



**BOARD OF DIRECTORS**

Shashi Ruia	<i>Chairman</i>
Ravi Ruia	<i>Vice-Chairman</i>
Prashant Ruia	
Rewant Ruia	
Vikram Amin	<i>Director - Marketing</i>
Robin Banerjee	<i>Director - Finance</i>
V. G. Raghavan	
Jatinder Mehra	
S. V. Venkatesan	
Sanjeev Shriya	
K. V. Krishnamurthy	
G. D. Goswami	<i>Nominee - ICICI Bank Ltd.</i>
Narottam B. Vyas	<i>Company Secretary</i>

**REGISTERED OFFICE**

Post : Hazira Pin: 394 270  
Dist : Surat  
Gujarat  
Tel. : 0261-668 2400  
Fax : 0261-668 2796

**CORPORATE OFFICE**

Essar House,  
11 Keshavrao Khadye Marg,  
Mahalaxmi,  
Mumbai - 400 034.  
Tel. : 022-66601100  
Fax : 022-66602748

**BANKERS**

State Bank of India  
Punjab National Bank  
Bank of India  
Allahabad Bank  
IDBI Bank  
State Bank of Patiala  
State Bank of Mysore  
Indian Bank  
State Bank of Saurashtra  
State Bank of Indore  
State Bank of Bikaner & Jaipur

**AUDITORS**

M/s. S.R. Batliboi & Co.  
Chartered Accountants,  
6th Floor, Express Towers,  
Nariman Point, Mumbai 400 021

**SOLICITORS**

M/s. Crawford Bayley & Co.  
State Bank Buildings,  
NGN Vaidya Marg, Fort,  
Mumbai - 400 023.

**TRANSFER AGENTS**

Data Software Research Co. Pvt. Ltd.  
Sree Sovereign Complex,  
No. 22, IVth Cross Street,  
Trustpuram, Kodambakkam,  
Chennai - 600 024.  
Tel. : 044-24834487/3738  
Fax : 044-24834636  
E-mail : dsrcmd@md3.vsnl.net.in  
**Visit us at our website**  
<http://www.essar.com>

**CONTENTS**

Board of Directors .....	01
Notice .....	02
Directors' Report .....	05
Corporate Governance Report.....	12
Auditors' Report .....	17
Balance Sheet .....	20
Profit & Loss Account .....	21
Schedules forming part of Accounts .....	22
Balance Sheet Abstract .....	45
Cash Flow Statement .....	46
Accounts of Subsidiaries .....	47
Consolidated Financial Statements .....	64
Proxy .....	85

Please send in your e-mail address to: [webmaster@essar.com](mailto:webmaster@essar.com)  
to keep you informed about the progress of the Company.

# Essar Steel Limited

## NOTICE

NOTICE is hereby given that the **Thirty First Annual General Meeting** of the Members of **Essar Steel Limited** will be held at the Registered Office of the Company at Post: Hazira, Pin: 394 270, Dist.: Surat, Gujarat on **Friday, 28th September, 2007 at 2.30 pm** to transact, the following business:

### ORDINARY BUSINESS:

1. To consider and adopt the Audited Balance Sheet as at March 31, 2007 and the Profit and Loss Account for the year ended on that date and the Reports of the Directors and Auditors thereon.
2. To appoint a Director in the place of Shri S N Ruia who retires by rotation and being eligible, offers himself for reappointment.
3. To appoint a Director in the place of Shri P S Ruia who retires by rotation and being eligible, offers himself for reappointment.
4. To appoint a Director in the place of Shri V G Raghavan who retires by rotation and being eligible, offers himself for reappointment.
5. To appoint a Director in the place of Shri Sanjeev Shriya who retires by rotation and being eligible, offers himself for reappointment.
6. To appoint M/s S R Batliboi & Co., Chartered Accountants, as Auditors of the Company and to fix their remuneration.

### SPECIAL BUSINESS

7. To consider, and if thought fit, to pass with or without modification(s), the following resolution as an Ordinary Resolution:

**"RESOLVED THAT** Shri Rewant Ruia, who was appointed by the Board of Directors as an Additional Director of the Company w.e.f January 29, 2007, and who holds office upto the date of this Annual General Meeting of the Company under Section 260 of the Companies Act, 1956, and in respect of whom a notice under Section 257 of the Companies Act, 1956 has been received from a member signifying his intention to propose him as a candidate for the office of Director of the Company, be and is hereby appointed as a Director of the Company whose period of office shall be liable to determination by retirement of Directors by rotation."

8. To consider, and if thought fit, to pass with or without modification(s), the following resolution as an Ordinary Resolution:

**"RESOLVED THAT** Shri K V Krishnamurthy, who was appointed by the Board of Directors as an Additional Director of the Company w.e.f October 31, 2006, and who holds office upto the date of this Annual General Meeting of the Company under Section 260 of the Companies Act, 1956, and in respect of whom a notice under Section 257 of the Companies Act, 1956 has been received from a member signifying his intention to propose him as a candidate for the office of Director of the Company, be and is hereby appointed as a Director of the Company whose period of office shall be liable to determination by retirement of Directors by rotation."

9. To consider and, if thought fit, to pass with or without modification(s), the following resolution as an ordinary resolution:

**"RESOLVED THAT** pursuant to the provisions of Article 100 of the Articles of Association of the Company and Sections 198, 269 and 309 read with Schedule XIII and other applicable provisions, if any, of the Companies Act, 1956 and subject to such consents, approvals and permissions as may be needed, Shri Robin Banerjee be and is hereby appointed as Whole-time Director designated as Director Finance of the Company not liable to retire by rotation for a period of three years with effect from 1st February, 2007 at a remuneration and on the terms and conditions set out below :-

#### a) Salary:

Basic salary of Rs. 4,81,250/- per month in the scale of Rs.3,00,000 to Rs.8,00,000 per month, as may be determined by the Board of Directors or Committee of Directors (Remuneration) or such other authority as may be delegated by the Board of Directors from time to time.

#### b) Perquisites

- i. Provident Fund, Superannuation, Gratuity, Leave travel concession, reimbursement of medical expenses - as per rules of the company.
- ii. House rent allowance subject to ceiling of sixty percent of the basic salary.
- iii. Allowances, performance bonus and reimbursements not exceeding Rs. 9,00,000 per month.

- c) The proposed remuneration is commensurate with the size of the company, the industry that the company belongs to and the profile & position of Shri Robin Banerjee

- d) The Director (Finance) shall not be entitled under any circumstances whatsoever, to any compensation for loss of office, unless otherwise decided by the Company.

