



BHUSHAN STEEL LIMITED
The Future of Steel

ANNUAL REPORT 2013-14

Forward Looking Statement:

This report contains forward-looking statements, which may be identified by their use of words like 'plans', 'expects', 'will', 'anticipates', 'believes', 'intends', 'projects', 'estimates' or other words of similar meaning. All statements that address expectations or projections about the future, including but not limited to statements about the Company's strategy for growth, product development, market position, expenditures and financial results, are forward-looking statements.

Forward-looking statements are based on certain assumptions and expectations of future events. The Company cannot guarantee that these assumptions and expectations are accurate or will be realised. The Company's actual results, performance or achievements could thus differ materially from those projected in any such forward looking statements. The Company assumes no responsibility to publicly amend, modify or revise any forward looking statements, on the basis of any subsequent developments, information or events. The Company has sourced the industry information from the publicly available sources and has not verified those information independently

CONTENTS

Corporate Overview

Corporate Information	01
Financial Highlights	02

Management Reports

Directors' Report	03
Corporate Governance Report	13
Management Discussion and Analysis	19

Financial Statements

Auditor's Report on Standalone Accounts	25
Standalone Financial Statements	29
Auditor's Report on Consolidated Accounts	56
Consolidated Financial Statements	58

CORPORATE INFORMATION

BOARD OF DIRECTORS

Mr. Brij Bhushan Singal

Chairman

Mr. Neeraj Singal

Vice-Chairman & Managing Director

Mr. Nittin Johari

Whole-time Director (Finance) & Chief Financial Officer

Mr. Rahul Sen Gupta

Whole-time Director (Technical)

Mr. P. K. Aggarwal

Whole-time Director (Commercial)

Mr. Mohan Lal

Director

Mr. V.K. Mehrotra

Director

Mr. B.B. Tandon

Director

Mr. M.V. Surya Narayana

Director

Ms. Sunita Sharma

Nominee Director of LIC

COMPANY SECRETARY

Mr. O.P. Davra

AUDITORS

Mehra Goel & Co.

Chartered Accountants

REGISTERED AND CORPORATE OFFICE

Bhushan Centre, Ground Floor, Hyatt Regency Complex, Bhikaji Cama Place
New Delhi-110066

Phone No.: 011- 71194000

Fax No.: 011- 46518611

e-mail : bsl@bhushansteel.com

Website : www.bhushansteel.com

CIN : L74899DL1983PLC014942

LEAD BANKERS

State Bank of India

Punjab National Bank

WORKS

P.O. Shibapur,
Meramandali
Distt.: Dhenkanal - 759 121
(Odisha) INDIA

Site IV,
Sahibabad Industrial Area,
Distt. Ghaziabad - 201 010
(U.P.) INDIA

Village: Nifan, Sarvoli,
Kharpada Road,
Taluka-Khalapur, Near Khopoli,
Distt.: Raigad - 410 203
(Maharashtra) INDIA

REGISTRAR & SHARE TRANSFER AGENTS

M/S RCMC SHARE REGISTRY PVT. LTD.

B-25/1, First Floor, Okhla Industrial Area Phase II,
New Delhi - 110020.

