City Applications.

Jamshedpur has also become the first city in India to have a 3-wall-depth penetration of Low Power Wide Area Network (LPWAN), forming the foundation for development of Smart City Applications. Applications under development include - smart metering for power and water, intelligent street-lighting and smart waste bin management.

We have adopted advanced analytics as a key tool to take operating efficiencies to the next level. Advanced Analytic-based predictive models are now powering critical plant functions, examples of which are:

### Steel making

Enhancement Break-out Detection System at LD Slab Caster to improve throughput and eliminate unsafe conditions through advanced data analytics.

### Tubes Business Unit

A Predictive Asset Maintenance solution enabling higher equipment availability and a Salesforce application for dealers to improve effectiveness and efficiency.

### New Bar Mill

Integration of QR Codes onto critical equipment enabling equipment data availability on a smartphone. Designated employees can monitor equipment health right on the shop-floor and perform on-site diagnostics.



Having established a dedicated team to drive the transformation to becoming an Industry 4.0 leader, we also facilitate the development of organisational capabilities around digital technologies and data analytics. We are in the midst of upgrading to SAP S4 HANA platform that will simplify and improve business processes.



## 04 Advanced Materials



### Graphene

Graphene - a material offering substantial superior anti-corrosive properties, enhanced product aesthetics and a wide range of applications - has been identified as one of the advanced materials that has the potential to multiply value across segments. The Indian Graphene market (₹80 crore) is currently in a nascent state with immense potential. The steep rise in graphene application patents further supports the realisation of an industrial market in the upcoming years.

A Graphene Development Cell (GDC) has been created at Jamshedpur to identify applications and establish new business (production units, supply chain and markets). Two Advanced Materials Research centres of excellence have been established at Chennai in collaboration with IIT Madras and at Bengaluru with CeNS for collaboration on basic research on Graphene and other 2D materials.

GDC has developed and implemented Graphene powder and Graphene-based liquid that acts as the input to Graphene based products. Graphene coated stirrups were launched under the brand name SUPERLINK+ in Jharkhand. SUPERLINK+ has enhanced corrosion resistance and better bonding strength with concrete as compared with existing stirrups in the market. Seven patent applications have already been filed in this area of work.

### KEY PERFORMANCE INDICATORS

#### COLLABORATIONS / MEMBERSHIP (TECHNICAL INSTITUTES) (NOS.)

FY17	42
FY16	32
FY15	23
FY14	7
FY13	12

#### R&D SPEND (₹ CRORE)

FY17	145
FY16	129
FY15	134
FY14	81
FY13	60

#### PATENTS FILED (CUMULATIVE TILL FY2017) (NOS.)

FY17	870
FY16	791
FY15	720
FY14	663
FY13	605

#### PATENTS GRANTED (CUMULATIVE TILL FY2017) (NOS.)

FY17	360
FY16	318
FY15	286
FY14	250
FY13	220





**The Tata Values and Tata Code of Conduct serve as the guiding philosophies of our work culture. We aspire to be the benchmark for environment performance and our approach to social responsibility is guided by our vision, our CSR and Affirmative Action Policies**

# RESPONSIBLE BEHAVIOUR



# Environment Leadership

## STRATEGIC FOCUS AREA

### Environment Leadership

## STAKEHOLDERS

Government  
Regulatory Bodies  
Customers  
Civil Society

## OUR GOAL

Become industry benchmark in environmental performance

## ENABLERS

Reduce CO<sub>2</sub> emission intensity  
<2tCO<sub>2</sub>/tcs

(tcs: tonne of crude steel)

Zero effluent discharge

100% utilisation of LD Slag

Increase use of renewable energy

No net loss of targeted Biodiversity components in raw material locations and progressive reclamation of mine altered sites

## CAPITALS IMPACTED



UN SDG  
7 - AFFORDABLE  
& CLEAN ENERGY



UN SDG  
13 - CLIMATE  
ACTION



UN SDG  
12 - RESPONSIBLE PRODUCTION &  
CONSUMPTION



We aspire to be the Indian steel industry benchmark for environment performance by focusing on climate change mitigation and resource efficiency. The key natural resources on which our operations are primarily dependent on are: coal, iron ore, water and ferro alloys.

