GRAPHITE INDIA LIMITED
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CIN : L10101WB1974PLC094602
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GIL:SEC/SM/20-21/33

August 6, 2020

Bombay Stock Exchange Limited
The Corporate
Relationship Department
1st Floor, New Trading Ring,
Rotunda Bldg., P.J.Towers,
Dalal Street,
Mumbai 400 001.

Scrip Code – 509488

The Manager
Listing Department
National Stock Exchange
Exchange Plaza,5th Floor,
Plot No-C/1, G Block,
Bandra-Kurla Complex,
Bandra (E)
Mumbai 400 051
Symbol – GRAPHITE

Sir,

Re: Corporate Presentation (August 2020)

Pursuant to provisions of Regulation 30 of the SEBI (Listing Obligations & Disclosure Requirements) Regulations, 2015, enclosed please find herewith copy of Corporate Presentation (August 2020).

We request you to kindly take the above on your records.

Thanking you,

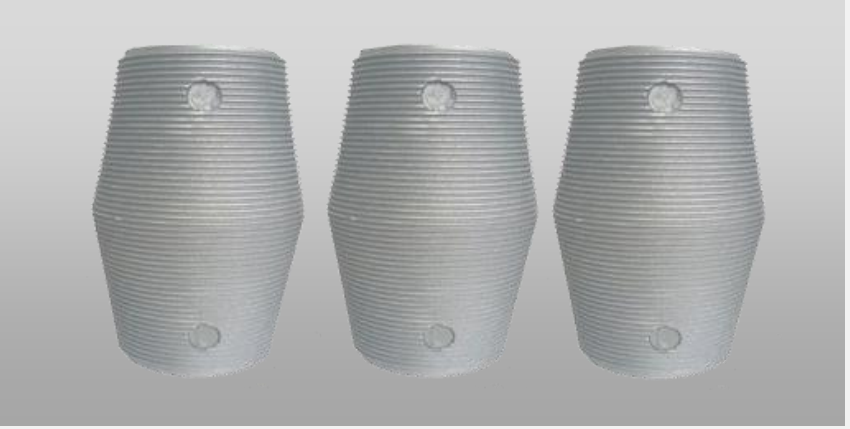
Yours faithfully,
For Graphite India Limited

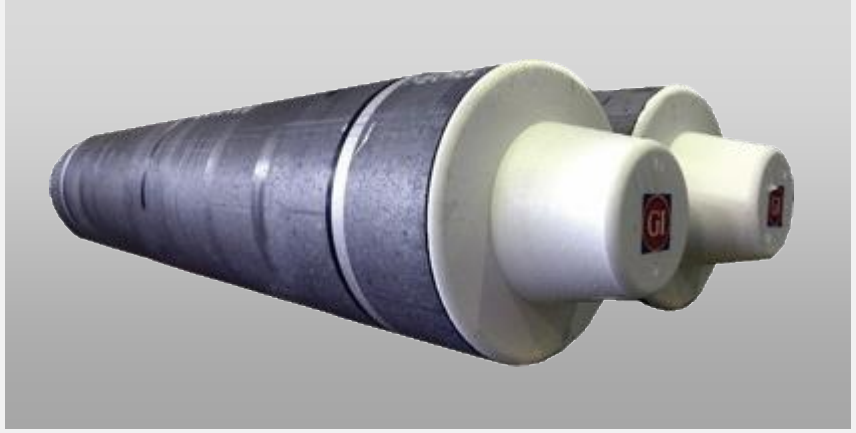
S. Marda
Asst. Company Secretary

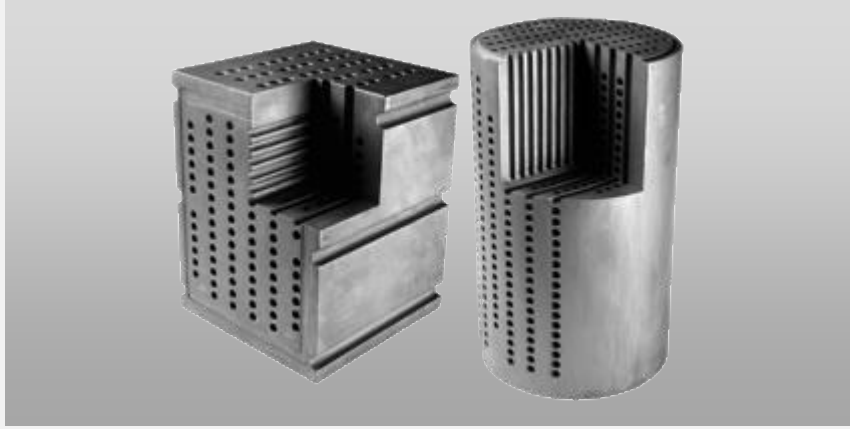
Graphite India Limited

NSE: GRAPHITE, BSE: 509488

Corporate Presentation
August 2020







Important Notice

Graphite India Limited

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

Graphite India Limited

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Investment Highlights

Graphite India Limited

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 three Locations
- Strong International Client Base with Exports constituting 46% of FY2020 Sales
- Strong Balance Sheet with Net Cash Position
- Included in MSCI Small Cap Index

Investment Highlights

Graphite India Limited

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 13%[1] of capacity among leading global electrode manufacturers
- Diversified client base with a global footprint

Best-in-Class Operations

- High quality; around 46% 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 along with lower exports from China post Covid-19, may lead to increased production in EAF producing countries
- Share of EAF's route in global steel production increased from 25% in 2015 to 28% in 2019
- 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
- Disciplined approach to operational cost controls and prudent capital management
- Consistent dividend policy

