Graphite India Limited
NSE: GRAPHITE, BSE: 509488

Corporate Presentation
August 2018
Important Notice

Forward Looking Statements

This presentation contains statements that contain “forward looking statements” including, but without limitation, statements relating to the implementation of strategic initiatives, and other statements relating to Graphite India’s future business developments and economic performance.

While these forward looking statements indicate our assessment and future expectations concerning the development of our business, a number of risks, uncertainties and other unknown factors could cause actual developments and results to differ materially from our expectations.

These factors include, but are not limited to, general market, macro-economic, governmental and regulatory trends, movements in currency exchange and interest rates, competitive pressures, technological developments, changes in the financial conditions of third parties dealing with us, legislative developments, and other key factors that could affect our business and financial performance.

Graphite India undertakes no obligation to publicly revise any forward looking statements to reflect future / likely events or circumstances.
Discussion Agenda

Investment Highlights

Milestones

Business Overview

Financial Performance

Strategic Outlook

Industry Dynamics

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20 - 24
Graphite India is globally well positioned through its product quality, scale of operations and manufacturing platform base.

- Ranked 3rd Largest Graphite Electrode Manufacturer in the World
- Leading Graphite Electrode Manufacturer in India
- 98,000 mt Capacity with Plants at Four Locations
- Strong International Client Base with Exports constituting 37% of FY2018 Sales
- Strong Balance Sheet with Net Cash Position
- Included in MSCI Small Cap Index
Investment Highlights

Global Market Position
- Largest Indian producer of graphite electrodes by total capacity
- One of the leading players in a highly consolidated industry
- Accounts for approximately 12.6% of capacity among leading global electrode manufacturers
- Diversified client base with a global footprint

Best-in-Class Operations
- High quality; around 37% of electrode production exported in competition with global players
- Focus on operational efficiency, productivity and technological know-how results in operating margins in line with market leaders
- Long-standing relationship with key raw material suppliers including needle coke
- Access to low cost sources of power

Attractive Industry Dynamics
- Consolidated industry with significant entry barriers due to technology intensive nature of operations
- China shutting down selected steel and electrode capacities leading to increased production in EAF producing countries
- Share of EAF’s route in global steel production increased from 25% in 2015 to 28% in 2017
- Strong support for EAF route over traditional blast furnace method due to:
  - Relatively lower production costs & capex requirement
  - Operational flexibility
  - Generates less carbon emissions

Strong Financial Performance
- Consistent cash flows to support organic and inorganic market opportunities
- Track record of positive cash flow generation despite the difficult market conditions in recent years
- Strong balance sheet with net cash position
- Strong cost management has resulted in one of the highest average EBITDA margins in the industry
- Consistent dividend policy

Notes:
1. Global capacity excludes Chinese producers
Milestones

Over 50 Years of Experience in the Graphite Electrode Industry

- Predecessor company formed by Bangur family and Great Lakes Carbon Corp (USA)
- Fully integrated plant established in Bangalore
- Backward integration through acquisition of two CPC manufacturing units in Barauni
- Amalgamation of IGE & GRP division with Carbon Corporation Ltd
- Installed a 7.5MW multi-fuel power plant at Nasik
- 1.5MW hydelpower plant commissioned in Karnataka
- Expanded Durgapur plant capacity from 14K MT pa to 34K MT pa, taking group capacity to 78K MT pa
- Graphite India formed from merger of two leading graphite electrode players in India
- Acquired 18K MT electrode manufacturing facility in Nurnberg, Germany, from Conradty
- Powmex Steel, an undertaking of GKW Limited, was merged


- Durgapur plant started production
- Promoted Carbon Corp Ltd with horizontal transfer of technology to manufacture graphite electrodes in Nasik
- Production in IGE Division started
- Production in FRP/GRP Division started
- Installed 24MW power capacity in Karnataka
- Expanded Durgapur plant capacity from 34K to 54K MT pa, taking group capacity to 98K MT pa
- Further expanded Durgapur plant capacity from 34K to 54K MT pa, taking group capacity to 98K MT pa
Business Overview

