Directors' Report

To the Members,

The Board of Directors hereby presents the 104th annual report on the business and operations of your Company along with the standalone and consolidated summary financial statements for the year ended 31st March, 2011.

Figures in ₹ crores

	Tata Steel Standalone		Tata Steel Group	
	2010-11	2009-10	2010-11	2009-10
Net Sales/Income from Operations	29,396.35	25,021.98	1,18,753.12	1,02,393.12
Total expenditure before depreciation (net of expenditure transferred to capital)	17,963.49	16,069.89	1,02,757.50	94,350.46
Operating Profit	11,432.86	8,952.09	15,995.62	8,042.66
Add: Dividend and other income	790.67	853.79	980.98	1,185.85
Profit before interest, depreciation, exceptional items and taxes	12,223.53	9,805.88	16,976.60	9,228.51
Less: Net finance charges	1,300.49	1,508.40	2,770.04	3,022.06
Profit before depreciation, exceptional items and taxes	10,923.04	8,297.48	14,206.56	6,206.45
Less: Depreciation	1,146.19	1,083.18	4,414.82	4,491.73
Profit before exceptional items and taxes	9,776.85	7,214.30	9,791.74	1,714.72
Add/(Less): Restructuring costs	–	–	2,310.21	(1,683.72)
Profit before taxes	9,776.85	7,214.30	12,101.95	31.00
Less: Provision for current taxation	2,857.00	1,998.00	2,910.34	2,162.53
Less: Provision for deferred taxation	54.16	169.50	335.56	(10.69)
Profit after taxes	6,865.69	5,046.80	8,856.05	(2,120.84)
Less: Minority Interest	–	–	(60.28)	15.24
Add: Share of profit of Associates	–	–	66.36	126.86
Profit after minority interest and share of profit of associates	–	–	8,982.69	(2,009.22)
Distribution on hybrid perpetual securities	6.79	–	6.79	–
Tax effect on distribution of hybrid perpetual securities	(2.25)	–	(2.25)	–
Profit after taxes and distribution on hybrid perpetual securities	6,861.15	5,046.80	8,978.15	(2,009.22)
Add: Balance brought forward from the previous year	12,772.65	9,496.70	7,010.48	10,961.96
Add: Balance brought forward - HMPCL on Amalgamation	–	12.28	–	–
Balance	19,633.80	14,555.78	15,988.63	8,952.74
Which the Directors have apportioned as under to:				
(i) Dividend on Preference Shares	–	45.88	–	45.88
(ii) Proposed dividend on Ordinary Shares	1,151.06	709.77	1,150.25	709.23
(iii) Tax on dividends	156.71	122.80	163.22	154.33
(iv) Special Reserve	–	–	5.32	48.55
(v) General Reserve	686.57	504.68	703.42	552.58
(vi) Debenture Redemption Reserve	1,000.00	400.00	1,007.26	400.00
(vii) Statutory Reserve	–	–	–	31.69
Total	2,994.34	1,783.13	3,029.47	1,942.26
Balance to be carried forward	16,639.46	12,772.65	12,959.16	7,010.48

DIVIDEND

The Board recommended dividend of ₹ 12 per Ordinary Share on 95,92,14,450 Ordinary Shares (2009-10: ₹ 8 per Ordinary Share on 88,72,14,196 Ordinary Shares of ₹ 10/- each) for the year ended 31st March, 2011.

The dividend on Ordinary Shares is subject to the approval of the shareholders at the Annual General Meeting. The total dividend payout works out to 19% (2009-10: 17%) for the standalone company.

INCREASE IN AUTHORISED SHARE CAPITAL

In order to facilitate the issue of Ordinary Shares with differential voting rights as to voting and/or dividend (hereinafter referred to as 'A' Ordinary Shares) in the future, the authorised share capital of the Company was increased from ₹ 8,000 crores to ₹ 8,350 crores by creation of a new class of Capital viz. 35,00,00,000 'A' Ordinary Shares of ₹ 10 each aggregating to ₹ 350 crores.

PREFERENTIAL ISSUE OF SHARES AND WARRANTS TO TATA SONS LIMITED

Pursuant to the shareholders' approval obtained through Postal Ballot, the following securities were allotted to Tata Sons Limited on 23rd July, 2010:

i. 1,50,00,000 Ordinary Shares of ₹ 10/- each at a premium of ₹ 584/- per share aggregating to ₹ 891 crores and

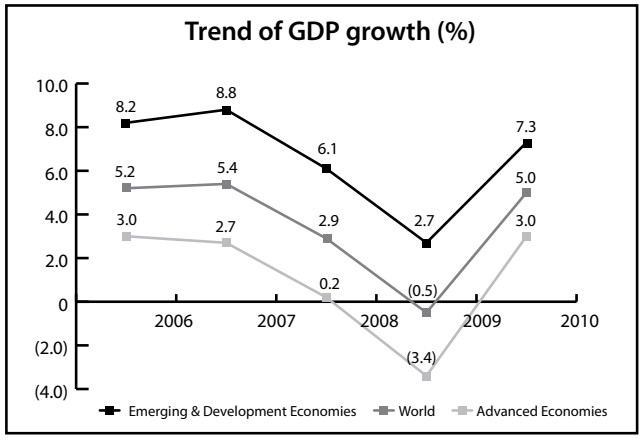
ii. 1,20,00,000 Warrants, where each Warrant would entitle Tata Sons Limited to subscribe to one Ordinary Share of the Company at a price of ₹ 594/- per share. As per the SEBI (ICDR Regulations 2009), an amount equivalent to 25% of the price i.e. ₹ 148.50 per Warrant aggregating to ₹ 178.20 crores was received from Tata Sons Limited. The option to convert the Warrants into Ordinary Shares is exercisable by Tata Sons Limited before 23rd January, 2012.

FOLLOW-ON PUBLIC ISSUE OF ORDINARY SHARES

The Company completed a follow-on public issue of 5,70,00,000 Ordinary Shares of ₹ 10/- each at a price of ₹ 610 per share (including premium of ₹ 600 per share) aggregating to ₹ 3,477 crores. The Ordinary Shares were allotted on 29th January, 2011 in accordance with the terms contained in the Prospectus dated 25th January, 2011.

GLOBAL ECONOMY

The world GDP, as reported by International Monetary Fund, was on an upturn, growing by 5% in 2010 as compared to a negative growth of 0.5% in 2009. While the growth in the advanced economies was 3.0% in 2010, in contrast to -3.4% in 2009, the emerging and developing economies grew by 7.3% in 2010 when compared to the growth of 2.7% in 2009. The growth in the developing and emerging economies slowed down during the end of 2010 as stimulus measures were slowly removed and policies were tightened in response to rising inflation and overheating concerns. A trend of GDP growth (%) for the last five years in the world, split up into advanced economies and emerging and developing economies, is shown below:



The US: The US GDP increased by 2.8% in 2010 as compared to a negative growth of 2.6% in 2009, but the country still faces large fiscal deficit. In late 2009 and early 2010 there was a deceleration in growth in the US economy as the effect of one time stimulus factors faded. However, in the second half of the year, growth picked up with a decline in the rate of unemployment and consumer spending picking up at its fastest pace in the last five years with further major stimulus measures being introduced along with tax cuts and investment incentives. The housing market, non-residential construction and overall credit growth still remained weak with tight bank lending conditions starting to ease for not only large firms but also for small and medium-sized firms.