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

Notes:
1. Global capacity excludes Chinese producers

Milestones

Graphite India Limited

Over 50 Years of Experience in the Graphite Electrode Industry

Year	Milestone
1962	Predecessor company formed by Bangur family and Great Lakes Carbon Corp (USA)
1967	Durgapur plant started production
1971	Fully integrated plant established in Bangalore
1974	Promoted Carbon Corp Ltd with horizontal transfer of technology to manufacture graphite electrodes in Nasik
1984	Production in IGE Division started
1989	-Backward integration through acquisition of two CPC manufacturing units in Barauni -Amalgamation of IGE & GRP division with Carbon Corporation Ltd
1994	Production in FRP/GRP Division started
1998	Installed a 7.5MW multi-fuel power plant at Nasik
2000	Installed 24MW power capacity in Karnataka
2001	1.5MW hydelpower plant commissioned in Karnataka
2002	Graphite India formed from merger of two leading graphite electrode players in India
2004	Expanded Durgapur plant capacity from 14K MT pa to 34K MT pa, taking group capacity to 78K MT pa
2006	Acquired 18K MT electrode manufacturing facility in Nurnberg, Germany, from Conradty
2009	Powmex Steel, an undertaking of GKW Limited, was merged
2013	Further expanded Durgapur plant capacity from 34K to 54K MT pa taking group capacity to 98K MT pa
2018	Graphite India made investment in General Graphene Corporation

Business Overview

Graphite India Limited

Graphite India

Graphite and Carbon* 98%	Others* 2%

Highlights

- 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 18MW through hydel route. It is used primarily for outside power supply
- 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
- GRP Pipes for water supply, sewage / industrial effluent collection and disposal, cooling towers, industrial process pipelines, seawater pipelines, industrial ducting and gasoline storage

Products

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

Graphite Electrodes

- Impervious Graphite Equipment: Heat Exchangers

Graphite Electrodes

GRP Pipe

- High Speed Steel (HSS)
- Alloy Steel

Steel Melting

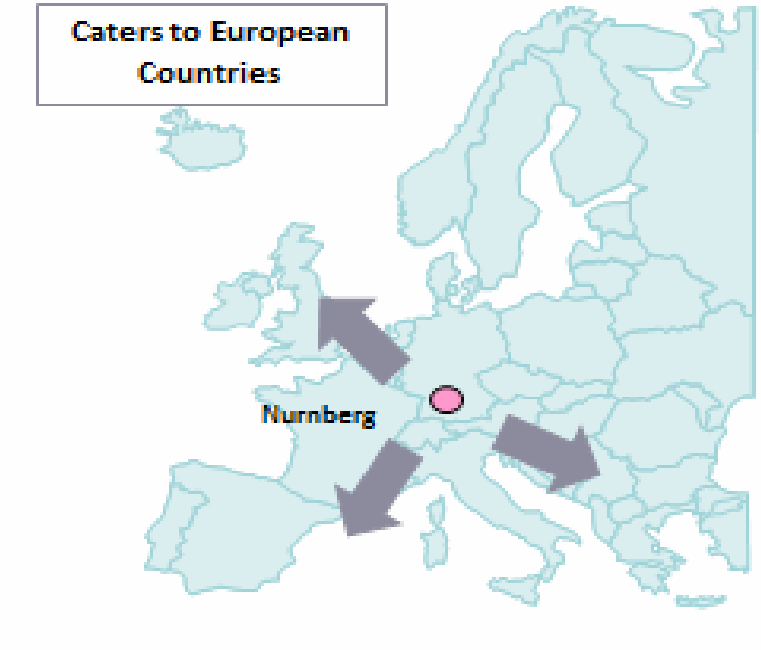
*Percentage refers to FY2019 Sales Contribution

Business Overview

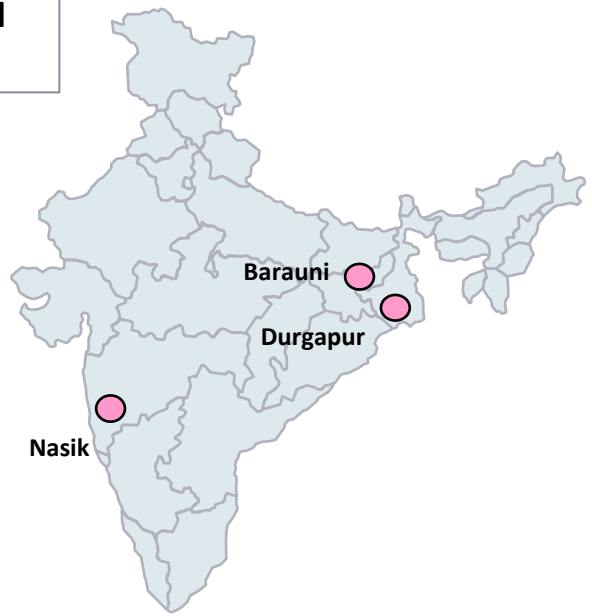
Graphite India Limited

Strategically Located Manufacturing Facilities

Caters to European Countries



Cater to global markets



Graphite India is the largest Indian producer of graphite electrodes and one of the largest globally, by total capacity. Its manufacturing capacity of 98,000 tonnes per annum is spread over three plants at Durgapur and Nashik in India and Nurnberg in Germany

- 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

Graphite India Limited

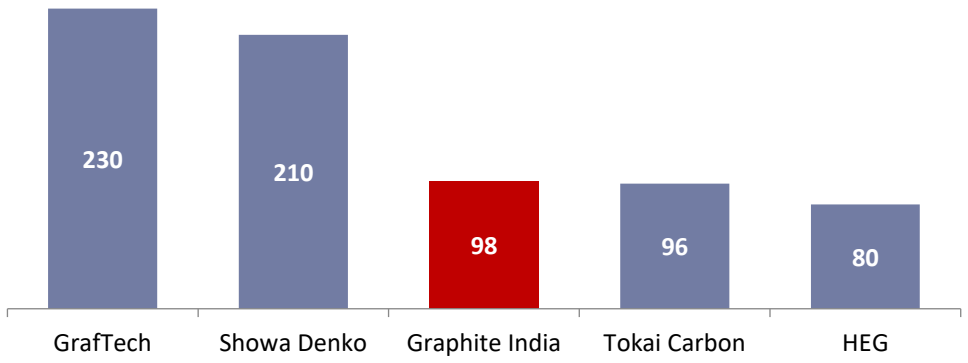
Diversified Premier Global Customer Base