**"RESOLVED FURTHER** that the Board of Directors ( which expression shall include any Committee thereof) of the Company be and is hereby authorised to amend, alter or otherwise vary the terms and conditions of the appointment of the Whole-time Director including remuneration from time to time as they may deem fit, provided that such remuneration shall not exceed the maximum limits for payment of managerial remuneration as may be admissible within the overall limits specified in the Companies Act, 1956 as existing or as amended, modified or re-enacted from time to time."

**"RESOLVED FURTHER** that the Board of Directors ( which expression shall include any Committee thereof) of the Company be and is hereby authorised to do all such acts, deeds, matters and things, as in its absolute discretion, it may consider, necessary, expedient or desirable, in order to give effect to this Resolution."

By Order of the Board of Directors

Mumbai  
20<sup>th</sup> August, 2007

**Narottam B Vyas**  
Company Secretary



## NOTES

1. A MEMBER ENTITLED TO ATTEND AND VOTE AT THE MEETING IS ENTITLED TO APPOINT A PROXY TO ATTEND AND VOTE (ON A POLL ONLY) INSTEAD OF HIMSELF /HERSELF AND THE PROXY NEED NOT BE A MEMBER OF THE COMPANY. PROXIES IN ORDER TO BE EFFECTIVE MUST BE RECEIVED AT THE REGISTERED OFFICE OF THE COMPANY NOT LESS THAN 48 HOURS BEFORE THE MEETING
2. The Register of Members and Share Transfer Books of the Company will remain closed from Thursday, 27th September, 2007 to Friday, 28th September, 2007 (both days inclusive)
3. The Chairman of the Audit Committee of Directors shall be present at the Annual General Meeting to answer queries of shareholders arising out of the Accounts of the Company.
4. **Members are requested to notify any change in their address to the Company's R & T Agents, Data Software Research Co. Pvt. Ltd., Sree Sovereign Complex No. 22, IVth Cross Street, Trustpuram, Kodambakkam, Chennai 600 024.**
5. All documents referred to in the accompanying notice and the explanatory statement are open for inspection at the Registered Office of the Company on all working days between 11.00 a.m. and 1.00 p.m. upto the date of the Annual General Meeting.
6. Members / Proxies should bring the Attendance Slip duly filled in for attending the meeting.
7. Members desiring any information as regards the Accounts are requested to write to the Company at least 15 days before the date of the meeting, as to enable the management to keep the information ready.
8. Directors retiring by rotation:

**Shri Shashikant Ruia**, Shashi Ruia, Chairman, Essar Global Limited, is a first generation entrepreneur industrialist. He has made invaluable contributions in strengthening the core and infrastructure sectors in India and has steered the Essar Group to a premier position amongst industrial houses in the country.

Mr. Ruia began his career in the family business in 1965 under the guidance of his father, the late Mr. Nand Kishore Ruia. Shashi Ruia, along with his brother Ravi Ruia, were instrumental in Essar's foray into businesses that were the domain of multinational giants or Indian public sector units: Shipping, marine construction, steel, power, telecom, offshore engineering and oil exploration.

Mr. Ruia is on several important national bodies and industry associations. He was on the managing committee of the Federation of Indian Chambers of Commerce and Industry (FICCI), an apex body of India's trade and business associations. He has also been the chairman of the prestigious Indo-US Joint Business Council and is a former president of the Indian National Ship-owners Association (INSA). The other companies in which Shri S N Ruia is a Director are:

1. Essar Shipping Ltd.
2. Essar Oil Ltd.
3. Essar Constructions (India)Ltd.
4. Essar Power Ltd
5. Hazira Plate Ltd.
6. Hazira Steel Ltd.
7. Essar Steel (Hazira) Ltd.
8. India Securities Ltd.
9. Vadinar Oil Terminal Ltd.

He does not hold any shares in the Company. Shri S N Ruia retires by rotation at the Annual General Meeting and offers himself for reappointment.

**Shri Prashant S. Ruia** has been on the Board of Essar Steel as Director since 1988 and served as Managing Director of the Company from October 2003 to October 2006. On expiry of his term as Managing Director, he stepped down as Managing Director but continues as Director on the Board liable to retire by rotation. Prashant Ruia is a Promoter Director of Essar Global Limited, which is registered in Cayman Islands and has offices in 50 countries worldwide. It is one of India's largest corporate houses, with interests in steel, energy, power, communications, shipping & logistics and construction. Essar Global has an enterprise value of over USD 20 billion and employs 20,000 people.

Prashant Ruia is responsible for the overall management and operations of companies in the Essar Global fold, especially the flagship businesses of steel and oil & gas. He is an integral part of

the strategy thinktank of Essar Global and is actively involved in the growth and diversification projects of all group companies, both within India and internationally.

He was responsible for integrating the operations of the steel business, making it internationally competitive. Mr Ruia helped Essar Steel make a mark in international markets as a value added, quality driven manufacturer. Prashant was instrumental in the setting up of Essar's first manufacturing facility outside India when Essar commissioned a cold rolling complex in Indonesia in 1997. The 10.5 million ton per annum petroleum refinery and associated port, power and other infrastructure facilities have been his other major achievements.

Prashant Ruia is on the Board of the International Iron and Steel Institute, a member on the Board of the Steel Committee of the Confederation Indian Industry and on the Board of Trade of the Ministry of Commerce and Industry, Government of India. He is also on the committee of the Indian Steel Alliance and an active member of the Young President's Organization, Mumbai Chapter. The other companies in which Shri Prashant Ruia is a Director are:-

1. Essar Power Ltd.
2. Essar Oil Limited
3. Kama Jewellery (India) Ltd.
4. Hazira Plate Ltd.
5. Hazira Steel Limited
6. Vadinar Properties Ltd.
7. Vadinar Oil Terminal Ltd
8. Hutchison Essar Ltd
9. Essar Bulk Terminal Ltd.
10. Essar Steel Orissa Ltd.
11. Hazira Pipe Mill Ltd.

He does not hold any shares in the Company. Shri P S Ruia retires by rotation at the ensuing Annual General Meeting and offers himself for reappointment.

**Shri. V G Raghavan** has been associated with Essar Group from 1976. He was re-appointed as Director (Finance) in October 2006 for a period of three years. He relinquished his office as Director (Finance) from January 31, 2007 but continues as Director on the Board liable to retire by rotation. He has also served as the Chief Financial Officer of Essar Shipping Limited and Essar Power Limited. He has handled special assignments in capacity expansion projects of Essar Steel. Prior to joining the Essar Group Shri. V G Raghavan was working for the State Bank of India. The other companies in which Shri V G Raghavan is a Director are: .