India: As reported in the Economic Survey of 2010-11, GDP is expected to grow by 8.6% in 2010-11 as compared to the growth of 8.0% in 2009-10. The agricultural output grew by 5.4% as compared to a nominal 0.4% growth in 2009-10 when the country was hit by a deficient monsoon. Manufacturing grew by 8.8% during the year being at par with the growth noticed in the last fiscal. Overall growth in industry was 8.1% during 2010-11 compared to 8.0% in the last year. Services witnessed a

decelerated growth of 9.6% as compared to a growth of 10.1% in 2009-10. Amongst the key macro-economic indicators, fiscal deficit was limited to 4.8% of GDP in 2010-11 as compared to 6.3% in 2009-10. Export and import grew positively by 29.5% and 19.0% in contrast to the negative growths experienced in the previous year. Clouds of high inflation and a temporary slowdown in the industrial growth are looming in the country as steps are being taken to mitigate such adversities.

Europe: GDP in the Eurozone increased by 1.9% in 2010-11 over 2009-10 with a high unemployment rate of around 10% and divergent performances by member countries. While Germany posted a growth of 4% driven by strong export demand and lower unemployment, the Spanish economy was adversely affected by fiscal tightening and a weak housing market with a rise in unemployment. Ireland, Portugal and Greece are seeking financial assistance from the EU and IMF after facing sharp increases in their borrowing costs and potential shortfall in funding. The UK GDP grew by 1.9% in 2010-11, continuing to recover but uneven growth, high unemployment and rising inflation has resulted in the UK household disposable income coming under pressure. There was a strong quarterly growth at the beginning of the year followed by a slowdown and winter-inflicted contraction in the December quarter. The fiscal austerity announced by the UK Government will see a 24% cut in public investment and 7% cut in real government consumption in the next five years.

TATA STEEL GROUP PERFORMANCE

Tata Steel Group steel deliveries at 23.5 million tonnes in the financial year under review were at par with the financial year 2009-10 (23.6 million tonnes). The gross steel deliveries (including the inter-group transfers) for the steel-producing entities were higher than the previous years with Tata Steel India, Tata Steel Europe, NatSteel Holdings and Tata Steel Thailand posting growth of 4%, 3%, 1% and 8% respectively. Your company's Indian operations recorded a growth of 4% in steel deliveries from 6.17 million tonnes in the financial year 2009-10 to 6.42 million tonnes in 2010-11.

Along with the increase in gross steel deliveries, the steel-producing entities witnessed increases in the average realisations in line with the steep increase in the raw material prices. The turnover for the Group in 2010-11 at ₹ 118,753 crores, was 16% higher than 2009-10 (₹ 102,393 crores). While the turnover in Tata Steel India witnessed a growth of 17% from ₹ 25,022 crores in the financial year 2009-10 to ₹ 29,396 crores in the financial year 2010-11, Tata Steel Europe's turnover increased by 15% from ₹ 65,843 crores in the financial year 2009-10 to ₹ 75,991 crores in the financial year 2010-11.

The Earnings before Interest, Taxes, Depreciation and Amortisation (EBITDA) of the Group increased significantly from ₹ 9,340 crores in the fiscal year 2009-10 to ₹ 17,103 crores in the financial year 2010-11 primarily driven by the increase in prices partly offset by the steep increase in input costs. Tata Steel India recorded an EBITDA of ₹ 12,224 crores in the financial year 2010-11 growing by 25% as compared to ₹ 9,806 crores in 2009-10.

Restructuring, impairment and disposals in the current year include ₹ 2,503 crores profit on disposal of Teesside Cast Products at Tata Steel Europe.

Consequently, the Group turned around with a Profit after Tax (after minority interest and share of profits of associates) for 2010-11 at ₹ 8,983 crores as compared to a loss of ₹ 2,009 crores in 2009-10.

Indian Operations: Crude steel production at 6.86 million tonnes in financial year 2010-11 was higher than the previous year (6.56 million tonnes) by 4%, thus exceeding the nameplate production capacity in the second year on enhanced capacity. There was an increase in the vessel life and heat size of the two steel melting shops enhancing their productivity to achieve the higher crude steel production of your company. Saleable steel also increased by 4% from 6.44 million tonnes recorded in financial year 2009-10 to 6.69 million tonnes in the financial year under review with higher hot metal being available from the bigger blast furnaces with higher productivity. The sales volume during the financial year 2010-11 at 6.42 million tonnes was 4% higher as compared to the previous year (6.17 million tonnes) indicating the robust growth in steel demand. Apart from the two steel melting shops, there were many units (including mines and collieries) which surpassed their respective best ever performances.

Ferro Alloys and Minerals division's saleable production at 1,405k tonnes in the financial year 2010-11 was higher than financial year 2009-10 (1,350k tonnes) by 4%. The sales (including transfers to other divisions of the Company), however, at 1,464k tonnes were lower than the previous year (1,508k tonnes) by 3%. Chrome alloys exports and manganese alloys sales of the division touched new heights during the financial year under review.

Improved demand in auto and infrastructure segments led to the increase in sales and production in the Tubes division. The division recorded production of 371k tonnes in FY 2010-11, higher by 6% over FY 2009-10 (351k tonnes), while the sales improved from 349k tonnes in FY2009-10 to 366k tonnes in 2010-11, an increase of 5%. Boosted by various improvement initiatives under 'Kar Vijay Har Shikhar' programme, the division continued to improve on its performance in various segments like 'Tata Pipes' (plumbing and irrigation), 'Tata Structura' (infrastructure) and Precision Tubes (Automotive, Process and Power sector).

Sales in the Bearings division in the financial year 2010-11 at 32.95 million numbers grew by 4% against the financial year 2009-10 (31.69 million numbers), while the production at 33.14 million numbers in FY 2010-11 increased by 12% over FY 2009-10 (29.61 million numbers). The increases were primarily driven by higher demand in the domestic auto segment.

European operations: Sales volumes of Tata Steel Europe (TSE), excluding seasonal effects, were reasonably flat for the first three quarters of the financial year 2010-11, before showing an improvement in the last quarter to the highest level of quarterly sales since financial year 2008-09. Deliveries in Tata Steel Europe during FY 2010-11 (14.9 million tonnes) increased by 3% over FY 2009-10 (14.4 million tonnes). Selling prices increased steadily through the year with the revenue per tonne increasing by around 17% over the previous year. The revenue per tonne increased relatively sharply in the first quarter of the financial year under review in anticipation of the equally sharp increase in price of raw materials, but became more modest in the second and third quarters before losing its upward momentum in the fourth quarter. Raw material prices, in contrast, peaked during the third quarter.

TSE has adopted the Tata Steel identity for trading purposes with effect from September 2010 and a progressive rebranding process is under way. The Company has also adopted a new operating model to replace the previous model of three main operating divisions (Strip Products, Long Products and Distribution & Building Systems). It is now organised into a number of business activities comprising steelmaking hubs (Strip Products Mainland Europe, Strip Products UK and Long Products Europe), speciality businesses (Colours, Building Systems, Packaging, Tubes, Kalzip, Plating, Cogent Power and Speciality Steel), and a distribution and sales network (Distribution UK & Ireland, Distribution Europe and International). TSE has adopted a single sales and marketing function with eight industry-focused marketing sectors, namely automotive, construction, packaging, rail, lifting and excavating, energy and power, industry strip and industry long products. Europe, principally the EU, continues to be the most important market of the Company.

On 24th February, 2011, Tata Steel UK Limited (TSUK), a subsidiary of TSE, signed a definitive sale agreement to sell certain assets of TCP to Sahaviriya Steel Industries Public Company Limited in a deal valuing the business at £434 million. The assets covered by the sale include the Redcar blast furnace, the Redcar and South Bank coke ovens, TCP's power generation facilities and sinter plant, and the Lackenby steelmaking and casting facilities. The deal also includes TSUK and SSI entering into a joint venture to operate Redcar wharf, TCP's bulk terminal. The sale was completed on 24th March, 2011.

