

## GROWING AND EXPANDING TO ALL CORNERS

- HEG has the largest Graphite Electrodes manufacturing plant in South and South-East Asia and the Middle East.
- Production capacity of Graphite Electrodes at HEG, Mandideep, increased from 30,000 to 52,000 MT p.a., making the Company one of the largest single-site manufacturers of Graphite Electrodes in the world.
- A new 25 MW Captive Power Plant was commissioned at HEG, Mandideep.
- HEG has set up a Steel Billets project at Durg, MP, due to be operational by mid 2005.
- HEG won a mandate to provide technical know-how to the Iranian Company – National Iranian Steel Co. – for establishing a Graphite Electrode manufacturing plant in Iran.
- The Group is one of the largest producers and exporters of Polyester / Viscose Blended Yarn in India.
- To enhance its operating capacity, Rajasthan Spinning & Weaving Mills Ltd. (RSWM) acquired Jaipur Polyspin Ltd., to manufacture Synthetic Blended Yarn.
- RSWM is acquiring a state-of-the-art Process House at Mordī, Banswara.
- RSWM is set to introduce Ready-to-Wear Apparels manufactured at its new unit based at Bangalore.
- Modernisation, Upgradation, Forward Integration, New Product Development and Value-addition, are all ongoing efforts at all the Group units.
- Maral has integrated units, increasing production capacities and also expanding its market-base globally.
- An 86 MW Malana Hydro-Electric project at Kullu was commissioned in a record low time of 30 months, at a cost of Rs. 3.75 crore per MW.
- Six Wind Energy projects (amounting to a total capacity of 3.60 MW) were commissioned at Jaisalmer, Rajasthan.
- Work on the 200 MW Allain-Duhangan Hydro-Electric project was commenced at Manali, HP.
- The Group also entered into a joint venture with global power player Statkraft Norfund Invest AS (SN POWER), Norway, for setting up Hydro Power Generation projects in India.
- The Group added another prestigious partner – International Finance Corporation, Washington, as Equity Holders in the AD Hydro Power Project.
- The Group envisions its Power Generation capacity to touch 2000 MW by 2015.

### GROUP FINANCIAL HIGHLIGHTS

(Rs. in Crores)

PARTICULARS	2002-2003	2003-2004	2004-2005
Turnover	1727	1815	2049
Export Sales	784	792	893
PBIDT	288	259	274
PBDT	186	201	208
PBT	73	81	96
PAT	62	72	79
Gross Fixed Assets	1929	1953	2494
Net Worth	729	768	969



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## INTRODUCTION

HEG Ltd., a leading company of the Rs. 20 billion LNJ Bhilwara Group was established in the year 1977 in technical cum financial participation of SERS, a subsidiary of Pechiney, France.

HEG Limited already one of the leading graphite electrode companies in the Asian continent, poised to become the largest single-site graphite electrode manufacturer in the world post the ongoing capacity expansion at its plant at Mandideep, near Bhopal (Madhya Pradesh). The recently completed 52,000 MT / annum capacity from earlier 30,000 MT / annum to be further augmented to 64,500 MT after the stabilisation of current expansion would also consolidate the Company's position as a quality driven and one of the lowest cost producers in the world.

The Company also operates a Sponge Iron Plant of 120,000 MT capacity and a Waste Heat Recovery System (WHRS) based power plant generating 12.8 MW at Borai, near Durg (Chhattisgarh). With the setting up of a 100,000 MT unit producing steel billets at Borai the Company intends to forward integrate into the commodity. HEG's power operations also include a 13.5 MW Hydro Electric power Generation Power facility at Tawa, near Hoshangabad (Madhya Pradesh).

### GRAPHITE ELECTRODES – AN OVERVIEW

Graphite Electrodes are primarily used in the process of melting steel scrap using the Electric Arc Furnace (EAF) route to manufacture steel. The demand for Graphite Electrode rests on steel production volumes through the rapidly growing EAF route.

The Graphite Electrodes business is driven by high level of technology and expertise, and its technology is available with only a handful of manufacturers globally.

Graphite is the crystalline form of the element carbon. Synthetic Graphite possesses a unique combination of physical and chemical properties, allowing for usage in a variety of applications. The product is most suited for use as EAF Electrodes due to its very low electrical resistivity and very high thermal shock resistance.

