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Your success is our success

STEEL'S GATEKEEPERS

GRAPHITE ELECTRODE PRODUCERS FACING DARWIN'S TEST

Metals & Mining

Steel's gatekeepers – Electrode producers facing Darwin's test

We initiate coverage on the Indian graphite electrode sector with BUY on both GRIL and HEG, assigning target price of Rs700 to each. The graphite electrode sector is in a Darwinian reset—a deep trough forcing consolidation, exposing weak cost positions, and realigning supply. As the steel cycle stabilizes, survivors enter the next upcycle with cleaner balance sheets, firmer procurement discipline, and structurally higher earnings resilience. This is a rare moment, of cyclical weakness creating a long-duration opportunity. GRIL and HEG are well-positioned to lead the next global cycle—one that is forming through China's anti-involution shift, Europe's CBAM rollout, and a globally coordinated policy resolve aimed at lifting the steel industry out of a prolonged downturn through rising protectionism.

Our central view

The graphite electrode (GE) industry is navigating one of its deepest cyclical troughs in a decade—prices under pressure, underutilized capacity, and profitability compressed across regions. After five years of falling GE prices, inconsistent procurement economics, and intermittent shutdowns, the industry is reshaping itself—not through expansion, but via subtraction. High-cost capacity is retreating. Balance sheets are being classified into two types: those that can sustain during cyclical troughs and those that cannot. The competitive field is becoming narrower, not broader. The winners of the next cycle will not be the largest producers, but the most resilient—those with cost integrity, qualification depth, and the balance sheet strength to endure a long trough. The current setup resembles the classic conditions at the bottom of commodity cycles—when the market looks its darkest, but fundamentals quietly begin to turn.

Demand is not the debate; decarb direction is irreversible

Demand is not the debate, in our view. EAF steelmaking continues its slow and uneven, albeit ultimately irreversible, rise. Scrap availability, policy backing, and decarb economics all push in the same direction. The long-term demand line slopes upward, with 110mt (~15% of current capacity) of new EAF capacity under construction, implying ~150kt of incremental GE demand against the existing ~650kt, ex-China market. EAF growth is driven by forces outside the electrode industry—carbon policy, scrap economics, regulatory pressure—and graphite electrode consumption follows mechanically. Timing can be debated, direction cannot. Which is why the real question for this sector is no longer demand, but the shape of the industry that will meet it—how much capacity remains, who can operate through a prolonged trough, and whose balance sheets will still be functional when recovery arrives.

Graphite India and HEG – Likely structural winners

Within this narrowing industry, Graphite India (GRIL IN) and HEG (HEG IN) represent two distinct forms of endurance. GRIL enters a trough with the sector's cleanest balance sheet, conservative capital philosophy, and a cost structure built for stability rather than peak-cycle capture. It may not offer the highest beta, but it is the least disrupted—able to absorb prolonged weakness without compromising strategic optionality. HEG, by contrast, carries more operating leverage, reflecting a business model historically geared to cycle amplitude. Yet, this structure gives it disproportionate upside if the supply-tightening thesis plays out and the cycle turns. The contrast is instructive—GRIL survives because it can wait; HEG survives because it moves fastest when the upcycle arrives. Both are positioned to benefit, but for different reasons—and in a thinning industry, both models have value. We initiate coverage on the Indian graphite electrode sector with BUY on both GRIL and HEG, assigning target price of Rs700 to both.

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Rating, Target Price and Valuation

	Rating	CMP (Rs)	TP (Rs)	Upside (%)	EV/EBITDA (x) FY26	EV/EBITDA (x) FY27	P/E (x) FY26	P/E (x) FY27	P/B (x) FY26	P/B (x) FY27
Graphite India	BUY	541	700	29	41.0	17.7	26.8	18.6	1.7	1.6
HEG	BUY	533	700	31	23.4	18.0	23.7	24.4	2.2	2.0

Source: Company, Emkay Research

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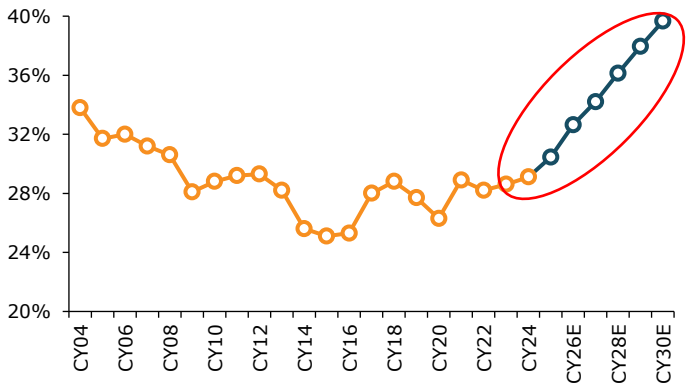

Source: WSA, Emkay Research

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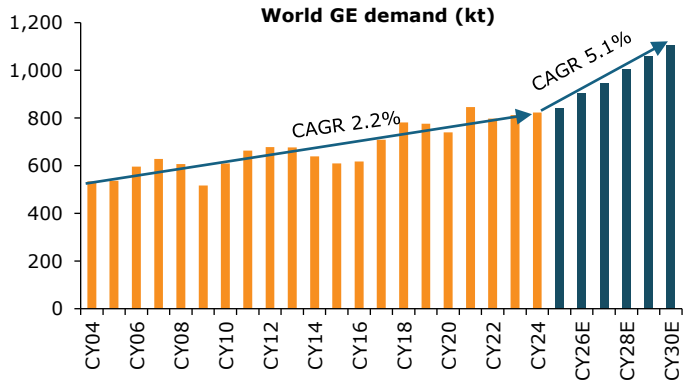

Source: WSA, Emkay Research

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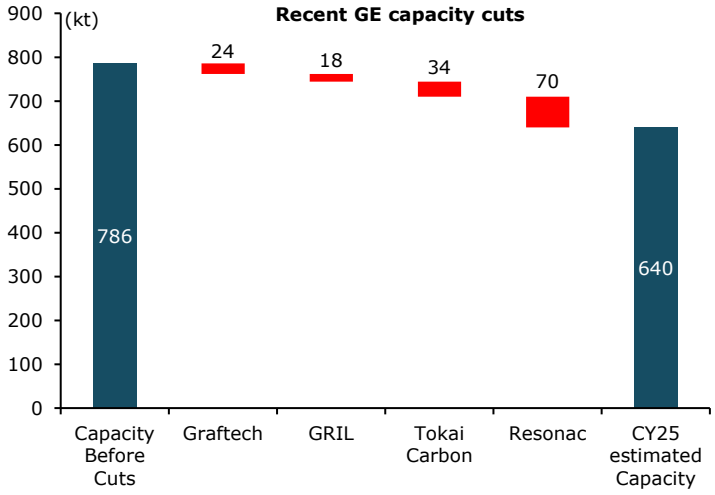
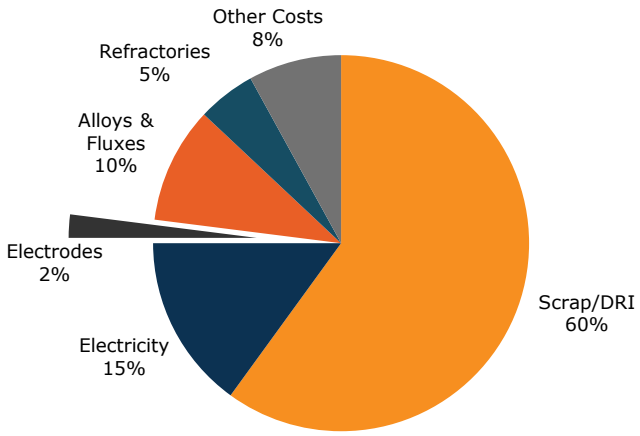


Source: Emkay Research

Exhibit 4: Electrodes remain a small cost component in EAF steel making



Source: Company, Industry, Emkay Research

Exhibit 5: The GE market is moderately concentrated with a few names, in terms of capacity

Company name	Current Capacity (kt)
GrafTech International	178
HEG	100
Graphite India	80
Tokai Carbon	72
Resonac Holdings (ex-Showa Denko)	140
Others	70
Total	**640**
Planned additions by Indian producers	40
Expected capacity in the next 3 years (Ex-China)	**680**

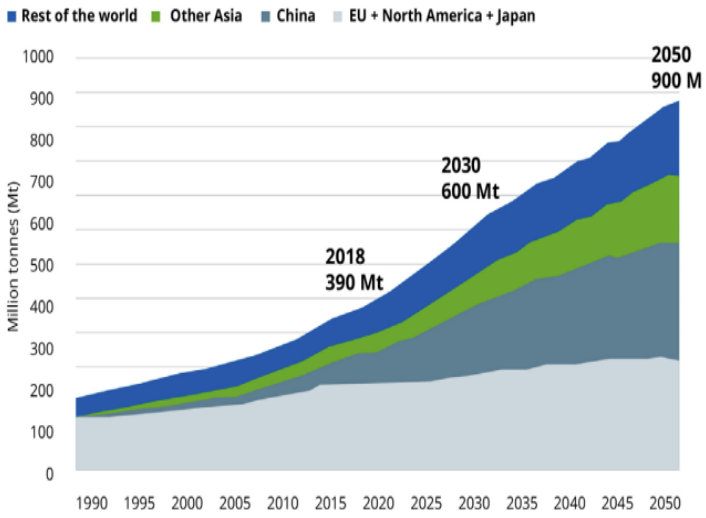
Source: Company, Emkay Research

Exhibit 6: Needle coke capacity ex-China is estimated to be ~750kt

Company name	Estimated capacity (kt)
Phillips 66	370
GrafTech (Seadrift)	140
C-Chem	110
Indian Oil Corporation	56
Others	74
Total Needle Coke capacity (ex-China)	**750**

Source: GrafTech, Industry, Emkay Research

Exhibit 7: End-of-life scrap availability



Source: World Steel Association, Emkay Research

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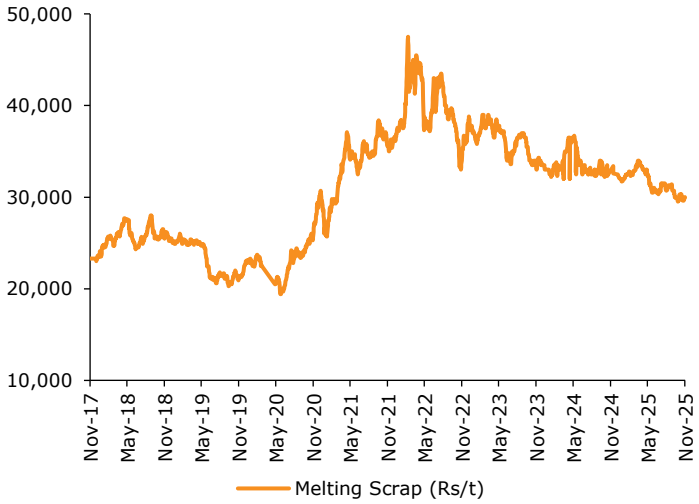

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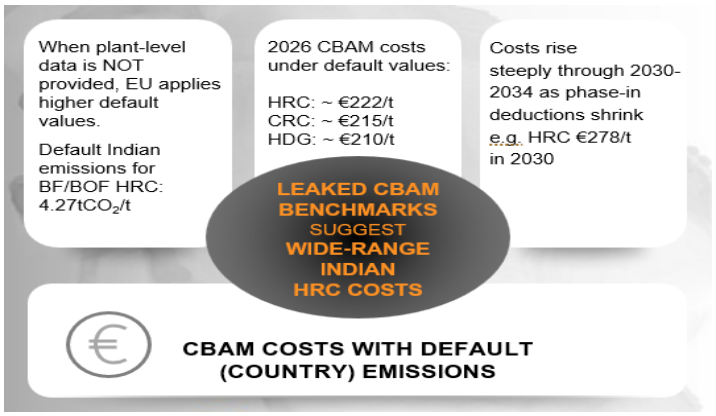

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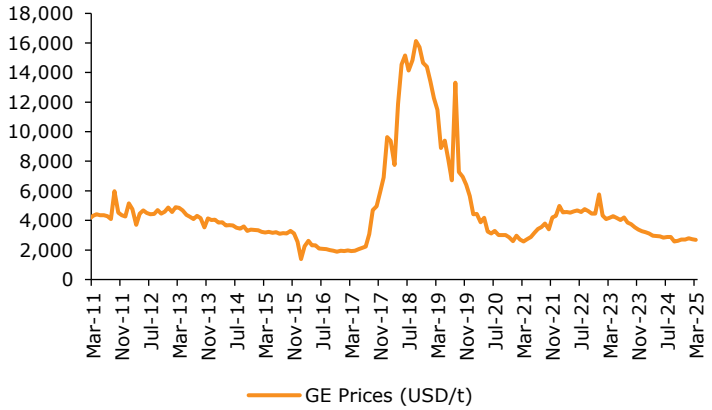

Source: Bloomberg, Emkay Research

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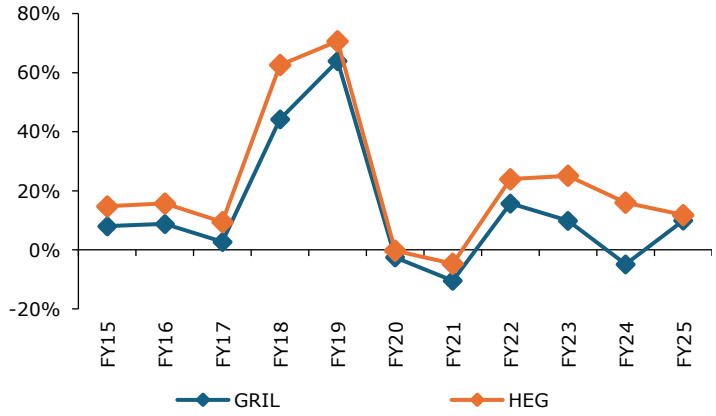
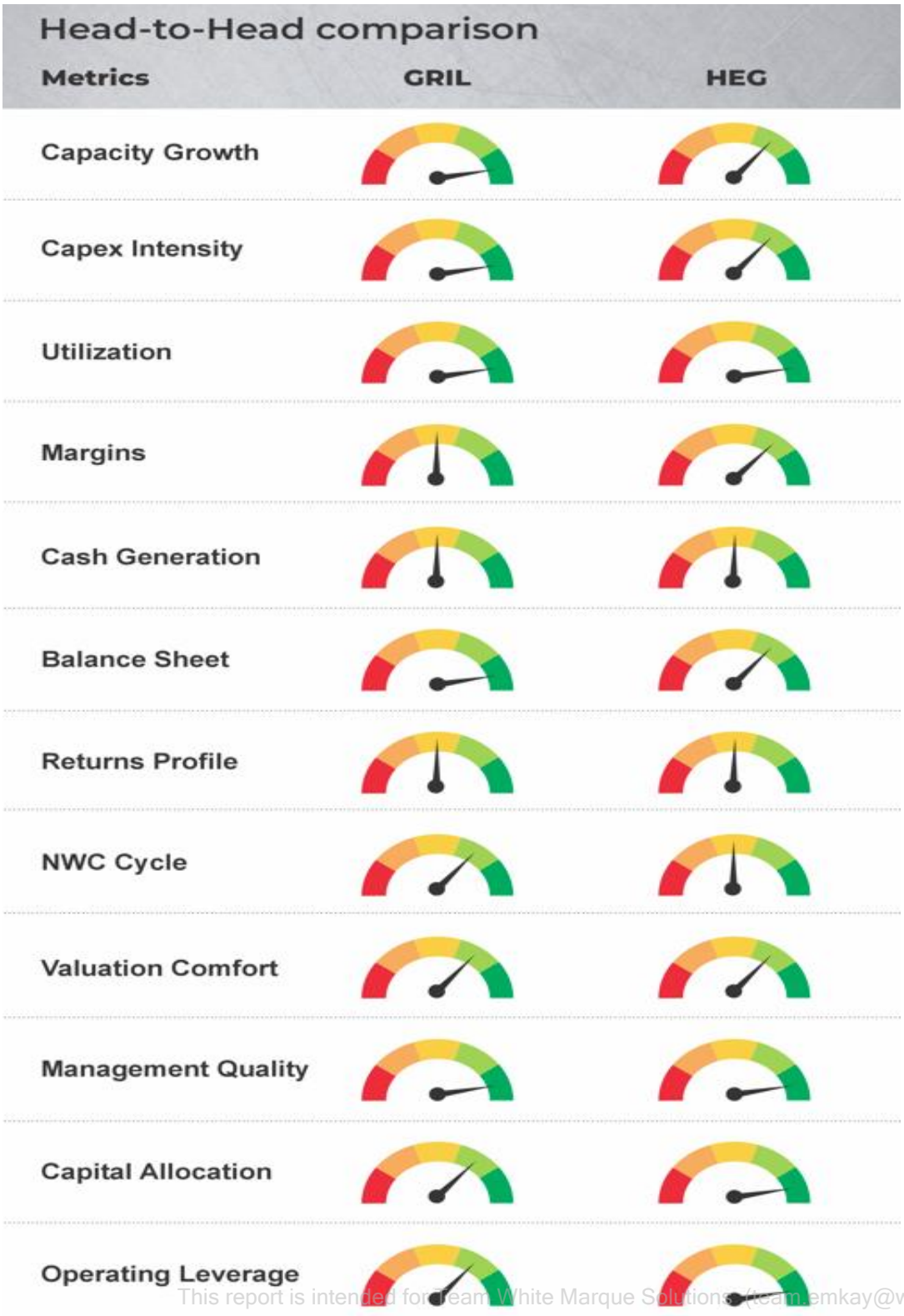


Source: Company, Emkay Research

Head-to-Head comparative analysis indicates varying degrees of competitive edge

We compare GRIL and HEG across key qualitative and quantitative metrics within the Indian graphite electrode market. Both are globally competitive, but GRIL outperforms on capacity growth, balance sheet strength, and capital allocation. Its indicators lean toward the stronger end, reflecting a more dynamic and efficient profile, while HEG remains more balanced across metrics, demonstrating a steady and resilient performance trajectory.

Exhibit 13: Head-to-Head comparison



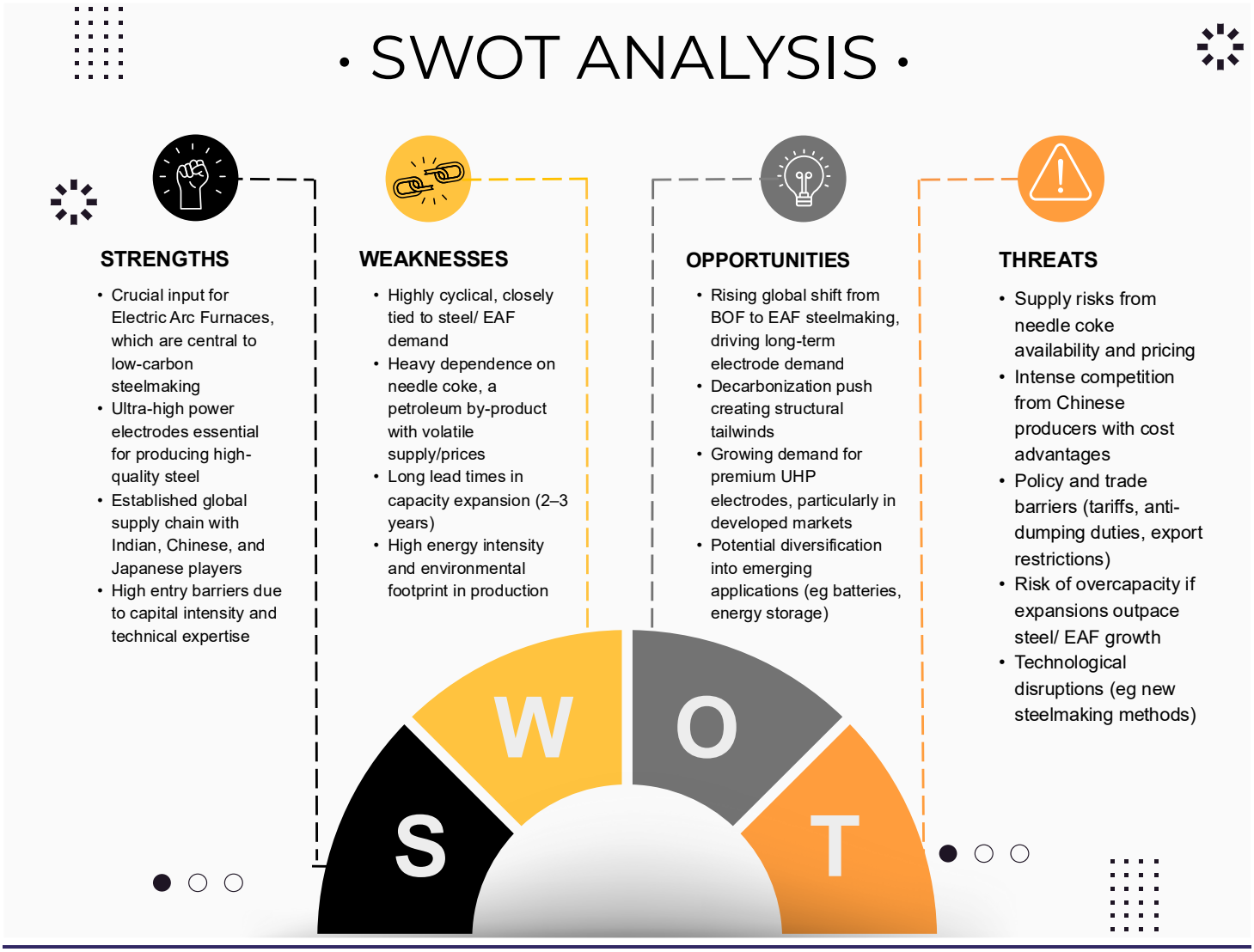
Source: Emkay Research

SWOT analysis – Structurally supported, cyclically sensitive

EAF-led demand is structurally supportive, but cyclicality makes scale, integration, and UHP capability crucial for sustainable returns

We view the graphite electrode market as structurally supported by the global shift toward EAF steelmaking and the broader decarbonization agenda, with long-term demand underpinned by rising penetration of ultra-high power (UHP) electrodes. However, the industry remains highly cyclical and exposed to needle coke supply volatility, which has historically driven sharp swings in margins. Competitive intensity from Chinese producers and trade-policy risks add further complexity, while overcapacity remains a potential risk if expansions run ahead of EAF growth. For investors, this suggests a medium-term backdrop of improving volume visibility albeit volatile pricing and earnings, thus favoring well-integrated players with secure raw-material linkages, technological edge in UHP electrodes, and diversified customer bases.

Exhibit 14: Graphite electrode market – SWOT analysis



Source: Emkay Research

Industry Overview

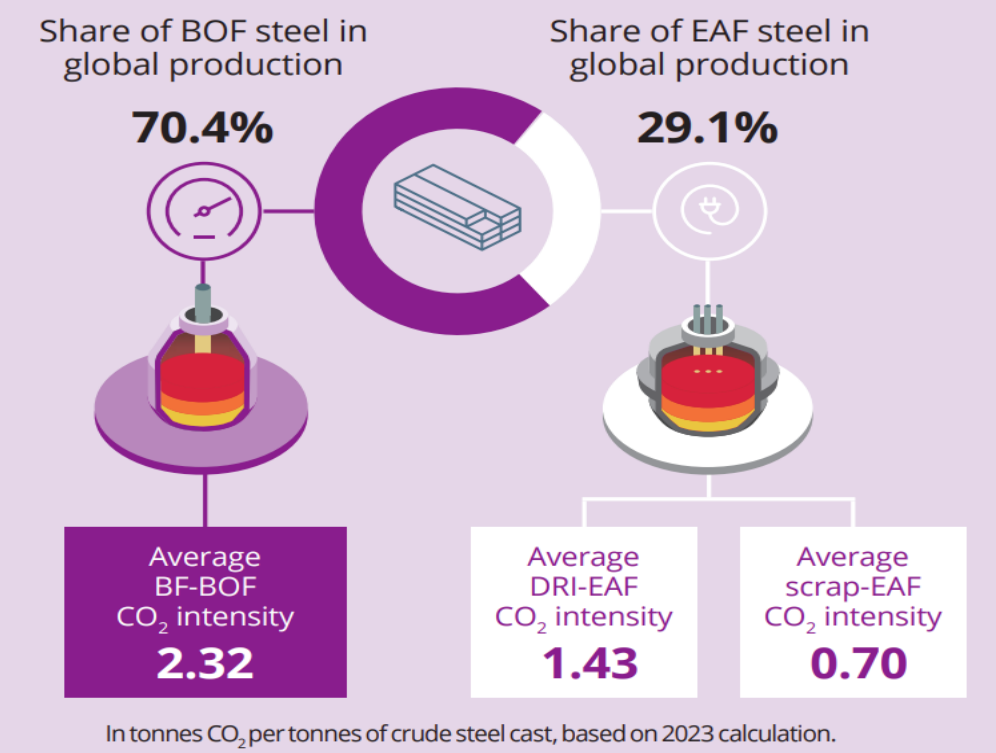
Tighter GE market balances meet EAF capacity additions

Ex-China EAF steel capacity is expected to see 3-4% CAGR through to CY30, underpinning steady demand growth for UHP GEs

Graphite Electrodes are essential consumables for the steel industry, primarily used in EAF–based steel mills to conduct current and melt scrap iron and steel. The key manufacturers are located across the USA, Europe, the Middle East, India, China, Southeast Asia, and Japan.

Demand for GE is closely linked to global EAF steel production, which is one of the three main steelmaking methods, alongside the Basic Oxygen Furnace (BOF) and Induction Furnaces (IF). According to the World Steel Association (WSA), global (ex-China) EAF steel production CAGR stood at 2–3% between CY15 and CY23, compared with a 1% CAGR in overall global steel production during the same period. Consequently, the share of EAF in global (ex-China) steel production rose to 50% in CY23 from 44% in CY15, with growth evident across nearly all regions.

Exhibit 15: Crude steel production – EAF is less carbon intensive



Source: World Steel Association, Emkay Research

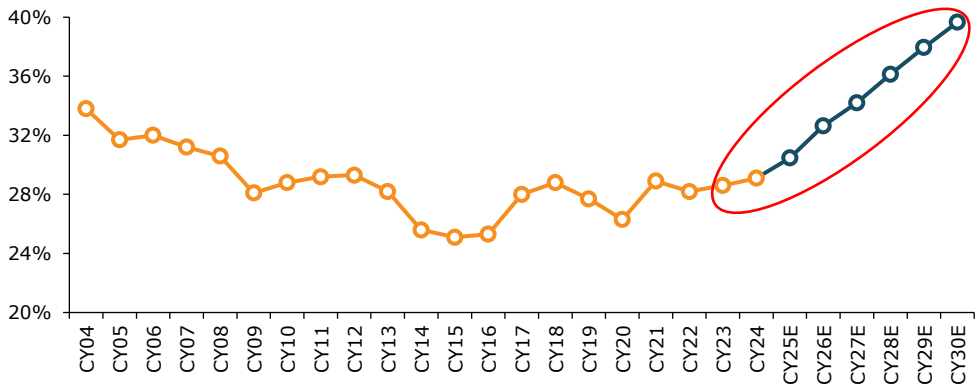
The shift toward EAF steelmaking is being driven by its efficiency and environmental advantages. The Steel Manufacturers Association (SMA) highlights that EAF steelmaking emits 75% less carbon dioxide compared to the BOF route, making it a more sustainable choice. Moreover, the process supports recycling by converting scrap-based raw materials into new steel, which is 100% and infinitely recyclable. EAF producers also enjoy flexibility in sourcing iron units, as they can utilize scrap or alternative feedstocks such as Direct Reduced Iron (DRI) and Hot Briquetted Iron (HBI). In China, where EAF accounted for only 10.1% of steelmaking till CY23, the share was targeted to rise to 15% by CY25 (which we see lagging so far), with further growth projected thereafter, per S&P Global.

With these structural advantages, EAF-based steel production is expected to expand at a faster pace than BOF in coming years. Industry announcements on capacity additions suggest that global (excluding China) EAF steel capacity is likely to see around 3-4% CAGR through to CY30. Such growth will directly translate into increased demand for UHP graphite electrodes, from both new EAF capacity as well as incremental demand at existing plants, to meet rising steel consumption.

The structural upside: EAF penetration rising toward 40%

Decarbonization legislation, carbon-border levies, and IRA-linked incentives in the US are reshaping steelmaking economics, shifting investment decisively toward EAFs. Announced projects imply global EAF share could rise to 40% by CY30, requiring both higher volumes and significantly more UHP electrodes, as modern furnaces operate at 900–1,200kWh/tonne with larger bore diameters. As EAF heat sizes rise from 120–150t historically to 200–300t, electrode consumption per furnace increases disproportionately due to higher current density. If the EAF pipeline is completed on time, global UHP electrode demand alone could expand from the current ~650kt to 800-850kt by CY30, creating a structurally tight supply balance in the premium segment.

Exhibit 16: World's EAF share is expected to accelerate to 40% by the end of this decade



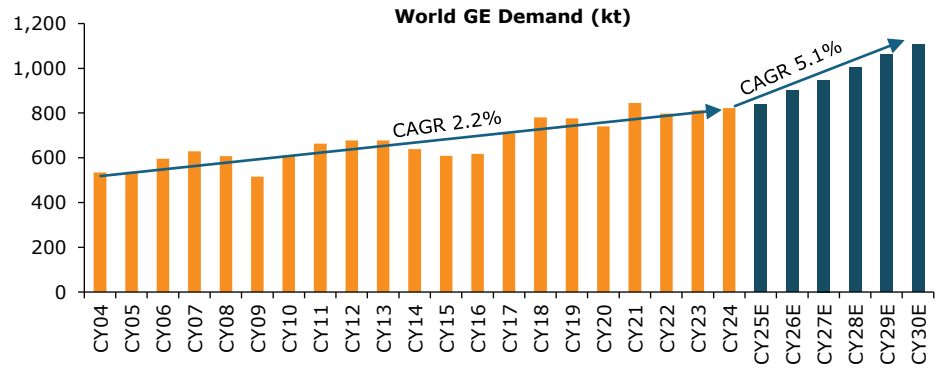
Source: WSA, Emkay Research

EAF expansion drives a 4-5% structural CAGR

Global graphite electrode demand has historically tracked EAF steel production, which today accounts for ~30% of global steel output (550mt of EAF steel). Electrodes are consumed at 1.5–1.8kg/t of liquid steel, implying a current global annual demand pool of ~850–1,000kt of electrodes across grades. Over the last decade, growth moderated due to the CY18–20 downturn, but demand rebounded during CY21–23, as steel utilization normalized. Looking forward, most industry forecasts converge on a 4-5% CAGR for electrode demand to CY30, with UHP grades expected to grow even faster at 5–6%, supported by commissioning of the ~110mt of new EAF capacity globally by CY30.

The long-term structural support for the industry stems from the ongoing transition toward lower-carbon steelmaking. Traditional BF–BOF steel emits approximately 2.1–2.3tCO_2 per tonne of steel, whereas scrap-based EAF production emits only 0.4–0.6tCO_2 per tonne. Even a modest increase of 5-7% in EAF share globally would translate into an additional 35-50mt of EAF steel output, which in turn implies incremental GE demand of 50-75ktpa. In an industry where effective spare capacity is often limited to 100-150kt, this incremental demand is highly material and underpins a long-term upward demand curve despite short-term cyclicality.

Exhibit 17: Global GE demand is projected to grow at a significantly faster pace in the next few years vs the past



Source: WSA, Emkay Research

Global (ex-China) GE market: A moderately concentrated industry

The global (ex-China) GE industry remains moderately concentrated, with several structural constraints keeping effective supply well below the installed capacity

The global GE industry remains moderately concentrated, with several structural constraints keeping effective supply well below the installed capacity. Although global nameplate capacity is ~1.0mt, actual UHP-grade deliverable volumes are meaningfully lower because true premium electrodes require high-quality needle coke, tight baking/graphitization controls, and multi-year OEM/customer qualifications. Such requirements naturally limit the competitive universe.

As a result, the top 6-8 global producers, including GrafTech (178kt), Tokai Carbon (96kt), HEG (100kt), Graphite India (98kt), Fangda (200kt, mostly non-UHP), and a small set of Japanese/Chinese specialists together account for over 70% of UHP-capable output.

While China has >500kt of broad GE capacity, only a limited portion consistently meets UHP specifications, keeping genuine high-end supply structurally inelastic. The market thus remains concentrated enough to support pricing discipline yet not monopolistic, particularly as new entrants are rare, given the USD250-300mn capex needed for even a 20-25kt UHP line and the drawn-out 24-36-month approval cycle. This combination of technical barriers, capital intensity, and qualification lags underpins a stable, moderately concentrated industry structure, with premium producers retaining strategic advantage.

Exhibit 18: The GE market is moderately concentrated with a few names, in terms of capacity

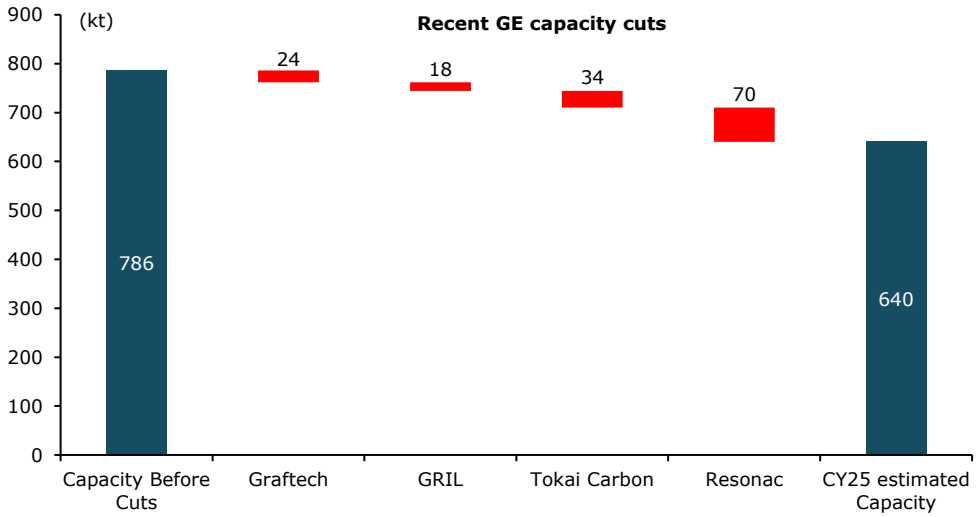
Company name	Current capacity (kt)
GrafTech International	178
HEG	100
Graphite India	80
Tokai Carbon	72
Resonac Holdings (ex-Showa Denko)	140
Others	70
Total	**640**
Planned additions by Indian producers	40
Expected capacity in the next 3 years (Ex-China)	**680**

Source: Company, Industry, Emkay Research

The recent rationalization of ~150kt of global graphite electrode capacity marks a meaningful inflection for industry fundamentals. With structurally weaker and higher-cost capacities shutting down, supply discipline has improved, tightening the demand–supply balance just as EAF steelmaking stabilizes globally. This capacity reset is particularly constructive for cost-advantaged incumbents, such as Graphite India and HEG, which operate with superior balance sheets, scalable UHP platforms, and the ability to run at higher utilizations.