The 'Fit for the Future' programme initiated in response to the financial crisis continued to give results with notable reduction in the average number of employees. The deal with SSI resulted in 850 employees getting transferred to SSI and it is expected that further jobs will be created.

South-East Asian operations: NatSteel recorded an increase in steel sales by 1% in FY 2010-11 (1.80 million tonnes) over FY 2009-10 (1.78 million tonnes). The increases were most noticeable in NatSteel Singapore, the Australian units, Thailand and in trading business, while other business units in China and Vietnam witnessed decline in their respective volumes. NatSteel Singapore increased its sales volume by 106k tonnes from 738k tonnes in FY 2009-10 to 844k tonnes in FY 2010-11. Average revenue per tonne improved across all units (other than Australian units) thereby increasing the turnover of the Company. The Company sold its share in an associate company Southern Steel Berhard (SSB) during the financial year. The EBITDA of the Company, excluding the profit on sale of share of SSB in the financial year under review, reduced from the previous financial year primarily due to rise in the cost of input materials which more than offset the increase in prices and impact of higher sales volumes.

Sales volume of Tata Steel Thailand during FY 2010-11 at 1.29 million tonnes was higher than FY 2009-10 (1.20 million tonnes) by 8%, while production increased by 6% from 1.21 million tonnes in FY 2009-10 to 1.28 million tonnes in FY 2010-11. During the financial year under review, the Company had to mothball the Mini Blast Furnace in the third quarter due to high costs of operations and low capacity utilisation, before recommencing its operations in the fourth quarter. The company incurred losses during the year primarily due to high costs of operations, low

capacity utilisation and losses due to mothballing of the Mini Blast furnace partly compensated by increase in average revenue per tonne and higher sales volume.

EXPANSION PROJECTS

Brownfield Projects:

Tata Steel India is implementing an expansion project at Jamshedpur Works to increase its crude steel capacity from 6.8 million tonnes per annum to 9.7 million tonnes per annum. The facilities under this project are scheduled to be completed in FY 2011-12. Simultaneously, the Company is implementing a few other major capital schemes at Jamshedpur which include Coke Plant Battery No. 11, Coke Dry Quenching at Coke Ovens Batteries 5, 6 & 7 and a new mill for producing Full Hard Cold Rolled (FHCR) coils. Tata Steel India is also setting up a Continuous Annealing and Processing Line at Jamshedpur with a capacity of 0.6 mtpa under a joint venture company with Nippon Steel Corporation (NSC), Japan. The line will produce automotive cold rolled flat products and address the needs of Indian automotive customers for high-grade cold rolled steel sheets. NSC will transfer its technology for producing high-grade cold rolled steel sheets for automotive application including skin panel and high tensile steel. These projects, along with other sustenance and improvement projects, are being implemented with a view to support your Company's current operations and its growth aspirations.

Greenfield Projects:

Odisha Project:

Preliminary work on the 6 mtpa greenfield steel plant at Kalinganagar, Odisha is in progress. The boundary wall on 3 sides (8.5 km) along with trench cutting and barbed wire fencing has been completed, warehouse has been made operational and construction of Sinter plant has started. As of March 2011, a total of 910 families have moved from the plant site to the new rehabilitation colony area where plot allocation has been started. The rehabilitation colonies have been provided with good infrastructural facilities which include clean drinking water, street lighting, and a community centre set up by the Company. Key challenges for FY 2011-12 are to develop infrastructure and mobilise resources to accelerate the project work.

Other projects:

Chhattisgarh Project:

The Company has signed an MoU with the Government of Chhattisgarh for setting up of a 5 mtpa Greenfield integrated steel plant in Bastar. Land has been acquired by the Government and the rights vest with Chhattisgarh State Industrial Development Corporation (CSIDC) for allotment to Tata Steel Limited for 99 years. The letter of intent from CSIDC has been issued. Your Company requested for demarcation free from all encumbrances, as per terms of MoU, before taking possession of the said land.

Further, Chhattisgarh Government has accorded approval for drawing water from the river Sabri and the Ministry of Railways, Government of India has granted an in-principle approval for the railway corridor. Public hearing for the Environment Clearance has been successfully conducted.

Prospecting License for iron ore has been granted in Bailadila-I deposits after obtaining necessary approvals from the Ministry of Environment and Forest and Ministry of Mines, Government of India. Prospecting License for Pyroxenite in the close proximity of iron ore area is in an advanced stage of grant by the State Government. In line with the Company's initiatives in the field of Corporate Social Responsibility, several activities in the field of health, youth and women empowerment, sports and skill development are being carried out for local residents as well as those from displaced families.

Ha Tinh Project at Vietnam:

Tata Steel signed an MoU with Vietnam Steel Corporation (VSC) on 29th May, 2008 to develop a steel complex with an estimated capacity of 4.5 million tonnes per year in Ha Tinh province at Vietnam. Another MoU was signed to set up a cold rolling mill in Ha Tinh province. On successful completion of study and financial closure, Tata Steel will have a stake of minimum 65% and VSC will have a stake of 35% in the steel complex.

Karnataka Project:

Tata Metaliks Limited (TML) and Tata Steel have entered into a MoU with the Government of Karnataka in June 2010 for setting up an integrated steel plant of 3 mtpa in Agadi and Boodagatti villages of Haveri District, Karnataka. State High Level Clearance Committee of the Government of Karnataka has approved 2,500 acres of land at Agadi, Boodagatti, Devagiri and Yellapura villages, and is in process of acquiring land.

RAW MATERIAL PROJECTS

Your Company continues to implement its long-term strategy to secure ownership of assets that will increase its raw materials security and share of value-added products. During the financial year 2010-11, the Company's primary focus was on expediting implementation of its existing ventures.

Coal Projects:

Benga Coal Project, Mozambique: The Tata-Riversdale Joint Venture in Mozambique conducted a formal 'Ground Breaking Ceremony' at the Benga Coal Project in the presence of the President of the Republic of Mozambique, His Excellency Armando Emilio Guebuza on 14th April, 2010. This official ceremony follows a series of milestones already achieved by the Company such as the signing of the Mining Contract, approval of Environmental Licences for the Benga Coal Project and the Benga Power Project, and the approval of Stage 1 of the Benga Coal Project following the completion of the Feasibility Study for production of 10.6 million ROM tonnes in two phases. Other key contracts and agreements include the CHP Plant Supply Contract, a Resettlement Action Plan and the Project Labour Agreement (PLA) which was signed with SINTICIM (the Mozambican National Construction and Mine workers Union).

Stage 1 entails initial production of 5.3 million ROM tonnes per year to produce approximately 1.7 mtpa of high quality hard coking coal and 0.3 mtpa of thermal coal by the second half of 2011. Tata Steel has 35% stake in the joint venture with 40% off-take right to the coking coal produced from these mines. The joint venture owns the Benga and Tete tenements which cover an area of 24,960 hectares. Benga has an inferred resource of approximately 4 billion tonnes. Your Company plans to supply the hard coking coal from this project to its facilities in Europe in the initial phase of the project development and also for the requirements of the Indian operations in the future. Tata Steel currently holds about a 27.1% equity stake in the parent company, Riversdale Mining Limited.

Coal Mining Project in Australia (CDJV): Tata Steel has a strategic interest of 5% in the coal mining project in Australia in partnership with Vale, Nippon Steel, JFE and POSCO with up to 20% off-take rights. The Joint Venture was formed for the development of a greenfield underground coal project in Bowen Basin, Queensland. The first raw coal production started in August 2006 and the mine is currently producing around 1.5 mtpa. The mine is being operated by Long Wall method and expected to produce around 3.0 million tonnes of Coking and PCI coal during FY 2011-12.