Given the increasing acceptance of the EAF route to manufacture steel the demand for Graphite Electrodes can only be expected to strengthen going forward.





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## CORPORATE INFORMATION

### Board of Directors

<b>L N Jhunjunwala</b>	Chairman - Emeritus
<b>Ravi Jhunjunwala</b>	Chairman & Managing Director
<b>Shekhar Agarwal</b>	Vice-Chairman
<b>V K Mehta</b>	Director
<b>D N Davar</b>	Director
<b>K N Memani</b>	Director
<b>Kamal Gupta</b>	Director
<b>P Murari</b>	Director
<b>R C Surana</b>	Executive Director & CEO
<b>N Mohan Raj</b>	Nominee - LIC
<b>N Mehta</b>	Alternate to V K Mehta

### Company Secretary

**Ramesh Gupta**

### List of Bankers

- |                             |  |
|-----------------------------|--|
| 1. State Bank of India      | 8. IDBI Bank Ltd                         |
| 2. State Bank of Indore     | 9. UCO Bank                              |
| 3. ICICI Bank Ltd           | 10. IndusInd Bank                        |
| 4. Central Bank of India    | 11. Landesbank Baden-Wurttemberg-Germany |
| 5. State Bank of Travancore | 12. DEG – Germany                        |
| 6. The Federal Bank         | 13. GE Capital Service India             |
| 7. Punjab National Bank     |  |

### CORPORATE OFFICE

Bhilwara Towers, A-12 Sector 1, Noida – 201301. NCR - Delhi. INDIA  
Telephone: +91 0120 254 1810 Facsimile: +91 0120 253 1648

### REGISTERED OFFICE

Mandideep (near Bhopal) District Raisen – 462046. Madhya Pradesh. INDIA  
Telephone: +91 07480 233 524 – 527 Facsimile: +91 07480 233 522

### GRAPHITE WORKS & THERMAL POWER PLANT

Mandideep (near Bhopal) District Raisen – 462046. Madhya Pradesh. INDIA  
Telephone: +91 07480 233 524 – 527 Facsimile: +91 07480 233 522

### POWER (HYDROELECTRIC) WORKS

Village Ranipur, Tawa Nagar, District Hoshangabad – 461001. Madhya Pradesh. INDIA  
Telephone: +91 07572 272 810, 272 859 Facsimile: +91 07572 272 849

### SPONGE IRON AND WASTE HEAT RECOVERY SYSTEM POWER WORKS

Industrial Growth Centre, Borai, District Durg, Chhattisgarh. INDIA  
Telephone: +91 0788 264 7214 – 16 Facsimile: +91 0788 264 7201

## MESSAGE FROM THE CHAIRMAN & MANAGING DIRECTOR

Dear Shareowners,

I am pleased to discuss with you the Company's progress during the fiscal year 2005 and our plans for the future.

### PERFORMANCE DRIVEN BY STRONG FUNDAMENTALS

The ability to anticipate and capitalize on emerging market trends, while effectively meeting any unforeseen challenges along the way, are the key attributes that enable a company to perform and chart its own growth path. HEG's performance during the year reflects these attributes.

Better realizations in the graphite electrodes business, where the outlook remains promising, and significant contributions from the sponge iron operations enabled the Company to deliver a stable performance for the year, despite the two-pronged impact of one of the worst monsoon failures experienced at the Tawa hydroelectric plant and a temporary technical problem at the waste heat recovery power plant turbine at Durg.

### EXPANDED GRAPHITE AND POWER CAPACITIES TO DRIVE GROWTH

During the year, we continued to implement initiatives aimed at further strengthening our leadership and status within the industry.

In view of the strong demand resulting from a progressive shift in steel making from blast furnace route to electric arc furnace route globally, we have been implementing enhancements in our graphite electrodes capacity. It gives me immense pleasure to state that the first phase of the Company's graphite electrode capacity expansion from 30,000 tonnes to 52,000 tonnes is now complete, and is in the final stages of commissioning for commercial production.

Access to captive power contributes significantly to our cost-competitiveness. The Company has therefore complemented the graphite capacity expansion by adding a new 25 MW thermal power plant, which is already operational.