Graphite India

Graphite and Carbon* 95%

• Core expertise in value-added Ultra-High Power (UHP) electrodes
• 98K tonnes/year (TPA) capacity, with flexibility to produce all grades of electrode
• Backward integrated; manufactures Calcined Petroleum Coke for use in electrode manufacturing
• Enhanced product range – large diameter UHP electrodes and specialty graphite products
• Impervious graphite equipment find applications in corrosive chemical industries such as pharma, agro-chemical, chloro-alkali & fertilizer industries
• Power generation capacity of 19.5MW through hydel route. It is used primarily as captive supply for the graphite electrodes business

GRP Pipes* 3%

• Pipes for water supply, sewage / industrial effluent collection and disposal, cooling towers, industrial process pipelines, seawater pipelines, industrial ducting and gasoline storage

Others* 2%

• Largest producer of High-Speed Steel (HSS) in the country
• HSS is used in the manufacture of cutting tools such as drills, taps, milling cutters, reamers, hobs, broaches and special form tools
• HSS cutting tools are essentially utilized in automotive, machine tools, aviation and DIY markets

Highlights

• Graphite Electrodes
• Specialty Carbon and Graphite
• Calcined Petroleum Coke
• Carbon Paste

• Impervious Graphite Equipment: Heat Exchangers

Products

Graphite Electrodes

• High Speed Steel (HSS)
• Alloy Steel

GRP Pipe

Steel Melting

*Percentage refers to FY2018 Sales Contribution
Strategically Located Manufacturing Facilities

<table>
<thead>
<tr>
<th>Plant Location</th>
<th>Post Expansion Capacity (MT/Year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Durgapur (India)</td>
<td>54,000</td>
</tr>
<tr>
<td>Bangalore (India)</td>
<td>13,000</td>
</tr>
<tr>
<td>Nasik (India)</td>
<td>13,000</td>
</tr>
<tr>
<td>Nurnberg (Germany)</td>
<td>18,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>98,000</strong></td>
</tr>
</tbody>
</table>

- The Indian plants are located close to the three main ports of India, offering logistic advantages to clients overseas.
- Closer to customers in Indian markets.
- The German plant caters to the needs of European customers and is located close to the EU market.
Business Overview

Diversified Premier Global Customer Base

North America:
- Nucor Group
- SDI Group
- SSAB
- Sterling Steel

Middle East:
- Diler and Yazici
- Qatar Steel
- Emirates Steel
- EZDK
- Kuwait Steel
- Jindal Shaded
- SABIC

India:
- Essar Steel
- Jindal Steel & Power
- JSW Steel
- Steel Authority of India
- Tata Iron & Steel

South East Asia and Far East:
- PTCT Indonesia
- Hyundai Steel Korea
- Tokyo Steel Japan
- Yusco Taiwan

Mexico:
- Exiros
Business Overview

Global Player with Strong Profitability

Graphite India is one of the largest graphite electrode manufacturers globally and the largest in India.

- Average capacity utilization was 85% in FY2018 as compared to 74% in FY2017.
- Operating margins remain one of the highest amongst the leading electrode manufacturers.

Note:
1. Fiscal years; Consolidated Gross Sales
2. Showa Denko capacity is post-acquisition of SGL Carbon business and after divesting SGL Carbon US business to Tokai Carbon
3. Accounts for FY2016 and FY2017 have been prepared in accordance with IND AS
4. Source – Macquarie Report, Company websites
Business Overview

Group Organizational Structure

Graphite India Limited

- Carbon Finance Limited
- Graphite International B.V

Incorporated in India

- Bavaria Electrodes GmbH
- Bavaria Carbon Holdings GmbH
- Bavaria Carbon Specialties GmbH
- Graphite Cova GmbH

Incorporated in Netherlands

Incorporated in Germany

Shareholding Pattern (Jun-18)

Promoters 65.2%
Others 20.1%
Foreign Portfolio Investors 6.0%
Mutual Funds 5.8%
Financial Institutions/Banks/Insurance Companies 3.0%

Promoters include 65.2% of the equity shareholding of the company.
## Business Overview