Iron Ore Projects:

Direct Shipping Ore Project in Canada (New Millennium Capital Corporation):

In September 2008, Tata Steel had entered into a Heads of Agreement with New Millennium Capital Corporation, Canada (NML), a Canadian listed mining company, to develop iron ore projects in northern Quebec and Newfoundland and Labrador and had acquired a 19.9% stake in NML. As per the agreement, Tata Steel had an exclusive option to acquire an 80% equity interest in NML's Direct Shipping Ore project (DSO Project) and an exclusive right to negotiate and settle a proposed transaction in respect of NML's LabMag and KéMag (Taconite) Projects. In September 2010, Tata Steel has made a positive investment decision by exercising its option to acquire 80% interest in the NML's Direct Shipping Ore ('DSO') Project.

As part of the Joint Venture agreement, Tata Steel will reimburse NML for 80% of NML's cost to date on the DSO Project; arrange funding for up to CAD$ 300 million of capital costs for the Project to earn its 80% share of the JV and commit to take 100% of the DSO project's iron ore products of specified quality, at world market prices, for the life of the mining operation. The Feasibility Study estimates proven and probable mineral reserves of 64.1 million tonnes and the project is expected to produce 4 million dry tonnes per year of iron ore products commencing in the second half of 2012. The iron ore from this project will be supplied to Tata Steel Group's facilities located in Europe.

On 26th February, 2011, Tata Steel purchased 67,39,956 common shares of NML under its existing pre-emptive right at CAD$ 3.50 per share for gross proceeds to NML of CAD$ 23,589,846. This will maintain Tata Steel's interest in NML at approximately 27.2% of the total shares outstanding.

On 6th March, 2011 Tata Steel signed a binding heads of agreement with New Millennium Capital Corporation to develop the LabMag and KéMag iron ore deposits, known collectively as the Taconite Project. The Taconite Project consists of two world-class magnetite iron ore deposits on the emerging Millennium Iron Range, which stretches 210 kilometres from western Labrador through eastern Quebec. The LabMag deposit is located in the Labrador portion of the range and the KéMag deposit is located in the Quebec portion. Together, the two deposits hold over 9 billion tonnes of reserves and resources and are expected to produce more than 20 million tonnes per year of concentrate, with a potential mine life of over 100 years.

Ivory Coast Project: In view of the environmental issues encountered in the case of Mt. Nimba deposit, Tata Steel approached the Government of Ivory Coast to grant a Prospecting License for Mt. Gao for an early start of the project. The Government of Ivory Coast has granted an Exploration

License to Sodemi on 30th July, 2009 and an Addendum to the Joint Venture Agreement was signed on 29th September, 2009 to include Mt. Gao in the Joint Venture Agreement. Upon transferring the Exploration License for Mt. Gao to the JV company, a helicopter-borne geophysical survey covering 811 sq km has been completed. The team on the site has also done a detailed geological mapping over a 100 sq km area at 1:10000 scale. Currently exploration work on the ground has been put on hold due to rising security concern in Ivory Coast.

Limestone Project:

Limestone Project in Oman: The Environmental Impact Assessment has been completed and the mining license is awaited.

OTHER PROJECTS

Dhamra Port Company Limited (DPCL):

The Dhamra Port Company Limited, a 50:50 joint venture between Tata Steel Limited and Larsen & Toubro, is developing a deep-draught port under a concession agreement awarded by the Government of Odisha on Build, Own, Operate, Share and Transfer (BOOST) basis. The project will be located on the eastern coast of India approximately 225 km southwest of Kolkata and 205 km from Bhubaneshwar.

Situated between Haldia and Paradip, Dhamra Port will be one of the deepest ports in India with a draft of 18 metres, capable of accommodating super capesize vessels up to 1,80,000 DWT.

Phase-I of the project is complete and the port has started commercial operations on 6th May, 2011. In Phase-I, two fully mechanised berths; one for handling import cargo and the other for export cargo with back-up facilities have been built, along with a rail corridor for hinterland connectivity. The construction of railway line on a route length 62 km from Bhadrak to Dhamra is completed except commissioning of the automated signaling system. The capacity is estimated to be 27 mtpa in Phase-I. Dhamra Port will be of strategic importance to Tata Steel in terms of its integrated logistics cost of raw materials and will also consolidate Tata Steel's supply chain network, contributing to its expansion aspirations.

S&T Mining Limited:

S&T Mining Limited is a joint venture between Tata Steel Limited and Steel Authority of India Limited to develop the raw material security. The company was shortlisted by CIL to participate in the tender for reviving and developing abandoned mines. It has made progress on its proposal to set up a 2 mtpa coal washery in Jharkhand for which it is in an advanced stage of environmental clearance. It is also gearing up for participating in the Coal auction process of Ministry of Coal, Government of India.

HEALTH AND SAFETY

Health and Safety continues to be a key performance indicator and one of the prime drivers of the Corporate Vision of your Company. The Group Vision is to achieve a target of 0.4 LTIFR with zero fatalities by 2012. Tata Steel's safety and health responsibilities are driven by the belief within our policy which was launched for Tata Steel group from January 2011: *"The safety and health of all the people who work in and with the Tata Steel Group is our number one priority."* In pursuance of this belief, we are committed to continual efforts to improve health and safety in Tata Steel as we strive for excellence.

Health and Safety is reviewed at all Board meetings of your Company with a Health, Safety and Environment committee incorporating senior executives and non-executives from the Board also established to carry out more detailed reviews. The integrated and systemic Health and Safety Management System introduced in Tata Steel Europe in 2008 with a governance process for improvement actions and regular safety tours by the Board and executive members is being evaluated for Tata Steel Group-wide application.

During the financial year 2010-11, the Group recorded a LTIFR of 0.78 improving by 18% against 0.95 in FY2009-10. Tragically, during the financial year under review there were 10 fatalities across the Group which included 5 contractor employees. The Board expresses its sincere regret at these fatalities and is committed to learning from each of these incidents to prevent any recurrence and also in its implementation of measures to ensure that any fatality potential is identified and controlled in our operations.

The safeguarding and promotion of the physical, mental and social well-being of employees of the Group has been enhanced from a number of programmes across the Group. In India, the programme 'Wellness at Workplace' targets the major health risks such as heart disease, diabetes and includes proactive reviewing of individual medical condition and identifying improvements. In Europe, health promotion is also done on major risks such as cancer, heart disease with an additional focus on minimising

exposure to potential health hazards like noise, vibration and the need to use personal protective equipment.

ENVIRONMENT

Tata Steel Group puts emphasis on minimising the environmental impact of its operations and its products by adopting sustainable practices and continuous improvements in environmental performance. Manufacturing steel unavoidably produces carbon dioxide (CO_2). However, Tata Steel products are part of the solution to climate change as steel has inherent environmental advantages of being durable, adaptable, reusable and recyclable. CO_2 emissions in steel production are offset by reductions in emissions through the life cycle of steel products, achieved through effective product design and through recycling at end of life. Furthermore, your Company aims to contribute positively to the communities around or near its operations, actively participating in community initiatives, encouraging biodiversity and nature conservation.

One of the key corporate goals which your Company seeks to achieve is to reduce carbon dioxide (CO_2) emissions per tonne of crude steel produced. The current targets, which are provisional and are under review pending regulatory developments in both India and Europe, are to reduce emissions on a group-wide basis to less than 1.9 tonnes of CO_2 per tonne of crude steel by 2015 and to less than 1.7 tonnes of CO_2 per tonne of crude steel by 2020 (using the World Steel Association reporting scope and methodology). CO_2 emissions for the Tata Steel Group during FY 2010-11 were 2.15 tonnes per tonne of crude steel for Blast Furnace route steel (2.01 tonnes per tonne of crude steel including Electric Arc Furnace route steel).