In order to take advantage of the in-house sponge iron production and access to economical captive power produced at its sponge iron unit at Durg through its waste heat recovery system, HEG is forward integrating into steel making. Towards that end, the establishment of a new capacity for 100,000 tonnes per annum of steel billet is in progress, and is expected to go on stream in the second quarter of current year.

### PROGRESSIVE DIVIDEND PAYOUT

Over the years, HEG has consistently rewarded its shareholders with healthy dividend payouts. For FY 2005 the Board has recommended a dividend of 30%, which represents a dividend payout ratio of 33%, higher than the payout ratio of 27% in the preceding year.

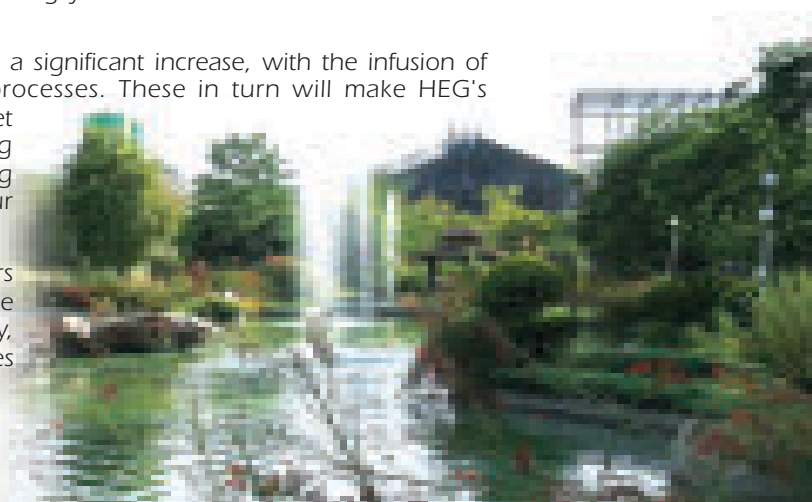
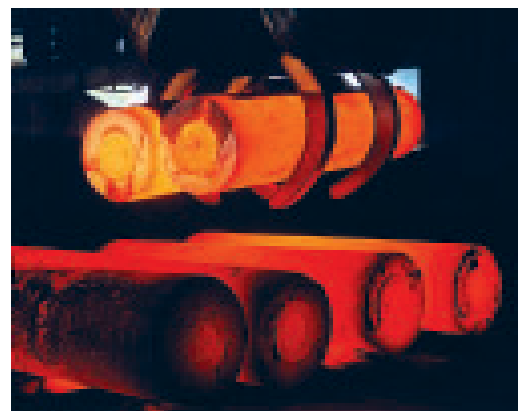
### AN ENCOURAGING OUTLOOK

Our capacities in both graphite and power are witnessing a significant increase, with the infusion of modern state-of-the-art technologies, equipment and processes. These in turn will make HEG's operations bigger and better than before. With the market outlook for graphite electrodes and sponge iron remaining positive, and our expanded capacities nearing commissioning, we expect noticeable improvement in our financial performance going forward.

Finally, I would like to thank our customers, our shareholders and our people for their continued confidence in the Company. I believe the Company is well placed - financially, operationally, and managerially - to seize new opportunities and deliver better returns.

**Ravi Jhunjhunwala**

Chairman & Managing Director





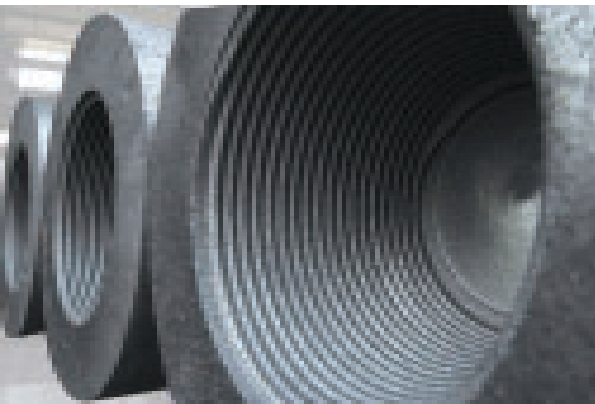


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## MESSAGE FROM THE EXECUTIVE DIRECTOR & CEO

Dear Shareholders,

### CONTINUED GROWTH IN CORE BUSINESSES



The financial year 2004-05 has been a good year for the Company on an overall basis, delivering a stable performance in the face of unexpected challenges. Our core business, graphite electrodes, continued to register a healthy growth on the back of better prices and very strong demand. The sponge iron business, which helps us run a waste heat recovery system and diversifies our business profile, continued to contribute not only by way of providing economical captive power during the second half of the year, but also by adding to both our overall revenues and earnings during the entire year.