Phone : 011 – 26387320, 26387321, 26387323

Fax : 011 - 26387322

e-mail : shares@rcmcdelhi.com

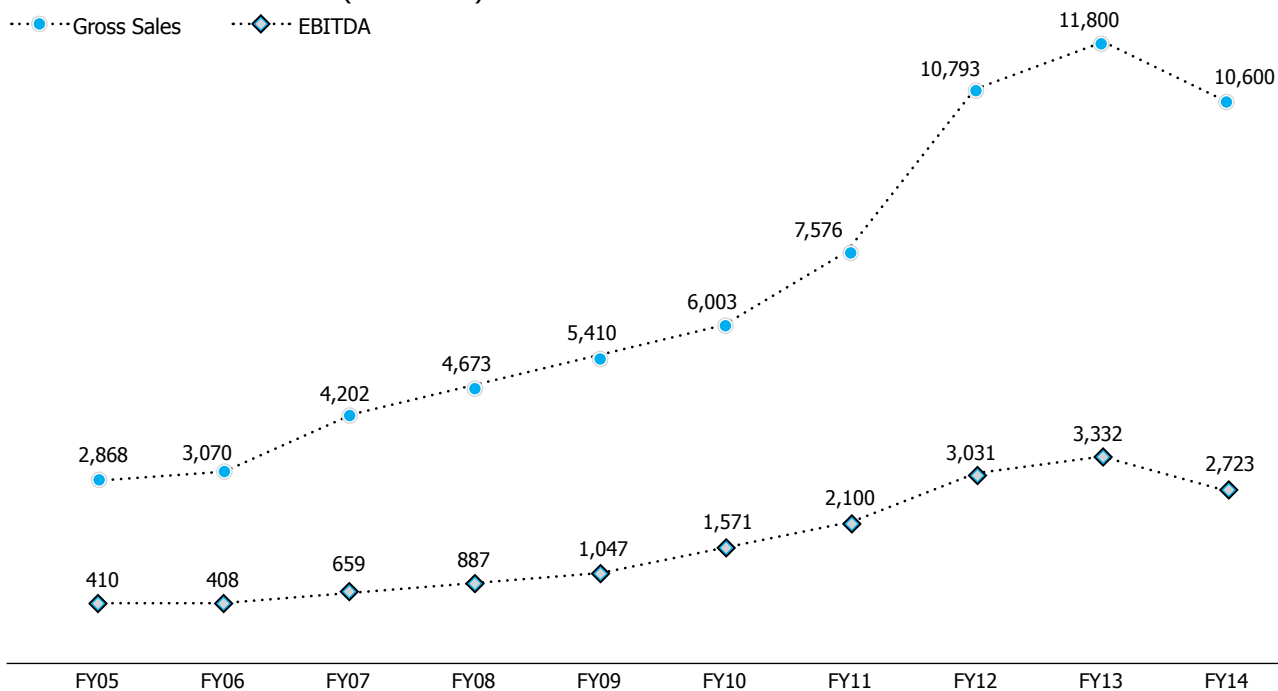
FINANCIAL HIGHLIGHTS

10 YEARS' FINANCIAL SUMMARY

(₹ in crores)

Particulars	FY14	FY13	FY12	FY11	FY10	FY09	FY08	FY07	FY06	FY05
Gross Sales	10,600	11,800	10,793	7,576	6,003	5,410	4,673	4,202	3,070	2,868
EBITDA	2,723	3,332	3,031	2,100	1,571	1,047	887	659	408	410
Cash Accruals	1,058	2,044	1,984	1,652	1,165	741	708	580	312	318
Net Worth	10,628	10,491	8,918	6,695	4,421	2,781	2,022	1,338	960	805
Gross Block (Including CWIP)	43,270	35,598	28,999	21,818	14,795	10,682	7,495	4,586	3,091	2,044

GROSS SALES & EBITDA (₹ in crores)



DIRECTORS' REPORT

Dear Shareholders,

Your directors are pleased to present the 31st Annual Report and the Audited Statement of Accounts for the financial year ended March 31, 2014.

FINANCIAL HIGHLIGHTS

Particulars	(₹ in Lacs)	
	Year ended	
	March 31, 2014	March 31, 2013
Gross Revenue	1060042.90	1180001.85
Profit Before Depreciation and Tax	105929.84	204485.93
Depreciation & Amortisation	96396.41	83086.19
Profit Before Tax	9533.43	121399.74
Provision for Current Taxation	1998.25	24289.36
MAT Credit Utilised/ Available for set-off	(1998.25)	(24175.00)
Provision for Deferred Tax	3241.07	30396.35
Income tax paid for earlier years	96.40	-
Profit After Tax	6195.96	90889.03
Profit brought forward from Previous Year	2176.32	893.09
Profits available for appropriation which the Directors appropriated as under:	8372.28	91782.12
Proposed Dividend on Equity Shares	1132.57	1132.58
Proposed Dividend on Preference Shares	777.99	11.48
Provision for Dividend Tax	324.70	194.43
Interim Dividend on Preference Shares	224.69	895.47
Dividend Tax on Interim Dividend	38.19	145.27
Transfer to Debenture Redemption Reserve	3200.00	26962.50
Transfer to Capital Redemption Reserve	693.34	-
Transfer to General Reserve	700.00	60000.00
Premium paid on Redemption of Preference Shares	168.06	264.07
Balance carried forward to Balance Sheet	1112.74	2176.32
Total	8372.28	91782.12

INTERIM DIVIDEND ON PREFERENCE SHARES

Interim dividend have been paid at the time of redemption of following cumulative redeemable preference shares:

- ₹10.00 per share on 693334 10% Redeemable Cumulative Preference Shares;
- ₹10.00 per share on 1200000 10% Redeemable Cumulative Preference Shares;
- ₹25.00 per shares on 400000 25% Non-convertible Cumulative Redeemable Preference Shares;
- ₹4.00 per shares on 17249 4% Non-convertible Cumulative Redeemable Preference Shares.