Business Overview

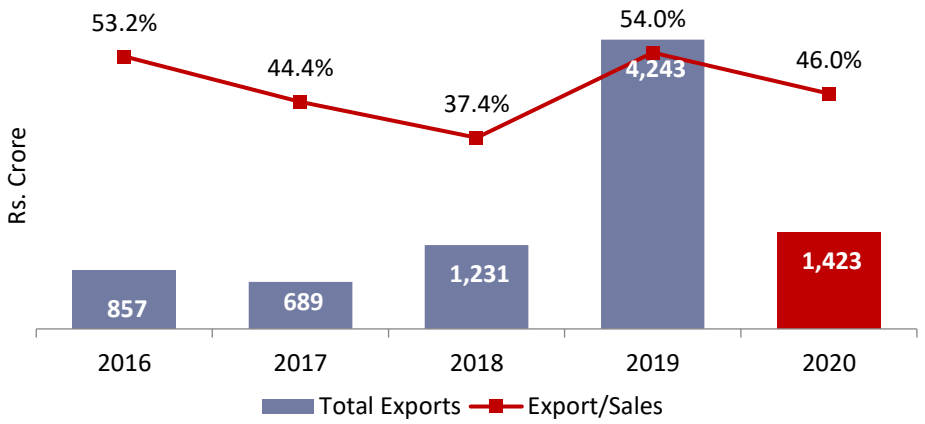
Graphite India Limited

Global Player with Strong Profitability

Graphite Electrode Capacity (in thousand tonnes / Year)[2]



GIL Exports[1]



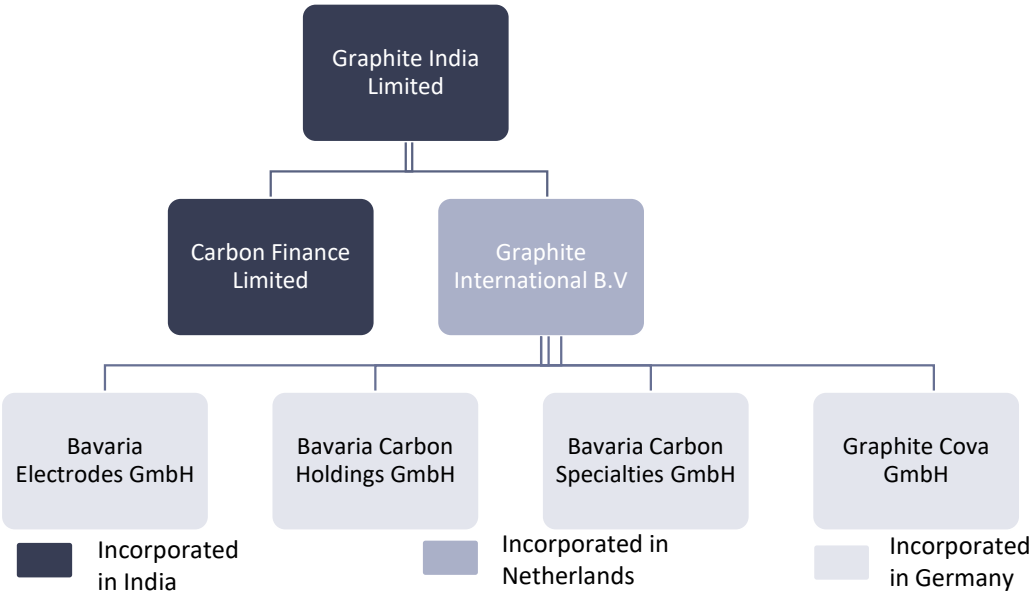
- Graphite India is one of the largest graphite electrode manufacturers globally and the largest in India
- Average capacity utilization was 55% in FY2020 as compared to 86% in FY2019
- Operating margins remain one of the highest amongst the leading electrode manufacturers

Note:
1. Fiscal years; Consolidated Gross Sales
2. Source –Company websites and reports