### Senior Management Team

<table>
<thead>
<tr>
<th>Key Executives</th>
<th>Background</th>
</tr>
</thead>
</table>
| K.K. Bangur, Chairman     | • Over 30 years of experience in managing the affairs of companies and its business activities  
                             • Has been a Director of Graphite India since July 1988 and Chairman since July 1993  
                             • Chairman of the Shareholders/Investors Grievance Committee and Committee for Borrowings  
                             • Past President of Indian Chamber of Commerce, Kolkata, Executive Committee member of FICCI, New Delhi and the past President of All India Employers Organization, New Delhi |
| M. B. Gadgil, Executive Director | • Mechanical Engineer with a Management Degree and has been with the Company for over 39 years  
                                  • Responsible for the management of Company affairs and is actively involved in strategic/ investment decisions |
| Ashutosh Dixit, President | • Mechanical Engineer with an MBA and PG Certificate in Metallurgy and has over 25 years of experience in the industry  
                             • Joined the Company in November 2017 and is responsible for Electrode and steel operations |
| B. Shiva, Senior VP, Legal & Company Secretary | • Mr. B Shiva, SVP (Legal) & Co Secretary, is a Law graduate and Fellow member of The Institute of Company Secretaries of India. He has been with the Company for more than 24 years |
| A. K. Dutta, Senior VP, Marketing | • Mr. A. K. Dutta is an Electrical Engineer with post graduation in management from IIM Calcutta and has about 33 years of experience in marketing. He joined GIL in 2006 |
| S.W. Parnerkar, Senior VP, Finance | • Mr. S.W Parnerkar, M.Com, L.L.B, FCMA, FCS, is the head of Finance of the Company  
                                         • Associated with the company for more than 23 years, he is responsible for all accounts and financial aspects of the Company |
Consolidated Yearly Performance Trends

**Net Sales (in crores) and Growth (%)**

<table>
<thead>
<tr>
<th>Year</th>
<th>Net Sales (Rs. Crore)</th>
<th>Growth (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>2,009</td>
<td>3%</td>
</tr>
<tr>
<td>2015</td>
<td>1,711</td>
<td>(15)%</td>
</tr>
<tr>
<td>2016</td>
<td>1,532</td>
<td>(10)%</td>
</tr>
<tr>
<td>2017</td>
<td>1,468</td>
<td>(4)%</td>
</tr>
<tr>
<td>2018</td>
<td>3,266</td>
<td>123%</td>
</tr>
</tbody>
</table>

**Operating Profit (EBITDA) and Margins**

<table>
<thead>
<tr>
<th>Year</th>
<th>Operating Profit (Rs. Crore)</th>
<th>Margin (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>3,266</td>
<td>15%</td>
</tr>
<tr>
<td>2015</td>
<td>1,533</td>
<td>10%</td>
</tr>
<tr>
<td>2016</td>
<td>1,847</td>
<td>11%</td>
</tr>
<tr>
<td>2017</td>
<td>1,267</td>
<td>9%</td>
</tr>
<tr>
<td>2018</td>
<td>7,533</td>
<td>47%</td>
</tr>
</tbody>
</table>

**Net Profit and Margins**

<table>
<thead>
<tr>
<th>Year</th>
<th>Net Profit (Rs. Crore)</th>
<th>Margin (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>130</td>
<td>6%</td>
</tr>
<tr>
<td>2015</td>
<td>58</td>
<td>3%</td>
</tr>
<tr>
<td>2016</td>
<td>83</td>
<td>4%</td>
</tr>
<tr>
<td>2017</td>
<td>70</td>
<td>5%</td>
</tr>
<tr>
<td>2018</td>
<td>1,032</td>
<td>32%</td>
</tr>
</tbody>
</table>

**Dividend Per Share (DPS)**

<table>
<thead>
<tr>
<th>Year</th>
<th>Dividend Per Share (DPS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>3.50</td>
</tr>
<tr>
<td>2015</td>
<td>2.00</td>
</tr>
<tr>
<td>2016</td>
<td>2.00</td>
</tr>
<tr>
<td>2017</td>
<td>2.00</td>
</tr>
<tr>
<td>2018</td>
<td>17.00</td>
</tr>
</tbody>
</table>
## Consolidated Financial Performance