CO_2 emission (direct + electricity) in the Indian operations during FY 2010-11 at 2.44 tonnes per tonne of crude steel was almost at the same level as the last year (2.41 tonne per tonne of crude steel), while the water pollutant discharge was 65 gallons per tonne of crude steel in FY 2010-11 improving 26% as compared to 88 gallons per tonne of crude steel in 2009-10. Solid waste utilisation also improved from 91.1% in 2009-10 to 94.4% in 2010-11. Environmental clearances for 2.9 million tonne expansion programme for Jamshedpur Steel Works and Chhattisgarh project were obtained along with the consent to establish the Cold Rolling Mill complex at Bara, Jamshedpur.

In the European operations, the CO_2 emissions were 2.0 tonnes per tonne of crude steel. More generally, compliance with environmental permit conditions was at a very high level across the European operations during the financial year and there were no prosecutions or regulatory enforcement actions in relation to environmental matters. Furthermore, TSE met all of its environmental obligations as specified under Phase 1 (2005 till 2007) of the EU Emissions Trading Scheme (EU ETS) and expects to meet its obligations for Phase 2 (2008 till 2012). In the UK, the revised target within the Climate Change Levy ('CCL') Agreement to reduce absolute energy consumption by 15.8% compared to 1997 levels was achieved in 2010. This ensures that Tata Steel Europe will continue to benefit from reduced rates in relation to the CCL for 2011 and 2012. The UK government announced in the 2011 budget their intention to introduce a 'carbon price floor' with effect from FY 2013-14. This is an additional tax on electricity generation related to the carbon intensity of the generation fuel used, which would come into effect if the price of carbon in the EU ETS does not reach certain thresholds. TSE also currently participates in a voluntary agreement with the Dutch government to benchmark and maintain its energy efficiency in line with world's best standards. The primary requirement of the agreement is an energy efficiency improvement of 2% per annum. The total energy efficiency improvement in 2010 was 2.8%.

SUBSIDIARIES

The consolidated financial statements presented by the Company include financial information of its subsidiaries prepared in compliance with applicable Accounting Standards. The Ministry of Corporate Affairs, Government of India vide its Circular No. 5/12/2007-CL-III dated 8th February, 2011 has granted general exemption under Section 212(8) of the Companies Act, 1956, from attaching the balance sheet, profit and loss account and other documents of the subsidiary companies to the balance sheet of the Company, provided certain conditions are fulfilled. Accordingly, annual accounts of the subsidiary companies and the related detailed information will be made available to the holding and subsidiary companies' investors seeking such information at any point of time. The annual accounts of the subsidiary companies will also be kept for inspection by any investor at its Head Office in Mumbai and that of the subsidiary companies concerned.

Details of major subsidiaries of the Company are covered in this Annual Report.

DIRECTORS

Dr. Karl-Ulrich Koehler has been Chief Executive Officer and Managing Director of Tata Steel Europe Limited since 1st October, 2010. He was appointed Chief Operating Officer of Tata Steel Europe Limited in February 2010. Considering his vast experience of 30 years in the steel industry, the Board thought it prudent to appoint Dr. Koehler as an Additional Non-Executive Non-Independent Director of the Company with effect from12th November, 2010.

Dr. Koehler will hold office till the date of the forthcoming Annual General Meeting and a notice has been received from a Member proposing the candidature of Dr. Koehler for being appointed as a Director of the Company.

Mr. Kirby Adams ceased to be a Director of the Company on 30th September, 2010. The Directors would like to place on record their appreciation of the contributions made by Mr. Kirby Adams during his tenure as Director of the Company.

Dr. J. J. Irani will step down as a Director of the Company on 2nd June, 2011 on reaching the age of 75 years, and hence will not be seeking re-appointment. The Directors would like to place on record their appreciation of the leadership and contributions made by Dr. Irani as the Managing Director of the Company from 1992 to 2001 and thereafter, as a non-executive Director of the Company. Therefore in accordance with the provisions of the Companies Act, 1956, and the Company's Articles of Association, Mr. Ratan N. Tata, Mr. Nusli N. Wadia, Mr. Subodh Bhargava and Mr. Jacobus Schraven retire by rotation and are eligible for re-appointment.

ENERGY, TECHNOLOGY AND FOREIGN EXCHANGE

Details of energy conservation and research and development activities undertaken by the Company along with the information in accordance with the provisions of Section 217(1)(e) of the Companies Act, 1956, read with the Companies (Disclosure of Particulars in the Report of Board of Directors) Rules, 1988, are given in Annexure 'A' to the Directors' Report.

PARTICULARS OF EMPLOYEES

The information required under Section 217(2A) of the Companies Act, 1956 and the Rules there under, in respect of the employees of the Company, is provided in the Annexure forming part of this Report. In terms of Section 219(1)(b)(iv) of the Act, the Report and Accounts are being sent to the Members, excluding the aforesaid Annexure. The Annexure is available for inspection by Members at the Registered Office of the Company during business hours on working days upto the date of the ensuing AGM, and if any Member is interested in obtaining a copy thereof such Member may write to the Company Secretary, whereupon a copy would be sent.

CORPORATE GOVERNANCE

Pursuant to Clause 49 of the Listing Agreements with the Stock Exchanges, a Management Discussion and Analysis, Corporate Governance Report, Managing Director's and Auditors' Certificate regarding compliance of conditions of Corporate Governance are made a part of the Annual Report. A note on the Company's corporate sustainability initiatives is also included.

DIRECTORS' RESPONSIBILITY STATEMENT

Pursuant to Section 217(2AA) of the Companies Act, 1956, the Directors, based on the representations received from the Operating Management, confirm that:

1. in the preparation of the annual accounts, the applicable accounting standards have been followed and that there are no material departures;
2. they have, in the selection of the Accounting Policies, consulted the Statutory Auditors and have applied them consistently and made judgements and estimates that are reasonable and prudent so as to give a true and fair view of the state of affairs of the Company at the end of the financial year and of the profit of the Company for that period;
3. they have taken proper and sufficient care to the best of their knowledge and ability for the maintenance of adequate accounting records in accordance with the provisions of the Companies Act, 1956, for safeguarding the assets of the Company and for preventing and detecting fraud and other irregularities;
4. they have prepared the annual accounts on a going concern basis.

On behalf of the Board of Directors

RATAN N. TATA
Chairman

Mumbai, 25th May, 2011

Declaration Regarding Compliance by Board Members And Senior Management Personnel With The Code Of Conduct

This is to confirm that the Company has adopted Tata Code of Conduct for its employees including the Managing Director and Whole-time Directors. In addition, the Company has adopted the Tata Code of Conduct for Non-Executive Directors. Both these Codes are posted on the Company's website.

I confirm that the Company has in respect of the financial year ended 31st March, 2011, received from the senior management team of the Company and the Members of the Board a declaration of compliance with the Code of Conduct as applicable to them.

For the purpose of this declaration, Senior Management Team means the Members of the Management one level below the Managing Director as on 31st March, 2011.