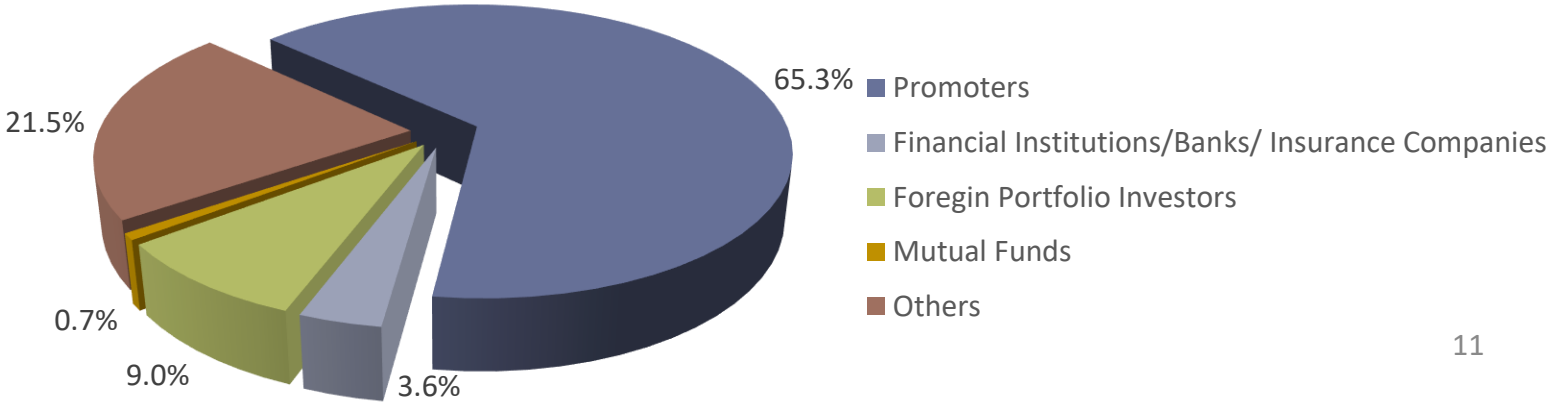
Business Overview

Graphite India Limited

Group Organizational Structure



Shareholding Pattern (Mar - 2020)



Senior Management Team

Key Executives	Background
K.K. Bangur *Chairman*	• Over 31 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
Ashutosh Dixit *Executive Director*	• 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 the management of Company affairs and is actively involved in strategic / investment decisions
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 25 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 more than 34 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 24 years, he is responsible for all accounts and financial aspects of the Company

Consolidated Financial Performance

Graphite India Limited

(Rs. Crore)	Q4 FY2020	Q4 FY2019	y-o-y Growth (%)	Q3 FY2020	q-o-q Growth (%)	Year Ended FY2020	Year Ended FY2019	y-o-y Growth (%)	Comments
Net Sales (Excluding Other Income)	602	1,693	*(64%)*	643	*(6%)*	3,094	7,858	*(61%)*	*Lower volumes and realization has impacted the sales and margins on a year on year basis.*
Other Income	23	70	*(67%)*	43	*(47%)*	174	210	*(17%)*	
Total Income	625	1,763	*(65%)*	686	*(9%)*	3,268	8,068	*(59%)*	
Operating Profit (EBITDA)[1]	(3)	934	*(100%)*	(445)	*(99%)*	95	5,233	*(98%)*	*Volumes improved in Q4 FY20 as compared to Q3 FY20, however sales were impacted due to lower realizations*
Margin (%)[2]	*(0)%*	*55%*		*(69)%*		*3%*	*67%*		
Interest	4	4	-	4	-	18	12	*50%*	
Depreciation	13	23	*(43%)*	12	*8%*	51	62	*(18%)*	
Profit Before Tax (before Exceptional items and Associates)	(20)	907	*(102%)*	(461)	*(96%)*	26	5,159	*(99%)*	*In addition, EBITDA was impacted due to fair value adjustment of inventory amounting Rs. 584 Cr in FY2020*
Share of Profit/(loss) of an Associate	(3)	(2)	*50%*	(2)	*50%*	(7)	(3)	*133%*	
Exceptional Items	-	(55)	*(100%)*	-	-	-	(55)	-	
Profit Before Tax	(23)	850	*(103%)*	(463)	*(95%)*	19	5,101	*(100%)*	
Net Profit	(7)	562	*(101%)*	(353)	*(98%)*	45	3,396	*(99%)*	
Margin (%)	*(1)%*	*33%*		*(55)%*		*1%*	*43%*		
Earnings Per Share (Rs)	(0.37)	28.74	*(101%)*	(18.08)	*(98%)*	2.30	173.80	*(99%)*	

Notes:
1. Operating Profit includes Other Income
2. All margins calculated as a percentage of Net Sales (excluding Other Income)
3. * Amounts are below the rounding off norm adopted by the company

Standalone Financial Performance

Graphite India Limited

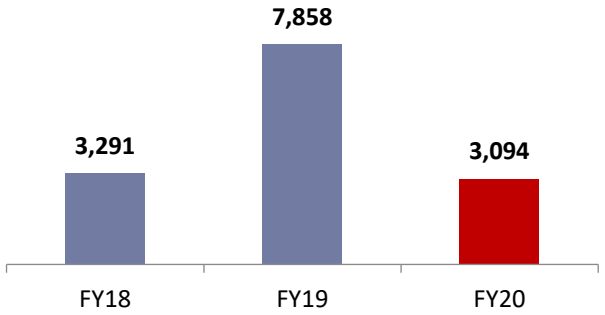
(Rs. Crore)	Q4		y-o-y Growth (%)	Q3	q-o-q Growth (%)	Year Ended		y-o-y Growth (%)	Comments
	FY2020	FY2019		FY2020		FY2020	FY2019		
Net Sales (Excluding Other Income)	548	1,390	*(61%)*	597	*(8%)*	2,875	6,737	*(57%)*	*Lower volumes and realization has impacted the sales and margins as compared to same period last year*
Other Income	18	63	*(71%)*	42	*(57%)*	157	197	*(20%)*	
Total Income	566	1,453	*(61%)*	639	*(11%)*	3,032	6,934	*(56%)*	
Operating Profit (EBITDA)[1]	39	734	*(95%)*	(451)	*(109%)*	62	4,403	*(99%)*	
Margin (%)[2]	*7%*	*53%*		*(76)%*		*2%*	*65%*		
Interest	4	4	-	4	-	17	11	*55%*	*Volumes improved in Q4 FY20 as compared to Q3 FY20, however sales were impacted due to lower realizations*
Depreciation	11	22	*(50%)*	11		44	56	*(21%)*	
Profit Before Tax (before Exceptional items and Associates)	24	708	*(97%)*	(466)	*(105%)*	1	4,336	*(100%)*	
Exceptional Items	-	(55)	-	-	-	-	(55)	-	*In addition, EBITDA was impacted due to fair value adjustment of inventory amounting Rs. 516 Cr in FY2020*
Profit Before Tax	24	653	*(96%)*	(466)	*(105%)*	1	4,281	*(100%)*	
Net Profit	25	427	*(94%)*	(356)	*(107%)*	31	2,806	*(99%)*	
Margin (%)	*5%*	*31%*		*(60)%*		*1%*	*42%*		
Earnings Per Share (Rs)	1.28	21.85	*(94%)*	(18.22)	*(107%)*	1.60	143.61	*(99%)*	