FINAL DIVIDEND

The Board of Directors recommended the following dividend for approval by the members at the ensuing Annual General Meeting:

- Dividend of ₹10.00 per share on 82,35,433 10% Redeemable Cumulative Preference Shares proportionately from the date of allotment till 31st March 2014;
- Dividend of ₹4.00 per share on 3,36,751 4% Non-convertible Cumulative Redeemable Preference Shares ;

- Dividend of ₹2.00 per share on 14,00,000 2% Redeemable Cumulative Preference Shares proportionately from the date of allotment till 31st March 2014;
- Dividend of ₹0.50 per share on Equity Shares for the year ended 31st March, 2014.

GROSS REVENUE AND EXPORTS

During the year your Company has achieved the Gross sales of ₹ 10600 Crore in comparison of previous year's level of ₹ 11800 Crore.

Further the company has achieved the Export Turnover of ₹ 1901 crore, registering a growth of 4.85 % over previous year's level of ₹ 1813 crore.

Export & Marketing

Our products are being exported across the globe and with a firm commitment and through sustained efforts, your company continues to maintain good rapport with Global Customers. Our quality products and timely delivery have found wide acceptance in the highly competitive international market.

The company is marketing its products through in-house marketing department as well as through trading houses / agents world-wide. The company has also established an office in Dubai for covering the markets of Middle East, Sudan & Ethiopia etc. Timely delivery of quality material has been our strength and on that basis we have been getting repeat business with our many customers for last so many years.

PROJECTS UNDER IMPLEMENTATION

Your company is implementing various projects at Integrated Steel Plant at Orissa to augment steelmaking capacity, to augment availability of Coke, Washed Coal & Captive Power, to optimize cost and to comply with regulations. Details of these projects are given below:

Capacity Expansion Projects

- Debottlenecking of the HR Facility to increase HR capacity by 0.5 MTPA to 4.9 MTPA. This project is expected to be commissioned in FY 2015
- Implementation of 0.35 MTPA Colled Rolling cum Electrical Steel Complex at an estimated project cost of ₹ 1563 crores. The facility is expected to be complete by July 2015.
- Completion of Coke oven plant (1.3 MTPA), Coal Washery (2.5 MTPA), 2 DRI Kilns (aggregate capacity of 0.34 MTPA) and 197 MW Power Plant.

Efficiency, Cost Reduction & Environmental Compliance Initiatives

- Addition, Modifications and Replacement (AMR) Scheme Project at Orissa to stabilize operation by optimizing logistics and energy conservation and to comply with environmental guidelines. The estimated project cost is ₹ 3892 crores and the project is expected to be completed by March 2015.

FINANCE

During the year the Company has faced multiple challenges due to suppressed economic conditions and delay in stabilizing Phase III operations due to unfortunate accident. On account of these challenges, the Long Term Credit Rating of the Company was also down-graded to Care BB (Double BB) and Short Term Credit Rating was downgraded to CARE A4 (A Four).

Despite these challenges, your company's bankers have demonstrated continued confidence on the company and during the year following major credit facilities were extended :

- Corporate loan of ₹ 4200 crores** for shoring up of Net Working Capital/ normal capex requirements of the company. The company has tied up corporate loan of ₹ 3575 crs out of ₹4200 crs from 14 banks and the tie up for the balance amount is in process.

- 2. Term Loan of ₹ 2700 crores for Addition, Modifications and Replacement (AMR) Scheme Project at Orissa.** The company has tied up the term loan of ₹ 1560 crs out of term loan of ₹ 2700 crs from 8 banks and the tie up for the balance amount is in process.
- 3. Enhancement of Working Capital facilities** by Working Capital Consortium lead by PNB for ₹ 11390 crore (Fund Based limit of ₹ 5390 crore and Non Fund Based limit of ₹ 6000 crore).

DIRECTORS

In accordance with the provisions of the Companies Act, 2013 and Company's Articles of Association, Mr. Brij Bhushan Singal and Mr. P. K. Aggarwal, Directors are liable to retire by rotation at the ensuing Annual General Meeting.

Being eligible Mr. Brij Bhushan Singal and Mr. P. K. Aggarwal, have offered themselves for re-appointment.

Your Directors recommend their re-appointment and necessary items for members' approval for their re-appointment form part of the notice of Annual General Meeting.