1. Essar Steel Chhattisgarh Ltd.
2. Essar Steel Jharkhand Ltd
3. Essar Steel Orissa Ltd
4. Bhandar Power Ltd
5. Essar Power (Jharkhand) Ltd.
6. Futura Aviation Ltd
7. Hazira Pipe Mill Ltd.
8. Essar Information Technology Ltd.
9. Essar Steel (Hazira) Ltd
10. Essar Power (Orissa) Ltd.
11. Essar Mineral Resources Ltd.

He does not hold any shares in the Company. Shri V.G. Raghavan retires by rotation at the Annual General Meeting and offers himself for reappointment.

**Shri Sanjeev Shriya** has been a Director of the Company since 1984 and is actively engaged in the industry for 20 years. In 1978, he entered the family business in Lohia Machines Limited. He has also promoted several other companies of which a few are engaged in technology related activities including telecom, smart cards etc. The other Companies in which Sanjeev Shriya is a Director are:-

1. Gold Rock Investments Ltd.
2. Smart Chip Ltd.
3. Syscom Corporation Ltd.
4. Smart Chip Syscom Ltd.
5. LML Ltd.

He does not hold any shares directly in the Company. Shri Sanjeev Shriya retires by rotation at the Annual General Meeting and offers himself for reappointment.

9. The Explanatory Statements pursuant to Section 173(2) of the Companies Act, 1956 relating to the Special Business mentioned in Item Nos. 7 to 9 of the accompanying Notice are annexed herewith.

## ANNEXURE TO NOTICE

### EXPLANATORY STATEMENT

Pursuant to Section 173 (2) of the Companies Act, 1956 the following Explanatory Statement sets out the material facts relating to Items No. 7 to 9.

### SPECIAL BUSINESS

#### Item No. 7

Shri Rewant Ruia was appointed as an Additional Director of the Company on January 29, 2007. In terms of Section 260 of the Companies Act, 1956 and Articles 82 of Articles of Association of the Company Shri Rewant Ruia would hold office as a Director upto the date of the ensuing Annual General Meeting. Rewant Ruia is the youngest member in the family of the Promoter Directors of the Essar Group. The Essar Group is one of India's largest corporate houses with an asset base of \$6 billion and interests spanning the core, infrastructure sectors of the economy - Steel, Oil & Gas, Power, Telecom & BPO, Shipping & Logistics and Construction. The Group has also drawn up plans to enter consumer- centric businesses.

Rewant did his high school education from the Hackley School in Tarrytown, New York and completed his Bachelors in Business Administration from Bentley College, Boston.

He began his formal career with the group in mid 2005. After a few months of understanding each of the group businesses, Rewant has been focusing in the telecom space, retail and new business development. He has been involved with managing the group's telecom assets and has also been spearheading the group's new venture into the telecom, oil and steel retail businesses. Rewant has also been part of Essar's drive to go international with new steel plants and identifying new business opportunities for the group.

Rewant is also actively involved in business strategy and brand management practices across Group companies.

Rewant is 23 years old and has a keen interest in squash, music and boats. His appointment would be in the interest of the Company. The company has received necessary notice from a member under section 257 of the Companies Act, 1956 proposing his candidature to the office of Director. None of the Directors other than Shri Rewant Ruia, Shri S N Ruia, Shri R N Ruia and Shri P S Ruia are any way concerned or interested in the resolution. Your Directors recommend the resolution as at Item no.7 for your approval.

#### Item no. 8

Shri K V Krishnamurthy was appointed as an Additional Director of the Company on October 31, 2006. In terms of Section 260 of the Companies Act, 1956 and Articles 82 of Articles of Association

of the Company. Shri K V Krishnamurthy would hold office as a Director upto the date of the ensuing Annual General Meeting. Shri K V Krishnamurthy is the Ex-Chairman of Bank of India. The Company shall immensely benefit from the vast experience of Shri K V Krishnamurthy in the Banking and financial sector. Shri K V Krishnamurthy will act as an Independent Director on the Board. His appointment would be in the interest of the Company. The company has received necessary notice from a member under Section 257 of the Companies Act, 1956 proposing his candidature to the office of Director. None of the Directors other than Shri K V Krishnamurthy is any way concerned or interested in the resolution. Your Directors recommend the resolution as at Item no. 8 for your approval.

#### Item no. 9

Shri Robin Banerjee was associated with Hindustan Lever Ltd for several years and with Thomas Cook as Executive Director (Finance). Shri Robin Banerjee is a Post Graduate in Commerce from the University of Calcutta. He is also a Fellow of the Institute of Chartered Accountants of India, an Associate of the Institute of Company Secretaries of India and an Associate of the Institute of Cost & Works Accountants of India. Shri Robin Banerjee has vast experience in various fields. His appointment as Director (Finance) on the Board shall be of immense help for the Company. Accordingly, the Board of Directors at its meeting held on 29th January, 2007 has appointed Shri Robin Banerjee as Whole-Time Director designated as Director (Finance) for a period of three years with effect from 1st February, 2007 on the terms and conditions as approved by the Remuneration Committee of Directors and as set out in the Resolution in Item No. 9 of the convening Notice. The Company has received a Notice under Section 257 of the Companies Act, 1956 from a member signifying his intention to propose the name of Shri Robin Banerjee as a Director of the Company. The appointment and remuneration of Shri Robin Banerjee as Whole-time Director requires the approval of the Shareholders in terms of Section 269 read with Part II of Schedule XIII and Section 309 of the Companies Act, 1956. Your Directors recommend the resolution set out in Item No. 9 of the convening Notice for your approval. Except Shri Robin Banerjee no other Director is in any way concerned or interested in the aforesaid Resolution.

By Order of the Board

**Narottam B Vyas**  
Company Secretary

Date : August 20, 2007  
Place : Mumbai,

"Persons constituting 'group' coming within the definition of group as defined in the Monopolies Restrictive Trade Practices Act, 1969 for the purpose of interse transfer of shares of the Company under regulation 3(1)(e)(i) of SEBI (Substantial Acquisition of Shares and Takeovers) Regulations, 1997".

Sr. no.	Name of the Company	Sr. no.	Name of the Company
1.	Essar Investments Limited	8.	Asia Pacific Far East Limited
2.	Essar Power Limited	9.	Essar Global Limited
3.	Teletch Investments (India) Limited	10.	Essar Infrastructure Holdings Limited
4.	ETHL Global Capital Limited	11.	Essar Energy Holdings Limited
5.	Asia Pacific Corporation Limited	12.	Asia Pacific Markets Limited
6.	Asia Pacific Enterprise Limited	13.	Essar Logistics Holdings Limited
7.	Essar Power Holdings Limited	14.	Essar Steel Holdings Limited

## DIRECTORS' REPORT

To the Members of **Essar Steel Limited**

Your Directors have pleasure in presenting the 31st Annual Report of your Company together with the Audited Statement of Accounts for the year ended 31<sup>st</sup> March, 2007.