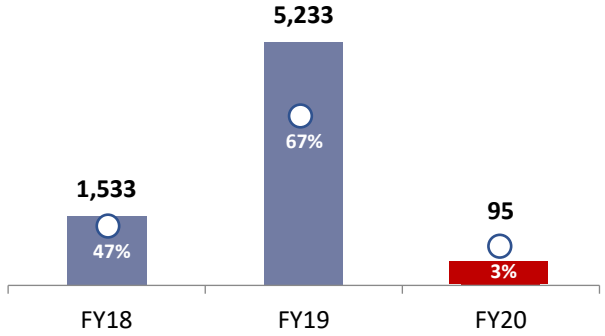
Notes:
1. Operating Profit includes Other Income
2. All margins calculated as a percentage of Net Sales (excluding Other Income)
3. * Amounts are below the rounding off norm adopted by the company

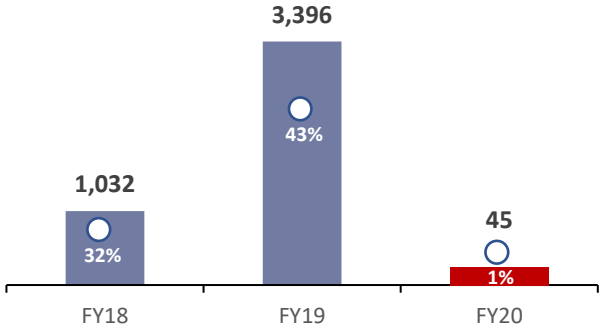
Annual Performance Trends

Graphite India Limited

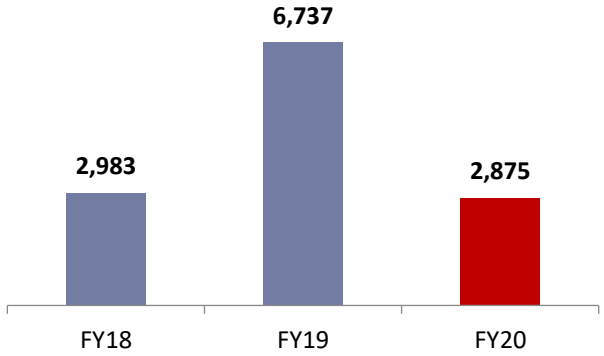
Consolidated

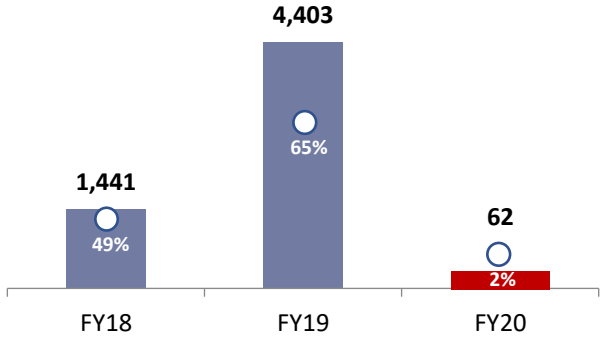


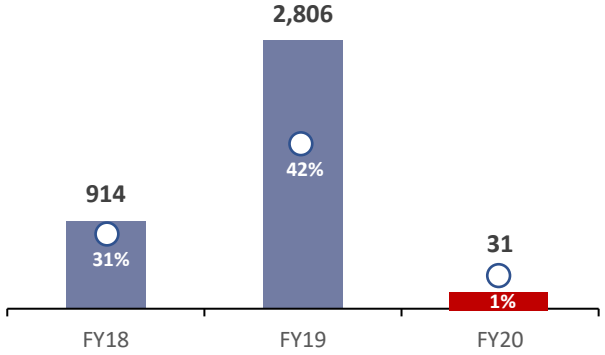




Standalone







Margins%

* All numbers in Crores unless specifically mentioned

Leverage Profile

Graphite India Limited

Significant financial flexibility available for future organic / inorganic growth

Consolidated Leverage Profile

(Rs. Crore)	Mar-20	Dec-19	Sep-19	June-19	Mar -19
Cash & Cash Equivalents[1]	**2,424**	**2,523**	**2,327**	**3,123**	**2,937**
Total Debt	(416)	(519)	(394)	(389)	(359)
Net Cash	**2,008**	**2,004**	**1,934**	**2,734**	**2,577**

Standalone Leverage Profile

(Rs. Crore)	Mar- 20	Dec- 19	Sep- 19	June- 19	Mar -19
Cash & Cash Equivalents[1]	**1,935**	**2,031**	**1,821**	**2,640**	**2,516**
Total Debt	(416)	(519)	(394)	(389)	(359)
Net Cash	**1,519**	**1,512**	**1,427**	**2,251**	**2,156**

Notes:
1. Cash and cash equivalents include investments

Annual Segment Performance

Graphite India Limited

Consolidated Segment Performance

(Rs. Crore)	Full Year		y-o-y
	FY2020	FY2019	Growth (%)
Graphite and Carbon	2,995	7,690	*(61)%*
Others	99	170	*(42)%*
Less: Inter Segment Sales	0	(2)	*(100)%*
Segment Revenue	**3,094**	**7,858**	***(61)%***
Graphite and Carbon	(54)	5,071	*(101)%*
Others	3	9	*(67)%*
Profit before tax and interest	**(51)**	**5,080**	***(101)%***
Finance Cost	(18)	(12)	*50%*
Unallocated Income / (expense)	95	91	*4%*
Profit Before Tax (Before Exceptional Items and Associates)	**26**	**5,159**	***(99)%***
Share of Profit/Loss of an Associate	(7)	(3)	*133%*
Exceptional Items	0	(55)	-
Profit Before Tax	**19**	**5,101**	***(100)%***