As the cycle turns, the reduced supply overhang should translate into faster utilization recovery, improved pricing power, and operating leverage for Indian producers, positioning them as disproportionate beneficiaries of the next upcycle.

Exhibit 19: Around 150kt of GE capacity has been cut recently



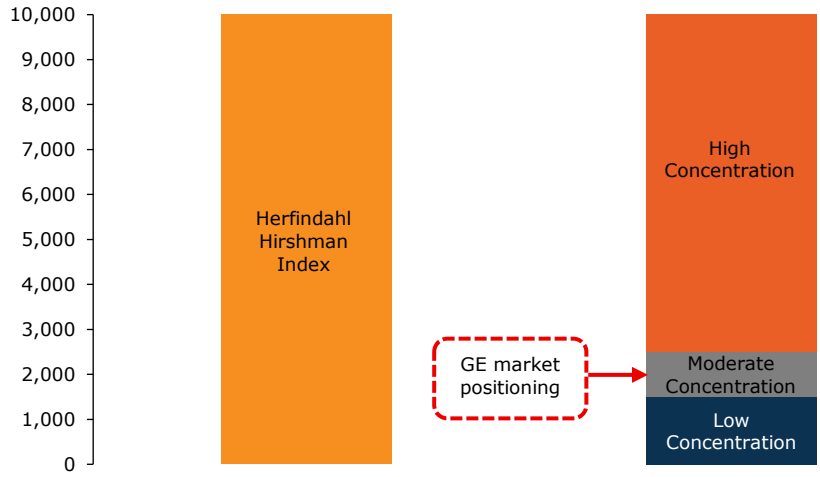
Source: Emkay Research

Exhibit 20: The GE market is moderately concentrated with a few names, in terms of market share

Company name	Market share
GrafTech International	26.8%
HEG	15.1%
Graphite India	12.0%
Tokai Carbon	14.5%
Resonac Holdings (ex-Showa Denko)	31.6%
Total	**100.0%**
HHI Index Score (Moderately concentrated market)	**2,300**

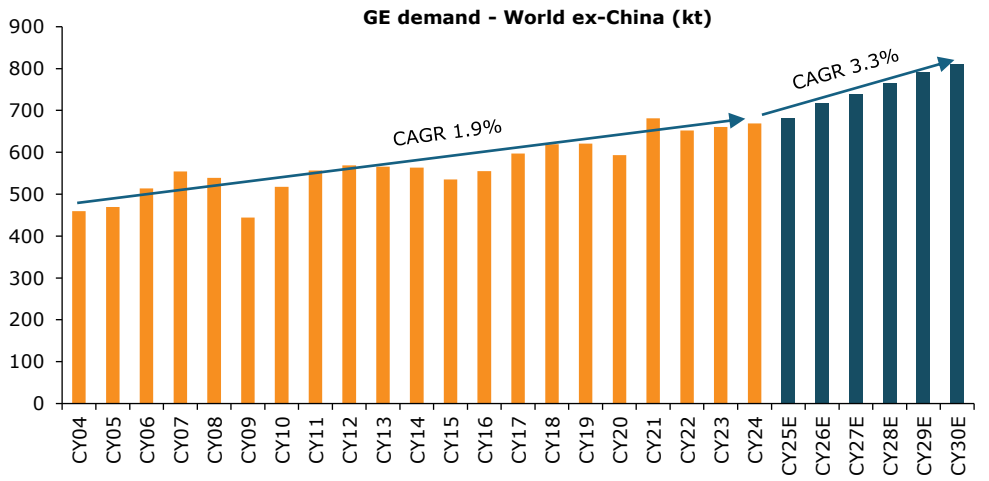
Source: Company, Emkay Research

Exhibit 21: GE market concentration is moderate, with an HHI of 2,300



Source: Emkay Research

Exhibit 22: Several policy initiatives are set to propel substantial GE demand growth in markets outside China



Source: WSA, Emkay Research

A small cost component in EAF steelmaking

GEs represent ~2% of the total cost structure in EAF steelmaking

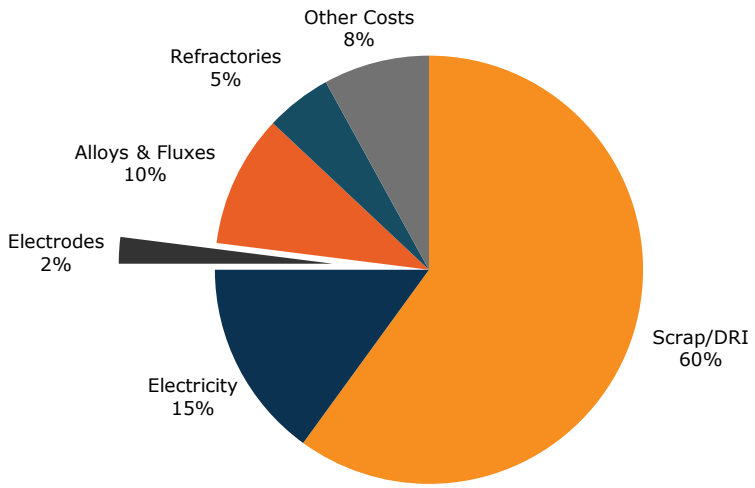
GEs represent a minor share of the total cost structure in EAF steelmaking, which is why even sharp swings in electrode prices have a negligible impact on overall EAF economics while materially enhancing the margin potential for electrode manufacturers. For a typical EAF producing long products or flat steel, total costs range at USD500-600/t of liquid steel, driven primarily by scrap/DRI (50–60% of cost), electricity and power (15–20%), electrodes (2–3%), refractories (4–5%), and other consumables and labour.

Even at elevated price levels, when UHP 600–700mm electrodes rise from USD4,000–5,000/tonne in soft cycles to USD10,000–12,000/tonne in tight cycles, the electrode cost per tonne of steel typically increases only from USD6–8/tonne to USD12–18/tonne (using 1.6-1.8kg of electrodes per tonne of steel). This represents a change of only ~2% of total EAF cost, which is insignificant relative to the much larger volatility in scrap prices (±USD50–100/tonne) or power costs (±USD10–20/tonne).

As electrodes constitute only a small portion of the total melt-shop economics, EAF producers rarely curtail production due to GE price spikes. Instead, they treat electrodes as a pass-through operational input, enabling electrode producers to maintain pricing power and high incremental margins during tight periods, particularly when needle-coke shortages restrict UHP supply.

This asymmetry—characterized by high-cost volatility upstream in needle coke, a low-cost share of electrodes in downstream EAF steelmaking, and relatively inelastic short-term demand—allows electrode manufacturers to expand EBITDA margins materially during industry upcycles, without disrupting steel economics.

Exhibit 23: Electrodes remain a small cost component in EAF steel making



Source: Emkay Research

Needle coke typically accounts for 35% of a GE producer's total cost base

Needle coke exposure and raw-material volatility

Needle coke is the most crucial raw material in graphite electrode production and typically accounts for 35% of a producer's total cost base. It is derived from specific petroleum or coal-tar feedstocks and is heavily constrained by refinery configurations and environmental regulations. Over the past five years, needle coke prices have ranged from USD500/t to over USD2,500/t, driven increasingly by competition from the lithium-ion battery anode industry, which also requires high-purity synthetic graphite. As electrode prices generally lag raw-material movements by one to two quarters, rapid increases in needle coke prices can significantly compress margins for non-integrated producers. This is why backward integration into needle coke or long-term supply contracts provides a meaningful competitive advantage by stabilizing margins and reducing exposure to raw-material shocks.

Needle coke – The real bottleneck

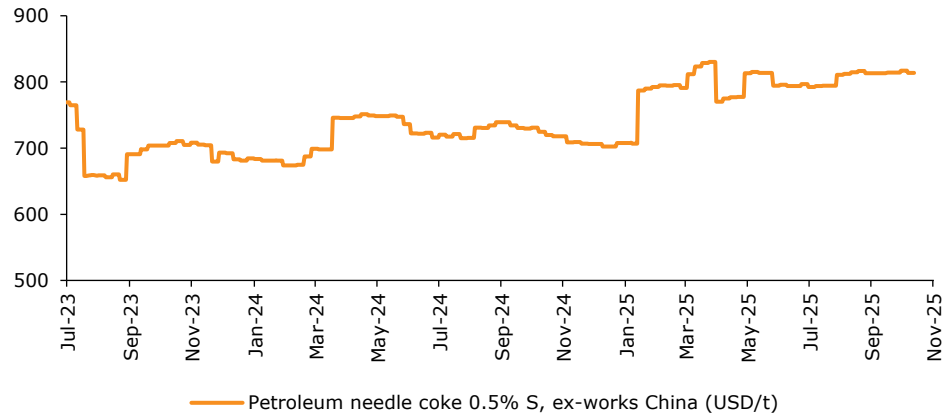
The global needle-coke market has remained structurally tight for more than a decade because supply depends on a small set of specialized delayed-coking and coal-tar units, with global nameplate capacity (ex-China) at 750kt today. Major producers such as Phillips 66 (370kt) and GrafTech's Seadrift (140kt) dominate the consistent high-end segment, while Chinese refiners contribute significant volumes, albeit with variable impurity levels and microstructure. Because building a new needle-coke-suitable coker requires USD200–250mn and 3-4 years of engineering and qualification, global supply remains inherently rigid, and the bottleneck in premium grades persists despite moderate additions to headline capacity.

Exhibit 24: Needle coke capacity ex-China is estimated to be ~750kt

Company name	Estimated capacity (kt)
Phillips 66	370
GrafTech (Seadrift)	140
C-Chem	110
Indian Oil Corporation	56
Others	74
Total Needle Coke Capacity (ex-China)	**750**

Source: GrafTech, Industry, Emkay Research

Exhibit 25: Movements in Chinese needle coke prices can be used as an effective proxy to gauge broader global pricing dynamics



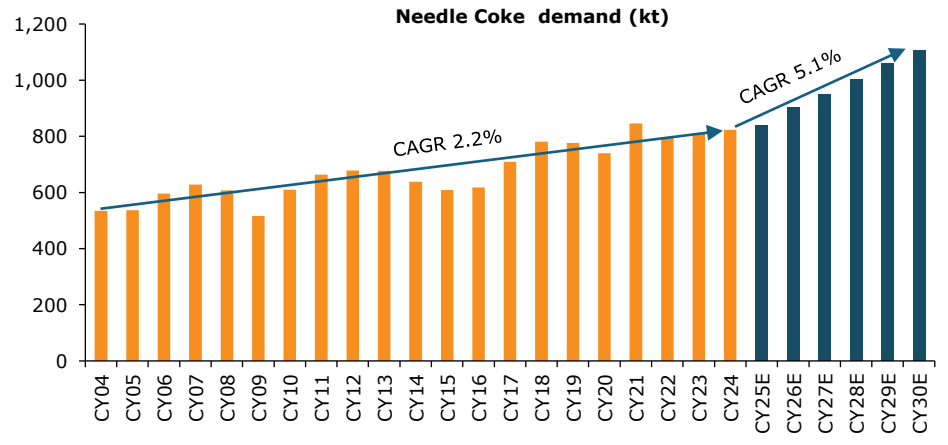
Source: Bloomberg, Emkay Research

Demand expansion amid tight premium supply is increasing upstream constraints

Needle-coke demand remains dominated by the graphite electrode industry, which consumes 55–65% of global supply, or roughly 650–750kt annually, with each tonne of UHP electrodes requiring 1.0–1.1 tonnes of needle coke. As global EAF penetration rises from ~29% toward ~40% by CY30, electrode-linked demand will climb steadily, while high-growth uses, especially synthetic graphite for lithium-ion batteries (already 15–20% of demand and poised to add 100–150kt by CY30) and emerging applications in nuclear graphite and engineered carbon materials (adding 50–80kt) push overall needle-coke demand toward a 5-6% CAGR.

This accelerating demand confronts a chronic shortage of super-premium grades, despite headline supply appearing balanced, the market has carried a recurrent 20–40kt deficit in true UHP-quality material, a gap that could widen to 40–70kt by CY30 without new high-purity cokers. The resulting bottleneck drives sharp price volatility. Given that needle coke forms 40–50% of UHP electrode cash costs, such price swings create material margin divergence between integrated suppliers who preserve utilization and pricing power and non-integrated peers exposed to spot-market feedstock shocks.

Exhibit 26: Needle coke requirement expected to be in tandem with global GE demand



Source: Emkay Research

Duty structure: Protectionism as a structural earnings stabilizer

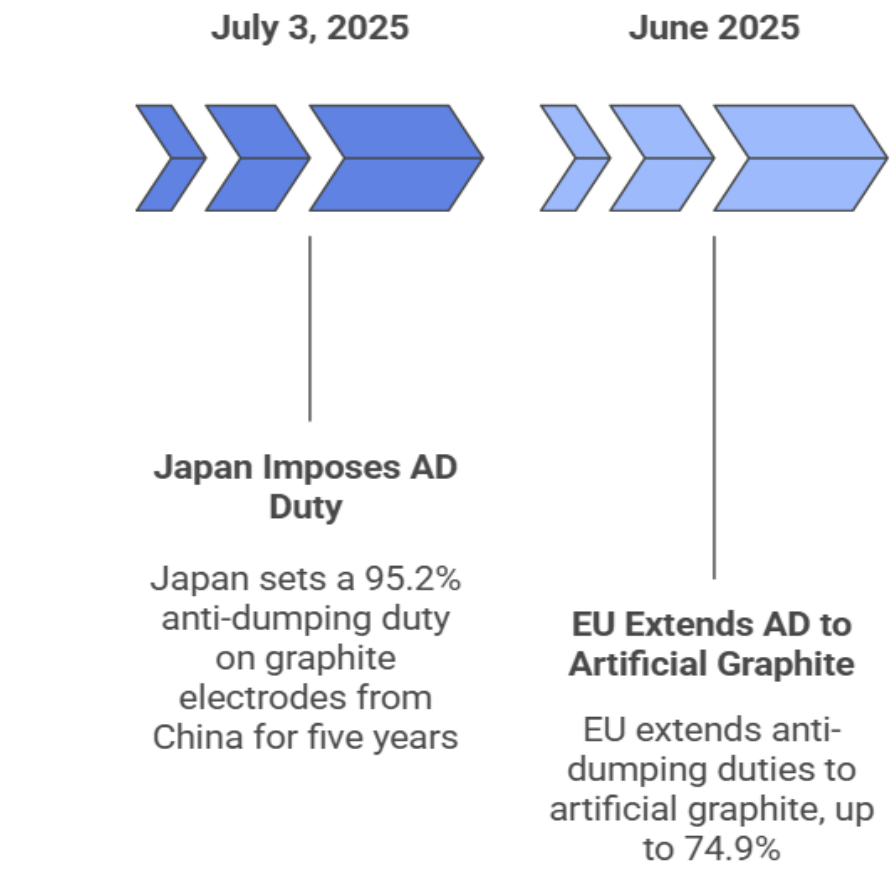
We see a structurally more protectionist global trade regime taking hold—and importantly, one that is likely to persist. As geopolitical priorities increasingly override pure cost arbitrage, large consuming economies are showing lower tolerance for predatory pricing and supply concentration risks, particularly from China. In this context, the risk of Chinese dumping in graphite electrodes is meaningfully curtailed. Japan's imposition of a prohibitive ~90% anti-dumping duty on Chinese GEs is emblematic of this shift and effectively walls off a key high-quality market from Chinese oversupply. For global electrode producers outside China, this does not represent a transient regulatory bump but a structural improvement in industry discipline, pricing power, and earnings visibility, with trade barriers now acting as a shock absorber through the cycle rather than a temporary distortion.

Exhibit 27: Global markets ring-fence electrode supply through anti-dumping measures

Region / Country	Basic Import Duty (MFN)	Anti-Dumping / CVD Status	Export Duties / Controls
European Union	0%	AD on Chinese electrodes; extended to artificial graphite (Jun-25) up to 74.9%	None
Japan	0%	95.2% AD on Chinese electrodes	Strategic controls possible
United States	0% (most HTS codes)	Reciprocal country tariffs apply to GE	Only for dual-use items
India	HSN-dependent	AD applied historically (mainly China)	Licensing for strategic goods
EAEU	Tariff-line specific	AD on Indian electrodes: HEG 1.06%, GIL 32.8%	Strategic controls possible
Brazil	MFN applies	Prior AD on Chinese electrodes terminated	None

Source: Emkay Research

Exhibit 28: Recent developments in GE import duties



Source: Emkay Research

Scaling up capacity: Indian GE players at the forefront

Indian GE players are scaling up capacity at much lower capex intensity compared to global averages

Scaling up for the next cycle

Indian GE producers are embarking on a fresh capex cycle to capture the structural uplift in EAF-linked demand. The two Indian players have emerged as pivotal anchors of non-China electrode supply. While GRIL has emphasized a measured, multi-site growth, HEG has built a global cost-competitive position through scale at Mandideep. Both companies now have approved expansion pipelines that will lift Indian capacity meaningfully over the next few years, reinforcing India's importance in balancing the structurally tight global supply of electrodes.

HEG has approved a brownfield expansion of 15kt, with a capital outlay of Rs6.5bn and a 30-month execution window, largely funded through internal accruals. This expansion has positioned HEG as one of the largest single-site producers of graphite electrodes globally. HEG's approach has been to consolidate scale at a single location, thereby driving operating leverage and positioning itself as a cost-competitive supplier in an otherwise fragmented non-China landscape.

Exhibit 29: GRIL and HEG plan to expand capacity by 25kt and 15kt, respectively, in the next 36 months

Particulars	GRIL	HEG
Existing capacity	80kt	100kt
Existing capacity utilization	80-85%	85-90%
Proposed capacity additions	25kt	15kt
Execution period	In 2 phases Phase 1: 13kt in 12 months Phase 2: 12kt in 36 months	30 months
Investment requirement	Rs6.0bn (includes Rs1.0bn for captive power through RE)	Rs6.5bn
Mode of financing	Internal accruals/Debt	Internal accruals/Debt
Rationale	**Building additional capacity in view of the anticipated growth in GE demand**	

Source: Company, Emkay Research

GRIL has sanctioned a two-phase addition of 25kt at a cost of Rs6bn, with Phase-1 (13kt) slated for completion within 12 months. Beyond electrodes, Graphite India has also signed an MoU to invest Rs47.6bn in a synthetic graphite anode material (SGAM) facility in Nashik, positioning itself for diversification into the battery materials value chain.

The upcoming capacity addition is structured less as a brownfield project and more as a debottlenecking scale-up, with Graphite India leveraging its existing assets. The strategy involves a combination of debottlenecking at operating lines and revamping older, idled extrusion facilities to deliver incremental capacity. However, with plant sites already land-constrained, the company has limited scope for large-scale expansion, making this approach both pragmatic and cost-efficient.

Indian GE producers demonstrate structural capex efficiency

Capex intensity for GE capacity in India remains structurally lower than global benchmarks, supported by a favorable cost environment and clear preference for brownfield-led expansions. Indian producers—primarily Graphite India and HEG—typically scale up capacity within existing facilities, enabling themselves to leverage pre-existing land, utilities, and environmental infrastructure. This materially reduces upfront spending compared with greenfield projects in Europe, Japan, and the US. Further, India benefits from significantly lower labor and construction costs, while a strong domestic ecosystem for crucial GE equipment (baking furnaces, extrusion presses, machining lines) reduces machinery and EPC expenditure by 30–40% versus global peers.

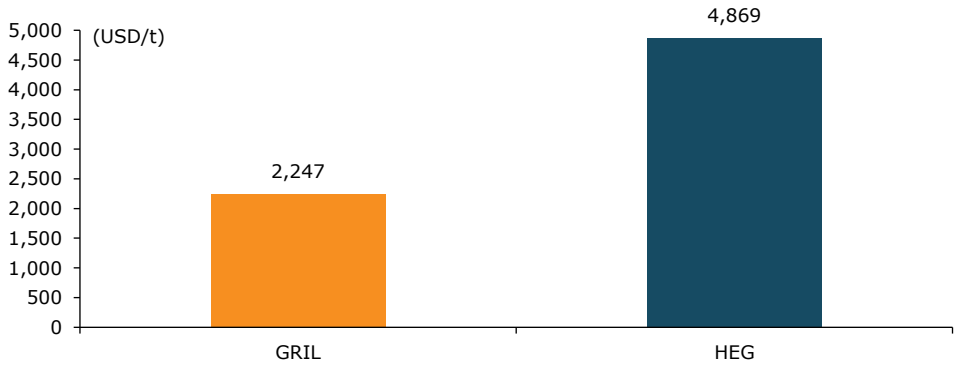
Although regulatory standards are stringent, environmental compliance remains far less capital-intensive than that in western markets, where advanced abatement systems and safety redundancies materially inflate project costs.

Indian capex intensity generally falls in the USD5,000–8,000/t range, compared with USD10,000–12,000/t globally

Consequently, Indian capex intensity generally falls in the USD5,000–8,000/t range, compared with USD10,000–12,000/t globally, enabling superior incremental RoCE during expansion cycles. Within India, the contrast is even sharper: Graphite India's estimated capex intensity of USD2,247/t is significantly below HEG's USD4,869/t, highlighting that GRIL's superior capital deployment efficiency and stronger cost leverage in capacity additions. However, we would note that GRIL's expansion is through debottlenecking while HEG is undertaking a brownfield expansion, and therefore capex intensity would be naturally lower for GRIL.

HEG's last expansion, of 20kt in 2023, was completed at a capex of Rs1.2bn, implying capex intensity of USD7,250/t.

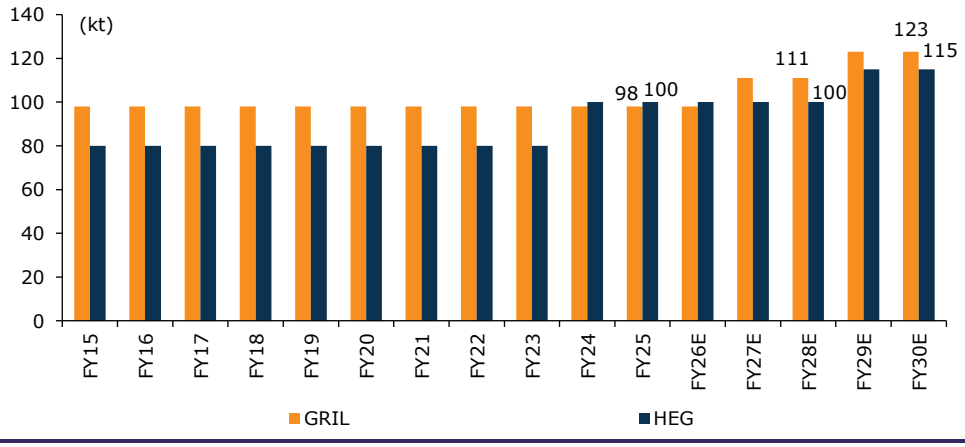
Exhibit 30: Capex intensity for GRIL and HEG better than global standards



Source: Company, Emkay Research

Together, existing market leaders are set to lift India's domestic electrode capacity by 40kt, enhancing supply security at a time when global markets are increasingly exposed to China-linked disruptions. While execution risks remain, particularly given the multi-phase nature of Graphite India's build-out, such investments underscore management conviction in sustained EAF penetration and higher replacement demand. Strategically, the pivot to anode materials also provides optionality for long-term growth, as India aligns with the global electrification and energy-transition cycle.

Exhibit 31: Capacity expansion over the years for GRIL and HEG



Source: Company, Emkay Research

Cleaner EAF route to gain ground

We believe the global balance between EAFs and BOFs is set to shift under the combined influence of decarbonization targets, demand growth, and raw material dynamics. By CY30, EAFs could represent 40% of global steelmaking capacity, up from 29% currently, with expansion concentrated in Europe, North America, Middle East, and parts of Asia. BOFs, while remaining dominant in China, India, and resource-rich regions, will increasingly come under pressure as carbon pricing, stricter environmental regulations, and trade measures raise the cost of emissions-intensive production.

Global steelmaking is tilting toward EAF (40% by CY30), though scrap availability and power costs could constrain utilization even as EAFs account for 110mt of new capacity additions

EAF buildout strengthens even as bottlenecks persist

The global steel industry is set to add ~200mt of new capacity, of which nearly 55% (110mt) will be in the form of EAFs. This reflects a structural shift toward cleaner technologies, supported by policy incentives and the long-term availability of scrap. However, BOF projects still represent 45% (90mt) of additions, with the bulk concentrated in China, India, and ASEAN nations. While EAF capacity is expanding rapidly, we note that utilization may lag given dependence on scrap supply and power costs, unlike BOFs with integrated raw material chains.

Exhibit 32: Total EAF capacity addition in the next 3-5years

Country	EAF capacity under construction (kt)
China	28,553
Iran	19,413
India	5,690
Germany	1,900
Türkiye	2,000
Sweden	4,000
Philippines	1,800
USA	5,616
Canada	3,700
Russia	4,030
Oman	5,100
Others	27,485
Total	**109,287**

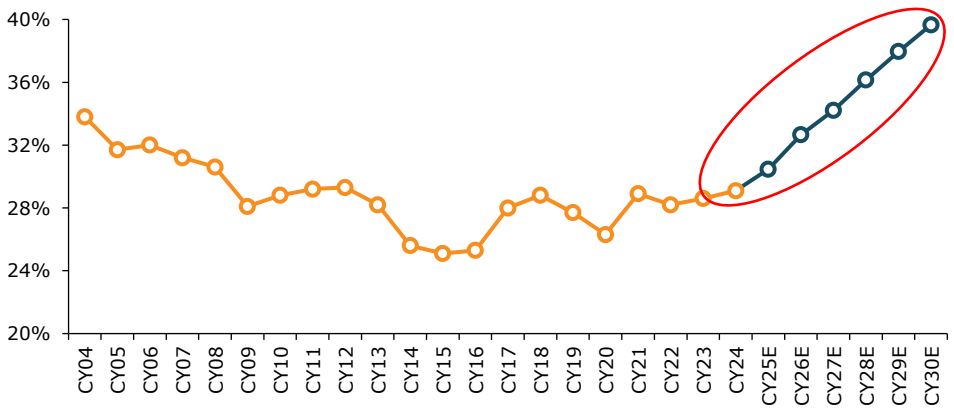
Source: Global Energy Monitor, Emkay Research

Regions with limited recycling infrastructure, scrap deficits, and expensive electricity face structural constraints. Conversely, Europe and North America leverage mature scrap markets and reliable energy to sustain higher utilization, leaving developing markets vulnerable to underuse until supporting systems evolve.

On the supply front, curtailments have been modest relative to additions, implying that closures are insufficient for balancing new capacity. China has introduced targeted replacement policies phasing out smaller blast furnaces, converters, and EAFs while shifting capacity toward coastal hubs. However, enforcement has been uneven and compliance issues have slowed the pace of reductions. Outside China, most economies lack aggressive phase-out frameworks, as political, social, and economic barriers hinder plant closures. As a result, many uncompetitive plants remain online, supported by subsidies or protected by local policies, leading to persistent overcapacity and export pressure. In essence, the industry is adding far more capacity than it is retiring, particularly in regions where government support shields inefficient producers from a market exit.

The rapid growth of EAF capacity has important implications. In principle, EAFs are far less carbon-intensive than BF–BOF routes, especially when paired with direct reduced iron (DRI) or hydrogen-based processes. However, their expansion is constrained by feedstock and infrastructure. Scrap availability is expected to double by CY50, but in the near term, limited supply, uneven collection systems, and scrap export restrictions may restrict how quickly new EAFs can operate at full utilization. Similarly, scaling low-carbon DRI or hydrogen projects requires access to high-grade ores, abundant renewable energy, and significant capital investment, making the transition uneven across regions.

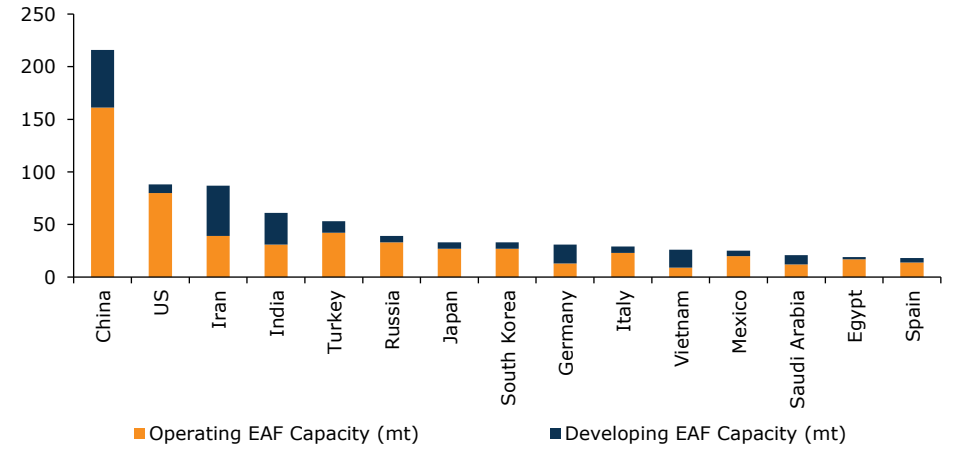
Exhibit 33: EAF production share is expected at 40.0% in CY30 vs 29.1% in CY24



Source: Emkay Research

Overall, the industry faces a paradox: while new EAF projects push the sector toward decarbonization, simultaneous BOF additions, and weak closure policies risk prolonging global overcapacity and carbon intensity. Unless policymakers intensify efforts to manage exits and support the shift toward sustainable feedstock, the short-term effect is likely to entail sustained margin pressure, heightened trade frictions, and rising competition for scrap and alternative raw materials.

Exhibit 34: Country-wise breakup of operating and developing EAF capacity



Source: Emkay Research

EAFs gain structural edge as BOF cost pressures mount

EAF profitability is highly contingent on scrap prices and electricity tariffs. In regions with cheap renewable or industrial power and efficient scrap markets, EAF margins are competitive and further supported by policy incentives such as the EU's CBAM and the USA's IRA.

BOFs, in contrast, remain cost-effective in countries with captive iron ore and coking coal, particularly where state subsidies shield them from market forces. However, BOF profitability is increasingly threatened by carbon costs, emissions trading schemes, and trade penalties on high-carbon steel. Near-term, BOFs will continue to be competitive in resource-rich, subsidized economies, but longer term, EAF profitability will strengthen as scrap supply expands, carbon pricing intensifies, and customers begin to pay green premiums for low-carbon steel.

Energy shock exposed structural fragility in Europe's EAF model

Power-cost volatility constrains European EAF utilization and electrode demand

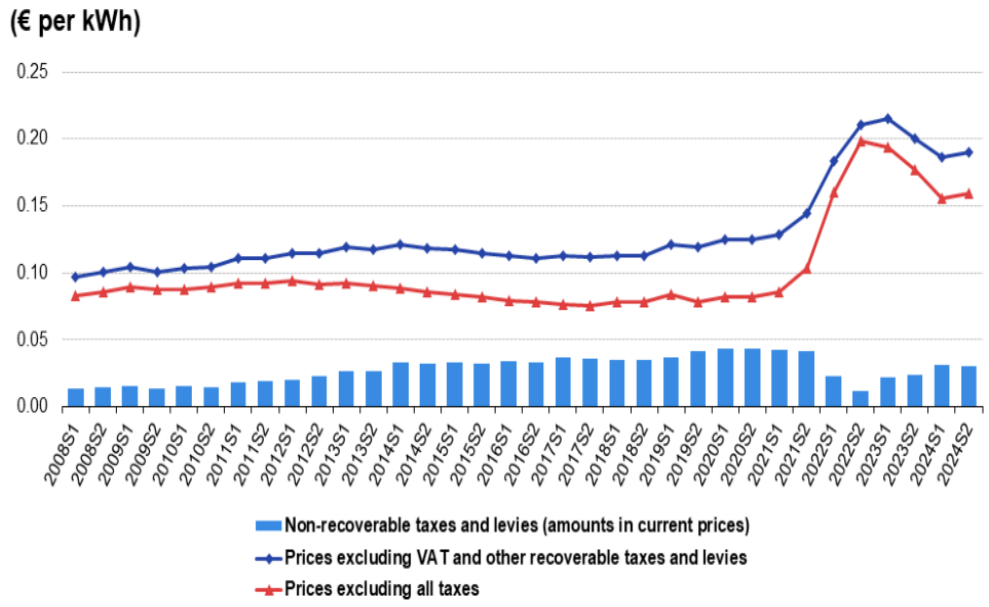
European EAF operators have been among the most visible casualties of the region's post-Ukraine energy shock. Following the invasion, Europe's power markets were upended as Russian pipeline gas flows collapsed and the EU was compelled to rapidly pivot to LNG. This created extreme volatility and record-high wholesale electricity prices, with CY22 day-ahead prices averaging at €219/MWh versus only €46/MWh in CY19. While prices halved to around €93/MWh in CY23, they remain more than double pre-crisis levels, with volatility still elevated.

For an EAF steel mill that consumes 400–550kWh/tonne of liquid steel, such swings directly translate into operating margins. Unsurprisingly, a number of mills, particularly in Spain and Italy, curtailed production at the height of the crisis, and even into CY23 and CY24, European producers remained cautious on utilization.

The structure of the industry amplifies this problem. EAF accounts for ~45% of steel production in the EU-27, ie 57.6mt in CY24, thus making the route crucial for the region's decarbonization agenda. Yet, unlike the integrated blast furnace route, which benefits from coal and coke hedges, the EAF model is almost entirely exposed to grid electricity pricing. Every €10/MWh swing in wholesale electricity alters EAF cash costs by €4–6/tonne. That cost sensitivity means mills often become uncompetitive in a high-price environment, driving production stops that ripple through the value chain.

Importantly for our focus, these shutdowns weigh directly on GE demand, as electrode consumption is tied linearly to liquid steel output, at around 1.7–2.0kg/tonne in the ultra-high-power EAF route.