### FINANCIALS

(Rs. in crores)

Particulars	Year ended	
	31st March 2007	31st March 2006
Sales and other Income	9019.68	7058.59
Profit before Finance Cost (net), Depreciation, Charges pertaining to earlier years and Taxation	1955.25	1689.11
Less: Finance Cost (Net)	617.94	422.67
Profit before Depreciation, Charges pertaining to earlier years and Taxation	1337.31	1266.44
Less: Depreciation	631.04	482.10
Profit before charges pertaining to earlier years and Taxation	706.27	784.34
Less: charges pertaining to earlier years	22.81	88.36
Profit before Taxation	683.46	695.98
Less: Provision for Deferred tax	187.52	152.35
Less: Current Tax	55.01	11.74
Add: Reversal of excess tax provisions related to earlier years	1.22	3.39
Less: Provision for Fringe Benefit Tax	5.66	5.10
Profit after taxation	436.49	530.18
(Less)/Add: Balance brought forward from previous year	1008.30	(1203.82)
Add: Transfer from Securities premium account	—	1356.30
Add: Transfer from Debenture Redemption Reserve	7.25	340.64
Less: Transfer to Debenture Redemption Reserve	(7.75)	(15.00)
Balance carried forward to next year	1444.29	1008.30

### DIVIDEND

In view of the need to conserve resources, the Board of Directors does not recommend dividend payment for the year.

### OPERATIONS

#### Manufacturing:

The Company's production of liquid steel at its plant at Hazira was 3.05 million tonnes, an increase of 20% from the 2.54 million tonnes produced in the last financial year. The production of HR coils was up 15% to 2.95 million tonnes from 2.57 million tonnes last year.

During the year, the Company completed its capacity expansion to 4.6 million tonnes per annum at Hazira. The pellet plant capacity at Visakhapatnam was also increased to 8 million tonnes per annum to cater to the increased requirements at the steel plant. Your Company also made additions to plant and equipment in the Cold Rolling Complex as part of its efforts to further strengthen its product offering. Your Company spent Rs. 3122 crores during the year for assets that were created in the manufacturing and other support functions.

#### Sales and marketing

The year under review saw some significant developments in the marketing of the Company's products. Exports crossed the 1 million tonne mark and your company continued to be the highest exporter of flat steel from India.

Overall sales volumes grew 13% to 2.8 million tonnes and revenues grew by 31% to Rs 9,000 crores from Rs 6,850 crores in the previous year. Domestic sales accounted for Rs 6,012 crores and export sales were Rs 2,988 crores.

Net average realisation across all products went up by 19% from Rs 23,380 per tonne to Rs 27,820 per tonne.

The Company's strategy to increase net sales realisation per tonne of steel involved action in three areas:

- Selling closer to low freight areas in the domestic market
- Increasing the proportion of value added grades in the sales portfolio
- Rationalising the customer base to optimise order quantity service levels.

The success of the implementation of these policies is outlined below:

- Close to 70% sales in the domestic market were in the West zone and 40% of our exports were to the Middle East – markets close to our manufacturing facilities at Hazira.
- 60% of total sales were to value added segments like API (for oil & gas pipelines), HSLA (high strength low alloy steels for the auto sector), IF (interstitial free steel for critical components of automobiles), CORTEN (corrosion resistant steel), plates for Boilers and Ship building, etc.
- The average sales quantity per customer went up by more than 100% leading to better planning and delivery schedules

The Company began a new initiative in the year to address the large and untapped potential in the retail market for steel products. In a bid to reach out to end users directly, the Company began commissioning Essar Steel Hypermarkets in April 2006 and in 12 months was able to setup more than 80 retail outlets which, clocked more than 1.1 lakh tonnes of sales valued at over Rs. 350 crores. This business is expected to grow multifold in the current fiscal. The introduction of the most advanced communication tools for placing steel orders, such as mobile messaging, and exclusive in-bound and out-bound call centers has met with tremendous response from small customers. Your company believes that this move will bring proximity, speed and higher customer satisfaction to a market that has been exclusively catered to by traders.

### Awards and recognition

Your Company continued to receive awards and commendations for its performance on several fronts.

1. **The prestigious Engineering Export Promotion Council (EEPC) Gold Award** for the second consecutive year for the best export performance. The award is instituted by the Ministry of Commerce, Government of India.
2. **Golden Peacock** Innovative product / Service award, CII, Kolkatta.
3. **Golden Jubilee Memorial Trust Award** in Research and Development from the Southern Gujarat Chambers of Commerce and Industry (SGCCI), Surat
4. **Best House keeping** award from Baroda Productivity Council, Baroda
5. **Ispat Suraksha Puraskar** for the year 2004-05 from the Joint Committee on Safety, Health & Environment in the Steel Industry (JCSSI), a committee set up by the Steel Authority of India Ltd.
6. **Greentech Environment Excellence Silver** award in the Metals & Mining Sector.
7. **Best Management Award** to Essar Steel Ltd, Visakhapatnam, in recognition of its "People Management Practices" in 2006-07, by Government of Andhra Pradesh.

### MANAGEMENT DISCUSSION & ANALYSIS

#### Global outlook:

Driven by buoyant steel - intensive economic activity including construction and infrastructure building in many developing economies, global apparent consumption of steel increased at an average rate of more than 7% per annum since 2002, to reach a record level of 1.11 billion tonnes in 2006. This growth rate is expected to continue in 2007. Global crude steel production grew 8% from 1.15 bn tonnes in 2005 to 1.24 bn tonnes in 2006. This is faster than the 6% growth in production seen last year.

Global steel markets continued to remain firm in the first quarter of the calendar year with domestic demand in China rising sharply. Chinese exports dropped 21 percent in January 2007, in comparison to December 2006. Globally, restocking activity was under way in the last quarter of the fiscal leading to higher apparent demand. Most global mills operated at maximum capacity in January 2007.

The global steel demand outlook for 2007 remains favourable. From a macro point of view the key factor is rising fixed asset investment as a share of global GDP, which is good news for the steel industry and your company.