We are cognisant of the fact that our mining operations impact the biodiversity of the regions in which we operate. Environmental impacts of our manufacturing operations include generation of CO<sub>2</sub>, dust emissions, discharge of water effluents and process waste generation.

To address these impacts, our policies for climate change mitigation, environmental care, energy efficiency and renewable energy provide overall guidance to our processes and help us achieve environmental leadership.

Environment management of key sites involved in mining and manufacturing are certified under EMS ISO 14001. The Company continues to be a Climate Action Member of the World Steel Association and endorses the United Nations Global Compact's SDGs and CEO Water Mandate.

## Some of the thrust areas for environmental excellence are:



Concerted R&D efforts to conserve natural resources



Climate change impact mitigation



Reduction of our resource footprint through ore beneficiation



Material substitution



Continual process improvement and product development



Revision of the Energy Policy to explicitly embed the promotion of renewable and non-conventional energy

## SHADOW CARBON PRICE

We believe any capital investment should be made after evaluation of its climate impact. To enable this, we have introduced the Shadow Carbon Price, which will be used for evaluating any capital expenditure projects in Tata Steel



Central Effluent Treatment Plant

## KEY ACHIEVEMENTS

 <b>01</b> <b>CO<sub>2</sub> EMISSION</b> <b>MITIGATION STRATEGY</b>	 <b>02</b> <b>WATER CONSUMPTION AND ZERO EFFLUENT DISCHARGE</b>	 <b>03</b> <b>SOLID WASTE UTILISATION</b>	 <b>04</b> <b>BIODIVERSITY</b>
<ul style="list-style-type: none"> <li>• Energy conservation through: Top Recovery Turbine (TRT) power generation</li> <li>• LD Gas recovery</li> <li>• Reduction in carbon rate</li> </ul>	<ul style="list-style-type: none"> <li>• Water conservation initiatives at operational facilities</li> <li>• Improved utilisation of Central Effluent Treatment Plant</li> </ul>	<ul style="list-style-type: none"> <li>• Zero waste mining driven by ore characterisation, ore-body modeling, and block modeling of mining deposits done, Life Cycle Inventory (LCI) studies for mines</li> <li>• State-of-the-art beneficiation plants in operation and studies underway for beneficiating slime and low-grade ores</li> </ul>	<ul style="list-style-type: none"> <li>• Rollout of Biodiversity Management Plans (BMPs) for each of the eight mining sites</li> <li>• Assessment of habitats using the Biodiversity Indicator and Reporting System (BIRS) tool undertaken</li> </ul>
<b>IMPACT</b> <p>TRT Power generation <b>increased by 20%</b>  LD Gas recovery <b>enhanced by 44%</b>  <b>1% reduction</b> of Carbon rate</p> <p>Jamshedpur Steel Works is the <b>National Benchmark in CO<sub>2</sub> emission intensity and Specific Energy Consumption</b> within Steel Sector (Coal based Integrated Works, BF-BOF)</p> <p><b>26% reduction</b> in CO<sub>2</sub> emissions in FY2017 (base level in FY2005)</p>	<p><b>Lowest ever water consumption with 12% reduction</b> over previous year at our Jamshedpur Steel Works</p> <p><b>Best ever effluent discharge figure</b> in FY2017, which was <b>~16% reduction</b> over FY2016</p>	<p><b>53% LD slag utilisation</b> in FY2017 as compared to 43% in FY2016</p> <p>We are the <b>first in India</b> to process Steel/LD slag as replacement of natural aggregates in road-making through screening and weathering, developed market through joint experiments with National Highway Authority of India, Jharkhand State Rural Road Development Agency and Jharkhand Road Projects Implementation Company Limited and <b>obtained accreditation from Indian Road Congress</b></p>	<p><b>No net loss</b> in targeted biodiversity components from pre-mine conditions</p> <p><b>Progressive reclamation</b> of mine-altered sites</p>







## KEY PERFORMANCE INDICATORS

05



### DUST EMISSION

- Up-gradation of pollution control equipment
- Engagement of OEMs for effective operation & maintenance