<table>
<thead>
<tr>
<th></th>
<th>Q1 FY2019</th>
<th>Q1 FY2018</th>
<th>y-o-y Growth (%)</th>
<th>Q4 FY2018</th>
<th>q-o-q Growth (%)</th>
<th>Full Year FY2018</th>
<th>Full Year FY2017</th>
<th>y-o-y Growth (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross Sales¹</td>
<td>1,965</td>
<td>415</td>
<td>373%</td>
<td>1,323</td>
<td>48%</td>
<td>3,291</td>
<td>1,554</td>
<td>112%</td>
</tr>
<tr>
<td>(Excluding Other Income)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Net Sales</td>
<td>1,965</td>
<td>390</td>
<td>404%</td>
<td>1,323</td>
<td>48%</td>
<td>3,266</td>
<td>1,468</td>
<td>123%</td>
</tr>
<tr>
<td>(Excluding Other Income)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating Profit (EBITDA)²</td>
<td>1,466</td>
<td>59</td>
<td>2,385%</td>
<td>756</td>
<td>94%</td>
<td>1,533</td>
<td>126.0</td>
<td>1,116%</td>
</tr>
<tr>
<td>Margin (%)³</td>
<td>75%</td>
<td>15%</td>
<td></td>
<td>57%</td>
<td></td>
<td>46.9%</td>
<td>8.6%</td>
<td></td>
</tr>
<tr>
<td>Interest</td>
<td>2</td>
<td>1</td>
<td></td>
<td>2</td>
<td></td>
<td>8</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Depreciation</td>
<td>13</td>
<td>13</td>
<td></td>
<td>13</td>
<td></td>
<td>52</td>
<td>46</td>
<td></td>
</tr>
<tr>
<td>Profit Before Tax</td>
<td>1,451</td>
<td>45</td>
<td>3,124%</td>
<td>741</td>
<td>96%</td>
<td>1,473</td>
<td>72</td>
<td>1,945%</td>
</tr>
<tr>
<td>Net Profit</td>
<td>957</td>
<td>30</td>
<td>3,090%</td>
<td>540</td>
<td>77%</td>
<td>1,032</td>
<td>70</td>
<td>1,365%</td>
</tr>
<tr>
<td>Margin (%)</td>
<td>49%</td>
<td>8%</td>
<td></td>
<td>41%</td>
<td></td>
<td>31.6%</td>
<td>4.8%</td>
<td></td>
</tr>
<tr>
<td>Earnings Per Share</td>
<td>49.08</td>
<td>1.54</td>
<td>3,090%</td>
<td>27.69</td>
<td>77%</td>
<td>52.81</td>
<td>3.61</td>
<td>1,365%</td>
</tr>
<tr>
<td>Capacity Utilization (%)</td>
<td>88%</td>
<td>84%</td>
<td></td>
<td>91%</td>
<td></td>
<td>85%</td>
<td>74%</td>
<td></td>
</tr>
</tbody>
</table>