# Essar Steel Limited

The most significant developments in the global steel industry were the two mega mergers of the last year: Arcelor-Mittal and Tata-Corus. The two deals are fine examples of the wave of consolidation that is sweeping the steel industry. Consolidation of this kind is not just restricted to regional amalgamation but also gives rise to wider product mix, higher capacity utilisation, increased competition and reduced cyclicity in steel prices.

The US economy seems poised for a rebound from the 4th quarter of this year (October 07 onwards) with improving market conditions, decreasing import levels and the continued decline of excess inventory levels at service centers. Recession fears receded in the US market, and barring the automobile industry, most sectors are expected to pick up. The EU and Japanese economies are still expanding. Middle East countries fuelled by income from sustained global oil and gas demand and elevated prices are experiencing explosive growth in steel demand on the back of investments in oil and gas pipelines and real estate.

Global steel prices are expected to be firm over the next 12 months despite a dip in Q2 of the current fiscal. This is mainly because Chinese steel exports, which were at an unrealistic annual rate of 96 mtpa, are expected to decline to an annual rate of 50 mtpa with the Chinese government imposing significant tariff and non-tariff restraints in an effort to correct trade imbalances.

On the input front, iron ore prices which has averaged a 9.5% increase this year, are expected to tighten further due to soaring freight rates, rapid escalation in cost of new mine developments leading to slowing down of green field mine projects. Coking coal fundamentals are also strong and prices are expected to remain firm accentuated by the severe port congestions in Australia. Zinc after a brief period of stability is expected to be firm through FY 07-08.

## India Outlook:

India produced 48 million tonnes of finished steel in FY07, a 9% increase over last year. Exports also grew 6.5% to 4.1 million tonnes. With GDP growing at 8.2%, steel consumption sectors that grew and fuelled steel demand were Construction (19%), Automobile (18%), Oil & Gas (30%) and Power (40%). Robust growth in industrial projects, favourable government policies and private participation in infrastructure, favourable demographics, rising incomes, and availability of cheap finance, contributed to this growth.

However, at 40 kg, India's per capita consumption remains abysmally low when compared to China (270 kg per capita). Forward looking steelmakers the world over are beginning to realise the value of partnering with their customers to offer total solutions and ensure long-term stability and profitability. Partnering, collaboration and consolidation will help the industry tap into a shared pool of resources, from procurement to R&D and customer retention.

In the first half of 2007 steel prices are expected to be under pressure from a rising rupee which has spiked the availability of cheaper imports and higher interest rates which have slowed consumption of steel consuming products. Increased availability of steel due to expansions of existing capacities and coming on stream of new capacities are also expected to keep downward pressure on the prices. But with sustained growth in consumption and no sign of abatement in the near future, the overall outlook for 2007 looks stable.

## Material Handling & Logistics:

In last year, your company undertook the following steps to upgrade its handling capability:

1. Oxide yard expanded, from storage capacity of 4.5 lakh metric tonnes (MT) to 12 lakh MT
2. Barge Un loader BU-IV constructed and commissioned
3. Direct feeding conveyor PC-1 & 2.
4. Long conveyor oxide transfer from Hot Briquetted Iron (HBI) to Hot Rolled Coil (HRC) unit.

The above upgrades have prepared your Company to match the handling needs of the enhanced (4.6 MTPA) plant capacity.

## Capacity Expansion:

In 2006, your company completed the capacity expansion at its Hazira Steel Plant, from 2.4 million tonnes per annum (MTPA) to 4.6 MTPA. The process was completed in November last year at an investment of around Rs 2,000 crore. Additionally, the capacity of the cold rolling mill and galvanising plant was also augmented.

## Research & Development (R&D):

The R&D Centre at Essar Steel maintains an advanced understanding of key processes and process-product relationships in iron and steel production and works to develop semi-finished products with specific attributes. In the area of product research, it focuses on new products as required by the customer which includes various application segments

such as automotive products, line pipe steel, boiler quality steel, shipbuilding quality plates and various cold rolled products in CRCA and galvanised conditions.

Your Company has an outstanding record of developing products that were hitherto imported. Some of the products that were developed by Essar Steel for the first time in the country included;

- Line Pipe Steel, in higher thicknesses and sour service applications for the oil industry
  - High strength dual phase steel, precision tubes and plates for use in the auto sector
  - High strength steel for the Indian Navy
  - Pressure vessel plates and for glass coat and sour service applications in the boiler industry
  - Structural steel for containers and high strength galvanised steel
- Essar Steel has been a pioneer in developing new grades and new dimensions for use in the domestic as well as international markets..

## Health Safety & Environment (HSE):

Your Company initiated a number of new measures in Health, Safety and environment, such as;

- Safety time out sessions to iterate importance and significance of safety to our operations
- Audiometry and spirometry tests and corrective measures for employees exposed to noise and dust hazards.
- Detailed analysis and procedure for the management of serious and high potential incidents

Assessments were made through external expert agencies on road safety, legislative and voluntary HSE requirements, and review of existing overall safety management systems. Apart from focusing on safety in plants, the company has also extended good safety practices in businesses outside the plants, for instance, during transportation of products and conducting safety audits at Steel Hypermarkets. A four-day DuPont Executive Leadership program on safety was organised for senior executives, which exposed our team to concepts in safe behaviour and safety leadership.

Health initiatives, like blood donation, polio immunisation, arthritis awareness and diagnostic camps, were organised at the Hazira residential township. Free medical camps for villages in the area were organised by the Company.

On the environment front, your company is already certified at ISO-14001 since 1999. Recent improvements include:

- Focus on process dust control,
- Strengthened waste oil balancing systems
- Enhanced water conservation through harvesting and close monitoring,
- Substituting ozone depleting substances and
- Implementing online emission monitoring of NOX, SOX & O2.

During the period Essar Steel also received safety awards from Joint Committee on Safety in Steel Industry (JCSSI), a steel industry committee of HSE, led by Steel Authority of India Ltd. (SAIL) and state-level awards from Gujarat Safety Council.

## FINANCE

During the year, the Company achieved the financial closure for its capex programme of increasing its steel making capacity from 2.4 million tonnes to 4.6 million tonnes per annum at Hazira. The Company also tied up the required loans for other capital expenditure projects including loans required for setting up of service centers. The Company deployed the required internal accruals and raised debt of Rs. 1,338 crores for funding the various capital expenditure programmes. A portion of these loans was raised in the form of External Commercial Borrowings (ECBs) of USD 155 mio i.e. equivalent to Rs. 695 crores (out of the sanctioned amount of USD 190 mio). The 4.6 mtpa expansion programme was completed and the increased capacity was commissioned during the year. The Company expects the full benefits of the expansion projects to accrue in the coming years.