FIXED DEPOSIT

The Company has not accepted any fixed deposit from the Public and as such no amount of principal or interest was outstanding on the date of the Balance Sheet.

AUDITORS & AUDITORS' REPORT

M/s. Mehra Goel & Co., Chartered Accountants, New Delhi, the Company's Auditors will retire at the conclusion of the ensuing Annual General Meeting. M/s. Mehra Goel & Co., Chartered Accountants have informed the Company that if appointed, their appointment will be within the prescribed limits U/s 141(3)(g) of the Companies Act, 2013 and they are not disqualified for re-appointment. Accordingly members' approval is being sought for their re-appointment as the Auditors of the Company at the ensuing Annual General Meeting.

The Notes on Financial Statements referred to in the Auditors' Report are self-explanatory and do not call for any further comments.

COST AUDITORS

M/s Kabra & Associates, Cost Accountants, New Delhi was appointed as Cost Auditors for conducting the audit of cost records of the Company for the financial year 2013-14.

DIRECTORS' RESPONSIBILITY STATEMENT

Pursuant to the requirements under Section 217 (2AA) of the Companies Act 1956 with respect to the Directors Responsibility Statement, the Directors based on the representations received from Operating Management, hereby confirm that :-

- i) in the preparation of the Annual Accounts for the financial year ended March 31, 2014, the applicable accounting standards read with requirements set out under Schedule VI to the Companies Act, 1956 have been followed and there are no material departures from the same;
- ii) the Directors have selected such accounting policies and applied them consistently and made judgments and estimates that are reasonable and prudent so as to give a true and fair view of the state of affairs of the Company as at March 31, 2014 and of the profit of the Company for the year ended on that date;
- iii) the Directors 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; and
- iv) the Directors have prepared the annual accounts of the Company on a 'going concern' basis.

AUDIT COMMITTEE

Pursuant to the provisions of Section 292A of the Companies Act, 1956 (as amended), and in accordance with the requirements of Clause 49 of the Listing Agreement(s), the Board of Directors of the Company has

constituted a Committee of Board of Directors as Audit Committee. Presently the Committee consists of four (4) Directors namely (1) Mr. B.B. Tandon (2) Mr. B.B. Singal (3) Mr. M.V. Suryanarayana and (4) Mr. V.K. Mehrotra

Mr. B. B. Tandon is the Chairman of the Audit Committee. Audit Committee shall have such powers and authority as provided under the aforesaid provisions and shall act in accordance with the terms of reference to be specified in writing by the Board of Directors from time to time.

CORPORATE SOCIAL RESPONSIBILITY (CSR) COMMITTEE

Pursuant to Section 135 (1) of the Companies Act, 2013 which comes into force with effect from 1st April 2014, the Company has constituted Corporate Social Responsibility (CSR) Committee comprising Mr. B.B. Singal, being its Chairman and Mr. Nittin Johari and Mr. B.B. Tandon as its members. The Corporate Social Responsibility Committee shall institute a transparent monitoring mechanism for implementation of CSR projects or programs or activities undertaken by Company.

PARTICULARS OF EMPLOYEES

The information required under Section 217 (2A) of the Companies Act, 1956 read with the Companies (Particulars of Employees) Rules, 1975, as amended, is given in the Annexure – 'A' forming part of this Report.

PARTICULARS OF CONSERVATION OF ENERGY, TECHNOLOGY ABSORPTION, FOREIGN EXCHANGE EARNINGS AND OUTGO

Your company is committed for conservation of energy and developing & absorbing new technologies. During the year under review, your company took various initiatives w.r.t. conservation of energy and developing new technologies. Information pursuant to 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 regarding conservation of energy, technology absorption, foreign exchange earnings and outgo are given in Annexure 'B' forming part of this Report.

TRANSFER OF AMOUNTS TO INVESTOR EDUCATION AND PROTECTION FUND

Pursuant to the provisions of Section 205A(5) and 205C of the Companies Act, 1956 the Company has transferred the amount which remained unpaid or unclaimed for a period of seven years to the Investor Education Protection Fund.

Further the Company has uploaded the details of unpaid and unclaimed amounts lying with the Company on its website www.bhushansteel.com and also on the website of Ministry of Corporate Affairs pursuant to the provisions of Investor Education and Protection Fund (uploading of information regarding unpaid and unclaimed amounts lying with the Companies) Rules 2012.

CORPORATE GOVERNANCE

Your Company has complied with the requirements of Clause 49 of the Listing Agreement regarding Corporate Governance with the Stock Exchanges. Management Discussion & Analysis, Corporate Governance Report and necessary certificates are forming part of this Report.