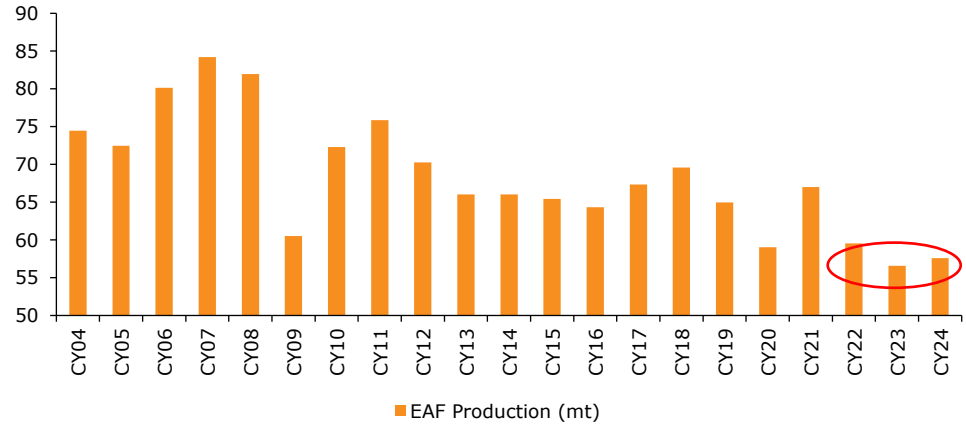
Exhibit 35: Europe's power markets were upended as Russian pipeline gas flows collapsed



Source: Company, Emkay Research

Europe's energy shock materially altered the cost landscape for graphite electrode manufacturers. Elevated electricity and natural gas prices rendered production unviable for many high-cost facilities, leading to widespread output cuts. Even as energy prices normalized, utilization has not recovered meaningfully, reflecting subdued steel demand, cautious restarts, and persistent competitive gaps with Asian suppliers.

Exhibit 36: Energy shock led to production cuts and the ongoing low utilization in Europe



Source: Company, Emkay Research

Geopolitical de-risking as a catalyst for EAF and GE demand

Looking ahead, the potential de-escalation or eventual end of the Russia–Ukraine conflict could prove to be a meaningful catalyst for the industry. While we do not assume a wholesale return of Russian pipeline gas, even a durable ceasefire would remove much of the geopolitical risk premium embedded in European power and gas markets. That, in turn, should ease volatility, stabilize forwards, and lower the marginal cost of electricity. Structural changes are already underway; Europe has diversified LNG import capacity, accelerated renewable installations, and implemented efficiency measures. A reduction in geopolitical risk would complement these initiatives and likely take industrial power pricing closer to sustainable levels.

For EAF producers, lower and more predictable electricity pricing translates directly into higher utilization rates. A 10% uplift in European EAF output, for example, would imply an additional 5–6mt of steel production, generating incremental electrode demand of 9–11kt annually. Beyond volumes, the stabilization of melt schedules would benefit graphite electrode suppliers through steadier order books, better working-capital management, and reduced price discounting. In a market where global GE supply is already constrained by environmental restrictions in China and tight needle coke availability, even modest improvements in European run-rates could tighten the balance and underpin stronger pricing.

Steel scrap tightness likely to become a constraining factor

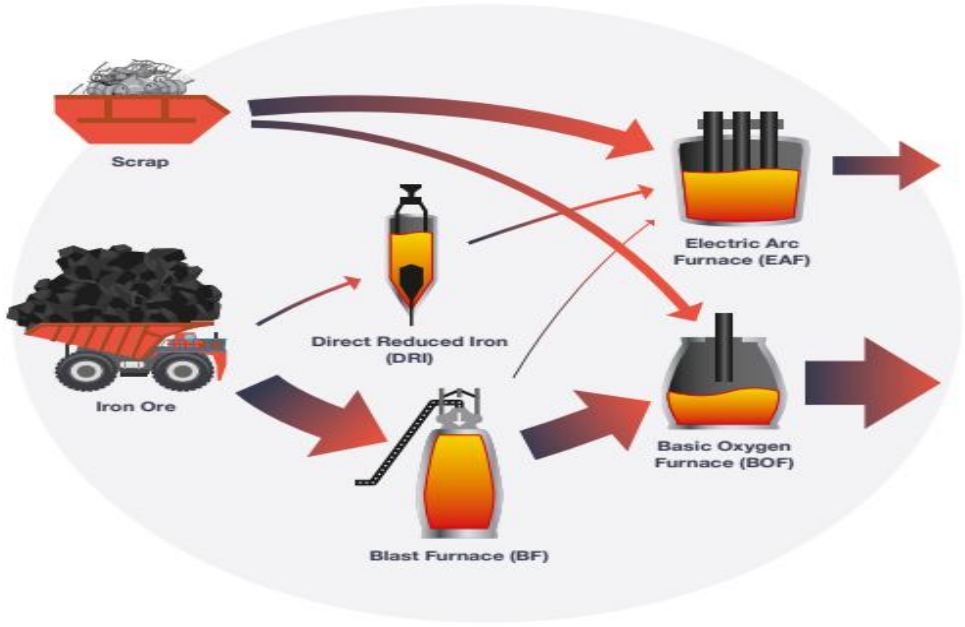
Steel industry is heading into scrap tightness, with demand growth set to outpace supply over the medium term

The global supply of carbon steel scrap is falling behind the pace of demand growth, raising the risk of a structural deficit that could disrupt steel supply chains, trade flows, and ultimately economic growth across both developed and emerging economies. Projections indicate that the current surplus of roughly 9mt will reverse into a shortfall of nearly 15mt by CY30. This looming imbalance highlights the urgency for private and public stakeholders to accurately assess existing scrap availability and establish reliable short- and long-term forecasts.

For steel producers, supply security will be crucial, with strategies likely centered on vertical integration through scrap yard acquisitions. Scrap processors stand to benefit by scaling up supply via advanced recycling technologies and industry consolidation.

On the policy front, we believe fiscal incentives such as tax breaks and fee reductions could play an important role in accelerating recycling. In our view, the evolving scrap dynamics not only represent a structural risk to industry margins but also create a differentiated investment opportunity for producers and recyclers best positioned to secure and monetize reliable scrap flows.

Exhibit 37: Steel production routes

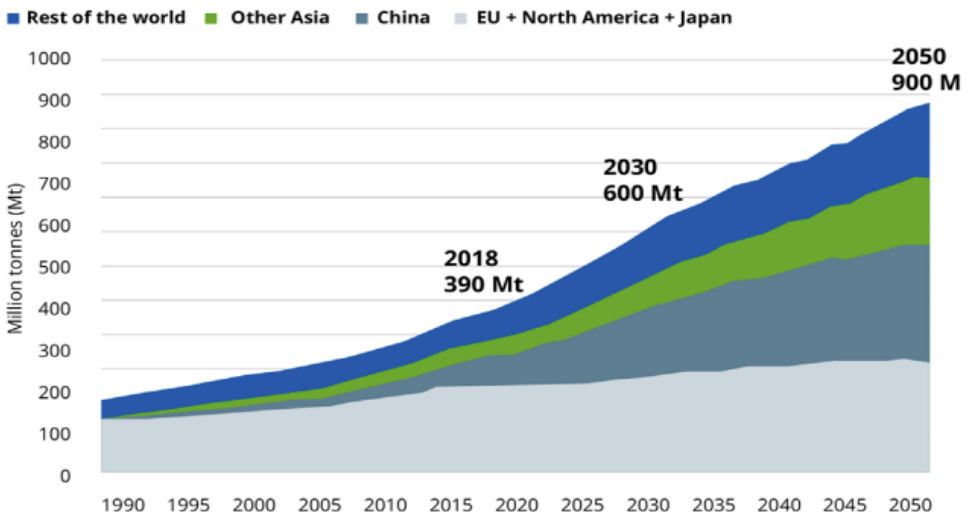


Source: World Steel Association, Emkay Research

Global scenario – More scrap, albeit still not enough

Global scrap availability is set to rise as the large wave of steel produced in the early 2000s, particularly in China, reaches end-of-life. Worldsteel estimates end-of-life ferrous scrap at ~400mt in CY19, increasing to ~600mt by CY30 and ~900mt by CY50, implying an incremental ~500mt over the next three decades. While this growth is material, it will still lag the pace of new steel demand, reinforcing the view that ore-based production will remain essential in meeting global requirements for the foreseeable future. From an investment perspective, this dynamic underscores the continued relevance of iron ore and coking coal in the steel value chain, even as scrap usage scales structurally higher.

Exhibit 38: End-of-life scrap availability



Source: World Steel Association, Emkay Research

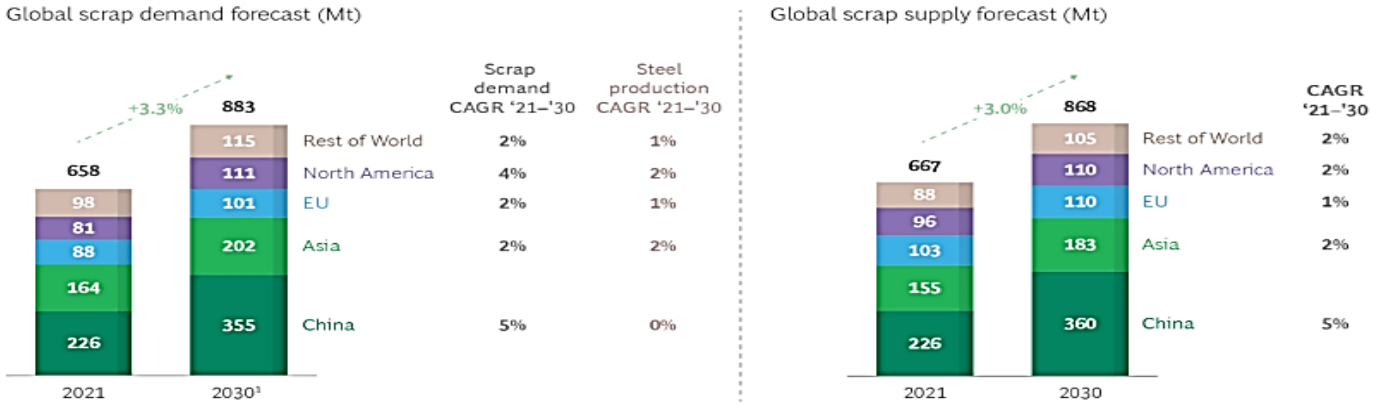
In our view, while the industry faces long-term tailwinds from rising scrap availability and circular economy adoption, structural constraints around timing and quality will limit the pace of substitution away from ore-based steel. Yet, the direction is unambiguously positive for the EAF route and hence also for the GE industry.

Steel industry is heading into a structural scrap imbalance, with demand growth set to outpace supply over the medium term

Near-term imbalance, before long-term availability, persists

We believe the steel industry is heading into scrap tightness, with demand growth set to outpace supply over the medium term. Scrap demand CAGR is projected at 3.3% as against 3% supply CAGR, driven by accelerating EAF adoption and mounting decarbonization pressures. By CY30, scrap is likely to account for ~50% of total iron input, up from 35% today, effectively flipping the current modest surplus into a ~15mt deficit.

Exhibit 39: Scrap demand is projected to grow ~3.3% by CY30; however, scrap supply is likely to lag demand



Sources: Global Steel Sector, March 2021, Credit Suisse; BIR report 2022; China Steel Association; HBIS; BCG analysis.

Note: Asia includes Middle East and does not include Turkey; EU does not include UK, Russia, and Turkey; UK, Russia, and Turkey are included in Rest of World. Mt = million metric tons.

¹Unconstrained scrap demand in 2030.

Source: BCG, Emkay Research

This tightening trend is set to accelerate as EAF utilization rises, with penetration to surpass ~40% of global steel capacity by CY30. The resulting competition for scrap will be most acute in regions with underdeveloped recycling ecosystems. India particularly faces structural headwinds unless it can rapidly scale up its collection and processing infrastructure. Anticipating this risk, steelmakers are increasingly pursuing vertical integration, acquiring or developing scrap yards, deploying advanced sorting and quality-control technologies, and securing tighter control over feedstock supply.

Exhibit 40: Increase in scrap consumption over the years

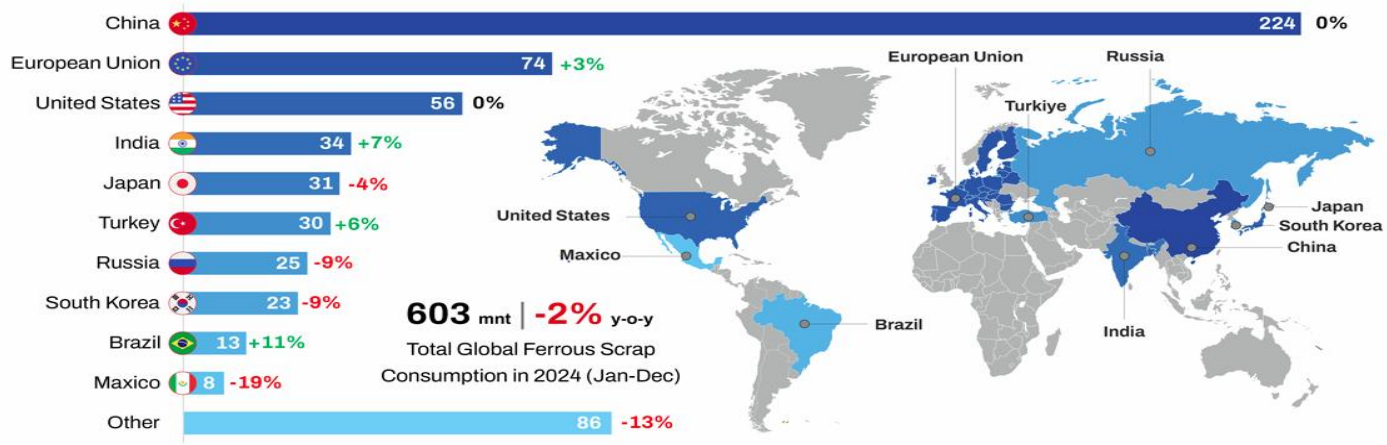
Scrap consumption (mt)	CY10	CY15	CY20	CY25 (P)	CY30 (P)
China	88	169	244	257	311
EU	88	82	74	72	84
US	55	52	52	55	67
India	19	26	18	37	59
Other	211	195	225	195	272
Total	**461**	**524**	**613**	**616**	**793**

Source: World Energy Monitor, Emkay Research

Compounding the challenge, we believe global scrap trade flows are likely to contract as major producers such as the US, EU, and China prioritize domestic retention to meet their own decarbonization goals. This policy shift reduces export availability and puts additional pressure on import-dependent markets like Turkey and India, thus intensifying structural disparities toward accessing low-carbon steelmaking inputs.

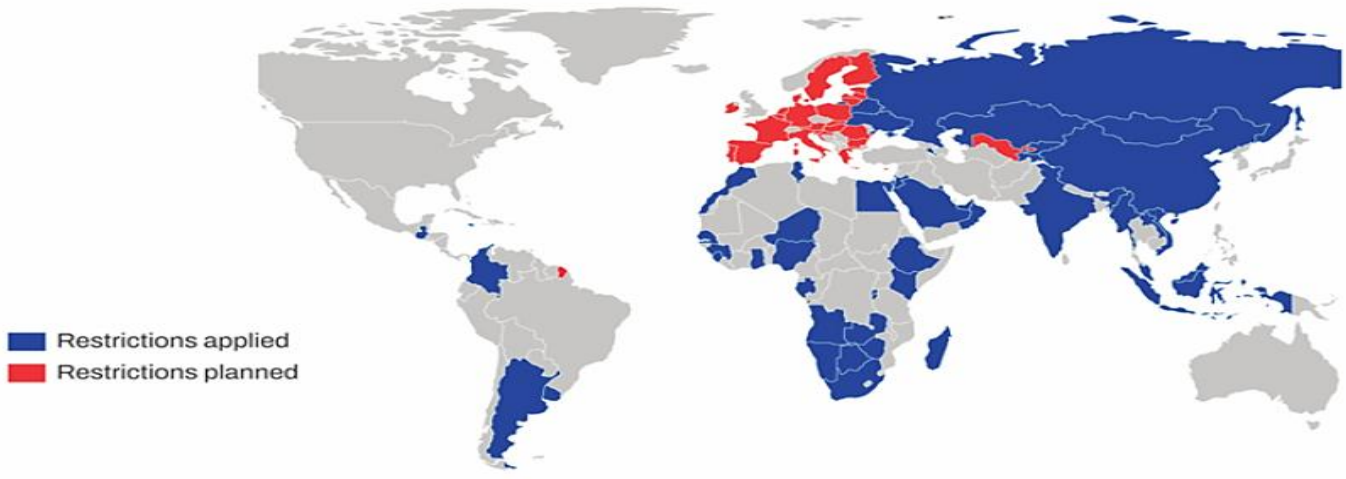
In our view, such dynamics highlight a bifurcation – integrated players in scrap-rich geographies stand to benefit, while import-dependent EAF operators in structurally-short markets face rising cost pressure and margin volatility.

Exhibit 41: Top-10 ferrous scrap-consuming countries in CY24



Source: BigMint, Emkay Research

Exhibit 42: Restricting scrap exports is becoming a global trend



Source: BigMint, Emkay Research

Global steel scrap supply – On a structural uptrend

Uneven global scrap availability structurally favors organized recyclers and integrated EAF steelmakers

We note that global ferrous scrap supply is on a structural uptrend, yet geographic availability remains uneven and is subject to policy and trade constraints. Steady sources of incremental supply include vehicle scrappage programs and infrastructure replacement cycles, while the potential de-escalation of geopolitical disruptions such as the Russia–Ukraine conflict could unlock additional latent flows. However, robust domestic scrap demand in China, coupled with ongoing export restrictions, is likely to keep global surplus limited.

Against this backdrop, organized recyclers and integrated EAF steel producers are well-positioned to capture incremental supply and convert it into an operational and pricing advantage, highlighting a clear structural opportunity within the ferrous value chain.

Region-wise implications

United States: The US is a key supplier of ferrous scrap globally, especially to Turkey. However, its own shortage of prime scrap is forcing it to rely on Canada. By CY30, prime scrap exports from Canada to the US are expected to fall 50%, intensifying domestic competition. US mills are therefore investing heavily in owning scrap yards and installing in-house quality control systems.

European Union: Europe is both a major scrap exporter and an expanding EAF hub. However, with exports projected to drop ~25% by CY30, domestic consumption will absorb much of its supply. EU policymakers are also considering protective trade regulations to safeguard local mills, which could further tighten global trade flows.

China: China is rapidly expanding its EAF capacity and simultaneously restricting scrap exports while being selective about imports. Its strong domestic demand growth means it will retain more scrap internally, cutting availability for the rest of the world. This could accelerate competition for alternative inputs like DRI and HBI.

India: India is highly vulnerable due to limited scrap collection and recycling infrastructure. Its dependence on imports will collide with the shrinking global availability, driving up costs for EAFs and threatening its decarbonization goals. Policymakers have begun introducing incentives (eg scrappage policies, tax rebates) to boost domestic recycling, but the scale remains insufficient.

Turkey: Turkey is the world's largest importer of scrap, sourcing mainly from the EU, US, UK, and Russia. With global trade flows shrinking, Turkey faces acute exposure, and some of its higher-cost mills may be forced to idle without government support. This makes Turkey one of the most at-risk regions under the projected scrap shortage.

Indian Scrap scenario – India's structural scrap gap widens

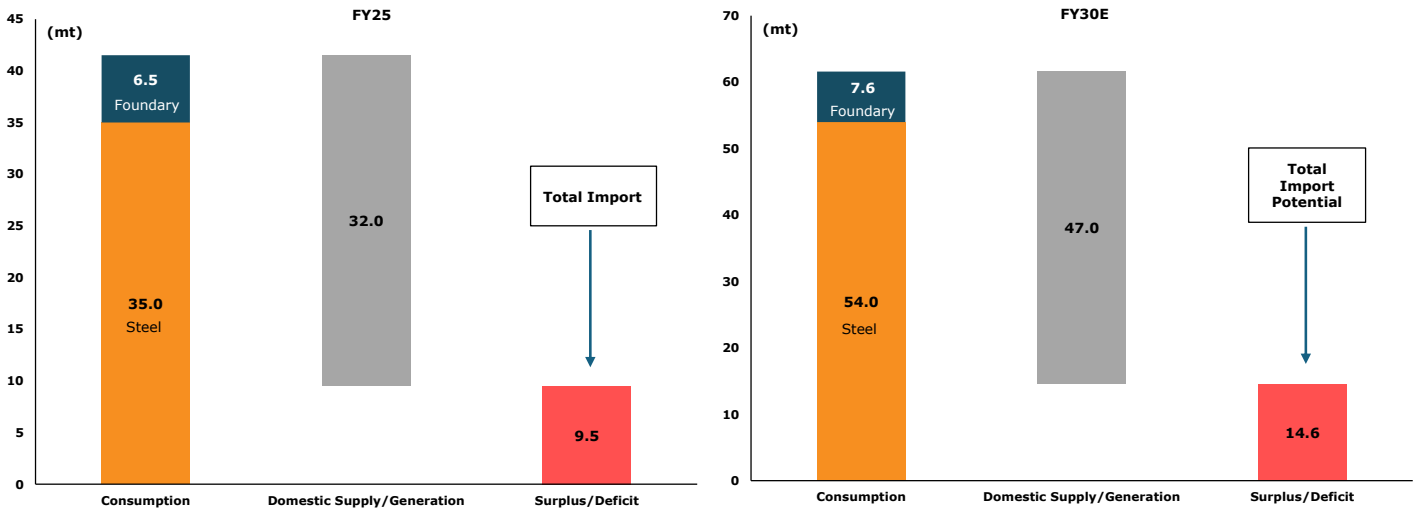
India remains structurally undersupplied with domestic scrap generation of 32mt falling short of demand by ~10mt in FY25

India ranks as the world's #2 crude steel producer (152mt in FY25) and the fourth-largest scrap consumer (34mt in CY24). Scrap usage has expanded materially (+43% over the past three years), diverging from the global downtrend.

However, India remains structurally undersupplied, with domestic generation of 32mt falling short of demand by ~10mt, keeping reliance on imports elevated (9.5mt in FY25; -20% YoY). Import availability, however, is becoming increasingly constrained by supplier restrictions, freight market disruptions, and growing substitution by sponge iron, adding further volatility to supply dynamics.

We see this structural deficit as reinforcing the urgency for India to accelerate recycling infrastructure build-out while also diversifying raw-material inputs.

Exhibit 43: India's scrap deficit to exceed ~15mt by FY30



Source: BigMint, Emkay Research

Exhibit 44: Steel scrap generation, by product

Type	Percentage	Quantity FY'25	Quantity FY'30
New Scrap	Home Scrap	7.4 MnT	8.4 MnT
	Industrial Generation	7.6 MnT	10.1 MnT
	Construction Industry	3.5 MnT	5.9 MnT
Old Scrap	EOL Scrap	7.4 MnT	10.4 MnT
	Ship Recycling	0.6 MnT	0.9 MnT
	Foundry Scrap	4.8 MnT	6.2 MnT
		Total Generation in FY'25 32.4 MnT	Total Generation in FY'30 46.7 MnT

Source: BigMint, Emkay Research

In our view, the medium-term environment will feature elevated scrap premiums, greater strategic integration, and sharper regional divergences in scrap availability and quality.

The tightness will be most acute in prime scrap, which is crucial for producing high-grade flat steel. The projected ~15mt shortfall raises dual risks: 1) elevated cost pressure on premium flat products, and 2) erosion of EAF competitiveness relative to BOFs in markets structurally short of high-quality scrap.

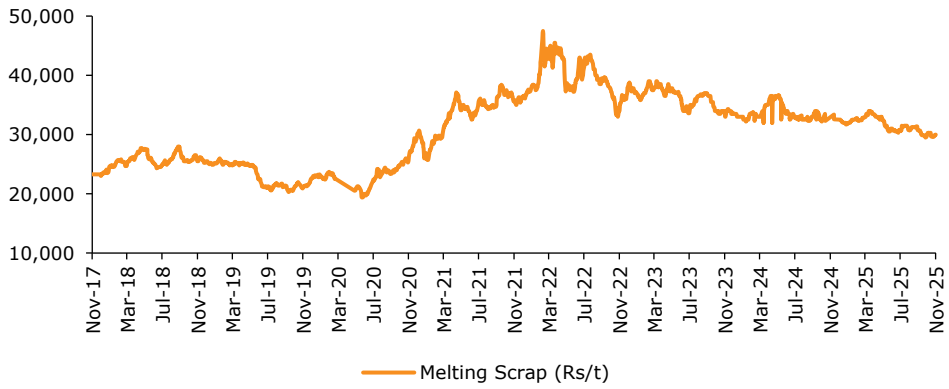
For import-dependent markets like Turkey and India, this dynamic not only heightens exposure to supply risks but also accentuates regional disparities for accessing low-carbon inputs. The outcome is likely to be intensified competition across global value chains, with strategic implications for trade balances, cost structures, and the pace of EAF adoption worldwide.

Exhibit 45: Turkey and India to face higher scrap import pressure as major producers shift to domestic retention for decarbonization

Steel scrap importer	CY20	CY21	CY22	CY23	CY24
Turkey	22.4	25.0	20.9	78.8	20.1
India	5.4	5.1	8.4	11.0	8.5
Vietnam	6.9	4.9	4.3	5.3	5.3
EU-27	4.1	5.4	3.9	3.9	4.8
USA	4.5	5.3	4.7	4.5	4.4
Taiwan	3.5	3.6	2.9	3.4	3.0
Mexico	2.1	2.8	2.9	2.8	2.3
Pakistan	4.5	4.2	3.1	2.1	2.2
South Korea	4.4	4.8	4.7	3.8	2.2

Source: Company, Emkay Research

Exhibit 46: Steel scrap prices have been range-bound for the last few years



Source: BigMint, Emkay Research

India's regulatory framework de-risks scrap availability

India's scrap policy balances supply security, ESG discipline, and green steel goals

India's scrap policy framework combines stringent quality control, environmental safety, and trade facilitation to ensure reliable and sustainable supply. The Directorate General of Foreign Trade (DGFT) mandates a Pre-Shipment Inspection Certificate (PSIC) for most scrap imports to confirm freedom from radioactive or hazardous materials. However, scrap originating from designated 'safe countries', including the US, UK, EU, Canada, Australia, and New Zealand, is exempt from PSIC if shipped through approved ports, which are equipped with radiation screening and customs infrastructure. Imports are categorized as 'free' under India's trade classification, but must comply with the Hazardous Waste (Management and Transboundary Movement) Rules, 2016, which prohibit contaminated or mixed waste.

On the fiscal front, India maintains a zero basic customs duty on ferrous scrap to strengthen domestic recycling and lower raw material costs. Such reforms align with India's Green Steel Mission and its goal to raise the share of scrap-based steel from 15% currently to 50% by CY30, reducing reliance on iron ore and coking coal. Further, India is aligning its trade and environmental norms with the EU Waste Shipment Regulation, ensuring compatibility with global standards and continued access to European scrap supplies post-CY27.

Collectively, this well-balanced policy ecosystem, encompassing strict environmental compliance, fiscal incentives, and international alignment positions India as a globally credible, high-potential market for scrap imports while advancing its broader objectives of circularity, decarbonization, and sustainable industrial growth.

Europe's steel industry at a turning point

Europe's steelmaking is structurally pivoting from blast furnaces to EAF and hydrogen-DRI, with ETS, CBAM, and aging assets effectively forcing BF phase-out by CY35

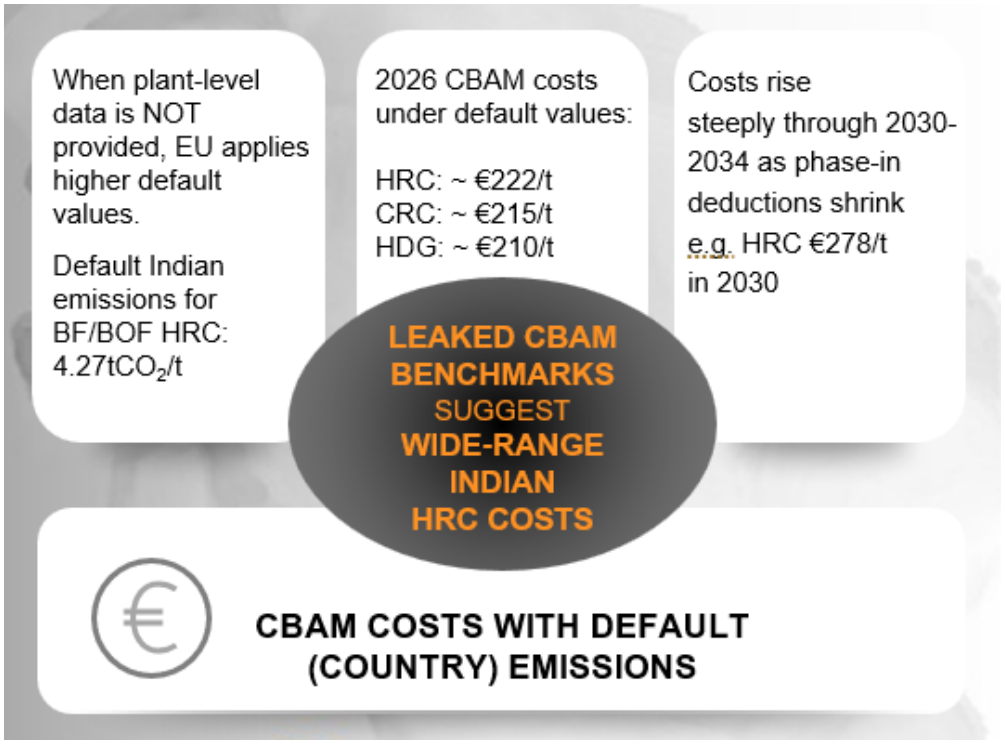
Europe's steel industry stands at the cusp of a transformation. The continent's traditional reliance on coal-based blast furnace steelmaking is being rapidly undermined by stringent climate policies, aging assets, and shifting economics. Over the next decade, the combination of rising carbon costs and targeted decarbonization incentives will accelerate the transition toward cleaner technologies such as EAF and hydrogen-based direct reduced iron (DRI). This shift is not merely cyclical, it represents a structural redefinition of Europe's steelmaking landscape, with CY35 emerging as the *de facto* sunset period for unabated blast furnace operations.

Carbon pricing and CBAM compelling rapid transition

The primary catalyst driving the decline of blast furnaces is the tightening European Union regulatory regime. The EU Emissions Trading System (ETS), in conjunction with the Carbon Border Adjustment Mechanism (CBAM), is reshaping the financial viability of carbon-intensive steel production. Under the revised ETS, free emissions allowances for the steel sector will be phased out between CY26 and CY34, after which producers must pay the full cost of their carbon output—potentially €150–200 per tonne of CO_2.

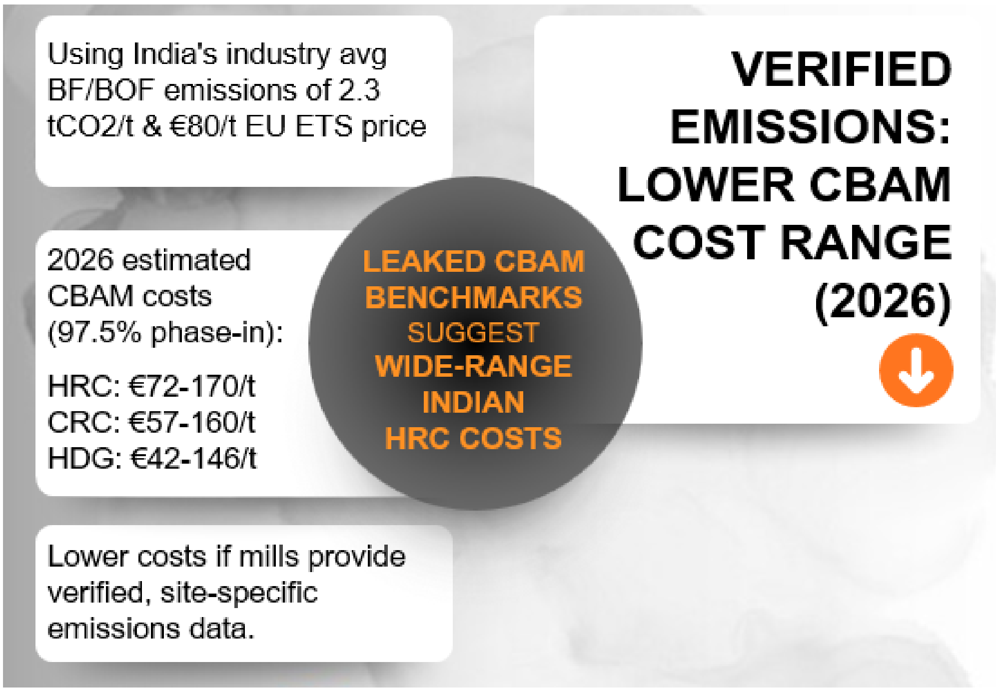
Given that each tonne of BF/BOF steel emits approximately >2 tonnes of CO_2, these plants will incur significant carbon liabilities, making them far less competitive than EAF or hydrogen-based routes, which emit less than 0.4 tonnes of CO_2 per tonne of steel. CBAM will further reinforce this shift by ensuring that imported carbon-intensive steel faces equivalent carbon costs, eliminating any protection from cheaper, high-emission imports. In effect, Europe's carbon policy architecture is setting a clear economic timeline for the phase-out of coal-based steelmaking by CY35.

Exhibit 47: CBAM cost could be as high as €222/t for Indian exporters of HRC to Europe



Source: Kallanish, Emkay Research

Exhibit 48: Providing plant-level emissions under CBAM sharply reduces the payable carbon cost



Source: Kallanish, Emkay Research

The leaked CBAM draft indicates that per-tonne costs could be significant, with steel imported from high-carbon routes and without verified emissions data potentially facing charges of €220–230/t. This creates a clear incentive for exporters to submit verified emissions information or shift toward lower-carbon production routes, as doing so can shrink the CBAM burden from hundreds of euros per tonne to only a few tens. For major exporting countries, this development underscores a meaningful rise in the landed cost of 'dirty' steel and aluminium entering the EU, with potential implications for trade competitiveness, supplier margins, and cross-border sourcing decisions.

Phasing out of the European blast furnace fleet

Europe's blast furnace fleet is entering a managed sunset, as carbon costs, aging assets, and hydrogen–EAF economics structurally force a continent-wide shift away from coal-based steelmaking by the mid-2030s

The convergence of carbon regulation, financial logic, and technological maturity marks the beginning of the end for Europe's blast furnace era. By the mid-2030s, unabated BF/BOF steelmaking is expected to survive only in transitional or niche contexts, while the majority of production will shift to EAF and hydrogen-based DRI pathways, in our view. This transformation represents not only an industrial evolution but a fundamental reorientation of Europe's heavy industry toward sustainability.