**Best-ever effluent discharge intensity**  
achieved in FY2017

#### EMISSIONS - GHG - TSJ (TCO<sub>2</sub>e/tcs)

FY17	2.29
FY16	2.30
FY15	2.42
FY14	2.43
FY13	2.52

#### EMISSIONS - DUST - TSJ (KG/tcs)

FY17	0.44
FY16	0.50
FY15	0.57
FY14	0.88
FY13	1.00

#### EFFLUENT DISCHARGE INTENSITY - TSJ (M<sup>3</sup>/tcs)

FY17	1.01
FY16	1.20
FY15	2.31
FY14	2.31
FY13	3.58

#### MATERIAL EFFICIENCY - TSJ (%)

FY17	92.90
FY16	92.40
FY15	91.30
FY14	91.20
FY13	90.80

#### TREES PLANTED - TSI (NOS.)

FY17	4,00,225
FY16	4,21,973
FY15	3,22,000
FY14	3,81,000
FY13	4,56,000

#### SPECIFIC WATER CONSUMPTION - TSJ (M<sup>3</sup>/tcs)

FY17	3.83
FY16	4.39
FY15	5.54
FY14	5.58
FY13	5.92

#### SOLID WASTE UTILISATION - TSJ (%)

FY17	82.40
FY16	80.60
FY15	78.30
FY14	78.00
FY13	77.70

TSJ: Tata Steel Jamshedpur

TSI: Tata Steel India

Tata Steel Jamshedpur

## Community Development: Positively impacting lives

### STRATEGIC FOCUS AREA

#### Impact Based CSR

### STAKEHOLDERS

Government  
Regulatory Bodies  
Community

### OUR GOAL

Positively impacting  
>2 million lives

### ENABLERS

Expand reach and impact of our  
Initiatives in areas of Health,  
Education, Livelihood, Water and Civil  
Infrastructure, Skill Development,  
Sports and Ethnicity

Leverage collaborative and financing  
opportunities

### CAPITALS IMPACTED



### UN SDG

11- SUSTAINABLE CITIES &  
COMMUNITIES



Thousand Schools Project, Odisha

We are aware that the regions that we operate in are largely socio-economically backward and have been impacted by political unrest. An overwhelming majority of the population in these regions is dependent upon rain-fed, single-crop agricultural produce for their livelihood. A major concern in these regions is the development of the Scheduled Castes (SC) and Scheduled Tribes (ST) who constitute a major percentage of the population. We promote Affirmative Action based on positive discrimination to improve levels of education, employment, employability, entrepreneurship, while preserving the ethnicity of this section of the population.

The Tata Steel CSR Advisory Council comprises eminent personalities from academia and development sector, who provide policy-level inputs for improvement of our CSR interventions. The priority areas for improvement identified in Jharkhand and Odisha are health, education and livelihood. The other areas of intervention are skill development, ethnicity, water, civil infrastructure and sports.

### Thousand Schools Project

This ambitious project aims at making the Right to Education (RTE) Act a reality in six blocks of three tribal districts of Odisha – Jajpur, Keonjhar, Sundargarh. The project envisions better access to school for children while improving the quality of education that they have access to.

**Improved teaching quality is imperative for quality education. Some of the key initiatives in this direction are:**

01

Instituting effective classroom pedagogy to strengthen the foundation level learning of children

02

Enhancing teachers' capabilities

03

Making available quality teaching and learning materials in classrooms

04

Setting up of school libraries and introducing tablet-based classroom content

05

Establishing an effective academic monitoring mechanism

06

Enabling proper functioning of School Management Committees (SMCs), mandated by the RTE Act to have oversight of school functioning and performance

We have carried out numerous activities like staff orientation, training for teachers and the youth. We also trained the School Management Committees (SMCs) and members of Panchayati Raj Institution. We are implementing the project in partnership with Delhi-based NGO ASPIRE.

### IMPACT

- 22,000 children have been positively impacted through this project
- 400 habitations are child labour free across the six project blocks
- 6,375 out of school children have been mainstreamed into education
- 3,646 children have been helped to transition from primary to middle school
- 12,705 school going children of primary classes have been helped to improve their learning levels significantly in Language and Maths (evidence-based)

## KEY INITIATIVES

**EDUCATION** Improving the access and quality of education for all and scholarships for meritorious students



### 30 MODEL SCHOOLS

#### ACTION

Construction of 30 model schools in 30 blocks in Odisha

Spend of over  
**₹29 Cr.**

#### IMPACT

Delivered  
**3 model schools**  
to the State Government in FY2017  
with the required classroom  
infrastructure  
Another five are ready for handover