In addition to the term loans, the Company also raised Export Advances aggregating to USD 100 mio i.e. equivalent to Rs. 457 crores. These export advances show the commitment of the buyers towards purchasing of steel products from the Company. One such export advance of USD 75 mio was awarded the 'BEST DEALS of 2006' by Global Trade Review (GTR).

As a result of merger of pelletisation unit and cold-rolling unit with Essar Steel Limited and ramping-up of the steel making capacity, the Company enhanced its working capital banking limits from Rs. 1,730 crores to Rs. 2,600 crores, thereby enhancing the liquidity position.

## SUBSIDIARIES & CONSOLIDATED FINANCIAL STATEMENTS

During the year under review Essar Steel Orissa Ltd., and Essar Steel Trading FZE, U.A.E. became subsidiaries of the Company. Essar Steel



Jharkhand Ltd., continues to be the subsidiary of the Company. Essar Steel Chattisgarh Ltd. ceased to be the subsidiary upon disinvestment. A Statement pursuant to Section 212 of The Companies Act, 1956 and Audited Financial Statements in respect of these Subsidiaries are attached to this Report. Further Consolidated Financial Statements as required under clause 32 of the Listing Agreement are also attached to this Report.

#### **HOLDING COMPANY**

During the year Essar Steel Holdings Ltd (which in turn is subsidiary of Essar Global Ltd) has become the Holding Company of our Company as it holds 584,641,861 equity shares comprising of 51.29% of the paid up equity capital of the Company. The ultimate holding company viz. Essar Global Ltd alongwith its other subsidiaries now holds 87.05% equity shares in the total paid up equity capital of the Company.

#### **VOLUNTARILY DELISTING OF EQUITY SHARES**

The members of the Company have passed a Special Resolution for Delisting of Equity Shares from Bombay Stock Exchange Ltd and The National Stock Exchange of India Ltd through Postal Ballot. The process of Delisting of the Equity Shares is expected to be started shortly in accordance with the Securities and Exchange Board of India (Delisting of Securities) Guidelines 2003.

#### **DIRECTORS**

Shri S N Ruia, Shri P S Ruia, Shri V G Raghavan and Shri Sanjeev Shriya retire by rotation at the ensuing Annual General Meeting and, being eligible, offers themselves for reappointment. The Board recommends their reappointment.

Shri V G Raghavan resigned as Director (Finance), effective January 31, 2007. Shri P S Ruia ceased to be the Managing Director of the Company with effect from 29th October, 2006 upon completion of his tenure of 3 years. However, both Shri P S Ruia and Shri V G Raghavan continue to be on the Board. The Board placed on record its appreciation of the valuable contributions made by them during their tenure.

Shri K V Krishnamurthy and Shri Rewant Ruia have been appointed as Additional Directors on the Board. Shri Robin Banerjee has also been appointed as Director (Finance) by the Board.

#### **DIRECTORS' RESPONSIBILITY STATEMENT**

Pursuant to the requirements under Section 217(2AA) of the Companies Act, 1956, the Board of Directors of the Company hereby state and confirm that

- i. In the preparation of the Annual Accounts, applicable accounting standards have been followed along with proper explanation relating to material departures.
- ii. Directors have selected accounting policies and 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 the year under review.
- iii. Directors have taken proper and sufficient care 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.
- iv. Directors have arranged preparation of the accounts for the year ended March 31, 2007 on a "going concern" basis.

#### **AUDITORS**

Your Company's auditors, M/s. S R Batliboi & Co, Chartered Accountants, will retire at the conclusion of the ensuing Annual General Meeting. M/s S R Batliboi & Co, Chartered Accountants have informed the Company that if appointed, their appointment will be within the prescribed limits under Section 224(1B) of the Companies Act, 1956. Accordingly, the members approval is being sought to their appointment as the Auditors of the Company at the ensuing Annual General Meeting.

#### **Information and explanation on reservations / qualifications / adverse remarks in the Audit Report.**

1. As regards Auditors' disclaimer with respect to recognition of Deferred Tax Asset it is clarified that the Company has recognized Deferred Tax Asset on the following grounds:
  - i. The Company has been consistently making profits in the last 5 years.
  - ii. The Company has nearly doubled its capacity and has resulted in higher production.
  - iii. Steel Industry is witnessing healthy trend in their realisation.
  - iv. Strong domestic and export demand for steel following higher investment in infrastructure sector.

- v. The Company began a new initiative in the year to address the large and untapped potential in the retail market for steel products. In a bid to reach out to end user directly, the company began commissioning Essar Steel Hypermarkets & Service centers.
2. In respect of Auditor's observation regarding certain delays in repayment of dues (including interest) to domestic financial institutions and banks, it is clarified that the Company's cheques in respect of certain interest and repayments have been encashed subsequent to the dates on which they fell due. Further, these were due to systemic delay and the lenders have treated the accounts as regular.

#### **HUMAN RESOURCES**

The Company continues to nurture talent by systematic training programmes aimed at knowledge enhancement, improvement of skills, leadership and team building. The Essar Learning Centre and the Manufacturing Excellence program have imparted on-job and academic training at different levels in the organisation. The Company conducted an employee satisfaction survey during the year and the Human Resources team will address issues arising out of the findings. The Company's employee strength was 3,080 employees and it is matter of satisfaction that productivity per employee at Essar Steel is among the highest in this industry.

#### **RISKS AND CONCERNS**

The Company has adopted Risk Management Policy commensurate to the size and nature of its business.

#### **SOCIAL RESPONSIBILITY**

In keeping with its philosophy of concentrating on social responsibility programs that are relevant and useful to the communities in and around its manufacturing facilities, your Company continued its activities aimed at improving their environment and life style. Besides running a school and a hospital, it conducts regular health camps and blood donation drives, equip community centres with computers and other knowledge tools. Our major contribution has been in the form of direct and indirect employment to qualified youth in the vicinity and creation of self employment opportunities.

#### **ENERGY, TECHNOLOGY & 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 the Board of Directors) Rules, 1988, are given in the Annexure, forming part of this report.

#### **CORPORATE GOVERNANCE**

Your Company attaches considerable significance to good corporate governance as an important step towards building investor confidence, improve investors' protection and maximise long term shareholder value. Pursuant to amended Clause 49 of the Listing Agreement with the Stock Exchanges, a compliance report on the Corporate Governance forms part of the Annual Report along with Auditors' Certificate on its compliance.