As Europe moves toward its CY50 net-zero target, the phasing out of blast furnaces will stand as one of the most visible symbols of its climate ambition—a decisive end to the coal-based steel paradigm that defined the continent's industrial past, and the beginning of a hydrogen-powered, low-carbon steel future.

Aging BFs accelerate Europe's clean steel transition

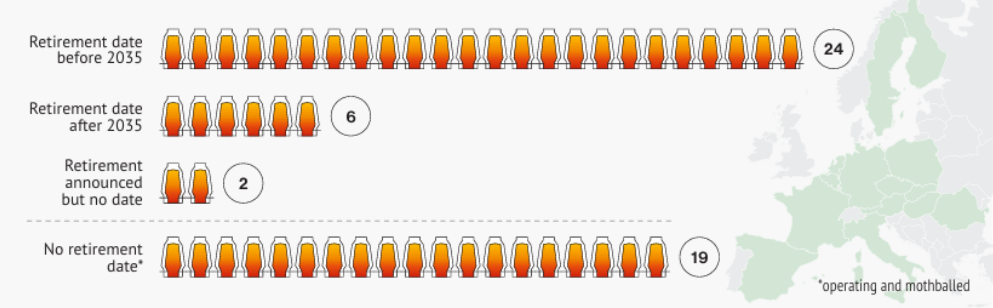
Beyond policy, structural and financial constraints are accelerating the decline of Europe's blast furnace fleet. Nearly half of the region's blast furnaces will reach the end of their current operating life before CY35. Re-lining these furnaces, a process costing €150–250mn/unit would lock companies into another 15–20 years of high-emission production. In an environment where carbon costs are rising and green financing is increasingly tied to sustainability metrics, such investments are no longer economically rational.

As a result, European steelmakers are redirecting capital expenditures toward cleaner production routes. Supported by national transition programs and the EU Innovation Fund, major producers are investing in hydrogen-ready DRI and EAF infrastructure, aiming to align production with both carbon neutrality targets and long-term cost competitiveness. The

transition is also being aided by technological advancements in renewable hydrogen and scrap availability, making the EAF route more feasible at scale.

Leading European steelmakers are already executing large-scale transformations that signal the phasing out of blast furnaces. ArcelorMittal has announced plans to replace its BFs at Dunkirk (France) and Bremen (Germany) with hydrogen-ready DRI and EAF units between CY30 and CY33. Tata Steel has committed to shutting down its BFs at Port Talbot (UK) by CY24 and converting to EAF-based production, while a similar transition is planned at its IJmuiden (Netherlands) site. Meanwhile, SSAB—a pioneer in fossil-free steel—intends to eliminate all BF-based operations by CY30, focusing entirely on hydrogen DRI technology.

Exhibit 49: EU blast furnaces with fixed retirement dates



Source: EEB, Emkay Research

Such announcements reflect not isolated corporate choices but a systemic industry pivot. National governments are aligning with the trend, providing subsidies, energy infrastructure, and hydrogen roadmaps to support a green steel ecosystem. As the cost gap between carbon-intensive and low-carbon steel widens, the market is effectively pricing out traditional blast furnace routes.

Of the 47 blast furnaces currently in operation, 32 have confirmed retirement timelines for phasing out coal-based production. Of these, 24 are slated to close by CY35, while the remaining six are expected to operate past that date. To remain aligned with a 1.5°C pathway, the planned CY35 closures must proceed without delay. The furnaces scheduled to run beyond CY35 are prolonging Europe's reliance on coal-based steelmaking, pushing the sector beyond both climate-aligned trajectories and the economic realities imposed by the EU ETS.

Prologue to the 2017–19 cycle

China's crackdown on pollution and overcapacity caused the shutdown of ~200mt of BoF steel and curtailed electrode plants, triggering a shift toward cleaner EAF steelmaking during 2017-19

The graphite electrode industry endured a deep downturn during CY11–16, as China's BOF-led steel expansion and surging exports displaced EAF production globally. This led to electrode demand and prices collapsing, forcing ~200kt ex-China capacity closures and causing heavy losses for players like HEG and Graphite India. A sharp turnaround followed from late-CY16, when China's crackdown on pollution and overcapacity caused the shutdown of ~200mt of BOF steel and curtailed electrode plants, triggering a shift toward cleaner EAF steelmaking.

With Chinese steel exports falling, EAF demand rose in other regions, while supply remained constrained due to capacity shutdowns and needle coke shortages, thus spiking UHP electrode prices from USD2,500/t in CY16 to USD13,000-15,000/t over CY17-18. Profits surged, with Indian producers turning net-cash-positive and rewarding shareholders, while global peers also benefited. Producers cautiously avoided large expansions, prolonging the upcycle through CY19. Thereafter, prices moderated as markets adjusted, but structurally higher EAF adoption and needle coke demand ensured electrodes remained positioned as a strategic, higher-margin industry than in the pre-CY16 era.

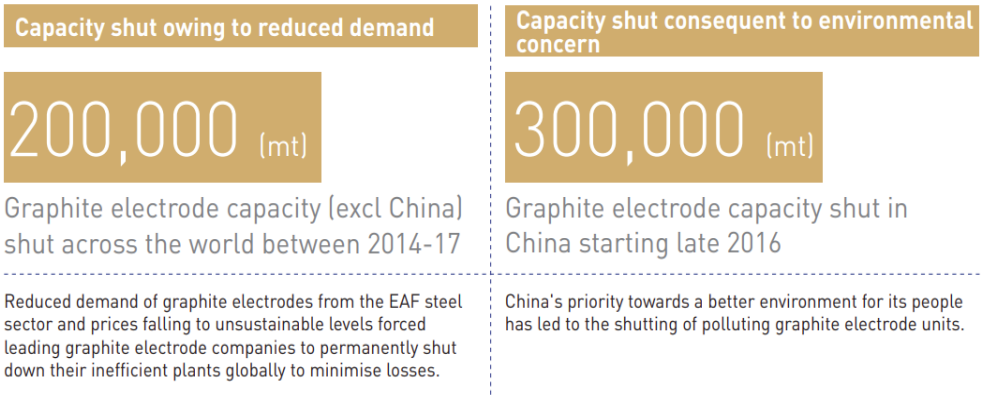
Background and pre-conditions (CY11–16)

The GE industry went through a severe downturn in the first half of the 2010s. Between CY11 and CY16, China dramatically increased its steel production capacity, largely through the blast furnace (BOF) route, which causes more pollution but is cheaper than EAF steelmaking. Chinese steel exports surged at a compound rate of more than 20%, capturing market share across the globe. This rise came at the expense of EAF-based steel production in Europe, the United States, and India.

As graphite electrodes are primarily used in EAFs, the weakening EAF steel demand translated directly into lower electrode consumption. Over this period, electrode demand contracted and electrode prices collapsed by ~50% to ~USD2,500/t, making operations unprofitable for several producers.

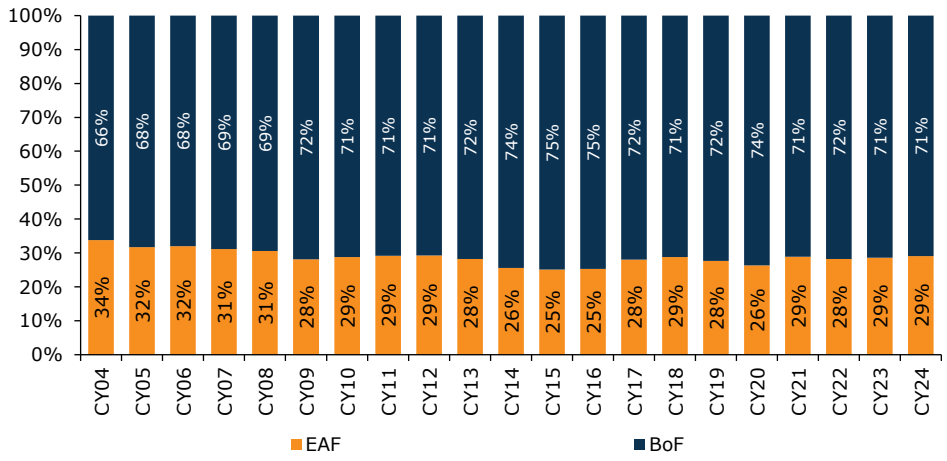
The prolonged downturn forced consolidation in the industry. Around 200kt of electrode capacity (~20% of global capacity outside China) was shut down or restructured. This reduced the number of global producers, left the industry with fewer large-scale players, and pushed utilization levels down to uneconomical ranges. By CY15–16, most companies, including leading Indian producers HEG and Graphite India, were reporting losses. The stage, however, was inadvertently being set for a sharp rebound because the supply side had already contracted substantially.

Exhibit 50: Around 200kt of GE capacity (ex-China) was closed during CY14-17



Source: Company, Emkay Research

Exhibit 51: Global EAF share has declined over the past 20 years, as China's BOF-led steel expansion displaced EAF production



Source: World Steel Association, Emkay Research

China's CY16 capacity crackdown tightened steel and electrode supply alongside needle-coke shortages, lifting ex-China EAF output and driving GE prices to USD13,000–15,000/t

Catalysts in the previous cycle

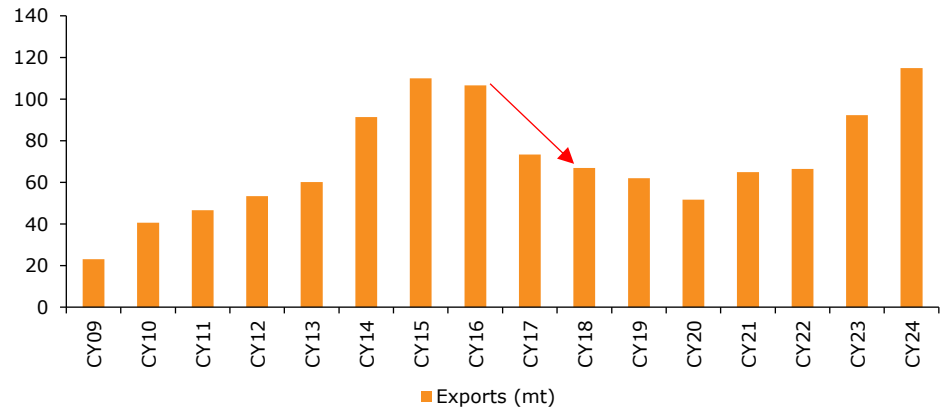
The up-cycle was sparked by policy changes in China beginning in late-CY16. The Chinese government launched a massive crackdown on pollution and industrial overcapacity. In steel, this meant the closure of about 200mt of steel capacity (~16% of China's total). At the same time, older, less efficient, and highly polluting plants—including electrode plants—were either forced to shut down or faced strict curtailments.

This had two powerful effects. First, as 90% of Chinese steel capacity was BOF-based, the closures directly curtailed BOF output while the policy direction shifted toward cleaner and more sustainable methods, such as the EAF route. Second, with China producing as well as exporting less steel, global steel markets rebalanced.

In CY17, Chinese steel exports fell ~35% YoY, allowing steel production in the rest of the world (where EAFs account for ~45% of capacity) to sharply rise. Because EAF steel uses electrodes as an indispensable consumable (~1.5-2kg/t of steel produced), this shift triggered an equally sharp rebound in electrode demand.

At the same time, a second factor made the situation more pronounced on the supply front: needle coke, the key raw material for graphite electrodes, was in short supply. Needle coke demand was rising not only from electrode producers but also from the fast-growing lithium-ion battery industry, where it is used in anodes. The 'dual demand' dynamic created a bottleneck that prevented a timely supply response, leaving the industry with significantly higher demand, curtailed electrode capacity, and raw material tightness.

Exhibit 52: China's steel exports entered a steep downcycle during CY17-18



Source: Emkay Research

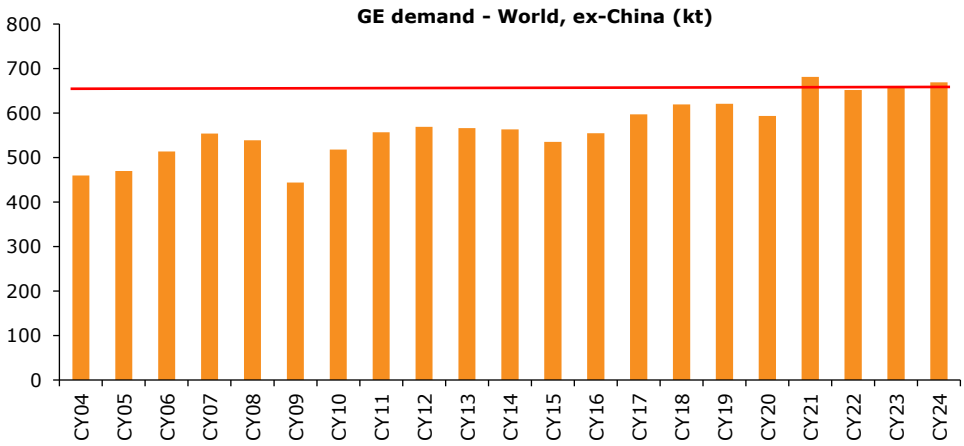
Supply-Demand dynamics during the past run-up

From CY17, global electrode demand surged. With Chinese exports falling, EAF-based steelmaking in the US, EU, and India expanded to fill the gap. Analysts projected a 3-4% compounded growth in electrode demand between CY16 and CY19. On the other hand, electrode supply could not respond quickly. Plants were already running at 85–90% utilization, which is considered optimal capacity in this industry.

Adding new capacity was not feasible in the short term, owing to the long lead times (2–5 years) required to build electrode plants, the high capital requirements, and the even bigger hurdle of obtaining needle coke supply contracts. As only a handful of companies globally control needle coke capacity, the industry was essentially 'supply-locked'.

This imbalance—demand rising sharply while supply was both constrained and slow to expand—tightened the market to an unprecedented degree.

Exhibit 53: GE demand over the years has been flat



Source: Emkay Research

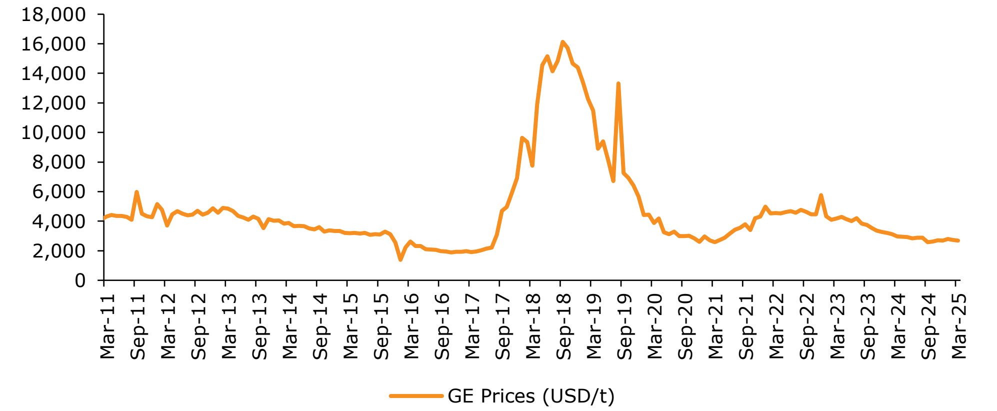
Electrode shortage drove a sharp price spike and profit windfall

The tightness in the electrode market translated directly into prices. From a base of USD2,500/t in CY16, prices for Ultra High Power electrodes skyrocketed to USD13,000–15,000/t by CY17–18, a fivefold increase in less than two years.

This price surge transformed industry profitability almost overnight. Global industry profits rose from USD1.5bn in CY17 to USD5.1bn in CY18, with further gains expected in CY19. Indian producers like HEG and Graphite India, who together controlled 22% of global UHP capacity outside China, saw their financials swing dramatically from losses in FY16–17 to record profits by FY18–19.

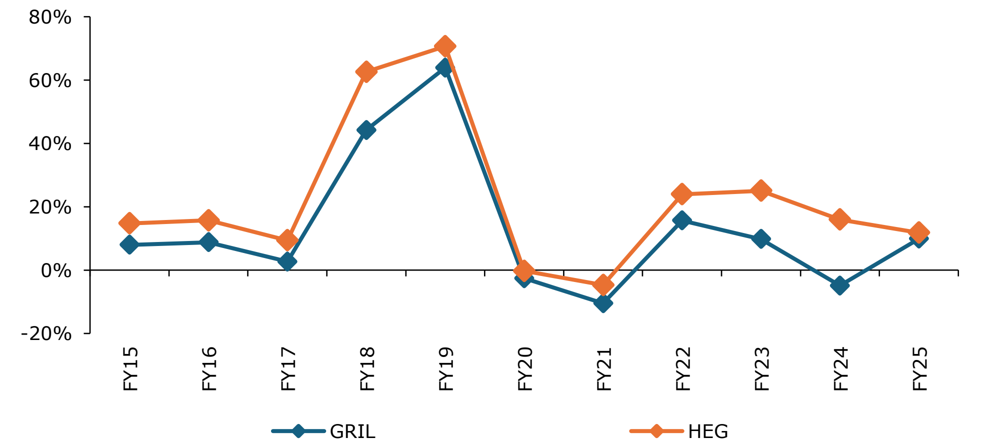
Notably, despite this surge, graphite electrodes remained a small fraction of steelmaking costs; less than 5% even at the peak price of USD13,500/t. This meant steelmakers could absorb the increase without cutting back production, ensuring that demand remains intact.

Exhibit 54: Graphite Electrode UHP prices hit a high of ~USD15,000/t in CY17-18



Source: Bloomberg, Emkay Research

Exhibit 55: EBITDA margins of GRIL/HEG expanded to multi-year highs over FY17-19



Source: Company, Emkay Research

HEG consistently delivers better EBITDA margins vs GRIL, largely due to its structurally lower cost base and tighter operating leverage. HEG benefits from better access to competitively priced needle coke through long-standing supplier relationships, higher power efficiency, and a more streamlined manufacturing footprint, which together lower cash costs per tonne.

In addition, a higher export mix and stronger contract discipline allow HEG to capture pricing premia during upcycles while cushioning margins during troughs. Over the cycle, such advantages translate into cleaner EBITDA spreads and less margin volatility relative to Graphite India.

Industry and the producers responded cautiously

Discipline over expansion defined the last upcycle, as electrode producers prioritized pricing, raw-material security, and balance-sheet strength

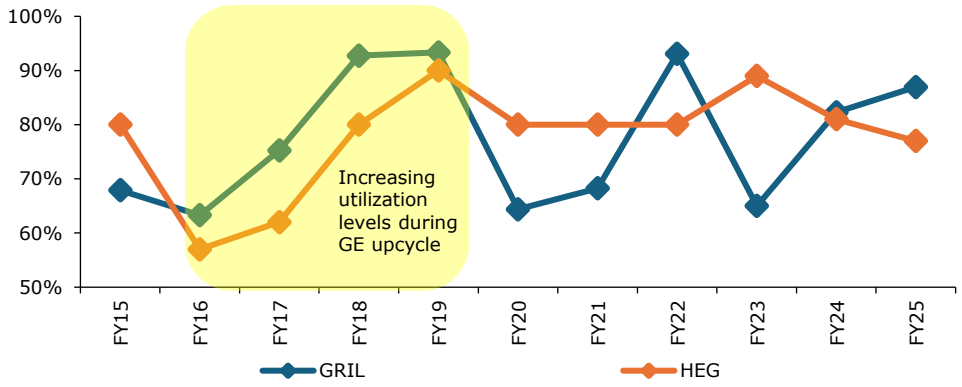
During the previous up-cycle, electrode producers responded cautiously rather than rushing to expand capacity. Most companies, including HEG and Graphite India, operated at optimal utilization (85-90%) and focused on signing contracts at higher realizations. They also prioritized securing long-term needle coke supply agreements, as raw material scarcity was a bigger bottleneck than electrode plant availability.

Instead of adding aggressive new capacity, producers used the record cash flows to de-lever balance sheets, distribute dividends, and strengthen raw material security. For instance, HEG and Graphite India turned net cash positive and started rewarding shareholders with high dividend payouts.

Globally, Japanese producers (Tokai Carbon, Resonac, Nippon Carbon) also benefited, but their earnings trajectory was slower because they relied more on long-term annual contracts rather than quarterly or spot pricing. In China, the market was more volatile, with prices spiking during winter months due to seasonal shutdowns and thereafter normalizing somewhat.

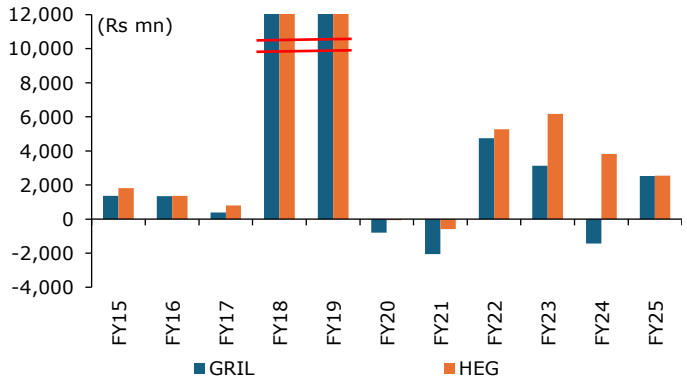
This cautious response meant that the supply-demand tightness persisted longer, prolonging the cycle run through CY18 and into CY19.

Exhibit 56: GRIL and HEG operated at optimal utilization of 85-90% during the upcycle



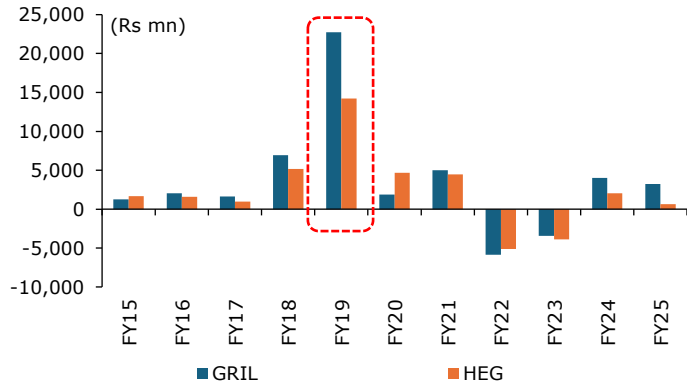
Source: Company, Emkay Research

Exhibit 57: The CY17–19 upcycle marked the peak EBITDA performance for GRIL and HEG...



Source: Company, Emkay Research

Exhibit 58: ...delivering FCF of Rs23bn at GRIL and Rs14bn at HEG



Source: Company, Emkay Research

The aftermath and cooling off (post-CY19)

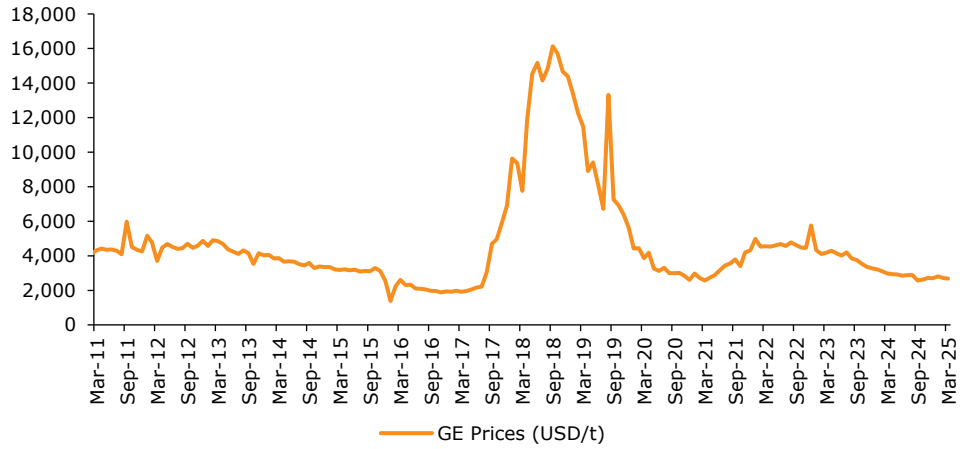
Post-CY19, the GE upcycle normalized, but EAF adoption and EV-driven needle-coke demand reset industry profitability above pre-CY16 levels

By late-CY19, however, the extraordinary up-cycle began to moderate. As the initial shock of Chinese capacity closures and steel export decline faded, the market gradually adjusted. Spot electrode prices in China started normalizing, though long-term global contracts remained at elevated levels compared to pre-CY16.

Meanwhile, the cost of needle coke remained high, compressing margins somewhat for electrode producers. Investors began questioning the sustainability of USD15,000/t prices, recognizing that such supernormal profitability would eventually attract incremental capacity and contract renegotiations.

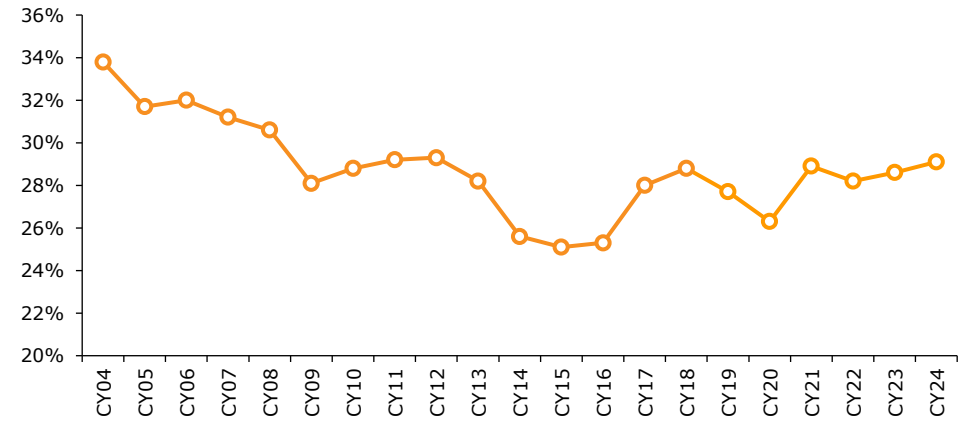
The legacy of the up-cycle, however, was significant. It repositioned graphite electrodes from being seen as a cyclical commodity to being treated as a strategic resource. Structural drivers, such as the global transition toward cleaner steelmaking (greater EAF adoption) and rising electric vehicle penetration (driving needle coke demand), meant that even if prices normalized, they would likely settle at a structurally higher level than the pre-CY16 average. In essence, while the spike of CY17–18 was unlikely to repeat, the industry had shifted into a higher and more stable profitability zone.

Exhibit 59: Graphite Electrode prices started to normalize in 2019



Source: Industry, Emkay Research

Exhibit 60: EAF share of steel production over the last 20 years



Source: Company, Emkay Research

Company Section

BUY Graphite India

Capital-efficient; net cash balance sheet; initiate with BUY

Metals & Mining ▸ Initiating Coverage ▸ **December 12, 2025**

CMP (Rs): 541 | TP (Rs): 700

We initiate coverage on Graphite India (GRIL) with BUY and target price of Rs700. GRIL offers an attractive mix of low-risk growth, strong cycle resilience, and valuation comfort. Its 25kt debottlenecking-led expansion delivers capacity at a fraction of greenfield cost, enabling rapid volume ramp-up and strong operating leverage as EAF-driven demand improves. A robust ~Rs40bn net cash position ensures complete self-funding, protects utilization through downturns, and creates strategic optionality across R&D, acquisitions, and capital returns. The stock, trading around its historical EV/EBITDA average with likely earnings upcycle ahead, presents a favorable risk-reward setup and remains a high-quality BUY in the graphite electrode space.

Capital-efficient growth through low-risk debottlenecking

GRIL's debottlenecking-led expansion provides a superior risk-adjusted growth pathway in an industry historically marred by capacity cycles and heavy upfront capex. By extracting incremental capacity of 25kt from its existing asset base, at a fraction of greenfield cost (USD2,247/t vs USD10,000/t), GRIL meaningfully lifts capital productivity while retaining strategic flexibility. The phased rollout (13kt in 12M; remaining in 36M) allows capacity addition to mirror utilization trends, ensuring that the company can accelerate or slowdown execution, basis demand. As GE demand normalizes with better EAF utilization, GRIL's low-cost incremental volumes should deliver outsized operating leverage, positioning the business for earnings expansion well ahead of topline recovery.

Fortress balance sheet enhances cycle resilience

GRIL's ~Rs40bn net cash balance sheet remains a structural differentiator in a notoriously volatile sector. The company can fully self-fund debottlenecking, modernization, and maintenance capex, avoiding reliance on external financing during inopportune moments in the cycle. Importantly, cash reserves safeguard utilization and workforce continuity during downturns – an advantage that helped GRIL maintain >65% utilization during the FY20-21 trough, far above that of leveraged peers who curtailed operations. The surplus liquidity also provides strategic optionality via distressed-asset acquisitions, enhanced shareholder payouts, and R&D investments into adjacencies such as specialty graphite and battery materials, all of which broaden long-term value creation beyond the GE cycle.

Expanded multiples reflect trough cycle earnings, pricing in recovery optimism

GRIL trades at 15.8x/8.6x FY27E/28E EV/EBITDA, offering valuation comfort at an early stage of the cycle, with expanded near-term multiples reflective of trough cycle earnings. Applying target multiple of 12x on FY28E EBITDA, which we believe represents a trough-to-mid cycle level, delivers a fair value of Rs700, implying ~30% upside as rising EAF penetration, firmer realizations, and ramp-up of debottlenecked capacity drive earnings. With net cash covering 38% of the market cap, the stock seems relatively protected from any downside, while operating leverage, normalized spreads, and a premium UHP mix enhance the upside potential, thus bolstering GRIL as a compelling BUY.