* Amounts are below the rounding off norm adopted by the company

Standalone Segment Performance

(Rs. Crore)	Full Year		y-o-y
	FY2020	FY2019	Growth (%)
Graphite and Carbon	2,780	6,575	*(58)%*
Others	95	164	*(42)%*
Less: Inter Segment Sales	0	(2)	*(100)%*
Segment Revenue	**2,875**	**6,737**	***(57)%***
Graphite and Carbon	(77)	4,251	*(102)%*
Others	0	4	*(100)%*
Profit before tax and interest	**(77)**	**4,255**	***(102)%***
Finance Cost	(17)	(11)	*55%*
Unallocated Income /(expense)	95	92	*3%*
Profit Before Tax (Before Exceptional Items)	**1**	**4,336**	***(100)%***
Exceptional Items	0	(55)	-
Profit Before Tax	**1**	**4,281**	***(100)%***

Quarterly Segment Performance

Graphite India Limited

Consolidated Segment Performance

(Rs. Crore)	Q4 FY2020	Q4 FY2019	y-o-y Growth (%)	Q3 FY2020	q-o-q Growth (%)
Graphite and Carbon	577	1,663	*(65)%*	625	*(8)%*
Others	25	32	*(22)%*	18	*39%*
Less: Inter Segment Sales	-	(2)	*(100)%*	-	-
Segment Revenue	**602**	**1,693**	***(64)%***	**643**	***(6)%***
Graphite and Carbon	(30)	905	*(103)%*	(490)	*(94)%*
Others	9	(1)	-	(4)	-
Profit before tax and interest	**(21)**	**904**	***(102)%***	**(494)**	***(96)%***
Finance Cost	(4)	(4)	*0%*	(4)	*0%*
Unallocated Income / (expense)	5	7	*(29)%*	37	*(86)%*
Profit Before Tax (Before Exceptional Items and Associates)	**(20)**	**907**	***(102)%***	**(461)**	***(96)%***
Share of Profit/Loss of an Associate	(3)	(2)	*50%*	(2)	*50%*
Exceptional Items	-	(55)	*(100)%*	-	-
Profit Before Tax	**(23)**	**850**	***(103)%***	**(463)**	***(95)%***

* Amounts are below the rounding off norm adopted by the company

Standalone Segment Performance

(Rs. Crore)	Q4 FY2020	Q4 FY2019	y-o-y Growth (%)	Q3 FY2020	q-o-q Growth (%)
Graphite and Carbon	527	1,359	*(61)%*	579	*(9)%*
Others	21	33	*(36)%*	18	*17%*
Less: Inter Segment Sales	-	(2)	*(100)%*	-	-
Segment Revenue	**548**	**1,390**	***(61)%***	**597**	***(8)%***
Graphite and Carbon	22	704	*(97)%*	(495)	*(104)%*
Others	1	0	-	(4)	*(125)%*
Profit before tax and interest	**23**	**704**	***(97)%***	**(499)**	***(105)%***
Finance Cost	(4)	(4)	*0%*	(4)	*0%*
Unallocated Income /(expense)	5	8	*(38)%*	37	*(86)%*
Profit Before Tax (Before Exceptional Items)	**24**	**708**	***(97)%***	**(466)**	***(105)%***
Exceptional Items	-	(55)	*(100)%*	-	-
Profit Before Tax	**24**	**653**	***(96)%***	**(466)**	***(105)%***

COVID-19 Impact and Business Response

Graphite India Limited

Covid-19 Industry Impact

- Covid-19 caused an unprecedented health and economic crisis around the globe
- Complete or partial lockdown of countries disrupted global economic activities
- Overall economy slowdown and lower manufacturing activity leading to production cuts and declining capital investments around the globe
- The global and domestic demand for graphite electrode is impacted due to partial closure of steel capacities, lower steel production and destocking of electrode inventory at customer end at a slower pace than anticipated

Business Response

- Closure of factories and offices from 24th March 2020 till mid April
- Allowed work from home to all employees and promoted audio-video conferencing for all internal and external meetings
- The Company started partial operations from mid-April onwards and restarted its factories in the phase manner. The company is engaging the permitted labour/manpower and took adequate safety measures to protect its workforce
- Corporate offices were also opened at the end of May 2020 with permitted employee strength
- The Company has been strictly following government health guidelines and taken various initiatives such as operating at a lower capacity, temperature screening at regular intervals, social distancing, distributing sanitizers and masks