### JYOTI FELLOWSHIP

Scholarships to meritorious SC/ST students

**3,083 students**  
in FY2017 over 2,883 in FY2016



### TATA STEEL SCHOLARS PROGRAMME

Assistance for professional education to meritorious SC / ST students

**95**  
in FY2017 over 83 in FY2016

**SPORTS & ETHNICITY** Preserving culture



### UNDER 10 FOOTBALL TRAINING CENTRES

#### ACTION

Training at Tata Steel-backed football training centre

#### IMPACT

Over 800 boys trained in various nuances of football



### TRIBAL LANGUAGE LEARNING CENTRES

Promotion of tribal languages and literature

Over 11,000 youth underwent training in tribal languages and scripts



### PRESERVE AND PROMOTE TRIBAL CULTURE AND HERITAGE

Tribal Conclave

**Samvaad:** The 3<sup>rd</sup> edition of 'Samvaad', a 5 day pan-India tribal conclave organised at Jamshedpur on 'Tribal Health Systems', featured 1,500 tribal artists, academicians, eminent personalities and activists from 40 different tribes across 20 states in India. On the lines



of its past two editions, Samvaad 2016 featured sessions on 'Tribal perspective on Development'. A tribal fashion show was also organised on the concluding day



**HEALTH** Primary healthcare, maternal and child healthcare, specialised healthcare and adolescent health programmes

**MANSI**  
Maternal & Newborn Survival Initiatives

**ACTION**

A PPP model based initiative to train Government appointed village level women health workers and increase their capabilities to work towards reducing neonatal and infant mortality

**IMPACT**

**46%** reduction in Neonatal Mortality Rate

**39%** reduction in Infant Mortality Rate

(Since the inception of MANSI in 2010)



**MESU**  
Mobile Eye Surgical Unit

A collaborative venture between Sankara Nethralaya and IIT Madras, supported by Tata Trusts and Tata Steel provides state-of-the-art cataract surgery in remote areas

**Held 7 camps**, screened around **3,700 people**, conducted close to **600 cataract surgeries** and dispensed spectacles to around **350 people** in some of the poorest and tribal-dominated areas



**MMU**  
Mobile Medical Units

Tata Steel mobile clinics, deployed in areas deprived of a proper clinic/dispensary, to provide basic consultation and medicine

**4,36,992 people** benefitted through mobile medical units in FY2017 (5,33,597 in FY2016)



**SPECIALISED HEALTH CAMPS FOR FOCUSED ILLNESSES**

Specialised camps are held periodically in remote locations to address specific diseases prevalent in these areas

**87 health camps** and **23,631 beneficiaries** in FY 2017 (129 camps and 30,537 beneficiaries in FY2016)

**SUSTAINABLE LIVELIHOODS** Enabling people

**SYSTEM OF RICE INTENSIFICATION (SRI) METHOD OF PADDY CULTIVATION**

**ACTION**

Working with farmers to deploy scientific agriculture techniques leading to improvement in paddy yield

**IMPACT**

**9,633 farmers** trained in FY2017 on the SRI method (8,350 in FY2016)



**FARMERS' TRAINING IN VEGETABLE CULTIVATION**

Improving cropping efficiency and maximising use of irrigation facilities

**5,451 farmers** trained in FY2017 (4,238 in FY2016)



**VAARTA**  
Agricultural Meet

Supporting farmers in undertaking modern agriculture by regular interface with agricultural scientists

**Vaarta agriculture experts** was held in Jamshedpur (Jan 2017), Kalinganagar and Gopalpur (March 2017) and Noamundi (December 2016) with a total **turnout of over 1,800**



**LIVELIHOOD INTERVENTIONS THROUGH COLLECTIVES FOR INTEGRATED LIVELIHOOD INITIATIVES (CInI)**

Livelihood interventions in agriculture and knowledge transfer through CInI

Reached out to nearly **1,500 rural women** in FY2017 to improve their economic condition and aid in becoming self-reliant


**RISHTA**

Regional Initiative For Safe Sexual Health For Today's Adolescents

Adolescents counseled on sexual health through school sessions and Youth Resource Centres


**BOKARO RIVER  
DRINKING WATER  
PROJECT**

Rainwater harvesting based project with a dam along with an intake well, capable of supplying approximately 1,000 kilo litres of filtered and chlorinated water per day