Target Price – 12M	Mar-27
Change in TP (%)	**NA**
Current Reco.	BUY
Previous Reco.	NA
Upside/(Downside) (%)	29.4

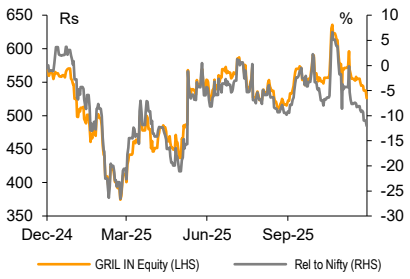
Stock Data	**GRIL IN**
52-week High (Rs)	652
52-week Low (Rs)	366
Shares outstanding (mn)	195.4
Market-cap (Rs bn)	106
Market-cap (USD mn)	1,171
Net-debt, FY26E (Rs mn)	(28,977.5)
ADTV-3M (mn shares)	1.1
ADTV-3M (Rs mn)	744.9
ADTV-3M (USD mn)	8.2
Free float (%)	35.0
Nifty-50	25,898.6
INR/USD	90.4

Shareholding,Sep-25	
Promoters (%)	65.3
FPIs/MFs (%)	6.6/9.6

Price Performance

(%)	1M	3M	12M
Absolute	(5.0)	3.7	(4.7)
Rel. to Nifty	(5.7)	0.1	(9.3)

1-Year share price trend (Rs)



Graphite India: Financial Snapshot (Consolidated)

Y/E Mar (Rs mn)	FY24	FY25	FY26E	FY27E	FY28E
Revenue	29,497	25,600	29,155	31,409	38,221
EBITDA	(1,441)	2,534	1,840	4,252	7,748
Adj. PAT	(1,458)	4,621	3,941	5,685	8,386
Adj. EPS (Rs)	(7.5)	23.7	20.2	29.1	42.9
EBITDA margin (%)	(4.9)	9.9	6.3	13.5	20.3
EBITDA growth (%)	0	0	(27.4)	131.1	82.2
Adj. EPS growth (%)	0	0	(14.7)	44.2	47.5
RoE (%)	(2.8)	8.1	6.6	9.1	12.4
RoIC (%)	21.1	6.2	3.1	9.3	15.8
P/E (x)	13.1	22.9	26.8	18.6	12.6
EV/EBITDA (x)	(55.8)	29.8	41.0	17.7	9.7
P/B (x)	1.9	1.8	1.7	1.6	1.5
FCFF yield (%)	5.2	4.4	1.3	2.5	3.2

Source: Company, Emkay Research

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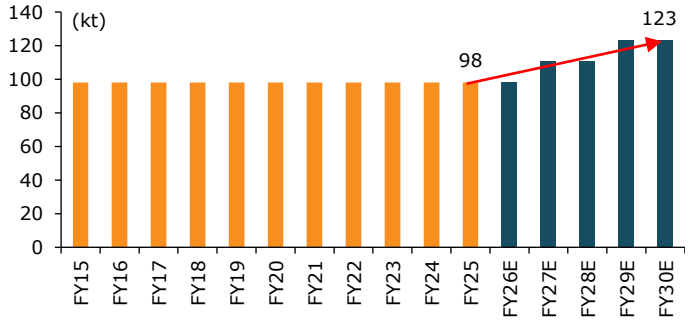
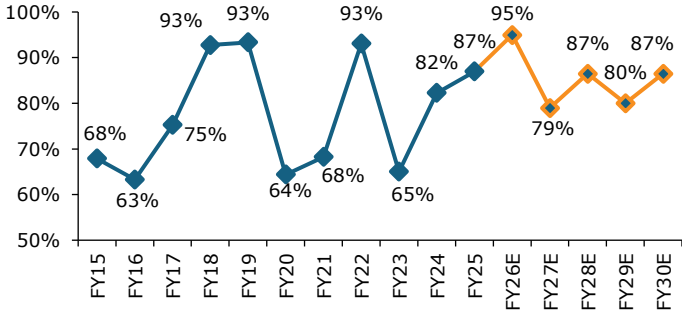
Key Charts

Exhibit 61: GRIL plans expanding capacity from 98kt to 123kt



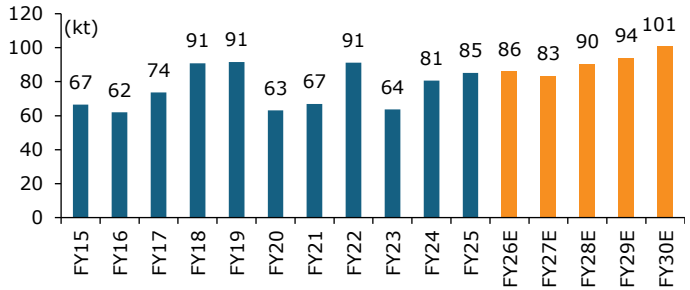
Source: Company, Emkay Research

Exhibit 62: Utilization to improve as demand for EAF picks up



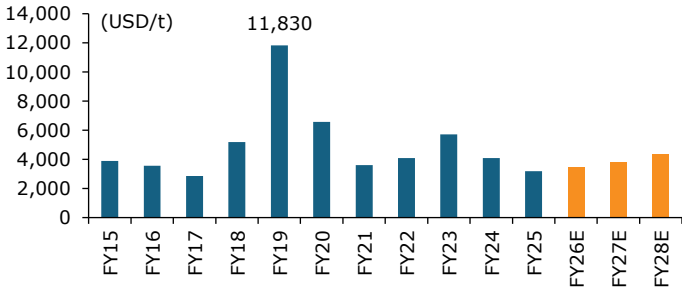
Source: Company, Emkay Research

Exhibit 63: Capacity expansion to drive higher production



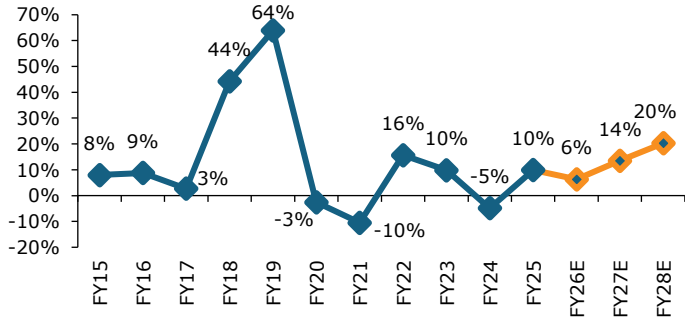
Source: Company, Emkay Research

Exhibit 64: GE realizations to increase gradually



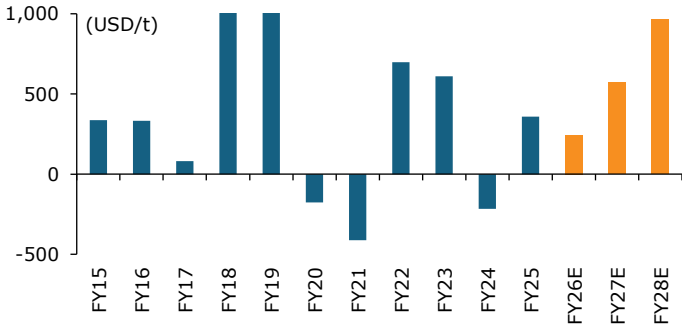
Source: Company, Emkay Research

Exhibit 65: EBITDA margins to improve to mid-cycle levels



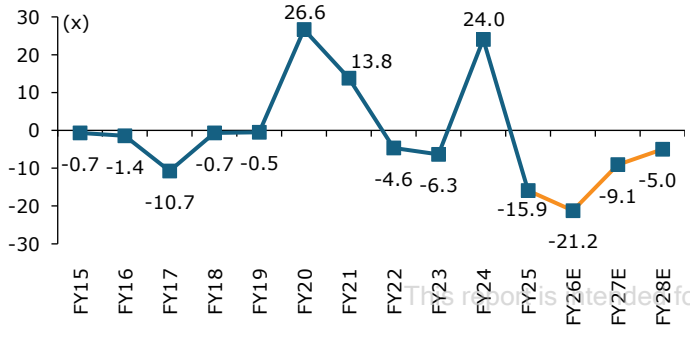
Source: Company, Emkay Research

Exhibit 66: Market rebalancing to drive higher EBITDA spreads



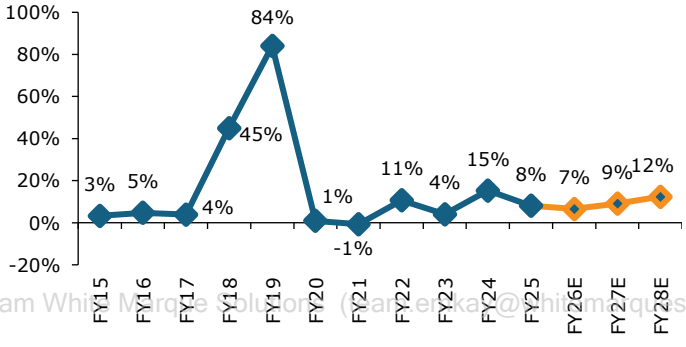
Source: Company, Emkay Research

Exhibit 67: Net debt-to-EBITDA remains at a comfortable range



Source: Company, Emkay Research

Exhibit 68: RoE improvement over the next few years



Source: Company, Emkay Research

Summary of estimates

Exhibit 69: GRIL – Summary of estimates

Rs mn	FY24	FY25	FY26E	FY27E	FY28E
P&L					
Net sales	29,496.9	25,600.3	29,154.8	31,409.1	38,220.6
Operating expenses	30,937.8	23,066.0	27,314.8	27,156.8	30,472.6
EBITDA	**-1,440.9**	**2,534.3**	**1,840.0**	**4,252.3**	**7,748.0**
Depreciation	804.4	895.2	972.3	1,045.7	1,141.5
EBIT	**798.4**	**6,023.5**	**5,559.0**	**8,226.2**	**11,977.6**
Interest and taxes	2,289.0	1,441.7	1,637.7	2,541.4	3,591.8
Net earnings	**8,081.0**	**4,621.1**	**3,941.3**	**5,684.8**	**8,385.8**
EPS (Rs)	**41.4**	**23.7**	**20.2**	**29.1**	**42.9**
Dividend (Rs/sh)	8.5	11.0	10.0	10.0	10.0
Number of shares (mn)	195.4	195.4	195.4	195.4	195.4
Balance sheet					
Gross block	**13,923.8**	**16,180.7**	**22,599.7**	**29,873.7**	**37,703.2**
Inventories	13,539.0	11,863.5	12,780.2	14,198.6	17,277.8
Receivables	5,218.4	4,682.3	5,191.9	5,593.4	6,806.4
Payables	1,605.6	2,634.0	2,504.9	2,484.7	2,896.3
Net working capital	**17,151.8**	**13,911.8**	**15,467.3**	**17,307.4**	**21,187.9**
Cash	**695.6**	**1,819.5**	**1,822.6**	**1,459.3**	**1,552.3**
Total assets	67,955.2	72,312.9	77,151.3	80,862.2	87,705.9
Total liabilities	11,803.6	13,640.5	16,511.4	16,491.2	16,902.8
Total Equity	**56,151.6**	**58,672.4**	**60,640.0**	**64,371.0**	**70,803.1**
Cash flow					
Operating cash before WC	9,685.3	3,786.9	-1,555.5	-1,840.1	-3,880.6
Working capital and other	-2,882.8	1,215.4	5,224.2	7,061.2	9,858.0
Operating cash flow	**6,802.5**	**5,002.3**	**3,668.8**	**5,221.1**	**5,977.4**
Capex	-2,596.9	-1,673.5	-2,700.0	-3,300.0	-3,600.0
Other investing items	207.4	-347.2	-1,681.3	0.0	0.0
Investing cash flow	**-2,389.5**	**-2,020.7**	**-4,381.3**	**-3,300.0**	**-3,600.0**
Borrowings/(repayments)	-2,493.1	-64.2	3,000.0	0.0	0.0
Equity changes	0.0	0.0	0.0	0.0	0.0
Other financing items	-1,781.1	-2,200.3	-2,284.4	-2,284.4	-2,284.4
Financing cash flow	**-4,274.2**	**-2,264.5**	**715.6**	**-2,284.4**	**-2,284.4**
Net change in cash	**138.8**	**717.1**	**3.1**	**-363.3**	**93.0**
Ending cash	**369.9**	**1,087.0**	**1,090.1**	**726.8**	**819.8**
Free cash flow	4,029.4	3,216.0	638.1	1,590.5	2,046.8

	FY24	FY25	FY26E	FY27E	FY28E
Operational metrics					
GE Price (USD/t)	5,050.0	4,125.0	4,150.0	4,400.0	4,850.0
Needle Coke (USD/t)	1,862.5	1,262.5	1,250.0	1,400.0	1,600.0
GE Capacity (kt)	98.0	98.0	98.0	111.0	111.0
Capacity Utilization	82.3%	87.0%	95.0%	79.0%	86.5%
Production (kt)	80.6	85.2	86.0	83.5	90.4
Realization (USD/t)	4,083.7	3,185.9	3,450.0	3,825.0	4,350.0
Raw material cost (USD/t)	2,933.7	1,631.2	2,205.0	2,200.0	2,385.0
Financial metrics					
EBITDA margin	-4.9%	9.9%	6.3%	13.5%	20.3%
Net margin	27.4%	18.1%	13.5%	18.1%	21.9%
EBITDA spread (USD/t)	-215.9	359.2	243.9	572.4	962.5
ROE	15.3%	8.0%	6.6%	9.1%	12.4%
ROCE	1.5%	10.2%	9.0%	12.7%	17.2%
ROIC	-4.6%	12.5%	10.9%	14.2%	18.3%
Gross debt (Rs mn)	1,766.1	1,723.2	4,723.2	4,723.2	4,723.2
Net debt/(cash) (Rs mn)	-34,622.4	-40,335.3	-39,019.7	-38,656.4	-38,749.4
Net debt to EBITDA (x)	24.0	-15.9	-21.2	-9.1	-5.0
Net debt to Equity	-61.7%	-68.7%	-64.3%	-60.1%	-54.7%
Valuation					
P/E (x)	11.2	22.8	26.8	18.6	12.6
EV/EBITDA (x)	na	25.7	36.3	15.8	8.7
FCF yield	4.4%	3.0%	0.6%	1.5%	1.9%
Dividend yield	1.8%	2.0%	1.8%	1.8%	1.8%

Methodology	**Rs mn**	**Rs/sh**
EV/EBITDA	92,976.5	475.9
less net debt / (net cash)	-39,019.7	-199.7
GrafTech Investment	2,455.2	12.6
Equity Value	**134,451.4**	**688.2**
Target price		**700.0**
Current price		541.4
Expected return		**29.3%**

Source: Company, Emkay Research

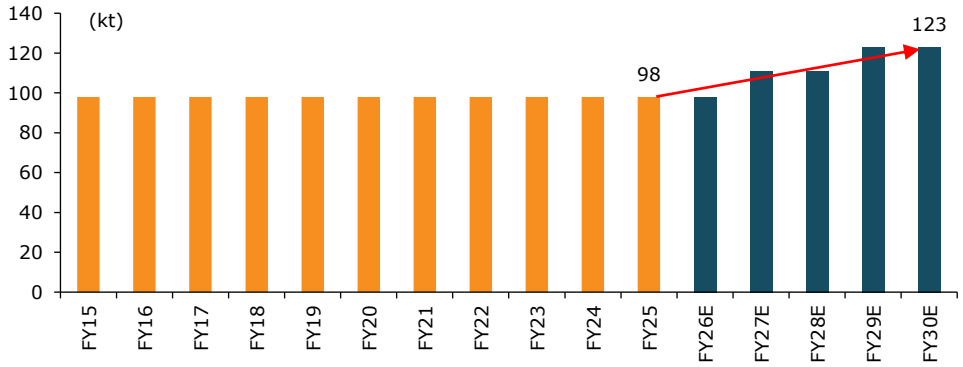
Investment Case

Capacity expansion via debottlenecking — High return, low-risk growth

Graphite India's capacity expansion through debottlenecking represents a capital-efficient and strategically disciplined growth approach in an otherwise highly-cyclical and capital-intensive industry. Instead of committing to large, multi-year greenfield projects, the company is extracting incremental capacity from its existing asset base by removing process constraints, upgrading specific bottleneck equipment, optimizing plant layout and fine-tuning operating parameters such as furnace cycles, baking times, and machining optimization. This allows Graphite India to enhance effective output with minimal incremental fixed assets, resulting in significantly higher capital productivity than peers pursuing fresh installations.

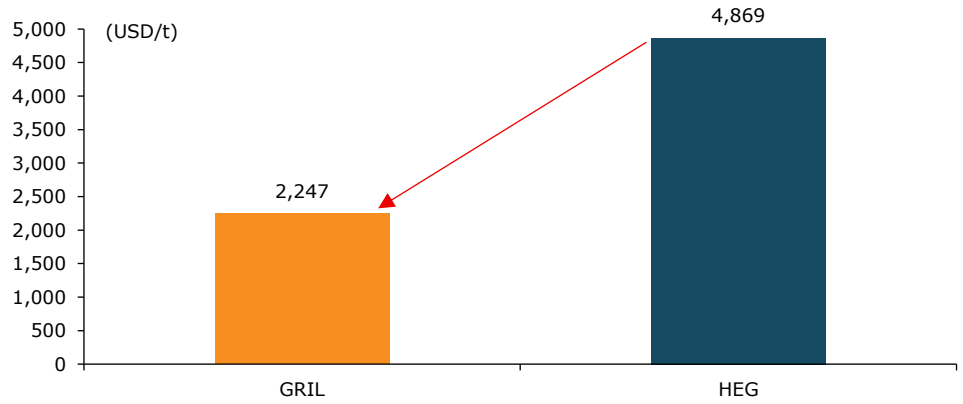
Unlike a greenfield build-out, GRIL's debottlenecking programme offers phased, low-risk capacity addition of 13kt over the next 12 months and the remaining 12kt within 36 months, with capex intensity materially lower at USD2,247/t (vs USD10,000/t for greenfield). The management can sequence interventions line-by-line, allowing capacity to track utilization trends. If demand stays subdued, the rollout can slow down; if EAF orders firm up, incremental volumes can be unlocked in shorter cycles of 3-6 months, thus mitigating any risk of adding excess supply at an inappropriate time in the cycle – an issue that hurt the industry post the FY18-19 spike, when aggressive Chinese expansions created a prolonged supply overhang.

Exhibit 70: GRIL to commission 13kt of the total 25kt planned capacity expansion within 12 months, driven primarily by debottlenecking measures



Source: Company, Emkay Research

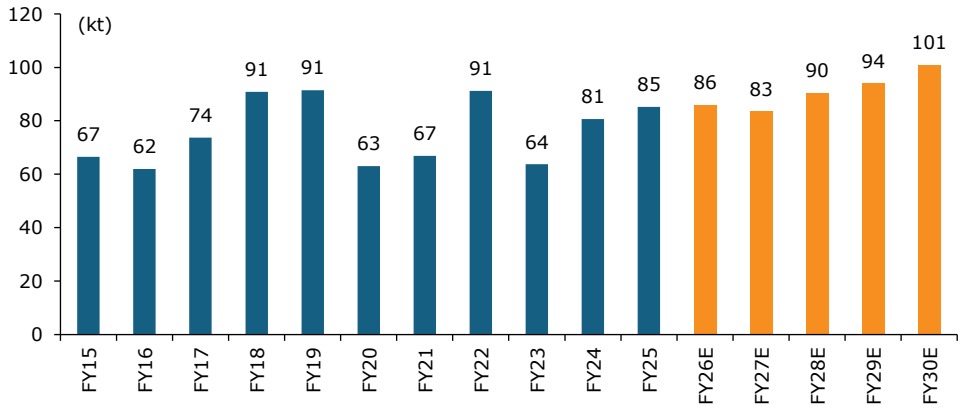
Exhibit 71: GRIL's capex intensity remains meaningfully below that of HEG



Source: Company, Emkay Research

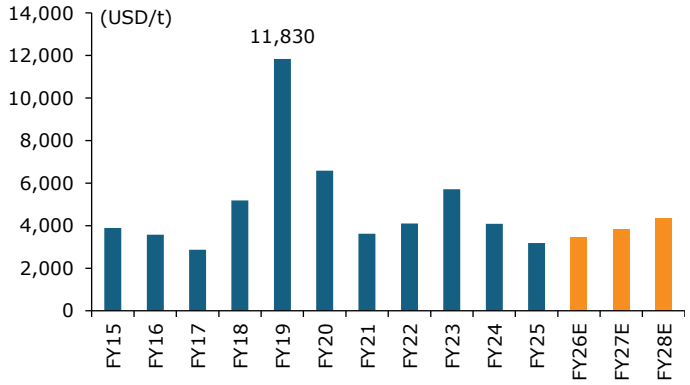
This approach becomes especially powerful in a cyclical recovery. GE demand is tightly correlated with EAF steel production, which tends to rebound sharply once steel margins improve. Debottlenecked capacity means Graphite India is positioned to ramp up volumes quickly when utilisation levels return to normal or exceed mid-cycle levels. As the bulk of fixed cost (labor, depreciation, utility infrastructure) is already incurred, incremental volumes carry higher contribution margins, driving EBITDA expansion at a faster pace than revenue growth.

Exhibit 72: GRIL's 13kt expansion scheduled over the coming 12 months is expected to support higher volumes from FY28



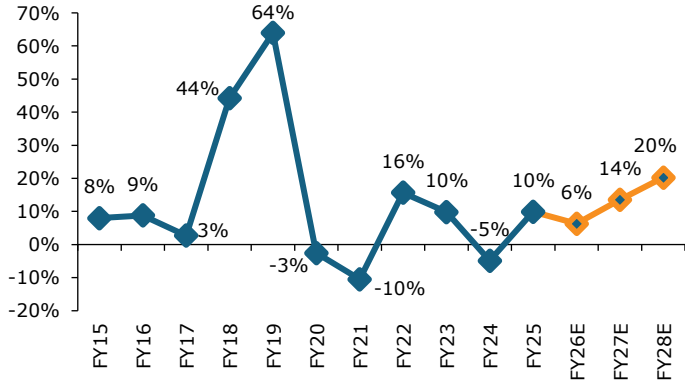
Source: Company, Emkay Research

Exhibit 73: GE realizations are set to firm up, though the recovery is likely to be gradual rather than sharp...



Source: Company, Emkay Research

Exhibit 74: ...while margins are set to improve on the back of operating leverage



Source: Company, Emkay Research

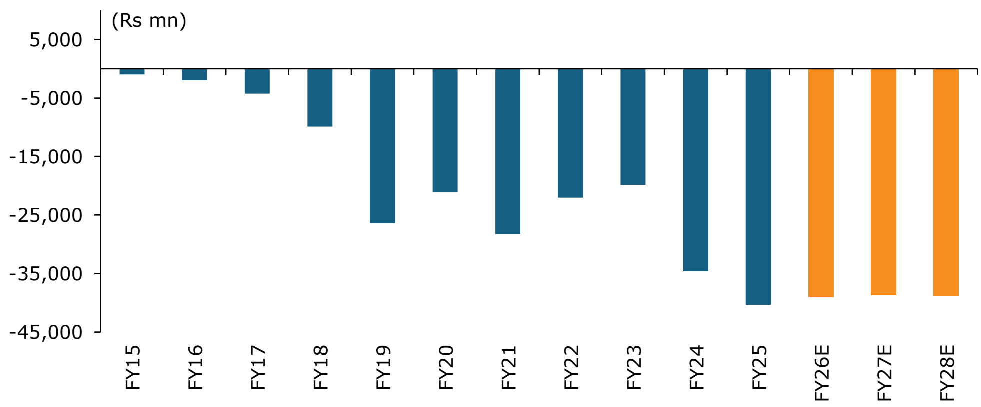
Strategically, the added capacity further strengthens GRIL's technical moat. While Chinese players remain cost-competitive, they still face inconsistency in UHP quality—particularly in larger diameters. In contrast, Graphite India's global approvals, multi-geography export presence, and long-standing OEM relationships position it to capture premium realizations on incremental volumes (UHP at USD4,000–4,500/t vs USD2,500–3,000/t for Chinese peers). With EAF steelmaking steadily gaining share globally (~26% to ~29% over the past five years), the company can participate in demand growth without tackling balance-sheet strain or committing to large, long-gestation projects.

Overall, debottlenecking represents a disciplined capital-allocation approach that lifts RoCE, sharpens the cost structure, preserves balance-sheet strength (net cash of ~Rs40bn), and allows Graphite India to scale up profitably through cycles—forming a key structural pillar of the medium-term investment thesis.

Balance sheet strength and net cash position

Graphite India's net cash position materially de-risks the investment in what is traditionally a highly volatile sector. The graphite electrode industry has historically seen large swings in profitability, driven by steel cycles, Chinese production policy, and raw material availability. Companies burdened with debt tend to underperform significantly during downturns due to high interest costs and restricted operational flexibility. Graphite India, by contrast, operates with a fortress balance sheet, enabling it to absorb prolonged periods of weak pricing without compromising its core business or diluting shareholders.

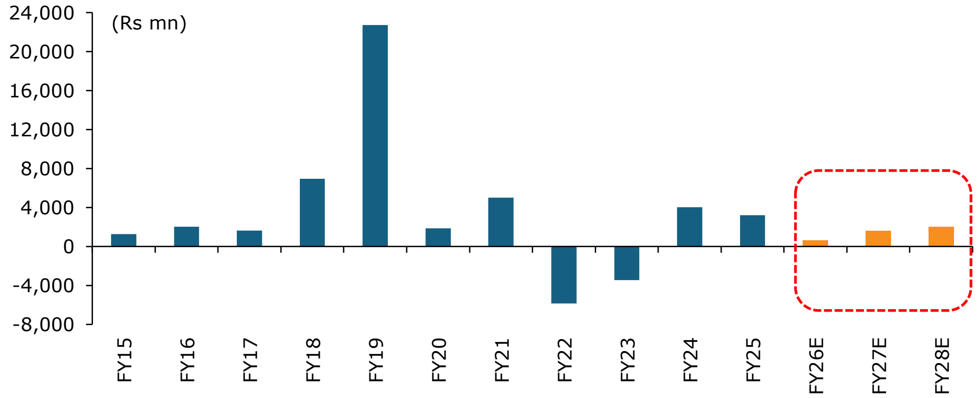
Exhibit 75: GRIL's net cash position materially de-risks the investment



Source: Company, Emkay Research

Its strong balance sheet allows Graphite India to self-fund all capex and maintenance requirements without depending on external financing. Debottlenecking-related investments, technology upgrades, maintenance capex, and even selective capacity modernization can be fully supported by internal accruals. This helps preserve margins, protects return ratios, and gives the management flexibility to time investments optimally through the cycle — not when the credit market permits, but when economics make sense.

Exhibit 76: GRIL continues to deliver positive FCF despite the trough in GE pricing and an ongoing capex plan of Rs6bn



Source: Company, Emkay Research

Graphite India's net cash position of ~Rs40bn provides a meaningful strategic buffer in a sector where earnings can swing sharply with electrode prices and steel utilization. In a scenario where GE prices starts correcting due to Chinese oversupply or weaker EAF demand, the company is not exposed to covenant-linked pressures or utilization-driven cash burn. Unlike leveraged peers, it can afford to run the plant at 70–80% utilization through the downcycle, retain technical manpower, and maintain customer-service levels. This cycle survivability has historically been a key differentiator during the FY20-21 downturn; for instance, GRIL's utilization trough of 65% was still above that of several global peers that were compelled into temporary shutdowns due to stretched balance sheets.

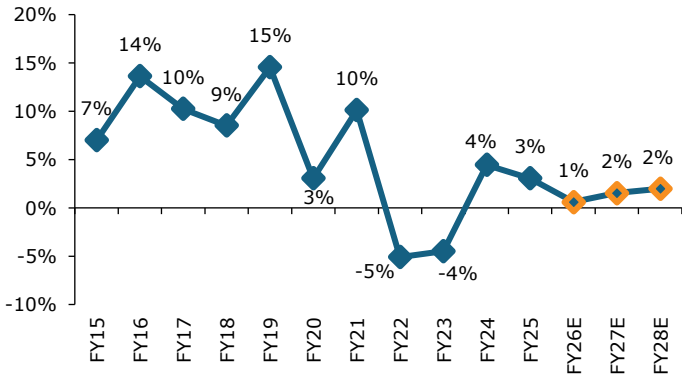
Beyond risk protection, the balance sheet creates positive strategic optionality. With net cash representing 38% of the current market cap, the company has room to:

- pursue opportunistic acquisitions of stressed assets or overseas electrode capacities at distressed valuations (EV/tonne typically compresses in downturns);
- enhance shareholder returns, with potential dividend payout or buybacks funded through surplus liquidity during strong cash flow periods;
- allocate significant sum annually to R&D in higher-value adjacencies (battery materials, specialty graphite, composites), helping diversify revenue flows beyond traditional UHP electrodes over the medium term.

The balance-sheet strength supports both growth and capital-return pathways, appealing to growth-oriented funds seeking strategic upside as well as income-oriented investors prioritizing stability.

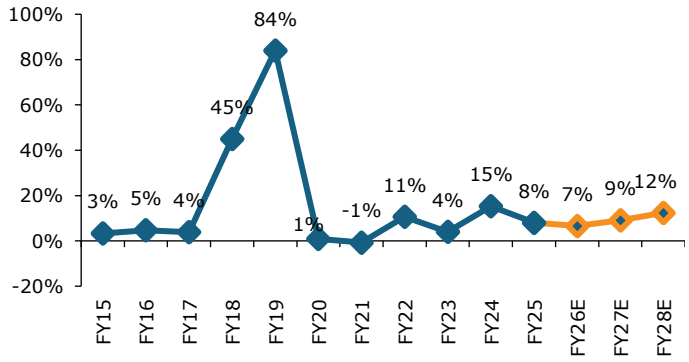
From a valuation standpoint, net cash also acts as a floor in cyclical troughs. When EBITDA/t compresses and headline multiples appear optically elevated, investors typically revert to book value and cash-adjusted metrics. With cash covering ~72% of the book value, Graphite India carries materially lower economic risk than leveraged global peers (net debt-to-EBITDA of 2-4x for several Chinese and European producers). This supports a structural valuation premium and positions the stock as a relatively safer vehicle to play a normalization in electrode demand.

Exhibit 77: FCF yield to be positive despite ongoing capex plan



Source: Company, Emkay Research

Exhibit 78: Despite its net cash–rich balance sheet, GRIL delivers an RoE that is at par with HEG



Source: Company, Emkay Research

Valuations reflect trough cycle earnings

Expanded multiples reflect trough cycle earnings while factoring in recovery optimism

As the share of EAF-produced steel increases, demand for graphite electrode is likely to see a gradual increase, leading to higher realizations. We believe EBITDA will compound at 45.1% over FY25–28E, driven by a combination of improving capacity utilization and firmer realizations. The stock is trading at 8.3x EV/EBITDA on our mid-cycle EBITDA margin assumption of 20% vs the meagre margin of 6% currently, which represents trough-cycle profitability.

We initiate coverage on GRIL with BUY and value the stock at 12.0x on our EBITDA estimate of Rs7.7bn for FY28, to arrive at an enterprise value of Rs93.0bn. Hence, we arrive at equity value of Rs134.4bn after adjusting for net cash and GrafTech stake of 6.82%. Our fair value estimate works out to be Rs700, implying expected return of ~30%.

Exhibit 79: We value GRIL at target price of Rs700, based on FY28E EV/EBITDA of 12.0x

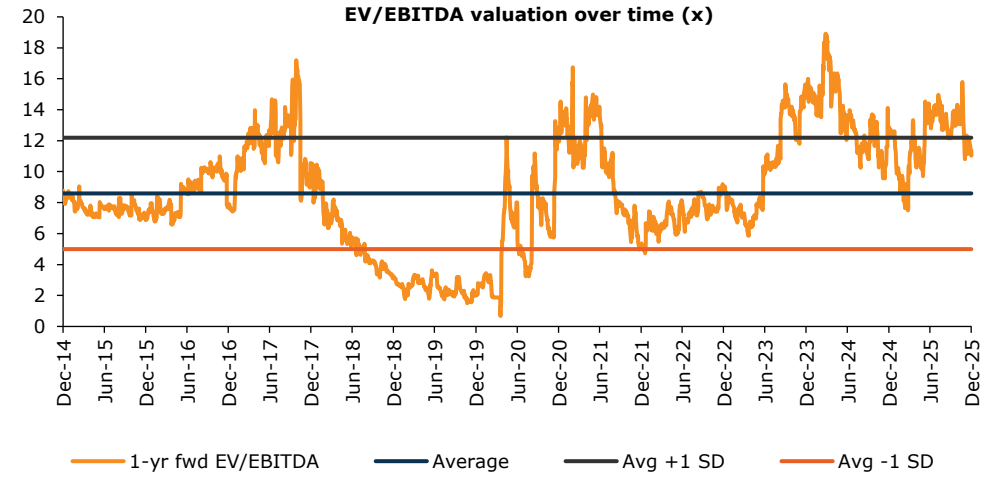
VALUATION	Time - period	Multiple (x)	Value (Rs mn)	Value/sh (Rs)
EV/EBITDA				
Enterprise Value	FY28	12.0	92,976.5	475.9
less net debt / (net cash)			-39,019.7	-199.7
Equity Value			**131,996.2**	**675.6**
GrafTech Investment @ 6.82%			2,455.2	12.6
Total Equity Value			**134,451.4**	**688.2**
Rounded target price				**700.0**
Current share price				541.4
Expected price return				29.3%
Expected dividend yield				1.8%
Expected total return				**31.1%**

Source: Emkay Research

10-year trailing EV/EBITDA valuation average of 15.4x

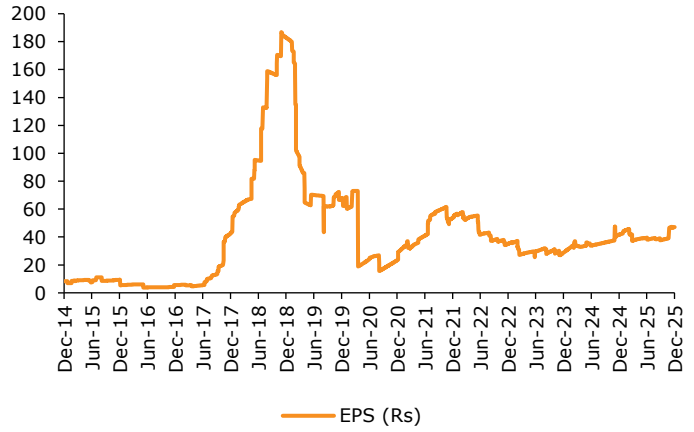
Over the past decade, GRIL has traded at an average trailing EV/EBITDA of 15.4x. On forward basis, its historical 1-year forward EV/EBITDA has averaged at 8.6x. Against this backdrop, the stock currently trades at 15.8x EV/EBITDA on FY27E and 8.7x on FY28E—broadly in line with the long-term averages.

Exhibit 80: GRIL – EV/EBITDA currently trading close to 1sd of its long-term average



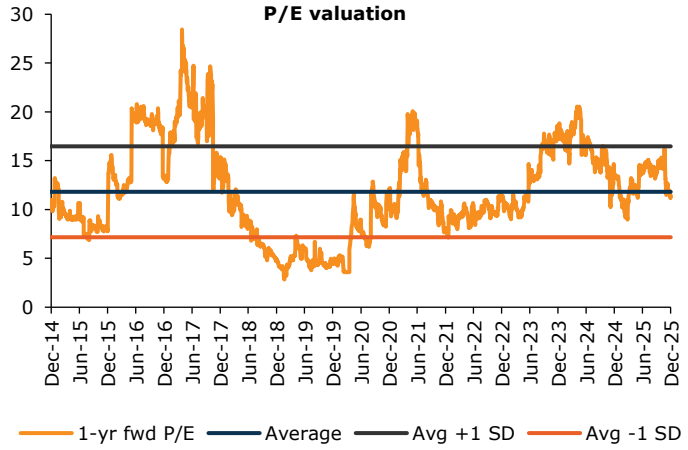
Source: Bloomberg, Emkay Research

Exhibit 81: GRIL – EPS has been stable over the years, except during the FY18-19 boom



Source: Bloomberg, Emkay Research

Exhibit 82: GRIL is trading close to its 10-year average P/E



Source: Bloomberg, Emkay Research

Earnings sensitive to graphite electrode and petroleum needle coke price movements

The profitability is understandably sensitive to GE and raw-material prices, with needle coke being the most crucial. The respective commodity supply-demand and inventory cycles gain prominence, for timing the moves in profitability.

Exhibit 83: GE and raw-material cost sensitivity on FY27E EBITDA

FY27 EBITDA	Needle Coke cost (USD/t)							
Graphite Electrode (USD/t)	**4,252**	1,000	1,100	1,200	1,300	1,400	1,500	1,600
4,100	4,995	4,252	3,509	2,766	2,024	1,281	538	
4,200	5,738	4,995	4,252	3,509	2,766	2,024	1,281	
4,300	6,481	5,738	4,995	4,252	3,509	2,766	2,024	
4,400	7,224	6,481	5,738	4,995	4,252	3,509	2,766	
4,500	7,967	7,224	6,481	5,738	4,995	4,252	3,509	
4,600	8,710	7,967	7,224	6,481	5,738	4,995	4,252	
4,700	9,452	8,710	7,967	7,224	6,481	5,738	4,995	

Source: Company, Emkay Research

Exhibit 84: % change sensitivity over FY27E EBITDA

FY27 EBITDA	Needle Coke cost (USD/t)						
Graphite Electrode (USD/t)	1,000	1,100	1,200	1,300	1,400	1,500	1,600
4,100	17.5%	0.0%	-17.5%	-34.9%	-52.4%	-69.9%	-87.4%
4,200	34.9%	17.5%	0.0%	-17.5%	-34.9%	-52.4%	-69.9%
4,300	52.4%	34.9%	17.5%	0.0%	-17.5%	-34.9%	-52.4%
4,400	69.9%	52.4%	34.9%	17.5%	0.0%	-17.5%	-34.9%
4,500	87.4%	69.9%	52.4%	34.9%	17.5%	0.0%	-17.5%
4,600	104.8%	87.4%	69.9%	52.4%	34.9%	17.5%	0.0%
4,700	122.3%	104.8%	87.4%	69.9%	52.4%	34.9%	17.5%

Source: Company, Emkay Research

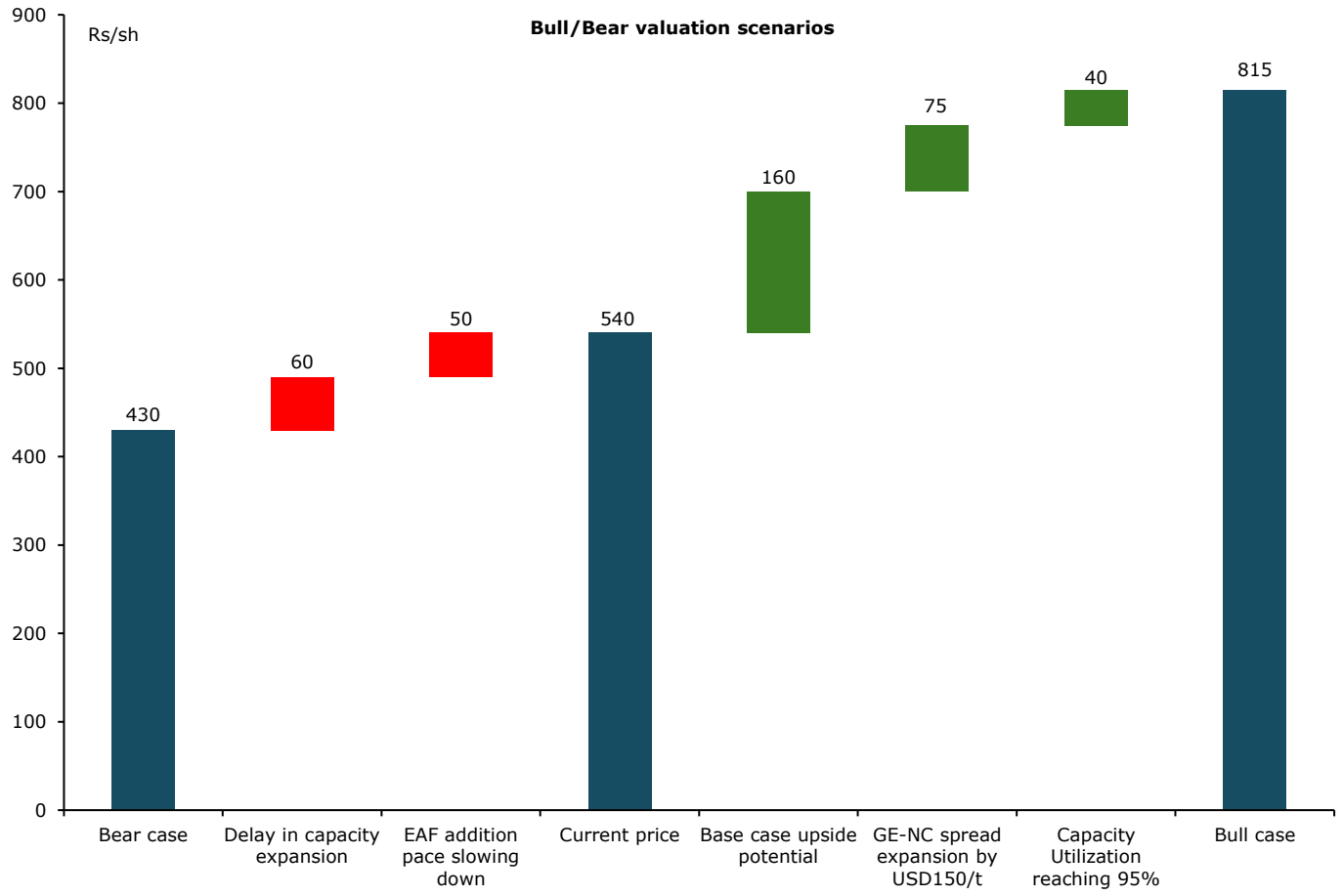
Rebound in GE prices and improved capacity utilization are key bull cases

Bull-/Bear-case scenarios indicate a -21% to +51% return spread

In our view, a rebound in GE prices as well as improved capacity utilization to 95% could translate into 51% upside for the stock – in our bull case.