COVID-19 Business Impact and Position

Graphite India Limited

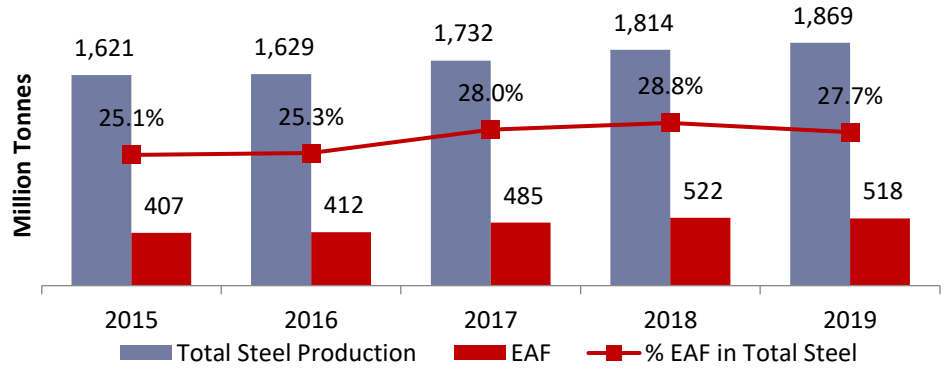
Covid-19 Business Impact	• The immediate impact on the business due to closure of factories and offices coupled with transportation challenges resulted in the muted sales in last week of March 2020 • The company started partial operations from mid-April onwards, however due to prolonged lockdown and restrictions on inter-state movement resulted in lower than budgeted Sales in the month of April and May, which in turn may adversely impact profitability • The demand for graphite electrode is expected to remain subdued in the near term due to partial closure of steel capacities, lower steel production and destocking of electrode inventory at customer end at a lower-pace than anticipated • Lower exports of steel from China to the rest of the world, especially to the regions having higher EAF capacities, will lead to an increase in domestic steel production and may result in higher demand for electrodes • In the medium term, it is expected that increased government spending on Indian infrastructure development and revival of key sectors such as construction, mining, capital goods and automobile will lead to increased demand for steel in India • Potential change in international market dynamics may be beneficial for the company in due course
Position	• The Company has a strong balance sheet with net cash position of Rs. 2,008 Crores at the end of March 2020 • Closely monitoring the impact of Covid-19 on the business and therefore operating at a lower capacity and will scale up its operation after carefully assessing the course of pandemic in the near term

Industry Dynamics

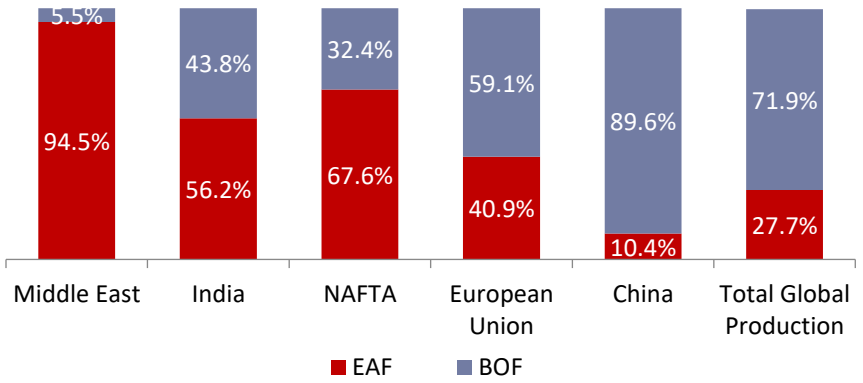
Graphite India Limited

Global Steel and Graphite Electrode Industry

Global Steel Production



Process Wise Steel Production 2019



- 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 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
- Lower exports of steel from China to the rest of the world, especially to the regions having higher EAF capacities, will lead to an increase in domestic steel production and may result in higher demand for electrodes

Source: World Steel Association

Steel Industry Outlook and Dynamics

Graphite India Limited

- World crude steel production was 443 Mt in Q1 CY2020, a decline of 1.4% as compared to Q1 CY2019
- The EU produced 38.3 Mt of crude steel in Q1 CY2020, a decline of 10% compared to Q1 CY2019. EU steel demand continues to be impacted due to decline in manufacturing activities where auto sector continues to remain worst hit
- Asia produced 315 Mt of crude steel in Q1 CY2020, a marginal decline of 0.3% compared to Q1 CY2019. China crude steel production for Q1 CY2020 was 234 Mt, representing a growth of 1.2% compared to Q1 CY2019
- India's crude steel production for Q1 CY2020 was 27.5 Mt, a decline of 5.3% from Q1 CY2019. India continues to remain the world's second largest steel producing country whereas Japan produced 24.3 Mt in Q1 CY2020 , down 2.4% compared to Q1 CY2019
- Crude steel production in North America was 29.5 Mt in Q1 CY2020, down 4.0% compared to Q1 CY2019
- The Middle East produced 10.2 Mt of crude steel in Q1 CY2020, an increase of 7.7% compared to Q1 CY2019

Steel Industry Outlook

- Global steel industry is impacted due to complete or partial lockdown of countries, closure of manufacturing facilities and lower demand from key sectors such as Automobile, Construction and Infrastructure. However, with easing of lockdown restrictions, the economic activity has started to rebound but is expected to be slow and its trajectory will depend on the severity and tenure of the Covid-19 in the near term
- As per WSA, global steel demand is expected to decline by 6.4% to 1,654 Mt in 2020 due to the ongoing Covid-19 pandemic. In 2021, the global steel demand is expected to increase by 3.8% to 1,717 Mt. Chinese steel demand is expected to grow by 1.0% in 2020 whereas steel demand in developing economies excluding China is expected to decline by 11.6% in 2020 and recover by 9.2% in 2021

Graphite Electrode Industry

Graphite India Limited

- Since 2016 China has closed about 300 million tonnes of outdated and highly polluting steel production capacity but around 908 million tonnes still remain. Such closures are being replaced by environment friendly electric arc furnaces (EAF's) which is supported by increased availability of scrap
- China's EAF steel output is expected to increase to 87 million tonnes in 2020, 12% of its steel output from 53 million tonne which is 6% of the steel output in 2017. Further, China is expected to have graphite electrode capacity totaling 1.5 million tonnes by 2020, up 66.7% from 0.9 million tonnes in 2017 to support newly installed EAF capacities
- Electrode capacities have been ramped up in China. However, EAF capacities have not kept pace due to higher scrap cost and electricity cost thus creating an imbalance. Excess electrode volumes are being exported to other countries at cheaper rates
- Global slowdown in steel demand coupled with increased steel exports from China is expected to impact demand of electrodes
- India removed antidumping duties on graphite electrodes imported from China in September 2018 which has resulted in increased imports. Steel prices also continue to remain under pressure and combination of these factors have resulted in significant correction of electrode prices
- Due to COVID-19 crisis, destocking of electrode inventory at customer end is delayed and is at a slower-pace than anticipated
- Needle coke prices have softened however not yet fully realigned with the electrode prices