**24,402 youth** touched in FY2017 (23,741 in FY2016)

Caters to **~ 8,000** people in eight villages of Ramgarh district

**Reduction in Infant Mortality Rate by 39%**  
since the inception of MANSI in FY2010

**Reduction in Neonatal Mortality Rate by 46%**  
since the inception of MANSI in FY2010

Key Performance Indicators	UOM	FY17	FY16	FY15	FY14	FY13
Beneficiaries of Mobile Medical Units and Static Clinics	Nos.	4,70,463	5,68,984	4,37,070	4,19,821	3,72,048
Beneficiaries of specialised health camps	Nos.	23,631	30,537	48,314	29,282	-
Adolescents touched through RISHTA (Regional Initiative For Safe Sexual Health for today's adolescents)	Nos.	24,402	23,741	47,442	46,477	-
Meritorious students covered through fellowships	Nos.	3,185	2,985	3,567	3,169	2,477
Meritorious students covered through TATA scholarship	Nos.	95	83	53	4	-
Youth enrolled for skill development	Nos.	3,090	3,089	3,458	1,743	2,225
Youth trained	Nos.	1,784	1,578	1,938	1,572	N/A
Youth placed / Self employed	Nos.	1,713	1,147	1,206	521	597
Women empowered through SHG	Nos.	10,259	9,975	9,033	9,700	9,500
Farmers trained on System of Rice Intensification (SRI) method of paddy cultivation for yield improvement	Nos.	9,633	8,350	5,948	2,200	250
Area under 2 <sup>nd</sup> and 3 <sup>rd</sup> crop	In Acres	3,511	5,086	5,510	5,032	3,177
Ponds	Nos.	209	200	426	92	-

## Compliance, Ethics and Governance

Ethical behaviour is intrinsic to the way we conduct our business. The Tata Group's founder, Jamsetji Tata, insisted that business must respect the rights of all its stakeholders and create an overall benefit for the society.

Our corporate values of unity, responsibility, excellence, pioneering and integrity are the guiding principles by which we strive to conduct our business.

Our governance framework flows from our Code of conduct and policies. The framework is designed to ensure that our business is conducted in an honest and ethical manner, with integrity and it conforms with the relevant laws and regulations of the countries where we operate in.

### Tata Code of Conduct

All Tata Group companies subscribe to the Tata Code of Conduct ('Code'), which clearly articulates our ethical principles and desired behaviours. The Code requires the Tata companies and employees to act with professionalism, honesty and integrity and to preserve the human rights of every individual and the community. The principles of the Code apply to all our dealings with our business partners who are encouraged to adhere to similar standards. The Code covers various subjects like equal opportunity employer, dignity & respect, human rights, bribery & corruption, gifts and hospitality, conflict of interest, financial reporting and records among others.

The Tata Code of Conduct is augmented by a number of policies that help strengthen governance practices at Tata Steel. These policies include the Conflict of Interest Policy, The Policy for Receipt of Gifts and Hospitality, The Whistle Blower Policy and the Prevention of Sexual Harassment at Workplace Policy.





## Affirmative Action

In accordance with its Affirmative Action Policy, Tata Steel encourages business entrepreneurs from socially disadvantaged communities and includes them in its supply chain on the basis of equal merit. The Company has leveraged its growth projects to diversify its workforce through positive discrimination in favour of local, marginalised communities and women. Also, Tata Steel chooses organisations aligned to its Affirmative Action Policy as its Strategic Sourcing partners.

## Building Blocks of Responsible Procurement

Policy outlines the fair business practices by which Tata Steel conducts business and we expect our suppliers to adopt similar principles.

### Tata Code of Conduct

We expect our suppliers to adopt management practices in respect of Health & Safety which provide a high level of safeguarding for their workers.

### SA 8000 and TSL Safety Norms

We require suppliers to maintain effective policies, processes and procedures to manage their environmental impact.

### Green Supply Chain

We expect our suppliers to develop and implement policies and procedures to ensure all human rights in their business and to encourage their suppliers to do likewise.

### SA 8000



We expect our suppliers to contribute to the social, economic and institutional development of the communities in which they operate.