The Company had to confront some unforeseen impediments during FY 2005. The hydel plant at Tawa was able to contribute for only one quarter during the year due to delayed and inadequate monsoons, and the generation of power at the captive power plant at Durg was also lower due to problems that occurred during the first half of the year. However, with better monsoons expected in the current year, we expect the hydel plant to perform much better. The power generation at our Durg facility too has returned to normal levels following the complete resolution of its earlier problems.

### SECTOR OUTLOOK REMAINS PROMISING

The share of steel produced globally through the electric arc furnace (EAF) route - which is where graphite electrodes are used - has been steadily rising, increasing from about 17% in 1975 to over 34% now. More than 50% of the steel produced in the US and over 38% of the steel manufactured in Western Europe is based on the EAF route, which means that more than a third of the world's current steel production is through the EAF method. Since the demand for graphite electrodes is driven by the growing acceptance of the EAF route, and given the tight supply of graphite electrodes, we believe that the market conditions for efficient and high quality graphite manufacturers such as HEG continue to be attractive.

### CAPITALIZING ON MARKET TRENDS THROUGH TIMELY EXPANSIONS

In FY 2004, when few had predicted the kind of robust demand for graphite electrodes that we are witnessing today, HEG had taken a well-considered decision to expand its capacities. I am glad to inform you that we have been able to implement and complete our expansions, raising graphite electrodes capacity from about 30,000 TPA to 52,000 TPA, in a timely manner. This expanded capacity will be commissioned for commercial production in the first quarter of FY 2006. In the course of this expansion, the Company has invested in state-of-the-art equipments and machinery. Following this expansion, our plant at Mandideep has become one of the most modern and is poised to become the largest single-site graphite plants in the world.

The Company's new 25 MW coal-based power plant, which will allow it to have access to reliable captive power post graphite expansion and reduce exposure to hydel power, has already been commissioned and operationalized in a record period of about 15 months.

HEG has been able to fund these expansions through a mix of internal accruals and external borrowings at a competitive interest cost.

### ACKNOWLEDGING THE SUPPORT OF ALL STAKEHOLDERS

It is our talented and dedicated people that make the difference in a competitive global market, and I would like to acknowledge their contribution to the Company's progress. I thank our customers for choosing HEG. I also thank all those who partner with HEG - our vendors, suppliers, and lenders - for their support. Finally, I thank you, our shareholders, for your continuing encouragement.

### LOOKING AHEAD

Our graphite electrode production is completely booked for this calendar year, and the price environment is positive. Given HEG's financial strengths, quality leadership, global customer profile, increased capacities, and the strong demand and price prospects for its products, the overall performance outlook for the Company remains positive.

**Ramesh C Surana**  
Executive Director & CEO



## MANAGEMENT DISCUSSION AND ANALYSIS

### Macroeconomic Overview

#### DOMESTIC: THE OUTLOOK IS POSITIVE

The manufacturing sector that delivered high rate of growth is expected to record a growth of 8.9% in FY2005 allowing the country to continue on its growth trajectory. What also helped was the improvement in domestic demand which offset the effects of a weak south-west monsoon and rising oil import bills. The industrial sector, registered 8.4% growth in the first three quarters of 2004-05, the highest thus far after 1995-96 with the production of steel in the period increasing to 28.3 million tones, recording 4.0% growth.

The contribution of exports, especially that from high end engineering goods, to the GDP improved in the fiscal year under review with Indian exporters increasingly penetrating buyer economies despite a higher rupee. Furthermore, the rising share of exports to Asian neighbours came across as a welcome trend since the income growth and therefore demand for imports from these markets are expected to be far less volatile than in the larger western markets.