H. M. NERURKAR
Managing Director

Mumbai, 25th May, 2011

Annexure 'A' to Directors' Report

Particulars for Tata Steel Limited, the standalone entity, required under the Companies (Disclosure of Particulars in the Report of the Board of Directors) Rules, 1988:

Conservation of Energy

a. Energy Conservation measures taken:

i. Waste heat recovery from Pressure Reducing & De-Superheating (PRDS) at Power House # 5 resulted in additional 3 MW power generations.

ii. Use of regenerative burners for lean gas (i.e. Blast Furnace Gas) at 3rd reheating Furnace of Hot Strip Mill.

iii. Modification in LD gas export system, which has resulted in higher LD Gas recovery.

iv. Execution of interconnection of Praxair 1 & 2 Plants to reduce Oxygen delay at Steel Making stage.

v. Efficient use of by-product gases for Power Generation.

vi. Higher availability of Top recovery turbine for Power generation.

b. Additional investments and proposal for reduction of consumption of energy:

i. Installation and commissioning of new LD Gas Holder (capacity: 100000 cum) and its export system.

ii. Recovery of sensible heat of coke by installation of Coke Dry Quenching system in Batteries #10 & 11 at Coke Plant.

iii Installation and commissioning of Thin Slab casting & rolling (TSCR).

iv. Installation and commissioning of 'I' Blast Furnace with Top Recovery Turbine.

c. Impact of the above measures:

Energy Conservation measures during 2010-2011 has resulted in achieving:

i. Lowest ever Plant Specific Energy Consumption - 6.006 Gcal/tcs.

ii. Lowest ever middling consumption - 14.16 kg/tss.

iii. Highest ever LD Gas Recovery - 50,697 Nm^3/hr

iv. Lowest ever Plant Power Rate - 356 kWh/tss

v. Highest ever combine boiler efficiency - 85.13%.

vi. Lowest ever Fuel rate at Hot Strip Mill - 0.292 Gcal/t.

vii. Higher Power generation through Top Recovery Turbine - 16.01 MW.

Form - A

Form for disclosure of particulars with respect to Conservation of Energy: 2010-11

Particulars	2010-11	*2009-10*	Difference	Reasons for variation
A. POWER AND FUEL CONSUMPTION				
1. ELECTRICITY				
(a) Purchased				
Units (M. KWH)	**2,354.76**	*2,439.47*	(84.71)	
Total Amount (₹ Lakhs) #	**70,459.98**	*68,626.30*	1,833.68	
Average Rate/Unit (₹/KWH)	**2.99**	*2.81*	0.18	
(b) Own Generation				
(i) Through Diesel Generator				
Units (M. KWH)	**15.45**	*12.86*	2.59	
Units per litre of Diesel Oil (KWH)	**3.92**	*3.94*	(0.02)	
Average Cost/Unit (₹/KWH)	**19.92**	*15.74*	4.18	
(ii) Through Steam Turbine/Generator				
Units (M. KWH)	**952.66**	*997.93*	(45.27)	Lower in-house power generation due to planned shutdowns.
Units per tonne of Coal (KWH)	**9,103**	*6,367*	2,736.88	
Average Cost/Unit (₹/KWH)	**2.17**	*2.08*	0.09	
(* This includes generation of PH4 in M. KWH which is operated on by-product gases upto 95%)	**204.78**	*312.89*		
(iii) Through TRT				
Units (M. KWH)	**140.28**	*109.73*		Higher in-house power generation by Top recovery turbine.
Average Cost/Unit (₹/KWH)	**2.00**	*2.00*		
2. COAL				
(i) Coking Coal & Cookeries				
Quantity (Million Tonnes)	**5.17**	*4.91*	0.27	Increase in coke production and increase in coal prices.
Total cost (₹ Lakhs)	**3,23,002.24**	*2,81,175.40*	41,826.84	
Average Rate (₹/Tonne)	**6,244.20**	*5,731.88*	512.32	
(ii) Blast Furnace Injection Coal				
Quantity (Million Tonnes)	**0.84**	*0.84*	(0.01)	Increase in imported coal price.
Total cost (₹ Lakhs)	**82,557.59**	*80,499.94*	2,057.66	
Average Rate (₹/Tonne)	**9,862.08**	*9,546.96*	315.12	
(iii) Middling Coal and ROM				
Quantity (Million Tonnes)	**0.10**	*0.13*	(0.03)	Higher Boiler efficiency resulted in lower middling consumption
Total cost (₹ Lakhs)	**1,066.19**	*1,398.91*	(332.72)	
Average Rate (₹/Tonne)	**1,062.04**	*1,067.51*	(5.47)	
3. FURNACE OIL				
Quantity (Kilo litres)	**16,225.92**	*14,046.39*	2,179.53	Increase in consumption is mainly at Wires Division due to increased production at Tarapur Plant
Total Amount (₹ Lakhs)	**4,306.58**	*3,251.10*	1,055.48	
Average Rate (₹/KL)	**26,541.36**	*23,145.44*	3,395.92	
4. OTHERS				
L.D.O.				
Quantity (Kilo litres)	**4,853.14**	*4,915.52*	(62.38)	
Total cost (₹ Lakhs)	**2,262.67**	*1,706.34*	556.33	Increase in Diesel price
Average Rate (₹/KL)	**46,622.93**	*34,713.39*	11,909.54	
5. OTHERS				
L.P.G.				
Quantity (Tonnes)	**6,576.22**	*4,618.56*	1,957.66	
Total cost (₹ Lakhs)	**2,720.59**	*1,586.49*	1,134.10	
Average Rate (₹/Tonnes)	**41,370.11**	*34,350.32*	7,019.79	
6. OTHERS				
NG				
Quantity (Tonnes)	**—**	*782.25*	(782.25)	Borivali Wire Plant has been closed w.e.f. Aug' 99
Total cost (₹ Lakhs)	**—**	*93.49*	(93.49)	
Average Rate (₹/Tonnes)	**—**	*11,951.42*	(11,951.42)	
7. OTHERS				
HSD Oil				
Quantity (Tonnes)	**58.85**	*46.94*	11.91	100% straightening is being done with HSD whereas in FY 10, a mix of RPO and HSD was used. Further, increase in also due to drawing of 30% more special grade steel than FY 10.
Total cost (₹ Lakhs)	**23.78**	*16.05*	7.73	
Average Rate (₹/Tonnes)	**40,411.94**	*34,192.59*	6,219.35	
# Excludes electricity duty paid on purchases.				

Form for disclosure of particulars with respect to Conservation of Energy: 2009-10

B. CONSUMPTION PER UNIT OF PRODUCTION

Particulars	Steel (per tonne)	Tubes (per tonne)	Bearings (per no.)	F.A.M.D. (per tonne)	Growth Shop (per tonne)	CRC West (per tonne)	Wire Div. (per tonne)
Electricity (KWH)	**356.00**	**113.00**	**0.41**	**3,614.14**	**570.74**	**113.00**	**222.14**
	389.98	*117.00*	*0.61*	*3,653.06*	*485.12*	*124.27*	*223.83*
Furnace Oil (Litres)				**—**	**11.31**	**6.37**	**29.40**
				—	*14.52*	*6.22*	*28.37*
Coking Coal (Tonnes)	**0.61**						
	0.62						
Others:							
Light Diesel Oil (Litres)	**0.63**	**—**				**—**	**2.84**
	0.58	*—*				*—*	*5.24*
High Speed Diesel Oil (Litres)		**0.28**					
		(0.17)					
L.P.G. (kg)						**13.50**	**20.67**
						13.09	*13.42*
NG (kg)							**—**
							19.06

Form - B

Form for disclosure of particulars with respect to Technology Absorption: 2010-11

Research and Development

1. **Specific Areas in which R&D was carried out by the Company:**
   - Raw materials
   - Cost and productivity
   - Market and new products
   - Energy and Environment

2. **Benefits derived:**

   A novel process is developed for production of sponge chrome and chrome nuggets. Sponge chrome will be used for production of ferrochrome in existing Submerged Arc Furnace (SAF) process. It will reduce the power and coke consumption by about 20% and increase the productivity of SAF. The chrome nuggets will be directly used as alloying element in stainless steel and alloy steel-making process. Both sponge chrome and chrome nuggets are value added marketable products for FA & MD. The novel process uses non-coking coal as a reducing agent and energy source and thereby reduces the need of low ash, low phosphorus (imported) coke.