Notes:
1. Q1 FY2018 onwards Net sales is net of excise
2. Operating Profit includes Other Income
3. All margins calculated as a percentage of Net Sales (excluding Other Income)
<table>
<thead>
<tr>
<th></th>
<th>Q1 FY2019</th>
<th>Q1 FY2018</th>
<th>Growth (%)</th>
<th>Q4 FY2018</th>
<th>Q4 FY2017</th>
<th>Growth (%)</th>
<th>Full Year FY2018</th>
<th>Full Year FY2017</th>
<th>Growth (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gross Sales</strong>¹</td>
<td>1,777</td>
<td>376</td>
<td>373%</td>
<td>1,212</td>
<td>47%</td>
<td></td>
<td>2,983</td>
<td>1,392</td>
<td>114%</td>
</tr>
<tr>
<td>(Excluding Other Income)</td>
<td>1,777</td>
<td>351</td>
<td>406%</td>
<td>1,212</td>
<td>47%</td>
<td></td>
<td>2,958</td>
<td>1,306</td>
<td>127%</td>
</tr>
<tr>
<td><strong>Net Sales</strong></td>
<td>1,777</td>
<td>351</td>
<td>406%</td>
<td>1,212</td>
<td>47%</td>
<td></td>
<td>2,958</td>
<td>1,306</td>
<td>127%</td>
</tr>
<tr>
<td>(Excluding Other Income)</td>
<td>1,777</td>
<td>351</td>
<td>406%</td>
<td>1,212</td>
<td>47%</td>
<td></td>
<td>2,958</td>
<td>1,306</td>
<td>127%</td>
</tr>
<tr>
<td>**Operating Profit (EBITDA)**²</td>
<td>1,328</td>
<td>57</td>
<td>2,230%</td>
<td>705</td>
<td>88%</td>
<td></td>
<td>1,441</td>
<td>159</td>
<td>804%</td>
</tr>
<tr>
<td>**Margin (%)**³</td>
<td>75%</td>
<td>16%</td>
<td></td>
<td>58%</td>
<td>12%</td>
<td></td>
<td>49%</td>
<td>12%</td>
<td>(5)%</td>
</tr>
<tr>
<td><strong>Interest</strong></td>
<td>1</td>
<td>1</td>
<td></td>
<td>2</td>
<td></td>
<td></td>
<td>6</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td><strong>Depreciation</strong></td>
<td>11</td>
<td>12</td>
<td></td>
<td>11</td>
<td></td>
<td></td>
<td>46</td>
<td>42</td>
<td>12%</td>
</tr>
<tr>
<td><strong>Profit Before Tax</strong></td>
<td>1,316</td>
<td>44</td>
<td>2,891%</td>
<td>692</td>
<td>90%</td>
<td></td>
<td>1,389</td>
<td>111</td>
<td>1,146%</td>
</tr>
<tr>
<td><strong>Net Profit</strong></td>
<td>858</td>
<td>30</td>
<td>2,760%</td>
<td>454</td>
<td>89%</td>
<td></td>
<td>914</td>
<td>112</td>
<td>714%</td>
</tr>
<tr>
<td><strong>Margin (%)</strong></td>
<td>48%</td>
<td>8%</td>
<td></td>
<td>37%</td>
<td></td>
<td></td>
<td>31%</td>
<td>9%</td>
<td></td>
</tr>
<tr>
<td><strong>Earnings Per Share</strong></td>
<td>44.00</td>
<td>1.51</td>
<td>2,760%</td>
<td>23.22</td>
<td>89%</td>
<td></td>
<td>46.76</td>
<td>5.75</td>
<td>714%</td>
</tr>
<tr>
<td><strong>Capacity Utilization (%)</strong></td>
<td>98%</td>
<td>95%</td>
<td></td>
<td>100%</td>
<td></td>
<td></td>
<td>95%</td>
<td>80%</td>
<td></td>
</tr>
</tbody>
</table>
## Leverage Profile

### Significant financial flexibility available for future organic / inorganic growth

### Consolidated Leverage Profile

<table>
<thead>
<tr>
<th>(Rs. Crore)</th>
<th>June-18</th>
<th>March-18</th>
<th>June-17</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Debt</td>
<td>(218)</td>
<td>(272)</td>
<td>(296)</td>
</tr>
<tr>
<td>Cash &amp; Cash Equivalents&lt;sup&gt;1&lt;/sup&gt;</td>
<td>1,741</td>
<td>1,263</td>
<td>773</td>
</tr>
<tr>
<td>Net Cash</td>
<td>1,523</td>
<td>991</td>
<td>477</td>
</tr>
</tbody>
</table>

### Standalone Leverage Profile

<table>
<thead>
<tr>
<th>(Rs. Crore)</th>
<th>June-18</th>
<th>March-18</th>
<th>June-17</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Debt</td>
<td>(169)</td>
<td>(155)</td>
<td>(171)</td>
</tr>
<tr>
<td>Cash &amp; Cash Equivalents&lt;sup&gt;1&lt;/sup&gt;</td>
<td>1,671</td>
<td>1,197</td>
<td>723</td>
</tr>
<tr>
<td>Net Cash</td>
<td>1,502</td>
<td>1,042</td>
<td>552</td>
</tr>
</tbody>
</table>