The country's forex reserves continued to rise, implying a more comfortable global trading position, reaching an estimated level of about \$130 billion towards the end of February in excess of India's total external debt of \$114 billion at end-September, 2004.

While major banks raised deposit rates marginally to sustain increased credit offtake interest rates on housing loans also witnessed a marginal firming up. Call money rates moved up in the second half of the year, reflecting higher growth of bank credit. Nevertheless, interest rates continue to be moderate. The benchmark prime lending rates of five major banks were lower by 25 to 50 bps in December 2004 compared to the rates prevailing a year ago.

The country's capital markets scaled new highs aided by both larger domestic inflows and strong foreign portfolio investments.

The 24% growth in exports from the country that stood at \$80 billion in FY2005, has demonstrated that exports can be an effective driver for a jobs-led growth. The Foreign Trade Policy for 2004-09 focuses the manufacturing sector, small industries and the farm sector while seeking to reduce documentation to keep transaction costs in check.

The series of initiatives aimed at the manufacturing and infrastructure sectors along with the emphasis on foreign- trade can create a conducive operating environment for Indian companies conducting business in both the national and international markets. Such an environment is likely to provide further impetus to the manufacturing sector, and, subsequently, to companies like HEG.





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## MANAGEMENT DISCUSSION AND ANALYSIS

### GLOBAL: IMPROVEMENTS AND CHALLENGES

The global economy grew 3.8% in 2004 following the 10.3% increase in trading volumes. Leading the growth thrust in 2004 were India and China, complementing the U.S. & Europe as drivers of economic growth besides setting the mood for the rest of the South and South East Asian region. The second most significant trend this year was the continuous rise in crude oil prices that appeared to affect the global economic order. However, in the developing world, particularly in parts producing metals and minerals, the effects were tempered to an extent by increasing prices they received for their exports.

Developing economies managed to outgrow high-income countries, with aggregate GDP rising 6.6% for the calendar year 2004. The U.S. grew an estimated 4.4%, Japan 2.6%, and Europe 1.8% (France and Spain recorded growth in excess of 2.5%). While growth in Japan and Europe was stronger than the previous year, the appreciation of their currencies contributed to the weakening of their exports in the second half of the year.

The depreciation of the dollar supported U.S. export volumes through weakening trade volumes elsewhere. Japan on the other hand was affected adversely by a combination of factors including falling demand for high tech products, the appreciation of the yen and its domestic investment cycle. Consumer demand in Europe was impacted by moderate wage growth and high oil prices while a stronger euro eroded exports. Conversely, significant pent up demand for capital goods gave an impetus to investment activity there. The region, including Central Asia, grew 6.8% in 2004, spurred on by strong growth in the Russian Federation, where high oil prices boosted incomes. Further enhancements in GDP and trade growth in the region were brought about by investment flows related to the accession of several countries to the European Union.

In a global environment that is likely to be constrained by inflationary and cost-related pressures, integrated and cost efficient players like HEG are ideally positioned to compete effectively and successfully.





## INDUSTRY OVERVIEW

While global steel production has increased over 8% in calendar year 2004, prices of the commodity continue to rise, driven by higher demand, rising input costs and historic industry conditions (unsustainably low prices, bankruptcies, consolidations and supply dislocations), continue to rise. That, combined with a clear shift in steel production in favour of the Electric Arc Furnace (EAF) route worldwide, will allow established manufacturers of graphite electrodes for EAFs like HEG, to partake in this global opportunity.

### EAF ROUTE OF STEEL-MAKING



The cost and quality advantages that steel produced through the EAF route enjoys has spurred a shift in production towards this method. Although, the per unit consumption of electrodes has been on the decline on account of better electrode quality and technology over years, the marginal declines going forward would be minimal. Steel production using the EAF route has been increasing rapidly over the past two decades, and with no more blast furnaces being commissioned, the share of steel being produced via the EAF method is likely to reach almost 38% by the year 2010. Moreover, the continuing trend in the usage of the higher end UHP grade electrodes, which is HEG's focus segment, would benefit the Company in the future.