Industry Dynamics

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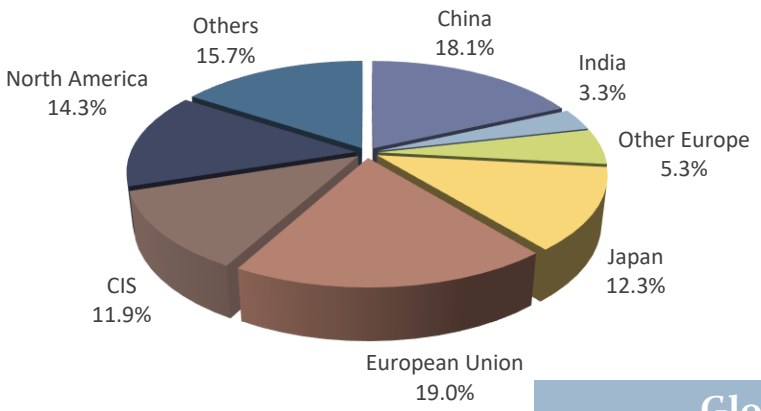
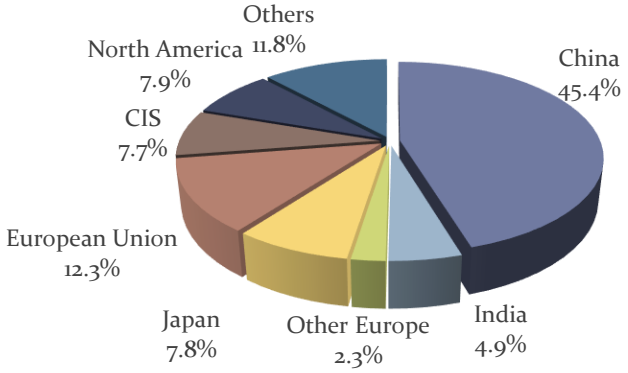
Over the years, China remains the biggest crude steel producer with a 53.3% share in 2019 vs 45.4% in 2010 & 18.1% in 2001

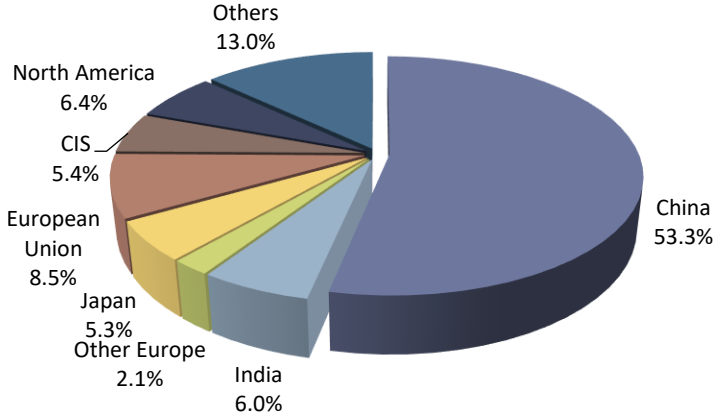
Global Steel Production 2001



Global Steel Production 2010



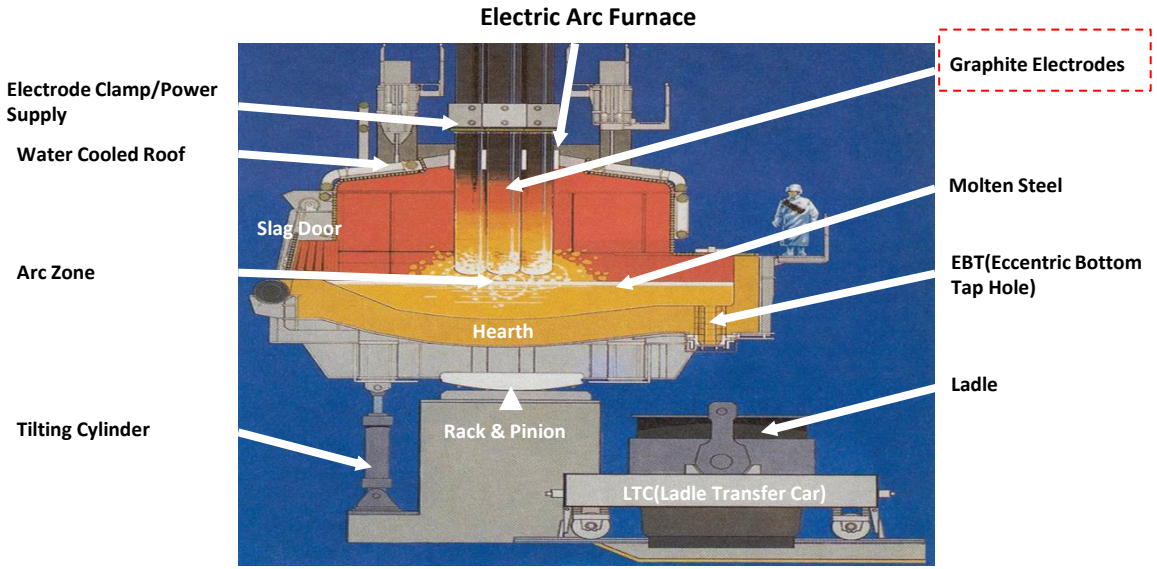
Global Steel Production 2019



Overcapacities in China earlier 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

EAF Steel Production Process



- 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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