### Affirmative Action

During the year, the Company provided both classroom and web module training to people who work at its sites. Training was provided on POSH<sup>1</sup>, COI<sup>2</sup> and TCOC<sup>3</sup>

**3,281** Officers

**14,430** Non-Officers

**22,069** Contractors' Employees'

**1,085** Vocational Trainees

<sup>1</sup> POSH- Prevention of Sexual Harassment

<sup>2</sup> COI- Conflict of Interest

<sup>3</sup> TCOC- Tata Code of Conduct





## WAY FORWARD

We will continue to seamlessly deploy our strategy, heading towards the goals set for each of our strategic focus areas.



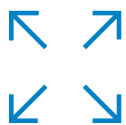
### Safety - Zero injury and fatality

We will continue with our efforts of building leadership's competency, improving contract worker safety management and all other process improvements for identifying safety hazards and mitigating risks, to ultimately reach our goal of Zero LTI



### Diversity and Inclusion

With an ambition of having at least 20% women in workforce, we will continue to uphold our ethos of being an equal opportunity employer



### Scale-up Services and Solutions

We will aim to ramp-up and stabilise our new operations and continue our efforts towards developing value-added services and products for meeting varied customer requirements



### Technology Leadership

We will continue to be the front runners in adoption of new technologies, both in terms of product development and process efficiencies





Thin Slab Casting and Rolling, Tata Steel Jamshedpur



## Climate change strategy: Reduction in specific water consumption and CO<sub>2</sub> emission

We will continue to evolve our operational practices and adopt state-of-the-art technologies to increase resource efficiency and reduce emissions



## Digitalisation - Realise value and improve stakeholder experience

We will exploit digital technology to the fullest for value enhancement and improving customers' and partners' experience. In view of Industry 4.0, we will strive to be ahead of the curve in adopting disruptive digital technologies



## Improvement in employee engagement

We will constantly strive to be one of the top quartile ranking companies in the space of employee engagement. We will keep focussing on employee well-being and happiness.



## Cost Leadership

With our multi-pronged approach of improving process efficiencies, optimising raw-material usage, waste recycling and employee productivity enhancement, we will keep honing our efforts of cost-leadership



# SUSTAINABILITY GOVERNANCE

Butterfly Park at Noamundi

## Sustainability Framework at Tata Steel

Sustainability is embedded in the very culture of Tata Steel. This stems from our visionary founder JN Tata's belief that the community is not just another stakeholder in business, but the very purpose of our organisation's existence. This belief is also reflected in the vision and values of Tata Steel that balance the aspiration of value creation along with the responsibility of being a benchmark corporate citizen.

## Sustainability Approach

Our approach is articulated not just in the Sustainability Policy, but also our CSR Policy, HR Policy, Affirmative Action Policy, Climate Change Policy, Environment Policy and Energy Policy. These are available on our corporate website [www.tatasteel.com](http://www.tatasteel.com). Some of the key aspects of our approach include:

### Stakeholder Engagement

We have established various platforms for periodically listening to stakeholder voices such as the community, investors, customers and employees. These are prioritised and built into our business objectives and strategies.

### Participation in national and international forums

Our senior leaders work with various industry bodies like the World Steel Association (WSA), the Confederation of Indian Industry (CII), Global Reporting Initiative (GRI), International Integrated Reporting Council (IIRC), UN Global Compact (UNGC) and the Task Force on Climate-related Financial Disclosures (TCFD) for further guidance on implementing sustainability practices.

### Corporate Sustainability team

The team is responsible for mainstreaming sustainability across the organisation and its value chain. The team tracks global best practices related to sustainability and facilitates their incorporation in the key processes of the Company.

### External Experts' perspectives

Our Corporate Sustainability team also drives various external assessments like the Dow Jones Sustainability Index and those conducted by the Confederation of Indian Industry. We use feedback from these external assessments for further improvement. Aligned with the United Nation's Sustainable Development Goals (SDGs) and COP21, we are now taking on the challenge of further reducing our carbon and water footprints and enhancing the impact of our CSR activities in the locations where we operate.

The Tata Values and Tata Code of Conduct serve as the guiding philosophies of our work culture. The performance related to various Sustainability issues is reviewed at the Corporate as well as the Board level. The Board-level Committees with their scope and membership have been detailed in the Corporate Governance Report. At the Corporate-Level, various committees review the sustainability and governance initiatives. These include the Apex Safety Committee, Apex Environment Committee, Apex HRD Committee, Apex CSR Committee, Apex R&D Committee and Quality & Production Meeting. These Committees are chaired by the Managing Director/Group Executive Director.