**Notes:**
1. Cash and cash equivalents include Mutual Fund investments
2. All numbers in Crores unless specifically mentioned
### Consolidated Segment Performance

<table>
<thead>
<tr>
<th></th>
<th>FY2018</th>
<th>FY2017</th>
<th>Growth (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Graphite and Carbon</strong></td>
<td>3,140.4</td>
<td>1,415.6</td>
<td>121.8%</td>
</tr>
<tr>
<td><strong>Others</strong></td>
<td>151.1</td>
<td>138.6</td>
<td>9.0%</td>
</tr>
<tr>
<td><strong>Less: Inter Segment Sales</strong></td>
<td>(0.3)</td>
<td>(0.4)</td>
<td></td>
</tr>
<tr>
<td><strong>Segment Revenue</strong></td>
<td>3,291.2</td>
<td>1,553.7</td>
<td>112.0%</td>
</tr>
<tr>
<td><strong>Graphite and Carbon</strong></td>
<td>1,465.1</td>
<td>13.0</td>
<td>-</td>
</tr>
<tr>
<td><strong>Others</strong></td>
<td>10.6</td>
<td>23.9</td>
<td>(55.8%)</td>
</tr>
<tr>
<td><strong>Profit before tax and interest</strong></td>
<td>1,475.6</td>
<td>36.9</td>
<td>3,895.8%</td>
</tr>
<tr>
<td><strong>Finance Cost</strong></td>
<td>(8.1)</td>
<td>(7.9)</td>
<td></td>
</tr>
<tr>
<td><strong>Unallocated Income / (expense)</strong></td>
<td>5.4</td>
<td>42.7</td>
<td></td>
</tr>
<tr>
<td><strong>Profit Before Tax</strong></td>
<td>1,473.0</td>
<td>71.8</td>
<td>1,951.5%</td>
</tr>
</tbody>
</table>

### Standalone Segment Performance

<table>
<thead>
<tr>
<th></th>
<th>FY2018</th>
<th>FY2017</th>
<th>Growth (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Graphite and Carbon</strong></td>
<td>2,833.1</td>
<td>1,257.4</td>
<td>125.3%</td>
</tr>
<tr>
<td><strong>Others</strong></td>
<td>150.6</td>
<td>134.8</td>
<td>11.7%</td>
</tr>
<tr>
<td><strong>Less: Inter Segment Sales</strong></td>
<td>(0.3)</td>
<td>(0.4)</td>
<td></td>
</tr>
<tr>
<td><strong>Segment Revenue</strong></td>
<td>2,983.4</td>
<td>1,391.8</td>
<td>114.4%</td>
</tr>
<tr>
<td><strong>Graphite and Carbon</strong></td>
<td>1,377.1</td>
<td>53.3</td>
<td>2,483.7%</td>
</tr>
<tr>
<td><strong>Others</strong></td>
<td>11.3</td>
<td>20.8</td>
<td>(45.7%)</td>
</tr>
<tr>
<td><strong>Profit before tax and interest</strong></td>
<td>1,388.3</td>
<td>74.1</td>
<td>1,773.5%</td>
</tr>
<tr>
<td><strong>Finance Cost</strong></td>
<td>(6.2)</td>
<td>(6.5)</td>
<td></td>
</tr>
<tr>
<td><strong>Unallocated Income / (expense)</strong></td>
<td>6.7</td>
<td>43.8</td>
<td></td>
</tr>
<tr>
<td><strong>Profit Before Tax</strong></td>
<td>1,388.8</td>
<td>111.4</td>
<td>1,146.7%</td>
</tr>
</tbody>
</table>

*All numbers in Crores unless specifically mentioned*
## Quarterly Segment Performance