#### **PERSONNEL**

As required by the provisions of Section 217(2A) of the Companies Act, 1956 read with Companies (Particulars of Employees) Rules, 1975, as amended the names and other particulars of the employees are set out in the Annexure to the Directors' Report. However, as per the provisions of section 219(1) (b) (iv) of the Companies Act, 1956, the Report and Accounts are being sent to all shareholders of the Company excluding the aforesaid information. Any shareholder interested in obtaining a copy of the particulars may write to the Company Secretary at the Registered Office of the Company.

#### **ACKNOWLEDGEMENT**

Your directors would like to express their grateful appreciation for the assistance and cooperation received from the Financial Institutions, Banks, Government Authorities and Shareholders during the year under review. Your Directors wish to place on record their deep sense of appreciation to all the employees for their commendable teamwork, exemplary professionalism and enthusiastic contribution during the year.

For and on behalf of the Board

**S. N. Ruia**  
Chairman

Date: August 20, 2007



## ANNEXURE TO DIRECTORS' REPORT

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:

- Hot DRI charging: 1.59 million MT of HBI plant product was discharged in form of Hot DRI during the FY 2006-07. The power saving due to Hot DRI charging is observed about 100 kWh for each ton of Hot DRI charged at EAF.
- Replacement of over capacity pumps of quench tank pumps thereby reducing specific power consumption @ 0.2 kWh/t.
- At Module 2, existing seal gas compressor replaced with water ring compressor, thereby reducing specific power consumption.
- At all modules reduction in oxygen consumption and zero Flaring operation, to reduce NG specific consumption @ 8 SM3/t.
- HDRI vessel capacity increased from 90 MT to 100 MT, to increase HDRI percentage in product, thereby reducing power consumption at EAF end.
- Six additional HDRI vessels increased in circulation so as to enable HDRI usage to 50 % of the charge mix with increasing productivity.
- RH usage to bring down LF heating requirement thereby saving in electric power consumption.
- Argon production from plant - II started by injecting Argon from Plant - II to Argon purification unit of plant - I, thus energy saved at argon purification unit of Plant - II. (~ 2640 KWH / day)
- York chiller of plant - II bypassed with modified water circuit. Thus, energy conservation of ~ 1800 KWH / day.
- Installation of VVVF Drives in the rapid cooling circuit of BAF Bases has resulted in reduction of cycle time by 5 hrs and power saving of Rs 36 lacs per annum based on the average production data.
- Installed and erection of Lighting transformer for GAL-1 and GAL-2 as per recommendation of ERDA, Vadodara resulting in reduced consumption of Energy by having servo stabilizers in the voltage circuit. Saving due to this is to the tune of Rs 4.50 lacs per annum.
- Energy saving due to VVVF drives installed for MH and CT of Crane 9 & 10 of DSC and Crane 6 of CRM.
- Lime plant no.2 bag house centrifugal fan was ruining on fix & maximum rpm (1480) and was contributing in power consumption at 16 kwh/Ton of production. By the commissioning of new Variable speed, Voltage, frequency drives, we have been able to bring power consumption down up to 15 Kwh/Ton of production
- Replacement of electronic ballasts for Tube light fittings. Replaced - 700 nos. Energy saving 16 KW. Energy saving per Year - 1.4 lacs kWh. Saving per year - 5.60 lacs kWh.
- Electronic Timers in peripherals and inside the plants. Energy saving per year - 1.75 lacs kWh.
- Switched-off one Cooling Tower and Pressure Filter Pump HT motors. Presently running with 1 no each out of 2. Annual savings Rs 128.60 lacs.
- RM hydraulic system - Addition of accumulator bank to have stand by pump/ to save power in HSM. Annual savings Rs 22.95 lacs.
- Process Optimization in HSM - Stopping idle running of applications during shutdown and long stoppage. Annual savings Rs 38.40 lacs
- Utility Department: Impeller of P - 14 series pumps for HSM Direct Cooling replaced with higher size (Full dia.) impeller. Annual Savings Rs 150 lacs .
- Utility Department- purge type level transmitters (23 nos.) replaced with head mounted pressure transmitter and ultrasonic level transmitters. Annual savings Rs 34.50 lacs.
- EAF 1 & 2 Pump House, One running pump stopped by reducing system resistance by installing Second heat exchanger. Annual savings Rs 192 lacs.
- Power savings due to slag door modification in SMP Rs 342 lacs.
- Use of LT compressors with 93% efficiency instead of HT compressors of lower efficiency (80%), we have been able to save upto Rs 48.20 lacs per annum.

#### b) Additional Investments and proposals being implemented for reduction in consumption of energy:

- Metallic blades of six cooling tower fans will be replaced with FRP blades. Power saving of about 42500 units per fan per year.
- Water system up-gradation: Counter current flow cooling towers with splash bar modification to run the plant at optimum load.
- Recuperator up gradation of one of the Module. Productivity will improve and reduction in the specific consumption of power and NG.
- Small modification in feed gas circuit to reduce pressure drop, hence reduction in specific power consumption of 0.4 kWh/t.
- Modification at Mod-1/2 pump house: Independent water supply, improve plant availability and reduces the specific power consumption. 15MW/day Power saving when one module is under shut down.
- Roll coolant motors being provided with VVVF drive. This will help us save about 17 lacs per annum.
- Fume exhaust of Tandem mill will be provided with drive which will become free after CTCM (Continuous Tandem Cold Mill) commissioning. This will help us regulate the speed as per the fume generation (load) and hence will result in energy saving.
- We are providing temperature control in both the pickling lines to have better pickling and less of losses.
- Energy saving due to VVVF drive installation at Crane1,12 &13 of CRM.
- Lime plant no.3 is using Approximately 273 m3/day service water for cooling of hydraulic oil in Heat exchangers. This is being discharged into drains. We are going to put cooling tower on water path to recycle & save total wastage of water as previously done for plant no 1&2.

#### c) Impact of measures at (a) and (b) above for reduction of energy conservation and on the cost of production of goods:

As mentioned in (a) & (b) above

### B. TECHNOLOGY ABSORPTION:

The Company has fully absorbed the MIDREX technology obtained from Voest Alpine, Austria for the production of HBI. It has also absorbed technology supplied by METCHEM for HRC plant including DC-Electric Arc Furnace, Continuous Casters and the Hot Strip Mill. The Company has emerged as the largest user of HBI in DC EAF and developed satisfactory technology for the same.

- Technical tie-up with M/s. DML Steel Tech - USA on the objective of process up gradation at continuous casting plant for reducing the conditioning activity in the critical grades slabs.

**Benefits derived:** By reducing the conditioning activity on critical grades slabs thus saving the precious metal, residence time in slab yard hence rollable stock increased.