   R&D has innovatively developed new agglomerates "cold bonded chromite pellets" for submerged arc furnace to produce ferrochrome which will reduce 70% energy in chromite pelletizing. These pellets exhibit superior reduction characteristics as compared to sintered chromite pellets but consume only 30% of the energy. The objective of the investigation was to reduce energy consumption and CO_2 emissions during chromite pelletizing and ferrochrome production. Cold bonded chromite pellets, as compared to conventional heat hardened pellets are estimated to decrease specific energy consumption of chromite pelletizing by 70% and mitigate CO_2 emissions by around 10,000 tons per annum. Chromium recovery is expected to increase by 5-8% during ferrochrome production.

   Tata Steel's R&D has taken initiative in the areas of clean environment by using steel industry by-product. Coke oven effluents are highly polluted & it is treated here in biological oxidation treatment plant (BOT) to decrease the load of the pollutants and to meet the standards norms as per pollution control board. But currently there is no sustainable colour removal technology followed to remove the colour of BOT final discharge. Concept of colour removal of BOT water by low cost absorbent materials comes from the limitation of chemical processes. In a broad sense, absorption process is practically possible through physio-chemical absorption of colour matter present in the water body of BOT effluent. However, the colour of water can be removed by the development of good absorbent. The three main criteria for development of good adsorbent are: 1) ability of removal of more than 99% colour from effluent. 2) cost of absorbent, 3) regeneration or reuse of the absorbent.

   We explore that coke breeze is identified as such an adsorbent which fulfils all of our requirements. The coke breeze is able to remove colour more than 99% and also substantially reduce the chemical load by removing toxic organic refractory materials like cyanide, thiocyanate and phenolic compounds. The spent adsorbent can be well consumed by our sinter plant itself.

   The final aim of this work is to develop a low cost absorber from steel industry by-product which can be reused by process of steel industry and to obtain colour-free eco-friendly eco-friendly discharge water. Two novel methods have been developed and demonstrated for complete removal of colour from BOT effluent water before hypochlorite treatment as well as final discharge. Moreover, substantial amount of cyanide and thiocyanate were also removed from the effluent water which would lead to lower consumption hypo-chlorite and sodium carbonate in the water treatment process. Finally, the water so produced will be recycled in the plant leading to zero discharge coke making process.

   In FY 2010-11, the techno-economic feasibility of sponge chrome production process was undertaken by a cross functional team consisting of members from R&D, Ferro Alloys operations, marketing and business performance enhancement group. As a result, the sponge chrome production idea having ₹ 370 million EBITDA benefit potential (100 ktpa plant) was selected as one of the key 'Shikhar' project for Ferro Alloys and Minerals Division. The project will be under taken in two phases. In the first phase of the project, a 10 ktpa sponge chrome production pilot plant will be built and integrated with existing ferrochrome production process at FAP, Bamnipal which will be up-scaled to full scale operation of 100 ktpa plant in second phase of the project. The pilot plant will help to generate data for up-scaling the process to full scale plant operation. For the 10 ktpa pilot plant, the team has already completed the site selection and prefeasibility activities with the help of Engineering Project Consultant. The prefeasibility activities included preparation of conceptual process flow-sheet, finalisation of technical specifications and key equipment designs in process flow-sheet, estimation of project costs and interactions with potential vendors for key equipments. The work is in progress to carry out basic and detailed engineering of the proposed 10 ktpa pilot plant with the help of Engineering Project Consultant. Presently, the team is focusing on environment impact assessment (EIA) of the 10 ktpa pilot plant.

3. **Future plan of action:** Tata Steel's R&D recognises clean environment as one of the biggest challenge and are determined to provide the solutions and aimed at reducing CO_2 emissions through the above mentioned programmes. As part of the company's vision, the reduction in the emissions of Carbon-di-oxide is attracting significant importance as a corporate strategy.

4. Expenditure on R&D:

		(₹ crores)
(a)	Capital	4.88
(b)	Recurring	75.69
(c)	Total	80.57
(d)	Total R&D expenditure as a % of total turnover	0.27%

Technology absorption, adaptation and innovation:

Efforts made on the Process Front:

Raw Materials & Iron Making

Sinter

- Use of three component flux in sintering (pyroxenite, limestone, dolomite) - to fine tune sinter chemistry.
- Introduction of olivine sand as MgO flux in sinter - as preparation for eventual discontinuation of pyroxenite Supply from Sukinda.
- Successful lab and production trials to improve the Granular index of sinter mix (lime Slurry dosing).
- Lab trials to reduce the RDI of sinter (coating with Magnesium Chloride).
- Improvement in the use of nut coke (improving the CRI of coke by catalyst dosing).

Coke

- Establishing new coals - wider choice and cost optimisation.
- Empirical model for diagnosis of coke quality extended - also awarded ANQ Congress award for paper based on this.

Blast Furnace

- Lowered slag rate by 6 kg/thm despite working at higher coke ash and alumina input – through slag regime adjustment.
- Replaced more than 15,000 tonnes of imported PCI coal by blending Jhama from Jharia at 'G' Blast Furnace.

Beneficiation

- Introduction of spargers for enabling finer bubbles in floatation - separation efficiency improvement.
- Facilitation of testing flowsheet development for KBP coal project.
- Facilitation of testing flow sheet concept development for beneficiation at Joda, Noamundi and Khondbond.
- Successful lab development of one chemical which functions as frother and collector in flotation circuit of Jharia coal washery. It works well with the 9th Seam i.e. higher product yield. Commercial trials are in progress.

Flat Product

Product Development:

- Successful development of BH 220 grade for Tata Motors.
- Commercialisation for high tensile hot rolled HS 800 at Tata Motors.
- Successful commercialisation of C-Mn 440 and GA C Mn 440 grade at Nissan.
- Commercialisation for high tensile hot rolled HS 600 for Wheel manufacturers.
- Approval from Hyundai for GA 440.

Process Improvement:

- Improvement in prime yield of CRCA C Mn 440 grade (current yield about 82%).
- Debottlenecking of caster by moving grades out of peritectic range.
- Debottlenecking of the scarfing machine by removing L 1 slabs of EDD from scarfing.
- Reduction in variation of Tensile strength in E 46 high tensile hot rolled steel from 110 Mpa to 50 Mpa.
- Improvement in camber rejection in Ashok Leyland by correction of decambering process. Rework at the Customer end reduced by 6%.
- Reduction in defects such as Tiny RIS, Silicon scales, stickers etc.
- Establishing systems in line with TQM for activities such as Defect control, NPD, CCMPetc.

Long Product & Global Wire

Product Development:

- Development & supply of welding grade wire rod (WR3M) that can draw at 50% higher speed (15-16 m/s against 10-12 m/s) to Lincoln, a welding electrode manufacturer of international repute.
- Development and supply of High Carbon Wire rod to Wire division that can draw at higher speeds (10 m/s against 6 m/s).
- Production and supply of high UTS/YS ratio rebars for nuclear application to BARC.

Process Improvement:

- Installation of Cut and Bend Optimisation tools at Faridabad and Bengaluru.
- Improvement in die life at Wire Division with new die design.
- Initiation of a new idea construction design service to retail customers.