### Consolidated Segment Performance

<table>
<thead>
<tr>
<th>(Rs. Crore)</th>
<th>Q1 FY2019</th>
<th>Q1 FY2018</th>
<th>y-o-y Growth (%)</th>
<th>Q4 FY2019</th>
<th>Q4 FY2018</th>
<th>q-o-q Growth (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graphite and Carbon</td>
<td>1,912</td>
<td>389</td>
<td>391%</td>
<td>1,265</td>
<td>51%</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>53</td>
<td>26</td>
<td>104%</td>
<td>58</td>
<td>(9)%</td>
<td></td>
</tr>
<tr>
<td>Less: Inter Segment Sales</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Segment Revenue</td>
<td>1,965</td>
<td>415</td>
<td>373%</td>
<td>1,323</td>
<td>48%</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>(Rs. Crore)</th>
<th>Q1 FY2019</th>
<th>Q1 FY2018</th>
<th>y-o-y Growth (%)</th>
<th>Q4 FY2019</th>
<th>Q4 FY2018</th>
<th>q-o-q Growth (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graphite and Carbon</td>
<td>1,439</td>
<td>38</td>
<td>3,687%</td>
<td>746</td>
<td>93%</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>5</td>
<td>-</td>
<td>-</td>
<td>4</td>
<td>3%</td>
<td></td>
</tr>
<tr>
<td>Profit before tax and interest</td>
<td>1,444</td>
<td>38</td>
<td>3,700%</td>
<td>750</td>
<td>92%</td>
<td></td>
</tr>
<tr>
<td>Finance Cost</td>
<td>(2)</td>
<td>(1)</td>
<td>(2)</td>
<td>(2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unallocated Income / (expense)</td>
<td>9</td>
<td>8</td>
<td>(7)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Profit Before Tax</td>
<td>1,451</td>
<td>45</td>
<td>3,124%</td>
<td>741</td>
<td>96%</td>
<td></td>
</tr>
</tbody>
</table>

### Standalone Segment Performance

<table>
<thead>
<tr>
<th>(Rs. Crore)</th>
<th>Q1 FY2019</th>
<th>Q1 FY2018</th>
<th>y-o-y Growth (%)</th>
<th>Q4 FY2019</th>
<th>Q4 FY2018</th>
<th>q-o-q Growth (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graphite and Carbon</td>
<td>1,725</td>
<td>351</td>
<td>391%</td>
<td>1,152</td>
<td>50%</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>52</td>
<td>25</td>
<td>108%</td>
<td>60</td>
<td>(13)%</td>
<td></td>
</tr>
<tr>
<td>Less: Inter Segment Sales</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Segment Revenue</td>
<td>1,777</td>
<td>376</td>
<td>373%</td>
<td>1,212</td>
<td>47%</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>(Rs. Crore)</th>
<th>Q1 FY2019</th>
<th>Q1 FY2018</th>
<th>y-o-y Growth (%)</th>
<th>Q4 FY2019</th>
<th>Q4 FY2018</th>
<th>q-o-q Growth (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graphite and Carbon</td>
<td>1,304</td>
<td>38</td>
<td>3,324%</td>
<td>693</td>
<td>88%</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>4</td>
<td>(2)</td>
<td>(50)%</td>
<td>8</td>
<td>(50)%</td>
<td></td>
</tr>
<tr>
<td>Profit before tax and interest</td>
<td>1,308</td>
<td>36</td>
<td>3,533%</td>
<td>701</td>
<td>87%</td>
<td></td>
</tr>
<tr>
<td>Finance Cost</td>
<td>(1)</td>
<td>(1)</td>
<td>(2)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unallocated Income / (expense)</td>
<td>9</td>
<td>9</td>
<td>(7)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Profit Before Tax</td>
<td>1,316</td>
<td>44</td>
<td>2,891%</td>
<td>692</td>
<td>90%</td>
<td></td>
</tr>
</tbody>
</table>

* All numbers in Crores unless specifically mentioned
Strategically established new eco-friendly facilities with **advanced technology** and **greater energy efficiency**

Recent capacity shutdown in China and decreased exports to other EAF producing countries is expected to provide impetus to electrode demand and price. We are **well positioned to benefit from the growing demand for graphite electrode** in the medium term globally.