### TECHNOLOGY INTENSIVE NATURE



The production of graphite electrodes continues to be driven by technology and expertise. HEG continues to invest in improving existing manufacturing processes through a dedicated R&D set-up. The facility also allows HEG to explore specialty graphite products for further application. Moreover, the enterprise-wide ERP & IT systems that the Company has implemented, facilitates knowledge sharing and informed decision-making. The dual strengths of technical competence and investments in technology present a formidable entry barrier into the industry.

### POSITIVE BIAS IN PRICE

Over the past couple of years a wave of consolidation in the industry necessitated the shifting of some western manufacturing operations to more cost effective locations east or in some cases complete closure. The consequent contraction in supply is expected to exert upward pressure on graphite electrode prices despite most graphite electrode makers including HEG, operating at full capacity. Additionally, the heightened pace of industrial activity combined with improved steel production has increased demand for graphite electrodes across the world. This correction in graphite electrode prices comes after artificially low levels in the late nineties. Interestingly, a better domestic power supply scenario and the need to produce better quality steel has led domestic steel players to embrace the EAF method further augmenting prospects of players like HEG.

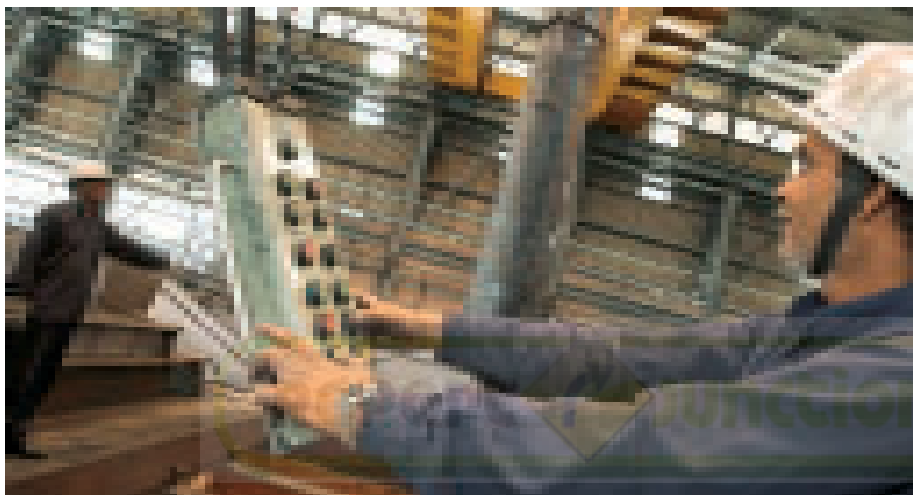


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## BUSINESS MODEL AND GROWTH STRATEGY

HEG has a well-defined strategy to become a dominant player in its core graphite electrodes business with unrivalled quality-led advantages accruing from efficient processes, state-of-the-art technology and captive power generation. The Company's focus is on value-added, technology-driven high-end products and the international markets.

### FOCUS ON THE GRAPHITE ELECTRODES BUSINESS



HEG operates in the high technology, quality driven graphite electrodes business. Graphite electrodes are used to melt scrap metal to produce steel using the Electric Arc Furnace (EAF) method. As a result, the demand for the product is subject to the volumes of steel produced using the EAF method.

The demand for steel, internationally, has been picking pace over the past year. Moreover, global trends have long been indicating a shift in favour of the EAF method of steel production. The EAF route offers the dual promise of better quality end product and higher returns. This trend in favour of EAF is therefore expected to consolidate and gain momentum in the

future. Consequently, both the usage and demand for graphite electrodes is expected to expand in tandem with the shift in the production processes for steel.

On the other hand, the consumption of graphite electrodes per tonne of steel produced which has declined on account of the improvements in technology and quality of graphite electrodes is now stabilising. Any slackening in demand for the graphite electrodes on this count is expected to be more than compensated by the continual growth in the manufacture of steel worldwide through the EAF method.

Another distinct trend in the marketplace has been the rise in the usage of higher-

end UHP grade electrodes, which is one of HEG's strength areas. This trend is expected to quicken pace in the coming years giving rise to a UHP to HP grade usage ratio of 3:1, thus being beneficial to HEG's operations.

The Sponge Iron business acts as an ancillary to the graphite electrodes business. The waste gases generated from its operations are channelled through the Waste Heat Recovery System (WHRS) to produce power that is further used for captive consumption.