We believe any delay in capacity expansion and EAF pace slowing down could affect profitability and valuations.

Exhibit 85: Bull-/Bear-case scenarios indicating downside risk or upside potential



Source: Company, Emkay Research

Sector valuation comps

Indian graphite electrode players trade at a premium due to volume growth potential, structurally higher RoCE, lower capex intensity, and healthy balance sheets, thus driving superior earnings visibility versus global peers. Confidence on India as a reliable UHP electrode supplier amid rising EAF steel demand has further supported valuation re-rating despite cyclicality.

Exhibit 86: Sector valuation matrix – India vs Global

Company	Year-end	Currency	CMP	M Cap (USD bn)	Stock performance YTD	P/E (x)		EV/EBITDA (x)		P/B (x)		ROE (%)		FCF Yield (%)	
						FY26E	FY27E	FY26E	FY27E	FY26E	FY27E	FY26E	FY27E	FY26E	FY27E
India															
Graphite India	Mar-25	INR	555.0	1.2	-2%	15.6	10.6	20.6	10.4	1.8	1.8	13.3	15.7	3.6	3.6
HEG	Mar-25	INR	527.7	1.1	3%	55.5	28.2	24.9	14.7	2.3	2.3	4.0	7.2	0.9	0.9
US															
Graftech International	Dec-24	USD	14.2	0.4	-18%	na	na	85.4	34.2	na	na	na	32.1	-32.9	-32.9
Japan															
Resonac Holdings	Dec-24	JPY	6,526.0	7.7	63%	41.8	16.4	12.2	9.3	1.8	1.8	3.9	10.8	na	na
Tokai Carbon	Dec-24	JPY	1,028.0	1.5	12%	14.1	11.5	7.1	5.8	0.8	0.8	4.8	5.6	na	na
Nippon Carbon	Dec-24	JPY	4,505.0	0.3	3%	8.4	14.7	na	na	0.9	0.9	na	na	na	na
Europe															
SGL Carbon	Dec-24	EUR	2.9	0.4	-28%	na	17.4	4.0	4.9	0.7	0.7	-0.2	13.5	-18.0	-18.0
Weighted Average India						**34.9**	**19.1**	**22.7**	**12.5**	**2.1**	**2.1**	**8.8**	**11.6**	**2.3**	**2.3**
Weighted Average Global + India						**33.8**	**15.9**	**15.1**	**9.8**	**1.6**	**1.6**	**4.6**	**10.7**	**-1.1**	**-1.1**

Source: Bloomberg, Emkay Research

Risks to our thesis

In a combined bear case of renewed China-linked price pressure + weak global steel demand + surge in needle coke pricing, sector RoCE could remain sub–WACC for another 2–3 years, materially delaying the re-rating thesis and exhausting investor patience despite balance-sheet resilience

Spread compression

Needle coke remains the most crucial margin swing factor. A sharp upward shock (driven by battery anode demand or refining outages) without commensurate electrode price increases could compress gross spreads by USD100-200/t and negatively impact earnings.

Project execution

As GRIL progresses on its 25kt expansion, any project execution risk arising from potential delays, cost overruns, or commissioning issues during execution could derail the volume growth potential. Given the technical complexity of electrode manufacturing, even minor slippages can defer ramp-up timelines and dilute expected returns.

Anti-involution in China loses relevance

In 2025 YTD, China has cut steel production by ~4% even though exports remain elevated. A lack of follow-through in production cuts in 2026 could keep the global steel market in surplus. Chinese producers continue to hold significant excess capacity and, without meaningful supply curtailments, are likely to maintain aggressive export volumes. This could keep global graphite electrode prices under pressure, intensify competition in key export markets, and limit pricing power for non-China producers.

Structural power cost disadvantage in Europe persists

If European electricity prices remain structurally elevated due to grid constraints or prolonged geopolitical risk, EAF utilization could stay depressed, structurally impairing one of the largest non-China end markets for UHP electrodes and weakening global demand recovery.

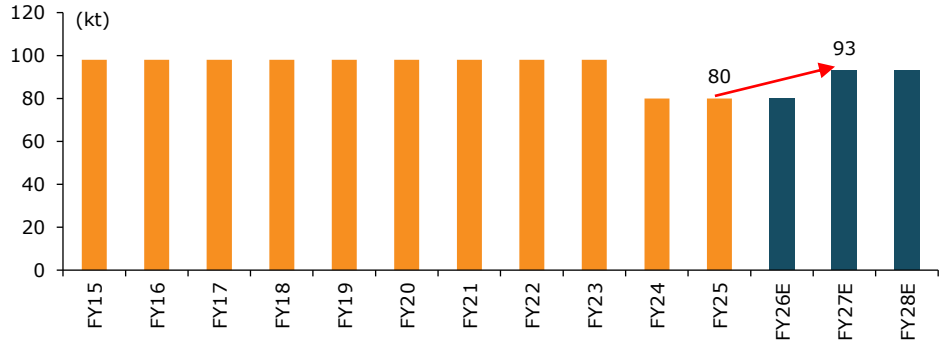
Decarbonization policy dilution

A slowdown, delay, or dilution in CBAM/ETS enforcement or EAF-linked incentives—especially under political pressure from high-energy-cost economies—could defer the structural shift toward EAFs, elongating the replacement demand cycle for graphite electrodes.

Company overview

Since its inception in the 1960s, Graphite India has expanded its capacity, from a modest 5kt to 80kt of graphite electrodes in India, alongside 18kt of capacity in Germany.

Exhibit 87: GRIL plans adding 13kt of GE capacity to reach 93kt by FY27



Source: Company, Emkay Research

GRIL manufactures a comprehensive range of graphite electrodes, spanning diameters—from 200mm (8") to 750mm (30"), catering to Ultra High Power (UHP), Ultra High Power for Ladle Furnace (UHP-LF/SHP), High Power (HP), and Regular Power (RP) grades for both AC and DC furnaces. GRIL's UHP electrode range is produced using premium-quality Needle Coke, a crucial raw material that enables superior performance and reliability, reinforcing its positioning among leading global suppliers of high-performance electrodes.

While graphite electrodes remain the company's core strength, GIL has diversified into a wide product portfolio. Its offerings include impervious graphite equipment, graphite specialty products, high-speed steel, glass reinforced plastic pipes, calcined petroleum coke, as well as renewable energy solutions spanning solar, wind, and hydropower.

Overseas subsidiaries

GRIL enjoys the leading producer position in graphite electrodes globally, by installed capacity. The company operates with an aggregate capacity of 98kt, spread across its facilities in Durgapur and Nashik (India) and, till recently, Nuremberg (Germany).

Its Indian plants enjoy a strategic locational advantage, being situated in proximity to the nation's key ports, thereby ensuring logistical efficiency for exports while also maintaining close access to domestic customers. Notably, in CY23, Graphite India discontinued operations at its Nuremberg facility, primarily due to weak demand conditions in Europe, industry overcapacity, and a sharp rise in energy costs that made operations unviable. However, the restructured speciality and coating businesses under the German subsidiary remain operational, catering to niche applications.

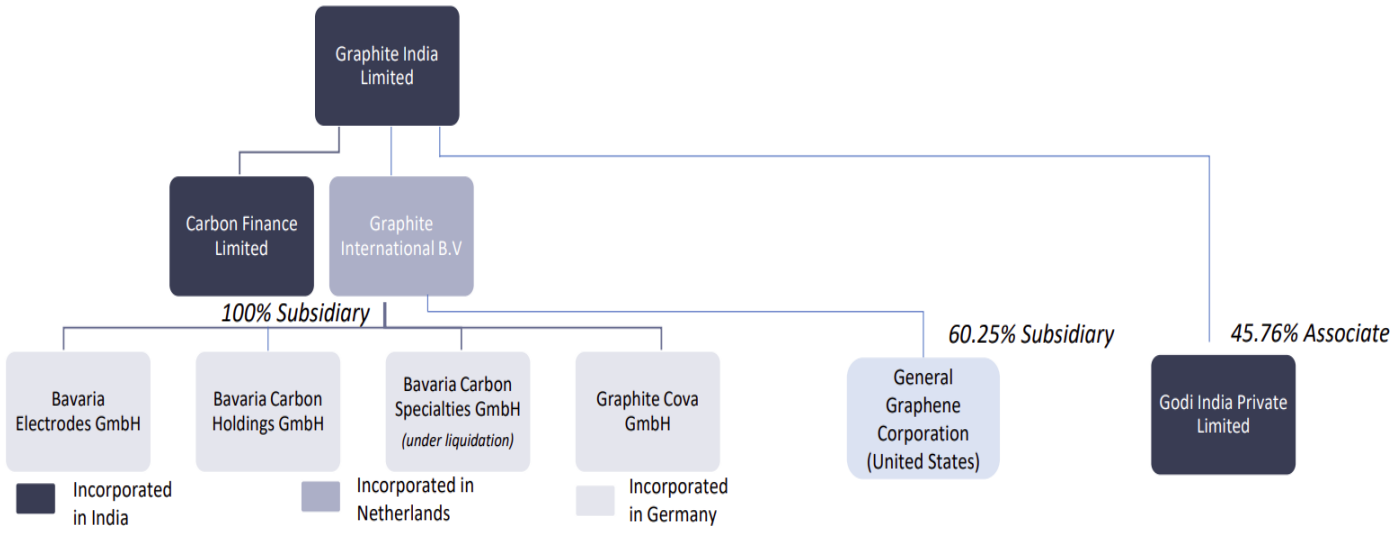
Exhibit 88: GRIL has strategically-located manufacturing facilities

Source: Company, Emkay Research

Exhibit 89: GRIL has a diversified customer base

Source: Company, Emkay Research

Exhibit 90: GRIL's organizational structure



Source: Company, Emkay Research

Graphite and Carbon segments

Barauni coke plant

Graphite India's Barauni facility in Bihar is a key backward integration unit engaged in the production of Calcined Petroleum Coke (CPC), Carbon Paste, and Electrically Calcined Anthracite Paste. The plant caters to critical end-use industries, including aluminium smelting, graphite electrode manufacturing, steelmaking, and ferro alloys. Despite its satisfactory performance in recent years, the division is likely to face headwinds from rising raw-material costs and supply shortages in the domestic market which could weigh on margins.

Captive power

The company operates an 18.9MW wind power plant at Nandurbar, Maharashtra, with all nine turbines fully commissioned. This facility has contributed to lowering power costs for the Nashik plant while simultaneously reducing carbon emissions. In addition, the company commissioned an 8.8MWp solar power plant at Bhoom, Maharashtra in Feb-25, further strengthening its renewable energy portfolio.

Impervious Graphite Equipment (IGE) division

The IGE division is engaged in the design, manufacture, and supply of impervious graphite heat and mass transfer equipment, along with turnkey systems. It operates through an integrated facility that encompasses process and product design, manufacturing, inspection, and supervision during erection and commissioning. Impregnated graphite, the division's core material, is well-suited for corrosive applications across multiple industries, including chloro-alkali, agrochemicals, chlorinated organics, specialty and fine chemicals, phosphoric acid, fertilizers, rayon, steel pickling, metal processing, polymers, drug intermediates, batteries, and gelatine.

Steel division

Based at Titilagarh, Odisha, PSD is India's largest producer of high-speed steel (HSS) and alloy steel, used in cutting tools for automotive, machine tools, aviation, and retail sectors. The division faces competition from smaller domestic players and low-cost imports. Performance improved during FY24-25, supported by continued exports and deeper penetration into new international markets.

Other segments

Glass Reinforced Plastic (GRP) division

The GRP division manufactures large-diameter glass-fibre-reinforced plastic pipes for municipal, seawater, effluent, irrigation, penstock, and pipeline rehabilitation applications, using the advanced mandrel filament winding technology. Operations are tender-driven, mainly from government and semi-government bodies, although demand was weak in FY25 due to the absence of new tenders. With limited near-term demand visibility, part of the Gonde facility has been repurposed for manufacturing graphite heat exchangers for the IGE division.

Hydel power (18MW)

The company operates an 18MW hydel power unit at Chunchunkatte (CCKT), near Mysore, with the generated power being supplied to third parties. An additional 10MW capacity is under development at the same site, comprising 5MWp solar and 5MW hydel capacity. Of this, a 4.5MWp solar plant was commissioned in Nov-24.

Exhibit 91: Graphite India – Plant locations

Facility type	Location	State/Country	Key notes
Graphite Electrode plant	Durgapur	West Bengal, India	Major capacity base; one of the largest plants
Graphite Electrode plant and upcoming SGAM facility	Nashik	Maharashtra, India	Existing electrode unit; site for Synthetic Graphite Anode Material project
Hydro, Wind, Solar	Renewable assets	Karnataka and other states, India	~38MW renewable power portfolio supporting sustainability and cost competitiveness

Source: Company, Emkay Research

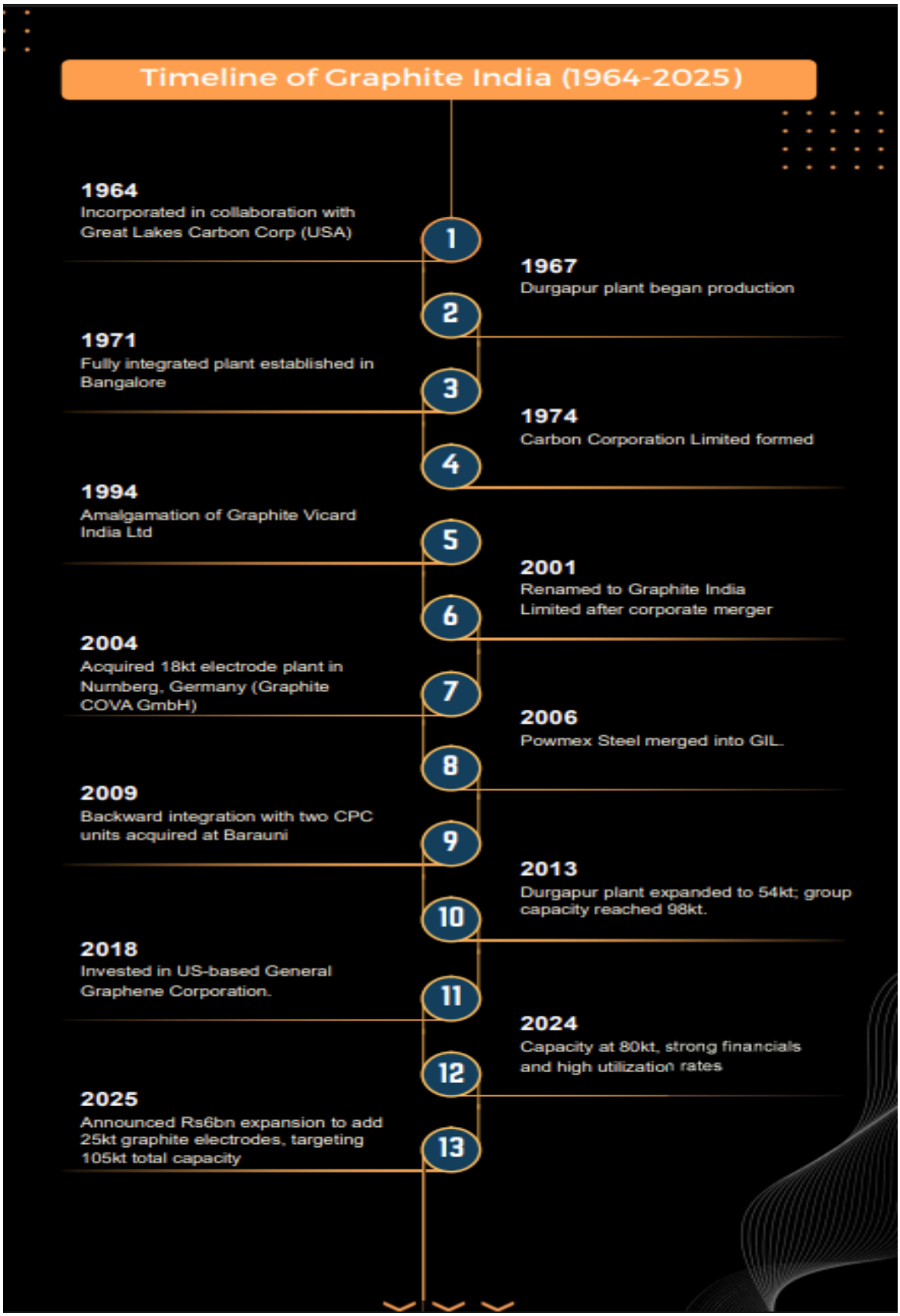
History and event timelines

Graphite India, established in 1967 in collaboration with Great Lakes Carbon (USA) and incorporated in 1974, is among India's two leading graphite electrode producers. Over the years, the company has expanded capacity through brownfield additions at Durgapur and West Bengal, while modernizing operations with advanced furnace and impregnation technology. A series of amalgamations and its rebranding to Graphite India in CY01 consolidated its leadership in the domestic market.

Besides electrodes, the company has built a renewable energy portfolio across hydro, wind, and solar, strengthening cost competitiveness and sustainability. More recently, it has diversified into advanced materials, acquiring DRDO technology for Carbon-Silicon Carbide components and announcing a large-scale Synthetic Graphite Anode Material (SGAM) project in Nashik to tap EV and energy storage demand.

With its strong legacy, scale, and diversification into new-energy adjacencies, Graphite India is strategically positioned to benefit from both cyclical recovery in steel/EAF demand as well as structural growth in battery materials.

Exhibit 92: GRIL's journey through the years



Source: Company, Emkay Research

Seasoned management team headed by a veteran industrialist

Graphite India is led by a seasoned management team, with deep industry expertise and a strong track record in navigating cyclical dynamics of the graphite electrode business. The company is chaired by Krishna Kumar Bangur, a veteran industrialist from the Bangur Group, which has long-standing presence in power and manufacturing.

The executive leadership has consistently emphasized on prudent capital allocation, operational efficiency, and maintaining a conservative balance sheet, thus enabling Graphite India to sustain through industry downcycles while capitalizing on upturns. The team's strategic focus on capacity rationalization, cost competitiveness, and diversification into adjacent carbon and graphite products underscores the management's disciplined approach toward driving long-term value creation for shareholders.

Exhibit 93: GRIL – Management team

Name	Designation	Profile summary
Krishna Kumar Bangur	Non-Independent Director and Chairperson	Krishna Kumar Bangur has been associated with the company since 1988 and serves as the Non-Executive Chairperson. With over three decades of board-level experience, he provides long-term strategic vision and leadership oversight. His wide exposure to business management and governance strengthens the company's decision-making framework and continuity.
MK Chhajer	CFO	MK Chhajer is the Chief Financial Officer of Graphite India, a role he has held since Jul-22, and also serves as Senior Vice President (Finance) and Head of Investor Relations. A qualified Cost Accountant with a BCom (Hons) from St Xavier's College, Kolkata, he has over three decades of experience with the company, having risen through its finance and accounts function. His responsibilities span financial reporting, budgeting, fund-raising, M&A, oversight of overseas operations, investment portfolio management, and stakeholder communication, giving him deep institutional and industry-specific financial expertise.
Ashutosh Dixit	Executive Director	Ashutosh Dixit serves as Executive Director, bringing in operational and managerial expertise. With hands-on experience in business execution and leadership, he focuses on driving efficiency, aligning operations with strategic objectives, and ensuring the company's growth momentum.

Source: Company, Emkay Research

Graphite India: Consolidated Financials and Valuations

Profit & Loss

Y/E Mar (Rs mn)	FY24	FY25	FY26E	FY27E	FY28E
Revenue	**29,497**	**25,600**	**29,155**	**31,409**	**38,221**
Revenue growth (%)	(7.3)	(13.2)	13.9	7.7	21.7
EBITDA	**(1,441)**	**2,534**	**1,840**	**4,252**	**7,748**
EBITDA growth (%)	0	0	(27.4)	131.1	82.2
Depreciation & Amortization	804	895	972	1,046	1,142
EBIT	**(2,245)**	**1,639**	**868**	**3,207**	**6,607**
EBIT growth (%)	0	0	(47.1)	269.5	106.0
Other operating income	-	-	-	-	-
Other income	3,044	4,384	4,691	5,020	5,371
Financial expense	171	112	331	331	331
PBT	**627**	**5,912**	**5,228**	**7,896**	**11,647**
Extraordinary items	9,539	0	0	0	0
Taxes	2,118	1,330	1,307	2,211	3,261
Minority interest	33	39	20	0	0
Income from JV/Associates	0	0	0	0	0
Reported PAT	**8,081**	**4,621**	**3,941**	**5,685**	**8,386**
PAT growth (%)	305.4	(42.8)	(14.7)	44.2	47.5
Adjusted PAT	**(1,458)**	**4,621**	**3,941**	**5,685**	**8,386**
Diluted EPS (Rs)	**(7.5)**	**23.7**	**20.2**	**29.1**	**42.9**
Diluted EPS growth (%)	0	0	(14.7)	44.2	47.5
DPS (Rs)	**8.5**	**11.0**	**10.0**	**10.0**	**10.0**
Dividend payout (%)	**20.6**	**46.5**	**49.6**	**34.4**	**23.3**
EBITDA margin (%)	(4.9)	9.9	6.3	13.5	20.3
EBIT margin (%)	(7.6)	6.4	3.0	10.2	17.3
Effective tax rate (%)	337.7	22.5	25.0	28.0	28.0
NOPLAT (pre-IndAS)	**5,338**	**1,270**	**651**	**2,309**	**4,757**
Shares outstanding (mn)	195	195	195	195	195

Source: Company, Emkay Research

Balance Sheet

Y/E Mar (Rs mn)	FY24	FY25	FY26E	FY27E	FY28E
Share capital	391	391	391	391	391
Reserves & Surplus	55,717	58,268	60,256	63,987	70,419
Net worth	**56,108**	**58,659**	**60,647**	**64,378**	**70,810**
Minority interests	44	13	(7)	(7)	(7)
Non-current liab. & prov.	1,420	2,070	2,070	2,070	2,070
Total debt	**1,766**	**1,723**	**4,723**	**4,723**	**4,723**
Total liabilities & equity	**59,365**	**62,494**	**67,462**	**71,193**	**77,625**
Net tangible fixed assets	8,788	10,239	11,967	14,221	16,680
Net intangible assets	-	-	-	-	-
Net ROU assets	11	10	10	10	10
Capital WIP	1,450	650	650	650	650
Goodwill	-	-	-	-	-
Investments [JV/Associates]	9,222	10,042	10,042	10,042	10,042
Cash & equivalents	**27,167**	**32,016**	**33,701**	**33,337**	**33,430**
Current assets (ex-cash)	19,824	17,419	18,845	20,665	24,958
Current Liab. & Prov.	8,538	9,775	9,645	9,625	10,037
NWC (ex-cash)	**11,286**	**7,645**	**9,200**	**11,040**	**14,921**
Total assets	**59,365**	**62,494**	**67,462**	**71,193**	**77,625**
Net debt	(25,401)	(30,293)	(28,977)	(28,614)	(28,707)
Capital employed	59,365	62,494	67,462	71,193	77,625
Invested capital	**21,280**	**19,577**	**22,860**	**26,954**	**33,293**
BVPS (Rs)	287.2	300.2	310.4	329.5	362.4
Net Debt/Equity (x)	(0.5)	(0.5)	(0.5)	(0.4)	(0.4)
Net Debt/EBITDA (x)	17.6	(12.0)	(15.7)	(6.7)	(3.7)
Interest coverage (x)	4.7	54.0	16.8	24.9	36.2
RoCE (%)	**1.4**	**10.2**	**8.8**	**12.2**	**16.6**

Source: Company, Emkay Research

Cash flows

Y/E Mar (Rs mn)	FY24	FY25	FY26E	FY27E	FY28E
PBT (ex-other income)	10,166	5,912	5,228	7,896	11,647
Others (non-cash items)	(11,723)	(4,044)	0	0	0
Taxes paid	(1,614)	(938)	(1,307)	(2,211)	(3,261)
Change in NWC	9,685	3,787	(1,555)	(1,840)	(3,881)
Operating cash flow	**6,803**	**5,002**	**3,669**	**5,221**	**5,977**
Capital expenditure	(2,597)	(1,674)	(2,700)	(3,300)	(3,600)
Acquisition of business	0	0	0	0	0
Interest & dividend income	461	678	0	0	0
Investing cash flow	**(2,390)**	**(2,021)**	**(4,381)**	**(3,300)**	**(3,600)**
Equity raised/(repaid)	0	0	0	0	0
Debt raised/(repaid)	(2,493)	(64)	3,000	0	0
Payment of lease liabilities	0	0	0	0	0
Interest paid	(176)	(113)	(331)	(331)	(331)
Dividend paid (incl tax)	(1,661)	(2,149)	(1,954)	(1,954)	(1,954)
Others	56	62	0	0	0
Financing cash flow	**(4,274)**	**(2,265)**	**716**	**(2,284)**	**(2,284)**
Net chg in Cash	139	717	3	(363)	93
OCF	6,803	5,002	3,669	5,221	5,977
Adj. OCF (w/o NWC chg.)	(2,883)	1,215	5,224	7,061	9,858
FCFF	4,206	3,329	969	1,921	2,377
FCFE	4,495	3,895	638	1,590	2,047
OCF/EBITDA (%)	(472.1)	197.4	199.4	122.8	77.1
FCFE/PAT (%)	55.6	84.3	16.2	28.0	24.4
FCFF/NOPLAT (%)	**78.8**	**262.0**	**148.9**	**83.2**	**50.0**

Source: Company, Emkay Research

Valuations and key Ratios

Y/E Mar	FY24	FY25	FY26E	FY27E	FY28E
P/E (x)	13.1	22.9	26.8	18.6	12.6
EV/CE(x)	1.4	1.2	1.2	1.1	1.0
P/B (x)	1.9	1.8	1.7	1.6	1.5
EV/Sales (x)	2.7	2.9	2.6	2.4	2.0
EV/EBITDA (x)	(55.8)	29.8	41.0	17.7	9.7
EV/EBIT(x)	(35.8)	46.0	86.9	23.5	11.4
EV/IC (x)	3.8	3.9	3.3	2.8	2.3
FCFF yield (%)	5.2	4.4	1.3	2.5	3.2
FCFE yield (%)	4.2	3.7	0.6	1.5	1.9
Dividend yield (%)	1.6	2.0	1.8	1.8	1.8
DuPont-RoE split					
Net profit margin (%)	(4.9)	18.1	13.5	18.1	21.9
Total asset turnover (x)	0.5	0.4	0.4	0.5	0.5
Assets/Equity (x)	1.1	1.1	1.1	1.1	1.1
RoE (%)	**(2.8)**	**8.1**	**6.6**	**9.1**	**12.4**
DuPont-RoIC					
NOPLAT margin (%)	18.1	5.0	2.2	7.4	12.4
IC turnover (x)	1.2	1.3	1.4	1.3	1.3
RoIC (%)	**21.1**	**6.2**	**3.1**	**9.3**	**15.8**
Operating metrics					
Core NWC days	139.7	109.0	115.2	128.3	142.5
Total NWC days	**139.7**	**109.0**	**115.2**	**128.3**	**142.5**
Fixed asset turnover	2.1	1.6	1.4	1.1	1.1
Opex-to-revenue (%)	55.8	47.6	31.0	28.7	24.4

Source: Company, Emkay Research

BUY HEG

Unlocking value via scale/strategic optionality; initiate with BUY

Metals & Mining ▸ Initiating Coverage ▸ **December 12, 2025**

CMP (Rs): 533 | TP (Rs): 700

We initiate coverage on HEG with BUY and target price of Rs700. HEG offers a compelling operating leverage and re-rating story, driven by near-90% utilization, a low-risk brownfield expansion, and a cleaner post-demerger structure that sharpens valuation for both, the graphite and Greentech businesses. Supported by the EAF capacity additions and accelerating lithium-ion anode demand, HEG's multi-cycle earnings visibility is materially improving. Our SOTP-based calculations for graphite and Greentech drive a fair value of Rs700, with optimal leverage, scalable cash flows, and strategic optionality reinforcing the upside.

Operating leverage strengthening through disciplined, low-risk growth

HEG offers a compelling operating-leverage story supported by disciplined capacity expansion, a strong balance sheet, and improving industry fundamentals. With utilization approaching 90% and a low-risk 15kt brownfield expansion lifting capacity to 115kt, HEG is positioned to disproportionately-benefit from a cyclical recovery. Brownfield capex intensity of USD4,869/t, less than half of a greenfield capex, ensures superior returns, faster ramp-up, and lower execution risk. As throughput rises on a largely fixed-cost base, even modest pricing or utilization gains would materially lift EBITDA, reinforcing an asymmetric risk-reward profile backed by HEG's cost curve advantage and meaningful share of global UHP capacity.

Sharper strategic identity and optimal capital allocation

The demerger of HEG Greentech represents a strategic inflection point for HEG, separating its graphite electrode segment from the emerging Greentech vertical to facilitate optimal capital allocation. HEG Graphite offers concentrated exposure to the GE cycle, whereas HEG Greentech houses BEL's steady hydro assets alongside TACC's 20kt graphite anode capacity under development. BEL's annuity-like cash flows de-risk the anode venture. Supported by robust structural demand for lithium-ion battery anodes, HEG Greentech is well-positioned for scalable growth. Our SOTP-based contribution of Rs190/share (27% of the group's) underscores HEG Greentech's significance within the HEG group.

Dual-growth platforms converge

HEG's valuation remains compelling relative to its improving fundamentals. We value the graphite business at Rs502/sh (12x FY28E EV/EBITDA, in line with its 10Y average), supported by 56% EBITDA CAGR over FY25–28E, while Greentech adds Rs190/sh on our SOTP for BEL and TACC, taking fair value to Rs700/sh (~30% upside). With sub-2x leverage despite a large Rs20bn of project capex lined up, strategic assets like 10% GrafTech stake, and simplified structure post-demerger, HEG stands out as a cyclical-plus-structural compounder leveraged to the EAF capacity additions across the globe and a growing battery-materials ecosystem.