HUMAN RESOURCE DEVELOPMENT

Your Company achieved a record level of turnover due to the untiring efforts put in by the people at all levels. Industrial relations remain cordial throughout the year and the Board records its appreciation for the contribution of all employees towards the growth of the company without which the achievements made would not have been possible.

SHIFTING OF REGISTERED OFFICE

The Registered office of the Company was shifted from F-Block, 1st Floor, International Trade Tower, Nehru Place, New Delhi - 110019 to Bhushan Centre, Ground Floor, Hyatt Regency Complex, Bhikaji Cama Place, New Delhi - 110066 w.e.f. 15.05.2014.

CONSOLIDATED FINANCIAL STATEMENTS

Your Directors have pleasure in attaching the Consolidated Financial Statements pursuant to Clause 32 of Listing Agreement entered into with the Stock Exchanges and prepared in accordance with the Accounting Standards prescribed by the Institute of Chartered Accountants of India, in this regard.

SUBSIDIARIES

The consolidated financial statements presented by the Company include financial information of its subsidiaries prepared in compliance with applicable Accounting Standards. As per the general exemption given by Ministry of Corporate Affairs vide General circular no. 2/ 2011, the Company is exempted under Section 212(8) of the Companies Act, 1956 from attaching to its Balance Sheet, the individual annual Reports of its subsidiary Companies.

As per the terms of the General circular no. 2/ 2011, a statement containing brief financial details of the Company's Subsidiaries for the year ended March 31, 2014 is included in the Annual Report. The annual accounts of these subsidiaries and the related detailed information will be made available to any investor of the company / its subsidiaries of seeking such information at any point and are also available for inspection by any investors of the Company/its subsidiaries at the Corporate Office of the Company and that of the head offices of the respective subsidiary Companies.

Detail of subsidiaries of the Company are covered in the Annual Report.

ACKNOWLEDGEMENTS:

Your Directors would like to express their gratitude & appreciation for the valuable guidance & support received from Government of India, Government of Australia, various State Governments particularly including States of Orissa, Maharashtra & Uttar Pradesh; Banks and the financial Institutions; various stakeholders such as Shareholders, Debenture-holders, Customers, Dealers, Suppliers and all the business associates among others. Your Directors also wish to place on record their deep sense of appreciation & gratitude to all Company's employees for their continuous commitment & enormous personal efforts as well as their collective contribution towards the growth of the Company.

The Directors look forward to their continued support in future.

for and on behalf of the Board of Directors,

Sd/-

Place : New Delhi
Dated : 12th August, 2014

(B. B. Singal)
Chairman

ANNEXURE - A

ANNEXURE TO THE DIRECTORS' REPORT FOR THE YEAR ENDED 31ST MARCH, 2014

EMPLOYED THROUGHOUT THE YEAR AND WAS IN RECEIPT OF REMUNERATION OF NOT LESS THAN ₹ 60,00,000 PER ANNUM.

SR. NO.	NAME	DESIGNATION	REMUNERATION (₹)	QUALIFICATION	AGE	EXP.	DATE OF COMMENCEMENT OF EMPLOYMENT	NATURE OF DUTIES	LAST EMPLOYMENT
1	Mr. Neeraj Singal	Vice Chairman and Managing Director	14325280	Graduate	46	27	01.04.1992	Operations and day to day Management	Executive Director with Bhushan Metals Ltd
2	Mr. Nittin Johari	Whole-time Director & Chief Financial Officer	9716523	M.com, FCA.	51	29	06.01.1995	Corporate financing and other related matters	Financial Controller with Wimco Limited
3.	Mr. Ashok Kumar Raina	Executive Director	7228800	B.E. (Metallurgy)	66	40	01.08.2011	Corporate Development	Managing Director with Auto Tech Ltd

EMPLOYED FOR PART OF THE YEAR AND WAS IN RECEIPT OF REMUNERATION OF NOT LESS THAN ₹ 5, 00,000 PER MONTH.

Nil

Note:

1. Remuneration as shown above includes salary, allowances, medical expenses, house rent, and taxable value of perquisites but excludes gratuity provision.
2. Mr. Neeraj Singal is son of Mr. B. B. Singal, Chairman of the Company.
3. Mr. Neeraj Singal holds 32.27 % of Paid-up Equity Share Capital of the Company as on 31.03.2014.
4. Nature of employment of Mr. Neeraj Singal is contractual.