## Leading The Way

Globally, Tata Steel was adjudged the Steel Industry Leader by the Dow Jones Sustainability Index for the year 2016.

Tata Steel has won the Indian Institute of Metals Sustainability Award for FY2016.

In December 2016, Tata Steel Jamshedpur Works underwent the GreenCo assessment conducted by CII-Green Business Centre and was awarded Platinum rating, the highest on the GreenCo rating scale. This made Tata Steel the first and the only Integrated Steel Plant to be awarded the GreenCo Platinum rating.



Afforested Botanical Park, Noamundi, Jharkhand

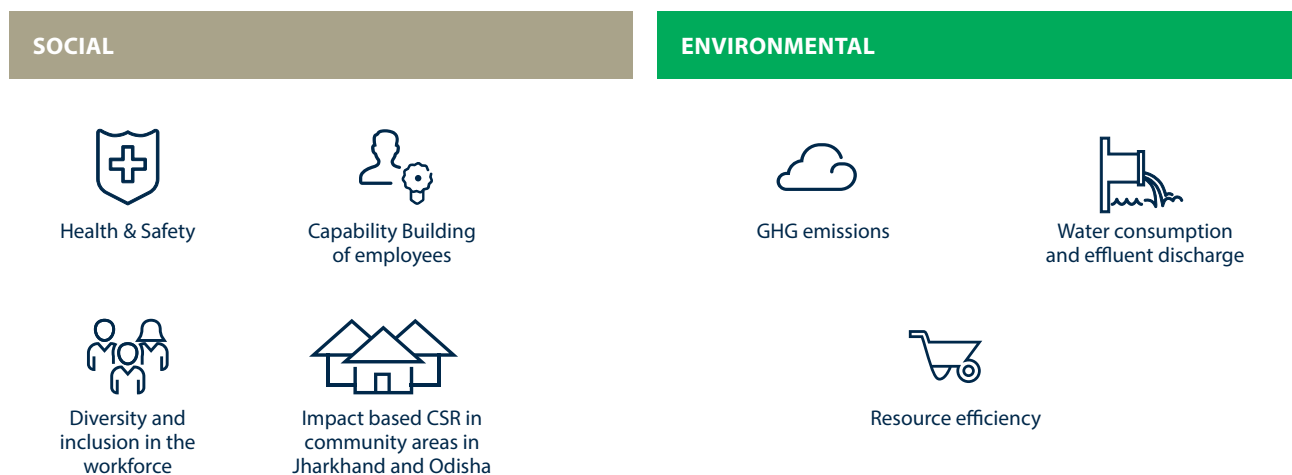
## Embedding Sustainability

The Corporate Sustainability group formulates and reviews the Company's Sustainability Policy. The key material issues (issues critical to value creation ability of the Company and of key interest to investors and other stakeholders) listed below are embedded in the business objectives at apex and divisional levels and are acted upon as well as reviewed.

## Materiality

We had conducted a materiality assessment for Tata Steel in FY2014. The material issues were identified by mapping stakeholder concerns and our business priorities. The identified material issues have been largely addressed. Moreover, in keeping with the developments in the external environment and changing stakeholder expectations, we have identified some additional issues which are material to us. We have plans to revisit our materiality through a third party study in near future.

## Key Material Issues



The economic material issues are part of our Business Objectives and Strategies. Further, to embed an integrated approach in the organisation and create a balance between the six capitals as per the IIRC framework, the key work processes of the Company are being reviewed by the Corporate Sustainability Group to identify gaps and enrich the work processes. This project is aimed at the inclusion of stakeholder issues at each process level and transition to integrated thinking and working. It also envisages minimising the negative impacts of our operations on the environment and society.

## Creating a Culture for Sustainability

Customised awareness programmes for Tata Steel officers (both at entry and existing) are conducted at regular intervals across the Company. Such programmes on relevant aspects of sustainability are also made available to external stakeholders such as suppliers and the community. Focused campaigns and celebrations (such as World Environment Day, Earth Day, Biodiversity Day, Safety Week, World Health Day, Anti-Tobacco Day and Ethics Month) are undertaken to drive awareness on environmental, health and safety issues. In June of every year, we celebrate the Tata Sustainability Month to mainstream Sustainability in our business and processes. In 2016, a Sustainability Expo was held for the first time during the Tata Sustainability Month.