Use **low cost base** and **high product quality** to expand global reach and customer base at competitive prices

**Enhance presence in value added graphite products** and grow impervious graphite equipment business

Focus on **improving margins** through proactively managing production schedules and **resource optimization** across facilities
Industry Dynamics

Global Steel and Graphite Electrode Industry

EAF route of manufacturing enjoys several advantages over traditional BOF route:

- Lower capital investment
- Lower break-even tonnage
- Flexibility in locating plants closer to consumption
- Less polluting than integrated steel plants

India has been increasing its market share of graphite electrode production steadily over the past few years due to relatively low cost of operations.

China shutting down selected steel capacities to curb pollution resulting in decreased exports from China and increased production in EAF producing countries.

Source: World Steel Association
According to World Steel Association (WSA), world crude steel production was 881.5 Mt in the first six months of 2018, up by 4.6% compared to the same period in 2017. The world crude steel capacity utilization in June 2018 was 78.5% as compared to 74.7% in June 2017.

India continued its strong growth momentum and registered a growth of 6.9% in Q2 CY2018. This was driven by domestic demand for steel which has been supported by a strong pick-up in infrastructure and manufacture sector.

Steel production in Middle East increased significantly by 12.7% y-o-y in Q2 CY2018 supported by recovery in oil and commodity prices and the outlook is positive for MENA countries.

In Q2 CY2018, the US steel production increased by 2.5% y-o-y. This growth is likely to continue since the outlook for steel demand in the US remains robust on the back of the strong economic fundamentals, consumption and investment.

The EU steel production increased by 2.2% y-o-y in Q2 CY2018.

WSA forecasts global steel demand to increase by 1.8% to 1,616.1 million Mt in 2018, and further increase by 0.7% to 1,626.7 million Mt in 2019.

As per WSA, steel demand in developed economies’ is expected to increase by 1.8% and in developing economies (excl. China) by 4.9% in 2018.
- China net steel exports were down by 15.5% in first half of 2018 to 28.7 million mt. This has allowed increased steel production and higher utilization in the other EAF steel producing nations

- The closure of inefficient induction furnaces and highly polluting blast furnaces in China are being replaced by environment friendly electric arc furnaces (EAF’s) which is supported by increased availability of scrap

- Around 56 new EAF furnaces is expected to come online in 2018 with an aggregate capacity of 60-70 million mt. The share of steel manufacturing capacity using EAF has already risen to 9 percent in 2017 from 6 percent earlier. The Chinese government has set a target of achieving 20 percent steel production through the EAF route by 2020. Additionally, recent closure of 2,00,000 - 3,00,000 tonnes of electrode capacity led to shortage of electrodes. These factors have resulted in an increased demand of graphite electrodes

- Such developments augur well for the industry and have led to an improved demand and supply balance, along with favorable electrode pricing scenario

- The needle coke industry is highly concentrated and petroleum needle coke demand is increasing due to its use in lithium-ion batteries used in electric vehicles. Hence, the timely availability of adequate needle coke at a reasonable price shall determine the effective/profitable utilization of any meaningful addition to electrode capacity across the industry
Over the years, China remains the biggest crude steel producer with a 49.2% share in 2017 vs 45.4% in 2010 & 18.1% in 2001.

Overcapacities in China led to subsidized exports however the trend has changed in 2017 with China shutting down selected steel capacities to curb pollution resulting in decreased exports and increased production in EAF producing countries.

Source: World Steel Association
An electric arc furnace (EAF) is a furnace that heats charged material by means of an electric arc. Arc furnaces range in size from small units of approximately one tonne capacity (used in foundries for producing cast iron products) up to about 400 tonne units used for secondary steelmaking. Electric arc furnace temperatures can be up to 1,800 degrees Celsius and the electrode tip & arc temperatures can go as high as 3,000-4,000 degrees Celsius. Graphite Electrodes are consumed in an electric arc furnace. An electrode typically lasts for 22-30 heats /batches or 10 hours. A single graphite electrode can weigh over 2 tonnes. Electrode demand is driven by the production of steel through the EAF method.
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