ANNEXURE- 'B'

PARTICULARS REQUIRED UNDER THE COMPANIES (DISCLOSURE OF PARTICULARS IN THE REPORT OF BOARD OF DIRECTORS) RULES, 1988:

A. CONSERVATION OF ENERGY :

(a) Energy Conservation Measures taken :

- Base Mix preparation unit commissioned to feed Base Mix for Sinter Plant to improve sinter quality & Blast Furnace Efficiency
- Efficient usage of In-plant wastes such as GCP Sludge, Fume Extraction dust, Mill Scale and BOF Filter Cake through Base Blending station.
- Continuous improvement in sintering and maintenance practices leading to 99.2% capacity usage of Sinter Plant #1 .
- Consistent improvement in feed materials and close monitoring of BF process leading to to monthly average of 117 kg/thm of Pulverized Coal Injection (PCI) & to monthly average productivity of 2.67 T/m3/day at BF#1 in March '14. Annual average availability of the Furnace remained at an impressive 97.03% level.
- Cold Briquetting Plant was commissioned at DRI plant and achieved 90% of rated capacity (daily production basis) within short period. This Plant converts DRI Fines (-5 mm), together with binders such as lime and molasses into more stable, ease to handle product e.g., briquettes for consumption in Steel making units (CONARC).
- Coke Oven #1 is a zero discharge plant. All the waste water from

the Batteries are recycled and treated through BOD Plant. The Plant has been stabilized during the year with :

- Stabilization of waste water treatment plant through enhancing microbial culture;
- Stringent policy in checking surface run-off water into the outside stream and achieving this through construction of impervious pond
- Sincere efforts in the reduction of major pollutant in the influent water and treated effluent water which are almost close to the norms
- New CTL addition , Capacity 0.20MT, Thickness: 8 to 25mm, Width: 800 to 1700mm. Length: 12000mm
- Installation of slab Conveyer system at Slab yard for Hot Direct Charging of slabs coming from caster directly into the reheating Furnace.
- Adopted strategy of conservation of Power in idle time during operation of Hot Strip Mill.
- Introduced HSS Work Rolls in finishing stands at HSM for Multiple Rolling campaigns and Good surface finish on strips.
- Introduced E-ICDP Work Rolls in the Finishing Stands for longer campaigns and better surface quality of strips.
- RHF#1 &2 Skid cooling inlet circuit no #12 modified that resulted in increase in productivity & reduced down time.