## KEY DEVELOPMENTS IN FY2017

Tata Steel released its first Integrated Report for FY2016, replacing two separate reports (Annual Report and Sustainability Report).

A new Carbon (Shadow) Pricing mechanism has been introduced for evaluation of capital projects.

The Energy Policy was revised to include explicit intent on renewable and non-conventional sources of energy.

The use of Life Cycle Assessment (LCA) as a decision-making tool was strengthened and projects for mainstreaming LCA as a decision-making tool was initiated.



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## Way Forward in Sustainability

### Carbon Neutrality

Studies and discussions have been initiated for carbon sequestration and use of breakthrough technologies and renewable energy.

### Water Footprint

Study to be initiated for base-lining of watershed potential at Jamshedpur.

### Integrated Approach

Mapping of key work processes to include the social and environmental considerations in line with the six capitals of IIRC framework for further improving Integrated Thinking has been initiated.

## Our Disclosures

- Integrated Annual Report presenting the value creation story of Tata Steel to all stakeholders
- Disclosure to RobecoSAM DJSI Corporate Sustainability Assessment
- CDP (erstwhile Carbon Disclosure Project) disclosure for Climate Change and Water
- Application for World's Most Ethical Companies (WME) to Ethisphere Institute, USA
- Communication of Progress to UNGC on the ten principles of Sustainability
- Environment Compliance Reports
- Other Statutory disclosures as per Companies Act, 2013 and SEBI Regulations

## Our Partnerships

- The Company is an active member of industry associations that have an international and nationwide presence such as Worldsteel Association, United Nations Global Compact (founding member), Confederation of Indian Industry, Federation of Indian Chambers of Commerce and Industry, Federation of Indian Mineral Industries, Indian Institute in Metals and The Energy and Resources Institute
- Tata Steel is an active member of the steel industry's 'Energy Operating Committee' to share performance and enablers as well as form industry opinion for advocacy
- Tata Steel has supported the Bureau of Energy Efficiency (BEE) as a member of the Industry Expert Group

# AWARDS AND RECOGNITION



Prime Minister's Trophy for the 'Best Performing Integrated Steel Plant' in the country for the performance year 2013-14



Safety and Health Excellence recognition 2016 in 'Leadership' category by World Steel Association



'Best Companies to Work for' 2016 award in the core sector by Business Today



'Best Risk Management Practice' Award in the category of Metals & Mining at the 3rd India Risk Management Awards 2017

## Financial Capital

- Winner in the 'Iron & Steel' sector for the Dun & Bradstreet Corporate Awards 2016

## Manufactured Capital

- Tata Tiscon & Tata Shaktee have been selected as 'Consumer Superbrand' for 2016-17 by Superbrands India Pvt. Ltd. for the third consecutive edition
- 6th EPC awards in the 'Outstanding Company in Steel' category for exceptional contribution towards infrastructure and construction sector

## Intellectual Capital

- Clarivate Analytics Innovation Award 2016
- Tata Steel's Advanced Corrosion Research Centre received the 'Excellent Laboratory Award' from National Association of Corrosion Engineers, International Gateway - India section

## Human Capital

- 'World's Most Ethical Company Award' 2017 - Recognised for the fifth time by Ethisphere

## Social & Relationship Capital

- Conferred the 'Tata Affirmative Action Programme' (TAAP) Jury's Award - 2016 for the fourth year in succession
- Awarded 'National Award for Outstanding Achievement in Industrial Relations' by All India Organisation of Employers (AIOE)

## Natural Capital

- Global Steel Industry Leader in the Dow Jones Sustainability Index 2016
- Tata Steel continues to be a climate action member of World Steel Association
- India's 1<sup>st</sup> Steel company to receive 'GreenCo Platinum Rating' by CII - Green Business Centre
- Awarded 'A' Rating - Climate Leadership Band by CDP for Climate Change disclosures for Supply Chain
- Noamundi Iron Mine and Joda East Iron Mine accorded 'Five Star rating' for its sustainable mining practices by Ministry of Mines, Government of India



### **Tata Steel Limited**

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