- Gauges supplied by Radio Thermometry require zeroing for all thickness changes and would result in loss of productivity after the mill is made continuous. To avoid this we are going for IMS gauge which is having 4 sets of detectors instead of one and is able to re-adjust internally for changes in the ambient conditions and does not require zeroing with each width change.

### C. FOREIGN EXCHANGE EARNINGS AND OUTGO:

- Activities relating to exports, initiatives to increase exports, developments of new export markets for products and services and export plan.

"During the financial year 2006-07 exports were to a record level of over 1 Million Tons. During the year, the company exported its full basket of steel products from HRC, Plates/ Sheets, Pickled & Oiled, Cold Rolled Full hard and Galvanized. The company continued with its policy of maintaining a global presence with supplies to markets ranging from USA, EU, Korea, Middle East, China, South East Asia and neighboring countries and also developed new countries like Australia, Latvia, Trinidad,

Reunion Islands, etc. Essar is the only Indian mill to supply bulk quantities of Galvanised products to the Australian market.

The company focus on value added segments continued with 60% share of the total sales. The company continued its focus of doing direct business with end users and thereby entering into long term contracts / MoU's with direct customers.

During the year the company successfully completed the \$ 103 Million contract with Ahwaz Pipe Mills. Also during the year, some of the new customers with whom business was initiated included CaterPillar, JCB Ltd (all globally established earth moving equipment companies), Aziz European Pipers Ltd etc.

During the year, the company exported over 265,000 Tons of Galvanised Coils into various export markets.

Consequent to the successful anti-dumping review conducted by the company in US, it was possible to re-enter the US market for sale of Hot Rolled Coils. Essar is the only Indian Steel company which was in a position to export HR Coils to the US market.

The focus for the forthcoming year will be on high end auto application, niche segments like EDDS in galvanized and CRCA besides continuity in the current product ranges."

## II) Total Foreign exchange used and earned (Rs. in Crores)

a) Foreign exchange directly earned through export	2,915.45
b) Others	192.98
Total foreign exchange earned(a + b )	3,108.43
c) Total foreign exchange used	
i) For import of plant and machinery/ technical know-how	258.30
ii) Others including raw materials and interest	1,300.88
Total foreign exchange used (c )	1,559.18

## Particulars with respect to Conservation of Energy:

### FORM A

#### A. Power and Fuel Consumption

Sr. No.	Particulars	Current year	Previous year
1.	Electricity		
a)	Purchased		
	Unit (Lakhs)	2,997.66	2,191.12
	Total Amount (Rs. in crores)	142.12	110.48
	Rate/Unit (Rs.)	4.74	5.04
b)	Own generation		
(i)	Through diesel generator		
	Unit (Lakhs)	59.58	—
	Units per ltr. of diesel oil	3.77	—
	Cost/Unit (Rs.)	6.33	N.A.
(ii)	Through steam turbine/ generator		
	Unit (Lakhs)	1,003.94	—
	Units per ltr. of fuel oil/ gas/ steam coal	1.25	—
	Cost/Unit (Rs.)	3.44	N.A.
(iii)	Through gas turbine / generator		
	Unit (Lakhs)	2,226.64	2,581.50
	Units / SM3 of gas	3.38	3.54
	Cost of fuel/Unit (Rs.)	3.04	2.37
(iv)	Through third party on conversion basis		
	Unit (Lakhs)	28,533.41	22,947.28
	Units / Ltr of NGL/HSD/NG	4.36	4.07
	Cost of fuel/Unit (Rs.)	3.14	1.96

Sr. No.	Particulars	Current year	Previous year
2.	Coal (specify quality and where used)	Steam coal for power Generation by CPP	
	Quantity (tones)	80,526	—
	Total Cost (Rs. crs)	26.00	—
	Average Rate (Rs. / MT)	3,230	N.A.
3.	Furnace Oil		
	Quantity (k. ltrs)	75,784	50,885
	Total Cost (Rs. Crs)	141.38	70.47
	Average Rate (Net of Modvat)	18,656	13,849
4.	Others		
	Quantity.(NGL) – MT	1,309.559	536.896
	Total Cost (Rs.Crs)	4.05	1.51
	Rate/Unit (Rs. per MT)	30,890	28,173
	Quantity.(NG) - '000 SM3	162,410.71	128,481.24
	Total Cost (Rs. Crs)	143.87	84.15
	Rate/Unit	8.86	6.55

#### B. Consumption per unit of Production

Particulars	Standard (If any)	Current year	Previous Year
Product: Iron Oxide Pellets	Unit Per MT	Unit Per MT	Unit Per MT
Electricity (Kwh)	38.00	43.64	50.52
Furnace Oil / LSHS (Ltrs)	16.70	16.80	16.27
Coal (Specify quality)	N.A.	N.A.	N.A.
Others (Specify)	N.A.	N.A.	N.A.
Product: Hot Briquetted Iron	Unit Per MT	Unit Per MT	Unit Per MT
Electricity	125	117	122
Furnace Oil	—	—	—
Coal (Specify quality)	—	—	—
Diesel Oil	—	—	—
Others - Natural Gas ( SM3 )	325	298	310
Others - Naptha ( Kg )	—	—	—
Product: Hot Rolled Coils & Cold Roll/Galvanizing	Unit Per MT	Unit Per MT	Unit Per MT
Electricity	—	877	865
Furnace Oil	—	—	—
Coal (Specify quality)	—	—	—
Diesel Oil	—	—	—
Others – NGL ( Ltr )	—	33	29
Other – NG (SM3)	—	55	50

### FORM B

#### RESEARCH AND DEVELOPMENT (R & D):

Essar has a well equipped R&D center with latest state-of-the-art facilities and a highly qualified team of engineers and technologist who are conducting developmental activities incessantly.

#### 1. Specific areas in which R & D carried by the Company and benefits derived

##### (a) Line pipe grades (API):

- Development of API 5L X-70 for higher thickness (>14mm) with DWTT guarantee at sub-zero temperatures.
- Development of API 5L X-60 for Sour service application.
- Development of API 5L X-80 for thickness less than 12 mm.

##### (b) Shipbuilding Grades:

Developed DMR 249A in 12mm and above for Indian Navy for war shipbuilding application.

**Pressure vessel:** Pressure vessel grade for sour service application is developed which is an import substitution.

##### (c) CRCA: CQ, CRCA in micro alloyed condition, Electrical Steel, Spheroid zed steels, DDQ, EDDQ and IF steel

##### (d) Galvanizing: IF steel (zero spangle, DX57D)

##### (e) Characterization of Iron ore pellets various studies done with SEM

##### (f) Mathematical modeling for process improvement.