- FM 1 to 4 stands Work Roll cooling nozzles modified to increase water flow that resulted in Work roll peeling & improvement in surface quality of strips.
 - In house Development of FMHP Heat Exchanger system made in line to reduce the temperature of FMHP Hydraulic system that resulted in reduction of break down.
 - First time in the world successfully installed commissioned PCD (Post combustion) Top lance in CONARC resulting in reduction of lance jam, tip consumption and increase in availability of lance to use. As the lance tips getting damage because of manual lance jam cleaning which is not required now?
 - Installed & commissioned MIWENTI oxygen lances to achieve high productivity.
 - Replaced all carbon injection line bends with ceramic coated type bends which enhance to inject more carbon to cover arc.
 - Floor concreting done at 0 mtr at electrode gantry area to avoid frequent fire in tunnels.
 - Implementation of YES(Yield Enhancement System) Tundish for Yield Improvement. So far 8 Tundish converted and average tundish return reduced from 5.8 T to 3.2 T. Further conversion of remaining tundish is under progress.
 - Header was interconnected between Centac #5 and utility header to reduce pressure drop. Leakage arresting was done. Cost: ₹ 3 lakhs, Saving: ₹ 3.14 crore
 - Special maintenance of chillers were taken to bring down the SEC. Cost : Marginal, Saving: ₹ 25.29 lakhs
 - Impeller were trimmed of chiller#4 which reduced in saving of power by at least 11.2 KW. Cost: Marginal , Saving: ₹ 6.96 lakhs
 - The oven in CCL was switched over to AUTO mode to maintain oxygen level as well as reduce flue gas temperature. About 200 MT RLNG saving. Cost : Marginal , Saving : ₹ 1.13 crore
 - Defective Motorized valves of Air knife in 4HI mill #1 & 2 were repaired which were causing wastage of compressed air .Cost : Marginal, Saving : ₹ 10.36 lakhs
 - Fine tuning of burners were carried out for furnace #4 of H&T .Cost: Marginal, Saving: ₹ 13.60 lakhs.
 - In degreasing section of G.P-2 70 kw pump was replaxhsd by 18.5kw. Cost : ₹ 75000 , Saving : ₹ 7.6 lakhs
 - Identification of conveyor motors which are not required unless 18 mtr pipes is running was carried out and were switched off total of 8 motors were identified. Cost: Nil , Saving : ₹ 1.23 lakhs
 - Installation of 8000 LPD solar water heater completed at Bhushan Garden.
 - K VX module a magnetic device was installed on boiler because of which fuel saving of >10 % was achieved. Cost: ₹ 36 lakhs, Saving : ₹ 1.14 crore
 - Installation of VFD in many areas resulting in huge savings of electrical energy. Some of the major areas are listed below.
 - A. Roll coolant pump #2 at 6 HI mill. Cost: ₹ 5.50, saving: ₹ 63.35 lakhs
 - B. Pot cooling blower in G.P 1. Cost : ₹ 2.90 lakhs , Saving : ₹ 9.73 lakhs
- (b) Additional Investment & Proposal for Reduction of Energy Consumptions:**
- Utilization of Mixed Gas (coke oven gas and BF gas) as fuel in Continuous Annealing Line (CAL) at Cold Rolling Complex.
 - Generation of 14 MW electrical power with installation of top pressure recovery turbine (TRT) & generator in Blast furnace-2. (Under final stages of commissioning)
 - Generation of steam with installation of Coke dry Quenching (CDQ) in Coke Oven -2 to be used as process steam in BF and cokeoven areas.
 - Installation of waste heat recovery system in Blast Furnace-2 (Under commissioning)
 - Installation of 60T and 125T mixed gas fired boilers to utilize the excess gas available from process. (Erection work started)
 - Generation of H2 from coke-oven gas to be used in Annealing furnaces and GP lines of CRM and utilization of residual sulfur free balance gas as fuel in Annealing furnace and GP lines as replacement of LPG.
 - Use of VVVF drive in Cooling Tower Fan motors for Power Plants (33MW + 77 MW, 2 X 165 MW), HSM and SMS 1 & 2, Blast Furnace, CRM, Oxygen Plants, BOF areas)
 - To install K VX magnetic module on CCL line T.O.
 - To provide 3 no's VFD on roll coolant pump of all 4HI mills.
 - To provide waste heat recovery system on H&T furnaces #1&2 and to utilize recovered waste heat in hot air dryers of grinding machines which is currently heated by steam.
 - To replace the present electrical heating system of dryer in STP of Tube mill with RLNG.
 - To provide VFD's on AHU blowers at 4HI mill main ECR, ECR -annealing & Tube Mill#4.
 - To install Poly-crack System to convert plastic waste into fuel
 - To install solar water heating system of capacity 8000 LPD at Residential.
- (c) Impact of the above measures:**
- The above mentioned Energy Conservation measures resulted in achieving:
- Saving of about ₹ 313 lakhs projected by connecting header of centac #5 and utility. This activity reduced the wastage of compressed air and resulted in reduce pressure drop and reduced venting, as a result 4th compressor was stopped permanently.
 - Special maintenance of chillers were carried out to bring down SEC near to 0.60 Kw/TR saving of about ₹ 25.29 lakhs was achieved.
 - Trimming of impeller of chiller #4 was carried out by 6% which resulted in power saving of about 11.2 KW which resulted in a saving of ₹ 6.96 lakhs.
 - Oven in CCL line has been made effective in AUTO mode , Damper in the exhaust has been rectified leading to saving of appx 180 mt of RLNG
 - Defective motorized valve in 4 HI mills were replaced giving us a saving of: ₹ 10.36 lakhs.
 - Fine tuning of furnace # 4 was carried out in H&T which improved combustion efficiency as well as combustion parameters.
 - In degreasing section of GP 2 it was identified that there is no requirement of 70 kw pump so it was replaced by 18.5 kw
 - Conveyor motors which were not required for 18 mtr pipe were switched off and were connected only on process requirement.

- 8000 LPD solar water heater was setup for new building in Bhushan Garden.
- KVX module was installed on boiler which helped us to increase our combustion efficiency by >10% and reduce CO emission by >30%.
- Generation of (77 + 33 MW) power from Waste gas of DRI.
- Saving in consumption of metallurgical coke by around 20 Kg/Ton of liquid pig iron produced achieved from waste heat recovery system of Blast Furnace-1.
- Drastic reduction in the consumption of LPG & LDO in Sinter plant, HSM Re-heating furnace, Lime dolo calcination plant and CRM complex.
- Ultimate saving in consumption of high grade metallurgical coke.
- Generation of 12 MW power from BPTG instead of wasting the energy in PRDS.
- Reduction in the consumption of coal required for generation of Steam for power plants.
- Reduced power requirement & improvement in power factor.
- Generation of 250KW power on continuous basis.
- Generation of process steam to be used in Blast furnace and cokeoven plant.
- Substantial saving in electrical energy by using Induction and LED lamps.