Target Price – 12M	Mar-27
Change in TP (%)	**NA**
Current Reco.	BUY
Previous Reco.	NA
Upside/(Downside) (%)	31.3

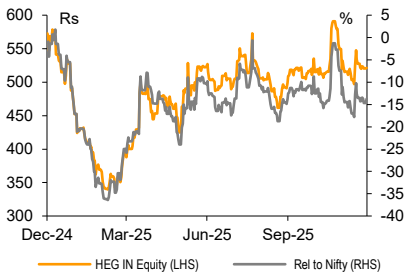
Stock Data	**HEG IN**
52-week High (Rs)	622
52-week Low (Rs)	331
Shares outstanding (mn)	193.0
Market-cap (Rs bn)	103
Market-cap (USD mn)	1,139
Net-debt, FY26E (Rs mn)	5,164.9
ADTV-3M (mn shares)	1.7
ADTV-3M (Rs mn)	904.5
ADTV-3M (USD mn)	10.0
Free float (%)	44.2
Nifty-50	25,898.6
INR/USD	90.4

Shareholding,Sep-25	
Promoters (%)	55.8
FPIs/MFs (%)	8.0/12.0

Price Performance

(%)	1M	3M	12M
Absolute	0.3	4.5	(6.2)
Rel. to Nifty	(0.5)	0.9	(10.8)

1-Year share price trend (Rs)



HEG: Financial Snapshot (Consolidated)

Y/E Mar (Rs mn)	FY24	FY25	FY26E	FY27E	FY28E
Revenue	23,949	21,597	27,664	29,771	39,734
EBITDA	3,824	2,551	4,701	6,097	9,744
Adj. PAT	3,117	1,151	4,350	4,227	5,501
Adj. EPS (Rs)	16.2	6.0	22.5	21.9	28.5
EBITDA margin (%)	16.0	11.8	17.0	20.5	24.5
EBITDA growth (%)	(38.2)	(33.3)	84.3	29.7	59.8
Adj. EPS growth (%)	(41.5)	(63.1)	277.9	(2.8)	30.2
RoE (%)	7.2	2.6	9.4	8.6	10.5
RoIC (%)	4.8	1.0	5.2	6.1	8.4
P/E (x)	33.0	89.4	23.7	24.4	18.7
EV/EBITDA (x)	28.2	43.1	23.4	18.0	11.3
P/B (x)	2.3	2.3	2.2	2.0	1.9
FCFF yield (%)	2.2	0.9	0.8	(1.4)	(6.5)

Source: Company, Emkay Research

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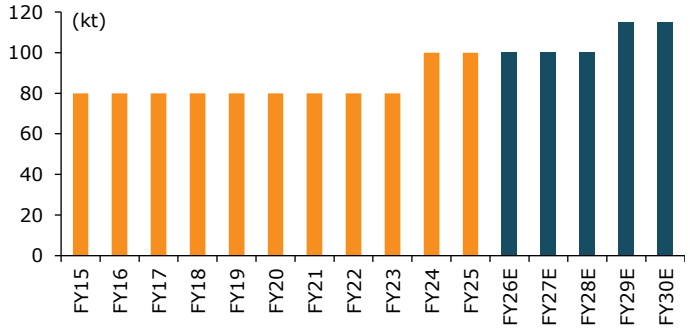
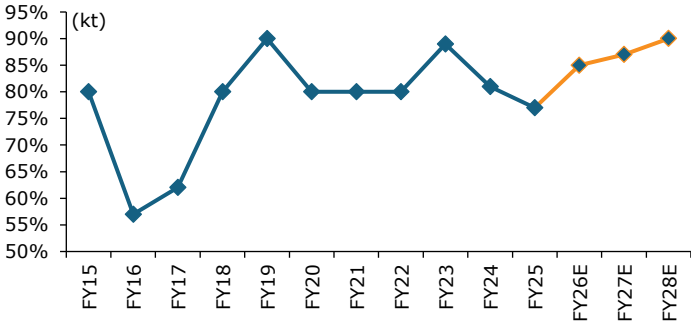
Key Charts

Exhibit 94: HEG plans expanding capacity from 100kt to 115kt



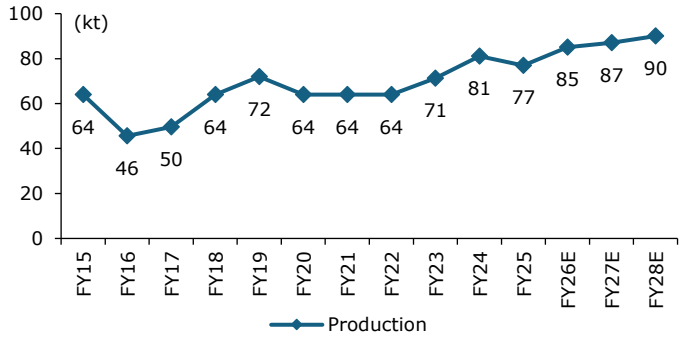
Source: Company, Emkay Research

Exhibit 95: Utilization to improve as demand for EAF picks up



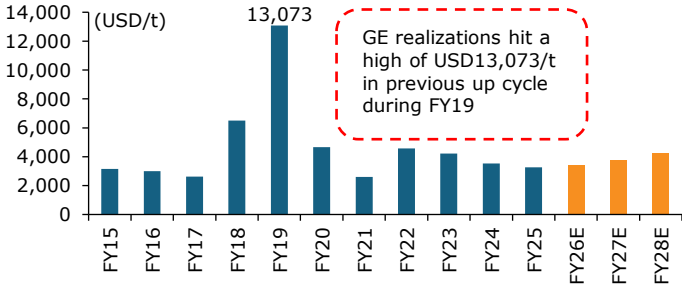
Source: Company, Emkay Research

Exhibit 96: Capacity expansion to drive higher HEG production



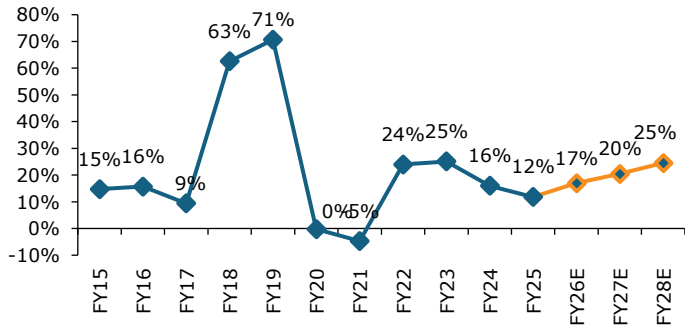
Source: Company, Emkay Research

Exhibit 97: GE realization to improve in coming years, with the increasing share of EAF



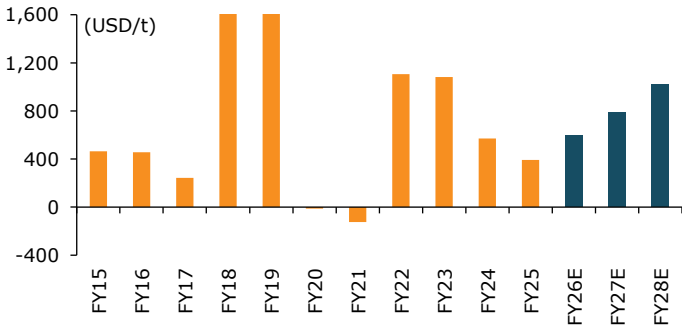
Source: Company, Emkay Research

Exhibit 98: EBITDA margin to improve to mid-cycle levels



Source: Company, Emkay Research

Exhibit 99: Market rebalancing to drive higher EBITDA spreads

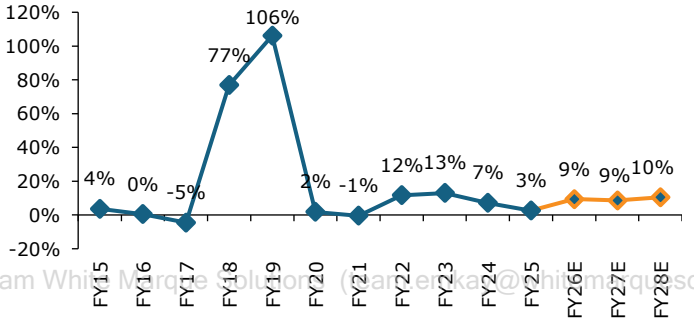


Source: Company, Emkay Research

Exhibit 100: Net debt-to-EBITDA toward 2.0x to support capex

Source: Company, Emkay Research

Exhibit 101: RoE to be steady over the next few years



Source: Company, Emkay Research

Summary of estimates

Exhibit 102: Summary of estimates

Rs mn	FY24	FY25	FY26E	FY27E	FY28E
P&L					
Net sales	23,949.0	21,596.9	27,663.7	29,771.2	39,733.5
Operating expenses	20,124.7	19,045.8	22,962.7	23,673.8	29,989.1
EBITDA	**3,824.3**	**2,551.1**	**4,701.0**	**6,097.4**	**9,744.5**
Depreciation	1,746.5	2,005.9	2,033.3	2,209.7	3,165.5
EBIT	**3,494.5**	**1,820.9**	**5,459.8**	**5,887.7**	**8,578.9**
Interest and taxes	1,194.3	845.1	1,637.8	2,234.7	3,669.3
Net earnings	**3,116.8**	**1,150.6**	**4,349.7**	**4,226.9**	**5,501.3**
EPS (Rs)	**16.2**	**6.0**	**22.5**	**21.9**	**28.5**
Dividend (Rs/sh)	4.5	1.8	6.8	6.6	8.5
Number of shares (mn)	193.0	193.0	193.1	193.1	193.1
Balance sheet					
Gross block	**31,021.5**	**33,934.2**	**37,184.2**	**47,234.2**	**60,134.2**
Inventories	11,941.5	12,546.4	14,779.2	13,050.4	17,417.4
Receivables	5,082.5	4,447.0	5,684.3	6,117.4	8,164.4
Payables	4,253.0	3,992.9	4,848.2	5,068.3	7,051.7
Net working capital	**12,771.0**	**13,000.5**	**15,615.3**	**14,099.5**	**18,530.2**
Cash	**4,102.3**	**1,470.4**	**1,683.7**	**1,318.1**	**1,553.9**
Total assets	57,013.6	56,481.5	61,381.6	67,560.5	83,944.9
Total liabilities	12,754.3	11,944.0	13,799.3	17,019.4	29,552.8
Total Equity	**44,259.5**	**44,537.7**	**47,582.5**	**50,541.3**	**54,392.2**
Cash flow					
Operating cash before WC	1,011.3	2,552.5	2,444.3	2,800.7	4,695.4
Working capital and other	5,111.0	244.4	1,734.9	5,742.7	1,070.7
Operating cash flow	**6,122.3**	**2,796.9**	**4,179.1**	**8,543.4**	**5,766.1**
Capex	-3,715.2	-1,822.3	-3,250.0	-10,050.0	-12,900.0
Other investing items	1,871.9	-246.0	0.0	0.0	0.0
Investing cash flow	**-1,843.3**	**-2,068.3**	**-3,250.0**	**-10,050.0**	**-12,900.0**
Borrowings/(repayments)	-1,219.7	-381.5	1,000.0	3,000.0	10,550.0
Equity changes	0.0	0.0	0.0	0.0	0.0
Other financing items	-2,021.6	-1,210.0	-1,715.8	-1,859.0	-3,180.3
Financing cash flow	**-3,241.3**	**-1,591.5**	**-715.8**	**1,141.0**	**7,369.7**
Net change in cash	**1,037.7**	**-862.9**	**213.3**	**-365.6**	**235.8**
Ending cash	**1,370.6**	**507.6**	**720.9**	**355.3**	**591.1**
Free cash flow	2,020.5	637.1	518.2	-2,097.6	-8,663.8

	FY24	FY25	FY26E	FY27E	FY28E
Operational metrics					
GE Price (USD/t)	5,050.0	4,125.0	4,150.0	4,400.0	4,850.0
Needle Coke (USD/t)	1,862.5	1,262.5	1,250.0	1,400.0	1,600.0
GE Capacity (kt)	100.0	100.0	100.0	100.0	100.0
Capacity Utilization	81.0%	77.0%	90.0%	87.0%	90.0%
Production (kt)	81.0	77.0	90.0	87.0	90.0
Realization (USD/t)	3,520.7	3,255.9	3,441.2	3,800.0	4,250.0
Raw material cost (USD/t)	1,716.9	1,388.0	1,364.5	1,600.0	1,850.0
Financial metrics					
EBITDA margin	16.0%	11.8%	17.0%	20.5%	23.7%
Net margin	13.0%	5.3%	15.7%	14.2%	13.8%
EBITDA spread (USD/t)	570.3	391.8	595.4	787.5	1,016.5
ROE	7.2%	2.6%	9.4%	8.6%	10.5%
ROCE	7.8%	4.0%	11.6%	11.7%	14.5%
ROIC	6.7%	3.1%	9.4%	8.5%	10.2%
Gross debt (Rs mn)	6,193.8	5,848.6	6,848.6	9,848.6	20,398.6
Net debt/(cash) (Rs mn)	2,091.5	4,378.2	5,164.9	8,530.5	18,844.7
Net debt to EBITDA (x)	0.5	1.7	1.1	1.4	1.9
Net debt to Equity	4.7%	9.8%	10.9%	16.9%	34.6%
Valuation					
P/E (x)	19.9	74.2	23.7	24.4	18.7
EV/EBITDA (x)	16.7	35.2	23.0	18.3	12.5
FCF yield	3.3%	0.7%	0.5%	-2.0%	-8.4%
Dividend yield	1.4%	0.4%	1.3%	1.2%	1.6%

Methodology	**Rs mn**	**Rs/sh**
EV/EBITDA	97,709.4	506.1
less net debt / (net cash)	4,394.9	22.8
GrafTech Inv @ 9.98%	3,592.8	18.6
Graphite Business Equity Val	**96,907.4**	**502.0**
HEG Greentech	**36,593.1**	**189.5**
Target price		**700.0**
Current price		533.3
Expected return		**31.3%**

Source: Company, Emkay Research

Investment Case

Operating leverage with disciplined expansion

HEG is supported by its dominant position in graphite electrodes, improving industry fundamentals, and a disciplined low-risk expansion strategy that enhances operating leverage without compromising on balance-sheet strength. With 100kt of existing capacity, rising utilization, and a 15kt brownfield expansion underway, the company is well positioned to benefit from the next upcycle in graphite electrodes while retaining meaningful downside protection.

HEG is among the world's largest graphite electrode manufacturers, operating a fully integrated single-location facility at Mandideep in Madhya Pradesh. The company primarily supplies ultra-high-power graphite electrodes to EAF-based steelmakers across global markets. Graphite electrodes account for 98% of consolidated revenue, while exports contribute nearly 65-70% of volumes. This directly links the business to the global EAF steel production cycle as well as the structural shift from blast furnace to electric arc furnace steelmaking, driven by decarbonization and the increasing use of scrap-based production.

HEG represents a disciplined, scale-driven, operating leverage story rather than an aggressive growth play. The combination of a large and efficient asset base, improving utilization, low-risk brownfield expansion, structural cost advantages from captive power, and a strong balance sheet positions the company to benefit disproportionately as the graphite electrode cycle turns upward. For long-term investors seeking exposure to both a cyclical earnings recovery and the structural shift toward EAF-based steelmaking, we see a favorable risk-reward scenario.

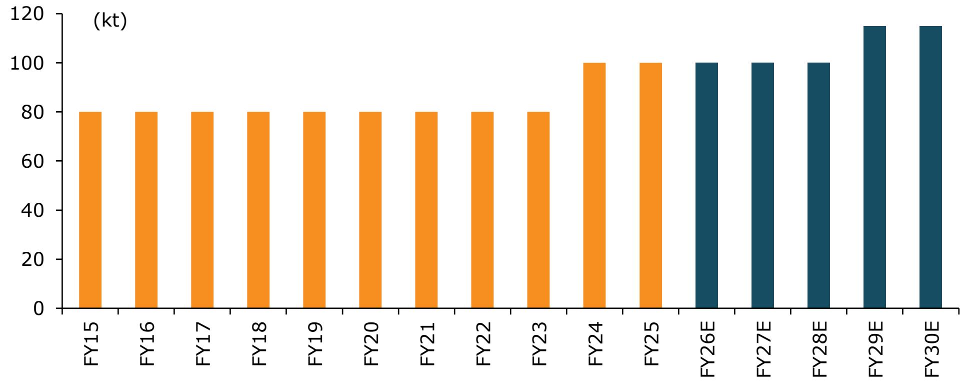
Capacity addition drives operating leverage

HEG has announced a 15kt brownfield capacity expansion at its existing Mandideep facility which will take total installed capacity from 100kt to 115kt over the next 30 months. The project involves an investment of ~Rs6.5bn, implying capex intensity of USD4,869/t. As the expansion is being undertaken at the current site, it benefits from existing infrastructure, utilities, logistics access, and skilled manpower, significantly lowering execution risk and ensuring a faster and smoother ramp-up.

This follows the successful commissioning of a 20kt brownfield expansion that earlier increased capacity from 80kt to 100kt. The additional 15kt will further consolidate HEG's position as one of the largest single-site graphite electrode producers globally. With international peers remaining cautious on new capacity additions and domestic EAF steelmaking on an uptrend, the demand–supply backdrop for electrodes appears favorable over the medium term. We view this expansion as a calibrated, value-accretive move designed to amplify operating leverage rather than pursue aggressive cycle-top growth.

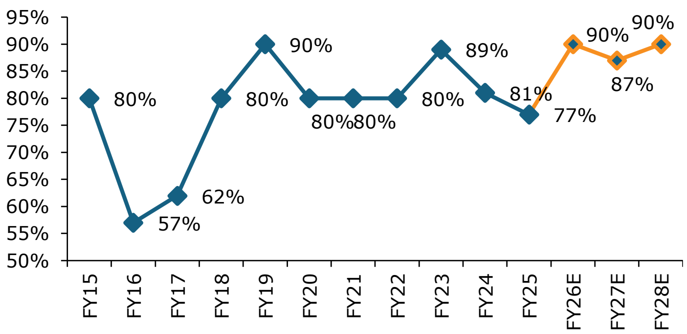
During the downturn, capacity utilization had declined to 60-65%, though recent trends suggest a steady recovery, with utilization now trending toward ~90%. Given the high fixed-cost nature of the business, every 10 percentage-point improvement in utilization would lift EBITDA by 13-14%, in our view, assuming stable realizations. As volumes normalize on the existing base and the incremental 15kt is brought online, the additional output will largely flow through at high contribution margins. At steady state, the expanded capacity alone would add 13-14kt of annual sales volume, which can significantly lift revenue and earnings even under mid-cycle pricing.

Exhibit 103: HEG has announced a 15kt brownfield capacity expansion



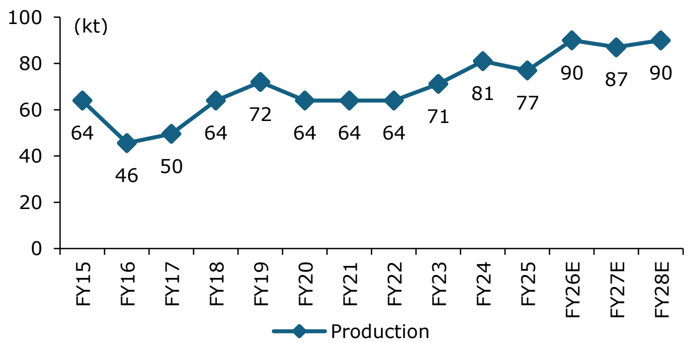
Source: Company, Emkay Research

Exhibit 104: Recent trends suggest a steady recovery, with utilization now trending above 90%



Source: Company, Emkay Research

Exhibit 105: Production is set to rise to 90kt on stronger demand, ahead of the FY29 capacity expansion



Source: Company, Emkay Research

Attractive project economics anchored by brownfield efficiencies and operating leverage

HEG's capacity enhancement initiatives are primarily brownfield in nature, leveraging its existing integrated infrastructure at the Mandideep complex. This keeps capital intensity structurally lower at USD4,869/tonne vs USD10,000–12,000/tonne for a typical greenfield facility, translating into superior return metrics and quicker payback. Incremental volumes are therefore added at a fraction of replacement cost, supported by shared utilities, in-house needle coke blending, and scale-driven procurement efficiencies.

HEG's last expansion, of 20kt in 2023, was completed at a capex of Rs1.2bn, implying capex intensity of USD7,250/t.

As utilizations increase from ~80% toward 95%, any improvement in graphite electrode prices (even by USD100/tonne) can drive a disproportionately higher EBITDA uplift of Rs500-750mn due to operating leverage. With a disciplined capex approach and no immediate requirement for large greenfield investments, incremental EBITDA is expected to meaningfully convert into free cash flow, setting up an asymmetric risk-reward, limited downside given its cost-curve position, and meaningful upside as demand and pricing recover.

Efficient operations in a competitive and struggling global market

HEG continues to outperform global peers on utilization, operating at ~90% versus the industry average of 60-65%, supported by disciplined global capacity rationalization and steady demand from EAF steelmakers.

Global GE capacity has contracted from ~800kt to ~650kt, with several closures being permanent, as facilities were bulldozed rather than mothballed; even mothballed plants require six months and incremental capex to restart.

Given the highly specialized, made-to-order equipment with lead times of 1.5 years, brownfield additions typically take 3 years and greenfield up to 5 years, creating high entry barriers and supply stickiness. With global GE demand (ex-China) estimated at ~800kt (1.5kg per tonne of EAF steel) by CY30, HEG's 100kt capacity represents a meaningful ~15% share of the addressable market.

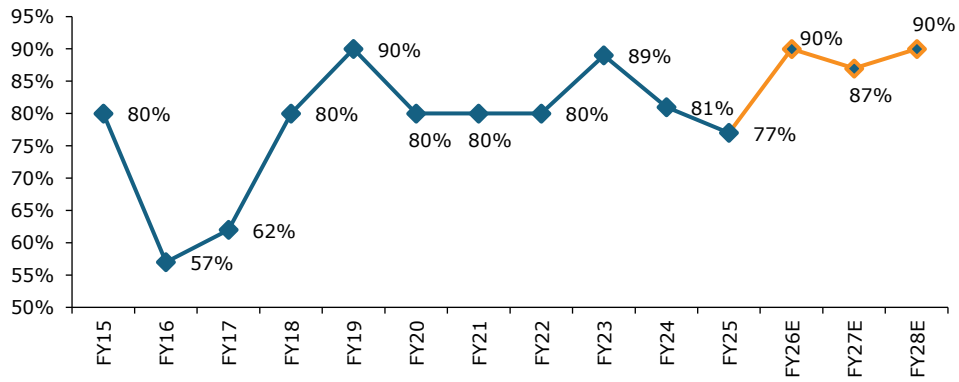
India's 180kt capacity further underscores HEG's strategic positioning as the largest single-site producer outside China, where lower-grade electrodes dominate and distort pricing. This combination of scale, quality focus, and higher utilization highlights HEG's competitive advantage in a structurally constrained industry.

Exhibit 106: The GE market is moderately concentrated with a few names, in terms of capacity

Company	Current capacity (kt)
GrafTech International	178
HEG	100
Graphite India	80
Tokai Carbon	72
Resonac Holdings (ex-Showa Denko)	140
Others	70
Total	**640**
Net capacity addition / (deletion) in the next 3 years	40
Expected capacity in the next 3 years (ex-China)	**680**

Source: Company, Industry, Emkay Research

Exhibit 107: HEG – Utilization rates expected to improve from FY26E



Source: Company, Emkay Research

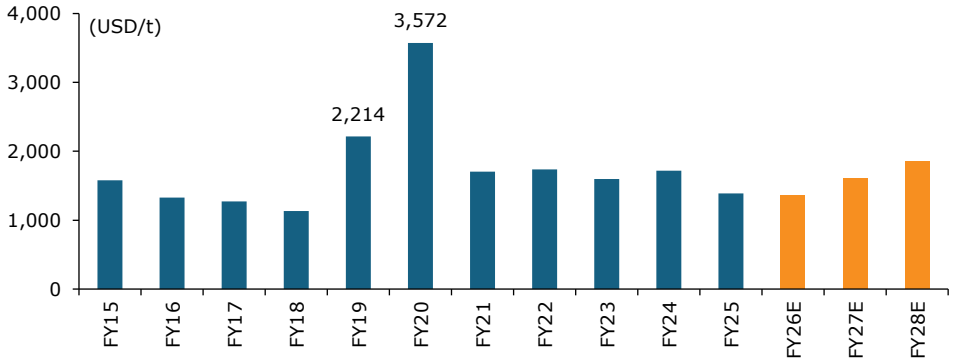
Efficiency mitigates cyclical risk

The company's competitive position is anchored by its scale and cost structure. However, HEG remains exposed to cyclicality in the global steel sector and volatility in the price of needle coke—its key raw material. Demand softness in developed markets and competitive pressures, particularly from China, weighed on performance in FY25. That said, the long-term outlook is supported by structural growth in EAF-based steelmaking, which is gaining share due to decarbonization efforts across the steel industry.

HEG's cost structure is driven by needle coke (25–30% of total costs), power (20–25%), and conversion expenses (~20%), with the balance comprising other operating costs. Needle coke, entirely imported, is procured at ~USD1,200/t, against electrode realizations of ~USD3,500/t. The company derives 65–70% of its revenue from exports, providing a natural currency hedge of 30–35%. With sales largely booked under 3-6-month contracts and no formal hedging policy, realizations typically reflect a lagged impact of price movements.

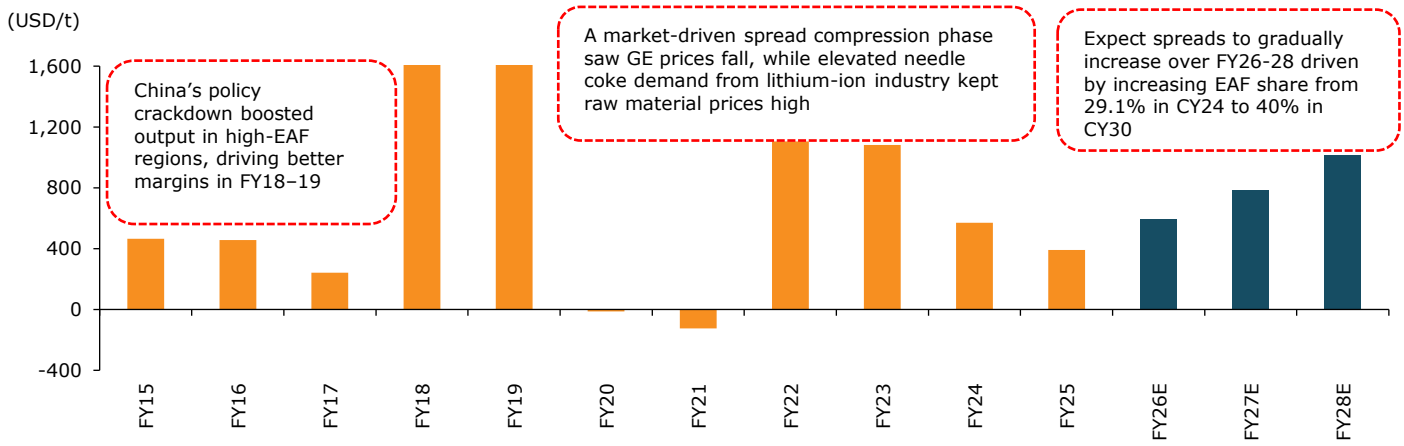
HEG has historically sustained mid-cycle EBITDA margin of 15–25%, and maintains a consistent dividend payout ratio of 30–35%, while annual sustaining capex requirements remain modest at USD3–4mn.

Exhibit 108: Raw material cost/t to be steady over FY26-28E



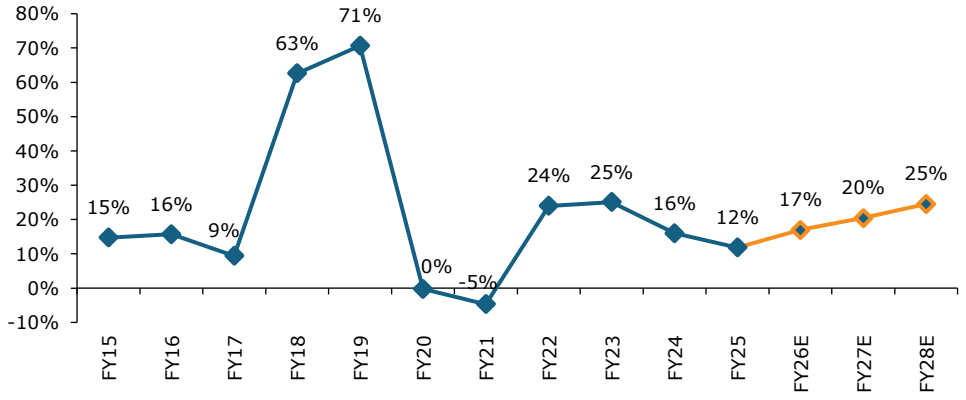
Source: Company, Emkay Research

Exhibit 109: HEG's EBITDA spreads show structural improvement despite near-term cyclical weakness



Source: Company, Emkay Research

Exhibit 110: EBITDA margin to improve to mid-cycle levels



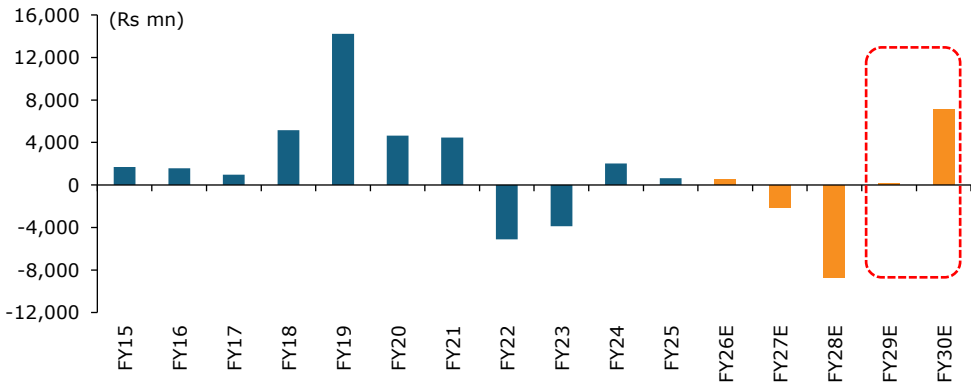
Source: Company, Emkay Research

Optimal capital structure with healthy balance sheet

HEG's leverage profile is optimal, with net debt of Rs5.1bn and net debt-to-EBITDA of 1.1x for FY26E. The balance sheet has steadily strengthened, supported by disciplined working capital management, calibrated capital spending, and improving cash-flow conversion, enabling the company to generate positive free cash flow through FY24-25 despite operating in a trough cycle.

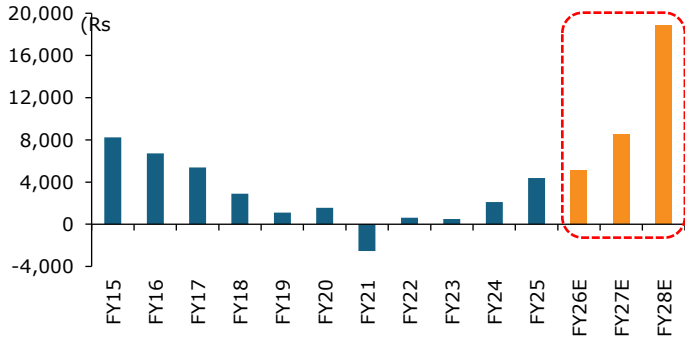
Annual operating cash flows of Rs2.8bn in FY25 and Rs4.2bn in FY26E, at trough-cycle graphite electrode prices, are sufficient to fund maintenance capex and meet debt servicing commitments, allowing HEG to gradually deleverage without constraining operational flexibility.

Exhibit 111: Free cash flow generation deferred, to allow for capex



Source: Company, Emkay Research

Exhibit 112: Net debt expected to increase over the medium term, amid TACC capacity build-out…



Source: Company, Emkay Research

Exhibit 113: …resulting in net debt-to-EBITDA trending toward 2.0x

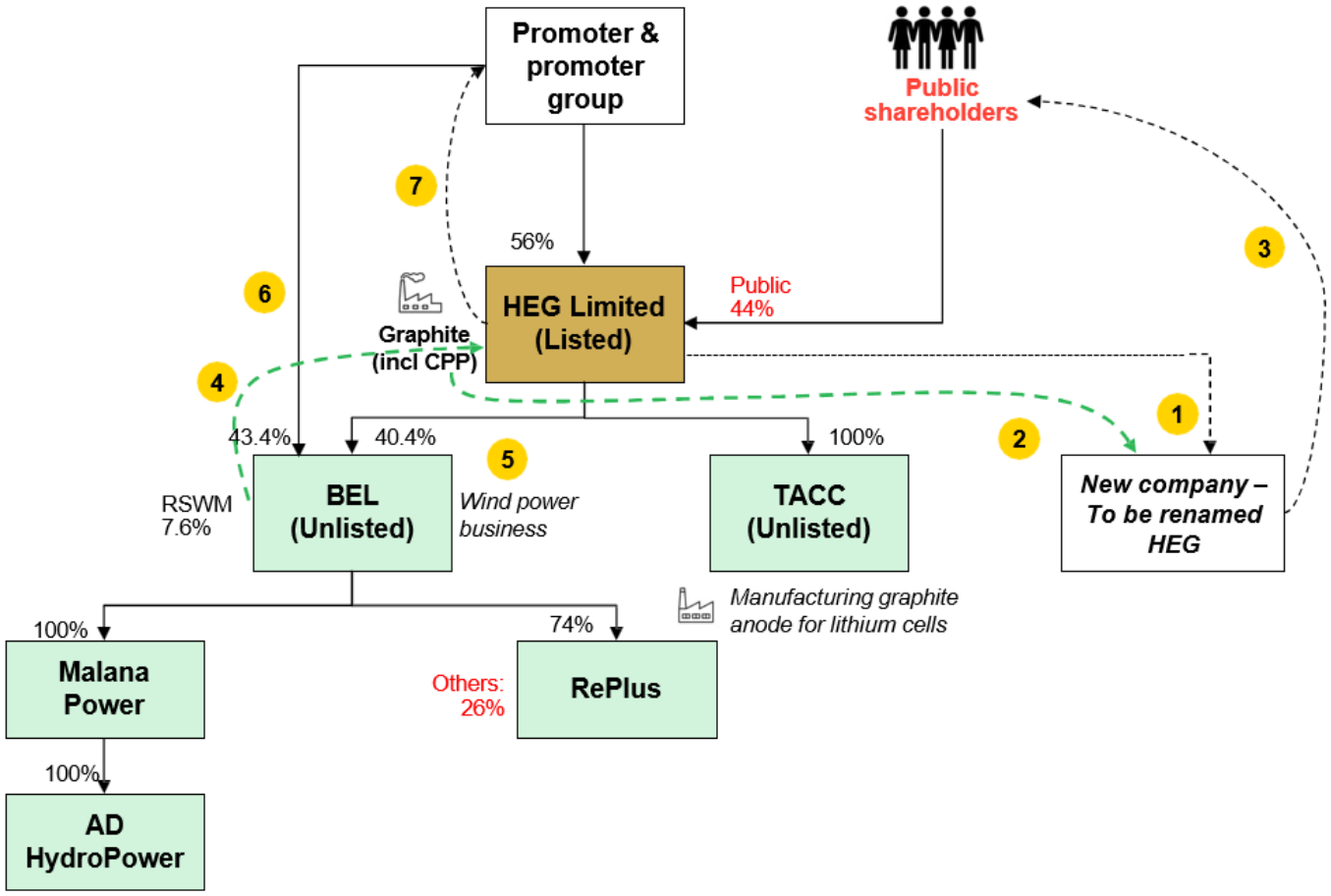
Source: Company, Emkay Research

HEG Greentech – To be a demerged entity

Demerger as a value-unlocking catalyst

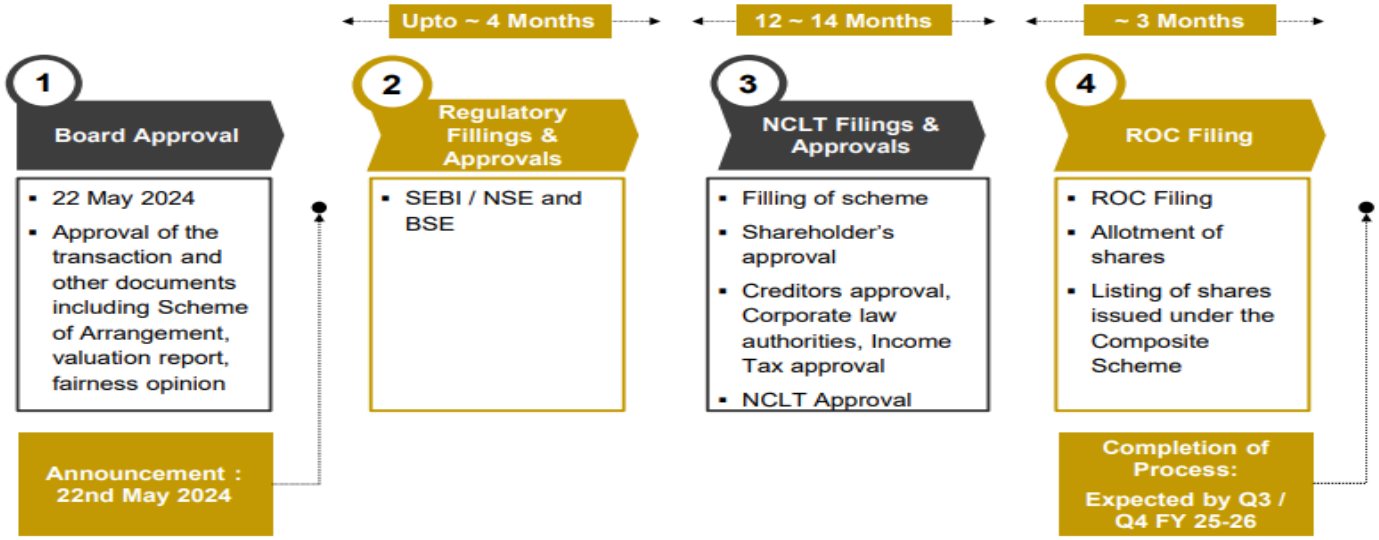
HEG has announced the segregation of its graphite business into a separate listed entity. The demerger will result in two distinct listed entities, with clearly defined business models and investor bases. Newly-listed HEG Graphite will offer pure-play exposure to graphite electrodes, benefiting from a cleaner comparative set and reduced conglomerate discount. It will enable investors to value the cyclical export-led electrode business independently of HEG's green ventures. Meanwhile, the existing company is to be renamed as HEG Greentech, and will house BEL and TACC, creating a stable, renewable-backed platform with exposure to emerging green technologies.