Technology Upgradation and Absorption in Tubes Division – 2009-10

In Tubes division, the following efforts are made to improve operational efficiency.

ST Mills:

- Galvanising Bath #2 of ST Plant was modified to install inner diameter (ID) air wiping facility in place of existing conventional steam blowing system for reduction in overall zinc consumption.

Some Major New products Developed through new technology absorption:

- Development of thin organic coated (TOC) galvanised pipes .
- Development of 300x200 mm tubes for structural applications.

- Development and commercialisation of 14 new sizes of cold drawn tubes for US Export market.
- Development of 76X4 mm CEW Propeller shaft tubes for Tata Motors.
- Development of 48.60*4.60 mm ERW tubes for head pipe application for M/s Honda Motors Scooters India Ltd.
- Development of 42.70*3.50 mm soft drawn tubes for head pipe application for M/s Bajaj Auto Ltd
- Improvement in steel properties used for structural application

Efforts taken on Process Improvement at Bearings Division:

- Trials conducted and established for regular use of Super finishing stones (Super Ceram) for improved and consistent honing (Ra 0.03 microns) in Plant 2.
- Developed Bore grinding wheels (Tyrolit) for Bore Dia. 10,12 and 15 mm for better skip dress in Plant 1.
- Optimised Quill diameter in small Ball Bearing Bore grinding from 3.17 to 4.0 mm for improved rigidity and subsequently higher productivity and less rejection Armature Specifications (hardness, composition, etc.) & Shore hardness in rubber seals has been benchmarked & rationalised to resolve the quality issues of Rubber seals.

Particulars of technology imported during last five years:

	Steel Division	**Absorption**	**Status of Implementation**
a)	Supply of imported design and drawing for 4th Stove of 'G' Blast Furnace (Paul Wurth Italia, Italy)	2006	Commissioned
b)	Supply of imported design and drawing for 'H' Blast Furnace (Paul Wurth Italia, Italy)	2006	Commissioned
c)	Supply of imported design and drawing for Sinter Plant No. 4 (Outokumpu Technology, Germany)	2006	Commissioned
d)	Supply of imported design and drawing for LD2 expansion project (SMS Demag, Germany)	2006	Commissioned
e)	Supply of imported design and drawings for convertor gas cleaning plants in LD shop 1 & 2 (SMS Demag, Germany)	2006	Commissioned
f)	Facility for quantitative estimation of minerals through Scanning Electron Microscope (Intellection Pty. Ltd., Australia)	2006	Commissioned
g)	Polarising Microscope with Photometer and Imaging at R&D (Leica Mikrosysteme Vertrieb GmbH, Germany and PRESI S.A., France)	2006	Commissioned
h)	Variable Frequency Drive for Descaling Pump Motor at Hot Strip Mill (ABB, India)	2007	Commissioned
i)	Sinter Plant No. 4, having a bed area of 204 sq. mtr. with ESP having lesser emission of 50 mg/Nm^3	2007	Commissioned
j)	Double Jaw Eye Vertical Tong For Batch Annealing Furnace at CRM	2007	Commissioned
k)	SCADA System for Water Utilities	2007	Commissioned
l)	Quantitative Estimation of Minerals by SEM (Scanning Electron Microscope)	2007	Commissioned
m)	XRD (X-Ray Defraction) for quantitative phase and texture analysis	2007	Commissioned
n)	Electric Blowers for 'H' Blast Furnace	2009	Commissioned
o)	Top Gas Recovery Turbine for 'H' Blast Furnaces	2009	Commissioned
p)	Flat Cast House Design for 'H' Blast Furnace	2009	Commissioned
q)	Internal Stoves for 'H' Blast Furnace	2009	Commissioned
r)	Use of mixed gas in place for CO gas, for firing in 7th Lime Kiln	2009	Commissioned
s)	New Billet Caster having all the latest facilities and having 9 m casting radius installed in an existing building suitable for 6 m casting radius, by going underground and taking the pass line to (-) 3.3 m level.	2009	Commissioned
t)	Use of hydraulic mould occilator and hydraulically operated turn over cooling bed at CC 3 at LD Shop 1	2009	Commissioned
u)	Robotised Sample Testing Laboratory at LD Shop No. 1	2009	Commissioned
v)	Top Gas Recovery Turbine for 'G' Blast Furnace	2010	Commissioned
w)	4th Stove for 'G' Blast Furnace to facilitate relining of other stoves, without hampering hot metal production	2010	Commissioned
x)	Continuous Emission Monitoring stations at 4 locations inside Tata Steel Works	2010	Commissioned
y)	Installation of Roll Coating & Drying System at Continuous Galvanising Line at Cold Rolling Mill.	2011	Commissioned
z)	Use of Blast Furnace Gas at New Reheating Furnace using regenerative burners at Hot Strip Mill	2011	Commissioned
aa)	Installation of Chiller system for maintaining temperature of cooling medium for 'H' Blast Furnace Blower Drives at Blower House No. 5	2011	Commissioned

Foreign Exchange earnings and outgo

a. Export performance:

1. Activities relating to exports:

Tata Steel sells its key products like HR, CR, Galvanised, Rebar, Wires, Ferro Alloys & Minerals (FAM) in international market of strategic importance viz., Middle East, South Africa, Japan, China, Korea, South East Asia, Europe and SAARC countries. The key focus is to serve a wide range of industries and to end customers with focus on high share of business. With the help of Tata Steel International, we are having the synergy at the group level and present a uniform face to the market through our global commercial network.

2. Initiatives taken to increase exports during FY 11:

In view of robust domestic demand during the year, the opportunity for exports has been limited for Flat and Long Products. However, there is a growth of 76% in Wires and 43% in FAM business over last year.

Specific initiatives were taken in the area of enhancing customer relationship, improved processes, new product, new market and channel development, infrastructure development, new operating model etc.

Increased sales to neighbouring markets have resulted in higher revenues.

FAM Division received the prestigious EEPC (Engineering Export Promotion Council) award for Star Performer in Large Enterprise category and also received the CAPEXIL (Chemical and Allied Export Promotion Council of India) award for excellence in Export performance.

FAM Division Celebrated 20 years of business relationship with JFE group and Hitachi Metals.

3. Development of new export markets for products and services:

Flat Products: Developed High Strength Quality Galvanised Steels for customers in Europe and Middle East. Established market for shipbuilding grade with customers in Bangladesh. Obtained new approval for supply of steel for skin panel and internal components from a leading automotive customer in South East Asia. Made trial shipment of 'Galvano', (GP brand) in South African market.

Long Products: Developed high End Wire Rod grade for Customers based in Nepal. Established new market of Rebars to Bhutan.

Wires: Expanded presence in EU market and entered new markets like Saudi Arabia and Nepal for Galvanised and Binding wires respectively. Re-entered Australia and New Zealand for Galvanised wires.

Ferroy Alloys and Minerals: Strengthened multimode, multi port delivery mechanism, introduced shipment through Inland Container Depot (ICD), Durgapur, introduced split CONCOR rake for multiple destinations, consistent container shipment from Paradip port.

4. Export plans:

Flat Products: Next year plan is to keep the volume at the similar level and seed some new markets to cater from the new Thin Slab Caster (TSCR) facilities.

Long Products: Near term plan is to maintain our presence with some key relationship customers. Increase in exports is expected as and when planned new capacities come-up for production in India.

Wires: Next year plan is to increase wires export by 50% over FY 11 by exploring new markets.

FAM Division: Will focus on enriched product mix and increase its volume in the higher realisations markets.

b. Total foreign exchange used and earned: This has been covered as a part of the notes to the financial statements in this Annual Report.