FORM-A

The details regarding present energy consumption including captive generation are furnished as per Form A of the Annexure to the Rules.

I. POWER & FUEL CONSUMPTION

	2013-14	2012-13
1. ELECTRICITY PURCHASED		
Unit (No. in lacs) KWH (including used for Project)	16551.89	19021.02
Total Amount (₹In Lacs)	96787.90	97213.14
Rate/ Unit (₹)	5.85	5.11
2. OWN GENERATION (THROUGH FURNACE OIL GENERATOR)		
Unit (No. in lacs) KWH	859.93	1140.18
Unit per ltr. of oil Excluding RLNG consumed alongwith Furnace Oil)	6.10	6.24
Rate per Unit (₹)	6.62	5.94
3. OWN GENERATION (THROUGH STEAM TURBINE GENERATOR)		
Unit (No. in Lacs) KWH (including units sold)	2388.41	2503.45
Unit per MT of Steam	230.91	251.49
4. FUEL CONSUMED IN MANUFACTURING		
Qty. (Ltrs. In lacs)	37.54	73.96
Total Amount (₹In Lacs)	1477.34	3131.21
Avg. Rate (₹)	39.35	42.34
5. RLNG		
Qty. (Thousand BTU in Lacs)	19371.05	18201.34
Total Amount (₹in Lacs)	18088.62	12643.05
Avg. Rate (₹)	0.93	0.69

II. CONSUMPTION PER UNIT OF PRODUCTION.

	2013-14	2012-13
Production (MTs)	1970511	2367126
Elect. (Unit/ MT)	681	585
Fuel Oil (Ltrs. / MT)	1.91	3.12
RLNG (Thousand BTU)	1448.79	1311.84
Elect. (₹/ MT)	3314.72	2676.99
Fuel Oil (₹/ MT)	74.97	132.28
RLNG (₹ / MT)	1352.88	911.23

FORM B

(Form for disclosures of particulars with respect to technology absorption)

RESEARCH & DEVELOPEMENT (R & D):

Company's Research and Development activities consist of carrying on normal quality testing of its raw material, work in progress and finished goods. It does not involve developments of new products.

**1. SPECIFIC AREAS IN WHICH R&D CARRIED OUT BY THE COMPANY :
ORISSA PLANT**

- Successful development and supply of 28MnB5 high Manganese & Boron Steel grade in size 8x1196 mm for agricultural disc application for overseas customer.
- High strength structural steel for Indian Railway Wagons produced with improved corrosion resistance (copper addition) having YS level minimum 450MPa in higher thickness in sizes 20/25x1250mm
- Developed 58CrV4 Grade HR coil in 3.5/4.5/20x1250 mm for H&T application for SAW blades-R58 for overseas market.
- Developed structural grade with restriction in silicon (0.04% max) for Galvanizing for High Strength & supplied to Domestic as well as Overseas Market in different sizes of 2.0x1250 mm, 4.0/5.0/6.0x1500 mm for applications in crash barriers as well as construction of Electric poles.
- Developed HR coils with customized composition for cost optimization. Steel supplied to JCB & other Domestic customers for application in heavy construction equipments as per EN10025-S355 & 2062 E350 grade in size 6//8/12x1500 mm.
- First time developed with appropriate steel composition and rolled 1.6 mm Chequered coils & sheets as per JIS 3131 SPHC grade for different overseas customers. Chequered coils rolled in different sizes of 1.6 to 5.5 mm x 1000 to 1219 mm for various applications.
- Developed cold rolling grade for cycle rim application in 3x1250 mm size.
- Developed Boron treated low carbon steel for better cold rollability & Galvanizing applications.
- Produced IS 1079 Gr-O with Cu for Railway wagon application.
- Successful development of customized HR coils for cold rolling & galvanizing application to achieve optimum hardness in finished product.
- Steel developed for Catering to critical EDD grade requirement by restriction of Nitrogen value below 50 ppm for better mechanical properties & draw ability at CRCA stage.
- Debottlenecking of slabs with deviation in low carbon steels with an appropriate grade T11 for tube applications.