Exhibit 114: Demerger – Essential framework of the proposed structure



Source: Company, Emkay Research

Exhibit 115: Demerger – Revised indicative timeline and key approval milestones updated to mid-CY26

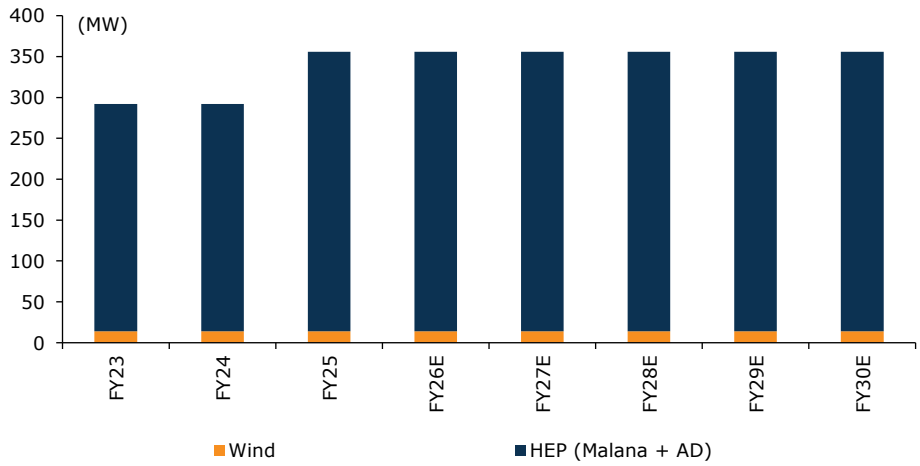


Source: Company, Emkay Research

BEL – Asset portfolio

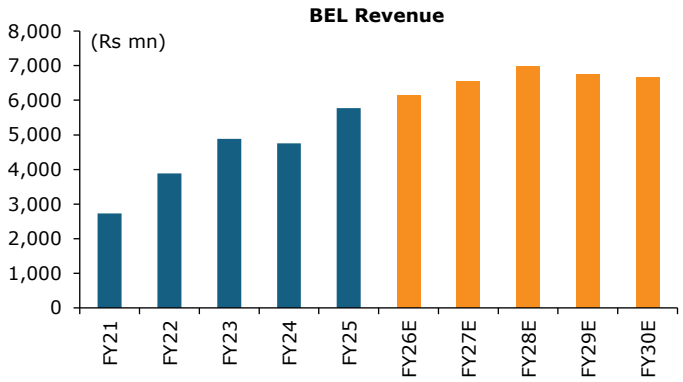
BEL currently has a diversified renewable portfolio consisting of 86MW of operational hydro capacity (Malana), a stake in the 192MW ADHPL project, and legacy 14MW wind assets. The company's strong base of contracted hydro cash flows provides stability and supports HEG Greentech's ability to self-fund future projects. BEL has also received Rs2.5bn from Singularity Growth (with an additional Rs2.5bn optional tranche) to fund growth and new sustainability-linked initiatives.

Exhibit 116: BEL renewable assets contain 278MW of hydro and 14MW of wind assets



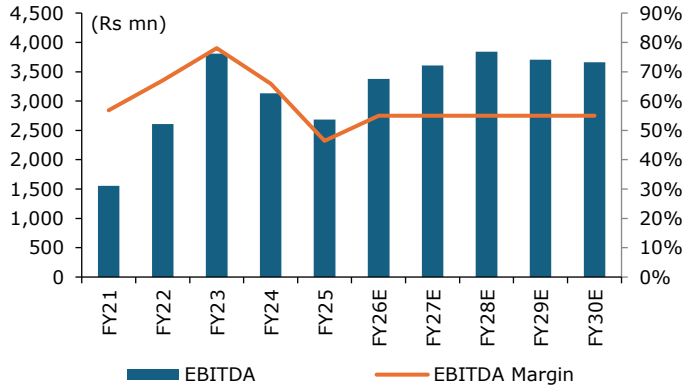
Source: Company, Emkay Research

Exhibit 117: BEL is likely to generate consistent revenue of ~Rs6bn over FY26-30E...



Source: Company, Emkay Research

Exhibit 118: ...resulting in EBITDA of ~Rs3.4bn, corresponding to margins of ~55%



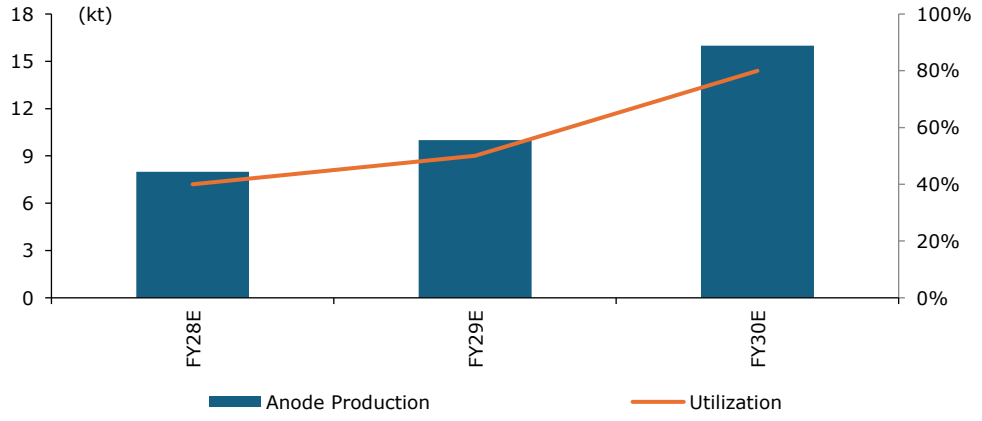
Source: Company, Emkay Research

TACC – Graphite Anode foray

Within HEG Greentech, a key growth driver will be TACC, which is setting up a 20kt graphite anode manufacturing facility at an estimated capex of Rs18.5bn. The project is progressing on schedule: land acquisition is complete, regulatory approvals are in place, groundwork has begun, and machinery specifications have been finalized, with equipment orders expected to be placed within the year.

The investment will be funded through a balanced mix of debt and equity and is targeted for commissioning by Apr-27. The management has given guidance for 30% EBITDA margin once the plant stabilizes and expects the project to deliver ~30% RoCE, supported by favorable anode pricing. Collectively, such factors position TACC as a meaningful long-term growth and value driver within HEG Greentech. Importantly, the technology has been secured, equipment orders have been placed with Chinese suppliers, and project funding is in place through a mix of ~30% internal accruals and ~70% debt, collectively reducing execution risk.

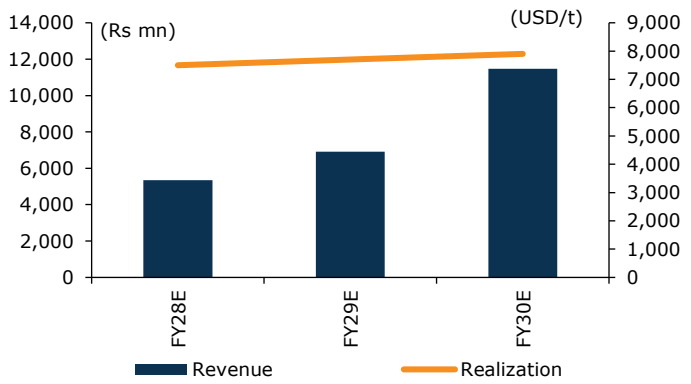
Exhibit 119: TACC's 20kt capacity is expected to commission by FY28



Source: Company, Emkay Research

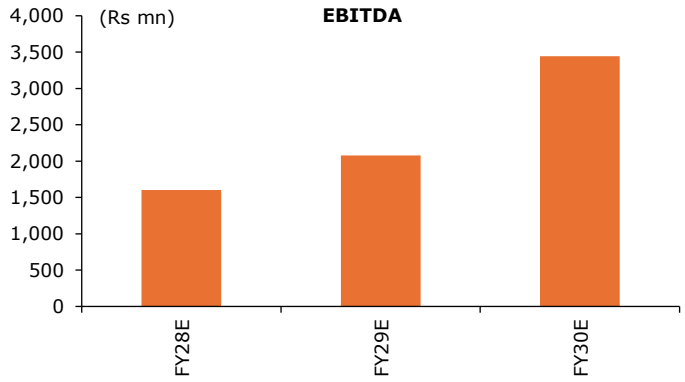
That said, we view the company's ~30% RoCE guidance for the anode business as optimistic. Even on the guided 30% EBITDA margin, we estimate that 20kt capacity would generate ~Rs3.2bn of EBITDA by FY30E. Given the high capital intensity, low asset turns, and the time required for customer qualification, our estimates point to a more modest RoCE of ~10% by FY30E. Returns should improve as the asset scales up, alongside a price recovery, but the management's targeted 30% RoCE appears aspirational in the initial years of operations.

Exhibit 120: TACC to generate a stable revenue stream from FY28 onward...



Source: Company, Emkay Research

Exhibit 121: ...with expected EBITDA margin of 30%



Source: Company, Emkay Research

From a financial standpoint, the graphite anode project is expected to generate annual revenue of Rs10-11bn at peak utilization, with EBITDA margin of ~30%. The initial phase is estimated to contribute Rs3.1bn to the consolidated topline by FY28E, scaling up meaningfully as the plant ramps up and subsequent phases come online. RoCE is projected at ~10% once the facility stabilizes in FY30, offering a strong incremental earnings driver and a meaningful diversification beyond the company's core graphite electrode business.

Against this backdrop, BEL's stable and recurring hydro cash flows provide a natural counterbalance to the more cyclical anode business, creating a more resilient earnings profile for HEG Greentech. The management has also indicated that Greentech's revenue could surpass that of the core graphite business over the next 3-4 years, underscoring a meaningful shift in the group's growth drivers and overall business mix.

Importantly, there will be no dilution in economic interest for existing shareholders, as they will continue to hold the same ownership in the graphite business. Shareholders will also receive additional shares in the Greentech entity, ensuring value continuity while creating greater transparency and unlocking potential value in the new energy-focused businesses. The management expects the restructuring to be completed by mid-2026.

Clearer structure, improved visibility

Post demerger, shareholders will own two distinct entities – HEG Ltd (graphite business) and HEG Greentech (new energy platform). The separation provides a clearer strategic focus and allows investors direct exposure to both businesses. The demerger is proposed on a 1:1 shareholding basis. The promoter shareholding will remain unchanged, with no dilution, ensuring continuity of ownership and alignment with shareholders.

Post-demerger, the graphite entity—HEG Limited at that time—would remain our core holding while HEG Greentech could be seen as a play for steady cash flows from the power portfolio, alongside the TACC anode project.

Investment rationale and implications

We view the proposed demerger as a structural value-unlocking, enabling independent valuation of HEG's graphite business and the scaling Greentech platform, while enhancing transparency and investor focus. Greentech is positioned to benefit from the growth opportunity in graphite anodes, crucial for lithium-ion batteries, with demand expected to rise ~3x by CY30 (Source: IEA), supported by EV adoption and energy storage.

The business model is partly de-risked through hydropower assets that provide steady cash flows, balancing the cyclicality of graphite and execution risks around the anode project. Capital discipline remains evident, with a defined funding plan, manageable leverage, and no dilution at the promoter level. In addition, external validation through investments from players such as Singularity and the group's strategic stake in GrafTech further strengthens the investment case.

We value HEG's Greentech business (comprising BEL and TACC) on SOTP basis, applying 10x EV/EBITDA and 20x P/E, which yield an equity value of Rs42.8bn (HEG's share amounts to Rs17.3bn) and Rs19.3bn, respectively, after adjusting for net debt and minority interest. On this basis, our fair value estimate for Greentech stands at Rs189/share, contributing to our overall target price of Rs700 for HEG.

Exhibit 122: We value BEL at 10x EV/EBITDA, implying an equity value of Rs42.8bn

VALUATION	Time-period	Multiple (x)	Value (Rs mn)
EV/EBITDA			
Enterprise Value	FY28	10.0	38,400.6
less net debt / (net cash)			-4,439.2
Equity value			**42,839.8**
Equity value attributable to HEG @ 40.4%			**17,315.8**

Source: Emkay Research

Exhibit 123: We value TACC at 20x P/E, implying an equity value of Rs 19.3bn

VALUATION	Time-period	Multiple (x)	Value (Rs mn)	Value/sh (Rs)
P/E				
Total Equity Value	FY30	20.0	19,277.2	99.9
Rounded fair value				**100.0**

Source: Emkay Research

Exhibit 124: We attribute Rs189.5/sh to Greentech from our overall value of Rs691.5/sh

VALUATION	Time-period	Multiple (x)	Value (Rs mn)	Value/sh (Rs)
HEG Greentech				
BEL	FY28		17,315.8	89.7
TACC	FY28		19,277.2	99.9
HEG Greentech Equity Value			**36,593.1**	**189.5**

Source: Emkay Research

Valuation multiples reflect trough cycle earnings

Valuation approach entails 12x FY28E EV/EBITDA

We value HEG using the SOTP framework, applying 12x EV/EBITDA multiple based on SOTP valuation of different businesses the company operates in. For the TACC segment, with the transition targeted for completion in FY28 and full ramp-up over the subsequent 24-30 months, we appropriately value the business on FY30 earnings and discount it back to ensure consistency with the valuation of other segments.

We believe the stock is already discounting a sustained earnings recovery, which should naturally lead to a moderation in multiples as the recovery plays out. In our view, the ongoing consolidation is healthy, creating a firm base for the share price while underlying earnings continue to strengthen.

10-year trailing EV/EBITDA valuation average of 12.8x

HEG has historically traded at an average trailing EV/EBITDA of 12.8x.

The stock is trading at 12.5x FY28E EV/EBITDA on our mid-cycle EBITDA margin assumption of 25% vs current margin of 12%, which represents trough-cycle profitability.

The valuation multiples of HEG appear optically higher than GRIL, owing to presence of equity interest in the BEL asset portfolio, which is not captured in our EBITDA estimate; however, it becomes part of the enterprise value.

With the accelerating EAF steel adoption expected to drive a meaningful rise in electrode demand and realizations, alongside better capacity utilization, we project EBITDA CAGR at a strong 56.3% over FY25–28E. We initiate coverage on HEG with BUY, valuing its graphite business at 12.0x FY28E EBITDA of Rs8.1bn, which yields an enterprise value of Rs97.7bn. After adjusting for net debt, minority interest, and the GrafTech stake, this translates into equity value of Rs96.9bn, or Rs502/share, for the graphite business.

For the BEL business, we apply a 10x EV/EBITDA multiple to FY28E EBITDA of Rs3.8bn, add net cash of Rs4.4bn, and allocate HEG's 40.42% stake; this results in an equity value of Rs17.3bn attributable to HEG. For TACC, we value the business at 20x FY30E PE, discounting the value back to FY28 to reflect the present value, arriving at an equity value of Rs19.3bn. Together, the HEG Greentech portfolio contributes Rs36.6bn, or Rs190/share.

Combining the graphite and Greentech segments, our fair value estimate for HEG stands at Rs700, implying an upside potential of ~30%.

Exhibit 125: We arrive at target price of Rs700 for HEG, using SoTP-based valuation methodology

VALUATION	Time-period	Multiple (x)	Value (Rs mn)	Value/sh (Rs)
EV/EBITDA				
Enterprise Value	FY28	12.0	97,709.4	506.1
less net debt, minorities, other			4,362.7	22.6
Equity value			**93,346.8**	**483.5**
GrafTech Investment value @ 9.98%			3,592.8	18.6
Graphite business - Equity value			**96,939.6**	**502.1**
HEG Greentech				
BEL	FY28		17,315.8	89.7
TACC	FY28		19,277.2	99.9
HEG Greentech - Equity value			**36,593.1**	**189.5**
Total equity value			**133,500.4**	**691.5**
Rounded target price				**700.0**
Current share price				533.3
Expected price return				31.3%
Expected dividend yield				1.3%
Expected total return				**32.5%**

Source: Emkay Research

Profitability hinged on core commodity cycles

The profitability is understandably sensitive to GE and raw-material prices, with needle coke being the most crucial. The respective commodity supply-demand and inventory cycles gain prominence, for timing the moves in profitability.

Exhibit 126: GE and raw-material cost sensitivity on FY27E EBITDA

FY27 EBITDA	Needle Coke cost (USD/t)							
Graphite Electrode (USD/t)	**6,097**	1,000	1,100	1,200	1,300	1,400	1,500	1,600
4,000	6,097	5,323	4,549	3,774	3,000	2,226	1,452	
4,100	6,872	6,097	5,323	4,549	3,774	3,000	2,226	
4,200	7,646	6,872	6,097	5,323	4,549	3,774	3,000	
4,300	8,420	7,646	6,872	6,097	5,323	4,549	3,774	
4,400	9,195	8,420	7,646	6,872	6,097	5,323	4,549	
4,500	9,969	9,195	8,420	7,646	6,872	6,097	5,323	
4,600	10,743	9,969	9,195	8,420	7,646	6,872	6,097	

Source: Company, Emkay Research

Exhibit 127: % change sensitivity over FY27E EBITDA

FY27 EBITDA	Needle Coke cost (USD/t)						
Graphite Electrode (USD/t)	1,000	1,100	1,200	1,300	1,400	1,500	1,600
4,000	0.0%	-12.7%	-25.4%	-38.1%	-50.8%	-63.5%	-76.2%
4,100	12.7%	0.0%	-12.7%	-25.4%	-38.1%	-50.8%	-63.5%
4,200	25.4%	12.7%	0.0%	-12.7%	-25.4%	-38.1%	-50.8%
4,300	38.1%	25.4%	12.7%	0.0%	-12.7%	-25.4%	-38.1%
4,400	50.8%	38.1%	25.4%	12.7%	0.0%	-12.7%	-25.4%
4,500	63.5%	50.8%	38.1%	25.4%	12.7%	0.0%	-12.7%
4,600	76.2%	63.5%	50.8%	38.1%	25.4%	12.7%	0.0%

Source: Company, Emkay Research

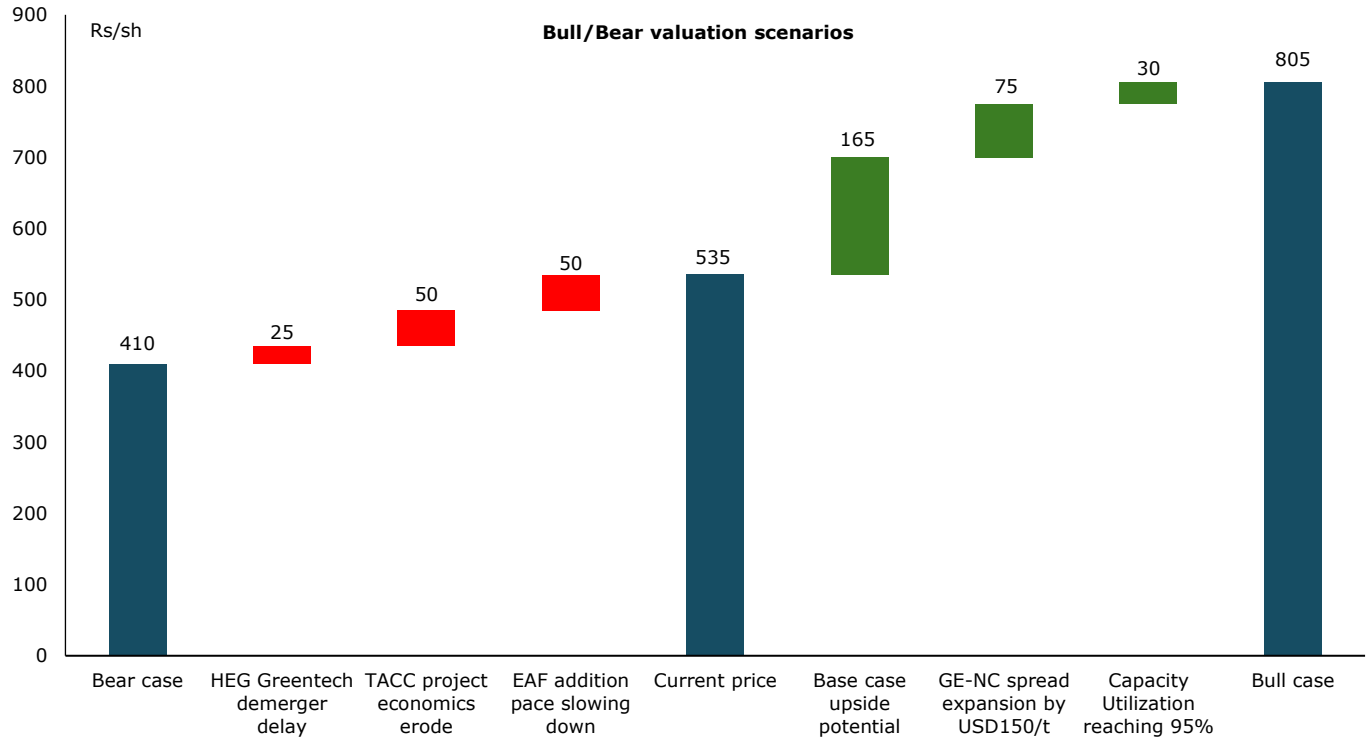
Rebound in GE prices and improved capacity utilization are key bull cases

Bull-/Bear-case scenarios indicate a -23% to +51% return spread

We believe a rebound in GE prices as well as improved capacity utilization to 95% could translate into 51% upside for the stock – in our bull case.

In our view, any margin contraction at TACC and EAF pace slowing down could affect profitability and valuations.

Exhibit 128: Bull-/Bear-case scenarios indicating downside or upside potential



Source: Company, Emkay Research

Sector valuation comps

Indian graphite electrode players trade at a premium due to structurally higher RoCE, lower capex intensity, and healthy balance sheets, driving superior earnings visibility versus global peers. Confidence in India as a reliable UHP electrode supplier amid rising EAF steel demand has further supported valuation re-rating despite cyclicality.

Exhibit 129: Sector valuation matrix – India vs Global

Company	Year-end	Currency	CMP	M Cap (USD bn)	Stock performance YTD	P/E (x)		EV/EBITDA (x)		P/B (x)		ROE (%)		FCF Yield (%)	
						FY26E	FY27E	FY26E	FY27E	FY26E	FY27E	FY26E	FY27E	FY26E	FY27E
India															
Graphite India	Mar-25	INR	555.0	1.2	-2%	15.6	10.6	20.6	10.4	1.8	1.8	13.3	15.7	3.6	3.6
HEG	Mar-25	INR	527.7	1.1	3%	55.5	28.2	24.9	14.7	2.3	2.3	4.0	7.2	0.9	0.9
US															
Graftech International	Dec-24	USD	14.2	0.4	-18%	na	na	85.4	34.2	na	na	na	32.1	-32.9	-32.9
Japan															
Resonac Holdings	Dec-24	JPY	6,526.0	7.7	63%	41.8	16.4	12.2	9.3	1.8	1.8	3.9	10.8	na	na
Tokai Carbon	Dec-24	JPY	1,028.0	1.5	12%	14.1	11.5	7.1	5.8	0.8	0.8	4.8	5.6	na	na
Nippon Carbon	Dec-24	JPY	4,505.0	0.3	3%	8.4	14.7	na	na	0.9	0.9	na	na	na	na
Europe															
SGL Carbon	Dec-24	EUR	2.9	0.4	-28%	na	17.4	4.0	4.9	0.7	0.7	-0.2	13.5	-18.0	-18.0
Weighted Average India						**34.9**	**19.1**	**22.7**	**12.5**	**2.1**	**2.1**	**8.8**	**11.6**	**2.3**	**2.3**
Weighted Average Global + India						**33.8**	**15.9**	**15.1**	**9.8**	**1.6**	**1.6**	**4.6**	**10.7**	**-1.1**	**-1.1**

Source: Bloomberg, Emkay Research

Risks to our thesis

In a combined bear case, of renewed China-linked price pressure + weak global steel demand + surge in needle coke pricing, sector RoCE could remain sub–WACC for another 2–3 years, materially delaying the re-rating thesis and exhausting investor patience despite balance-sheet resilience

Spread compression

Needle coke remains the most crucial margin swing factor. A sharp upward shock (driven by battery anode demand or refining outages) without commensurate electrode price increases could compress gross spreads by USD100-200/t and negatively impact earnings.

Project execution

As HEG makes progress on its 15kt expansion, any project execution risk arising from potential delays, cost overruns, or commissioning issues during execution could derail the volume growth potential. Given the technical complexity of electrode manufacturing, even minor slippages can defer ramp-up timelines and dilute expected returns.

Delay in demerger of HEG Greentech

We view demerger of HEG Greentech as a value unlocking and business simplification catalyst. Any delays in the demerger process could affect the stock price performance.

Anti-involution in China loses relevance

In 2025YTD, China has cut steel production by ~4%, even though exports remain elevated. A lack of follow-through in production cuts in 2026 could keep the global steel market in surplus. Chinese producers continue to hold significant excess capacity and, without meaningful supply curtailments, are likely to maintain aggressive export volumes. This could keep global graphite electrode prices under pressure, intensify competition in key export markets, and limit pricing power for non-China producers.

Structural power cost disadvantage in Europe persists

If European electricity prices remain structurally elevated due to grid constraints or prolonged geopolitical risk, EAF utilization could stay depressed, structurally impairing one of the largest non-China end markets for UHP electrodes and weakening global demand recovery.

Decarbonization policy dilution

A slowdown, delay, or dilution in CBAM/ETS enforcement or EAF-linked incentives—especially under political pressure from high-energy-cost economies—could defer the structural shift toward EAFs, stretching the replacement demand cycle for graphite electrodes.

Company overview

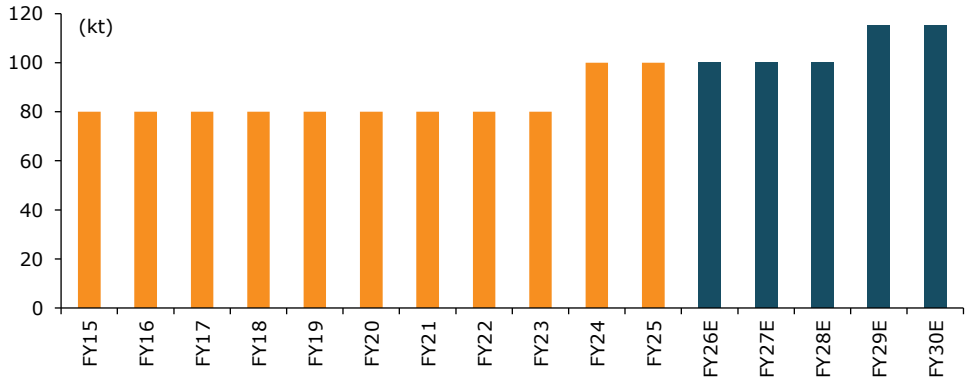
HEG, a flagship company of the LNJ Bhilwara Group, is one of the world's leading graphite electrode manufacturers and among the lowest-cost producers globally. Headquartered in Noida, the company operates a fully integrated manufacturing facility at Mandideep, Madhya Pradesh, which, after its recent brownfield expansion, has an installed capacity of ~100kt. This makes HEG one of the largest single-site electrode producers in the western world. The company produces both Ultra High Power and High Power electrodes, catering to Electric Arc Furnace steelmakers worldwide.

Exports form a significant part of HEG's business, with roughly two-thirds of its output shipped to over 30 countries, including several of the world's top steel producers. Its ability to consistently meet international quality standards, focus on UHP-grade electrodes, and maintain cost competitiveness through scale, integration, and captive power generation has enabled it to consolidate a strong global presence.

HEG has commissioned its Rs12bn brownfield expansion in the recent past, adding 20kt of capacity with only 121 incremental employees, highlighting the high operating leverage and efficiency inherent in the business. At full utilization of 80kt, the company's power requirement stands at 100MW, which is fully covered through a long-term contract at subsidized grid rates; currently cheaper by ~Rs2/unit compared to captive generation.

As a result, the 63MW captive thermal plant remains on standby, preserving optionality while lowering operating costs. The combination of scale expansion, lean manpower addition, and cost-effective power sourcing enhances HEG's competitiveness, positioning it to capture incremental demand with margin support.

Exhibit 130: HEG is expanding its GE capacity to 115kt from 100kt



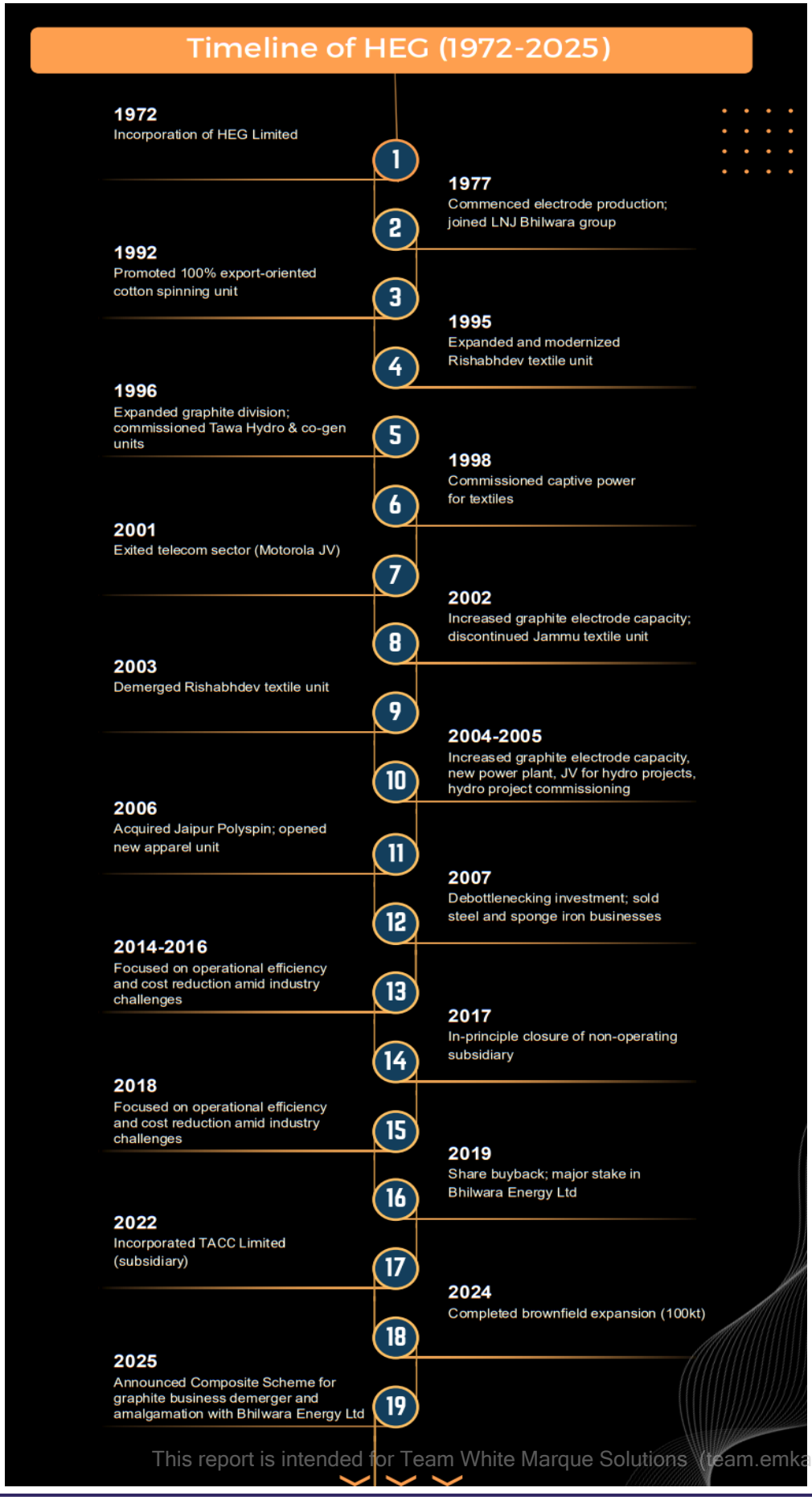
Source: Company, Emkay Research

History and timeline of events

HEG's four-decade trajectory demonstrates its transformation from a domestic carbon products manufacturer into a globally competitive, integrated player in graphite electrodes. Key strategic moves include international technological collaborations, timely capacity expansion, and strategic diversification into captive power. The company's strong R&D capabilities, quality focus, and export orientation position it well amid cyclicality.

The incorporation of HEG Graphite Limited signals the next strategic chapter—an imminent demerger aimed at unlocking value by creating two independently managed, listed entities. For investors, this transition promises enhanced corporate focus, capital allocation efficiency, and clearer sectoral exposure. Overall, HEG boasts of a resilient foundation, adaptability, and now a poised re-rating potential through structural transformation.

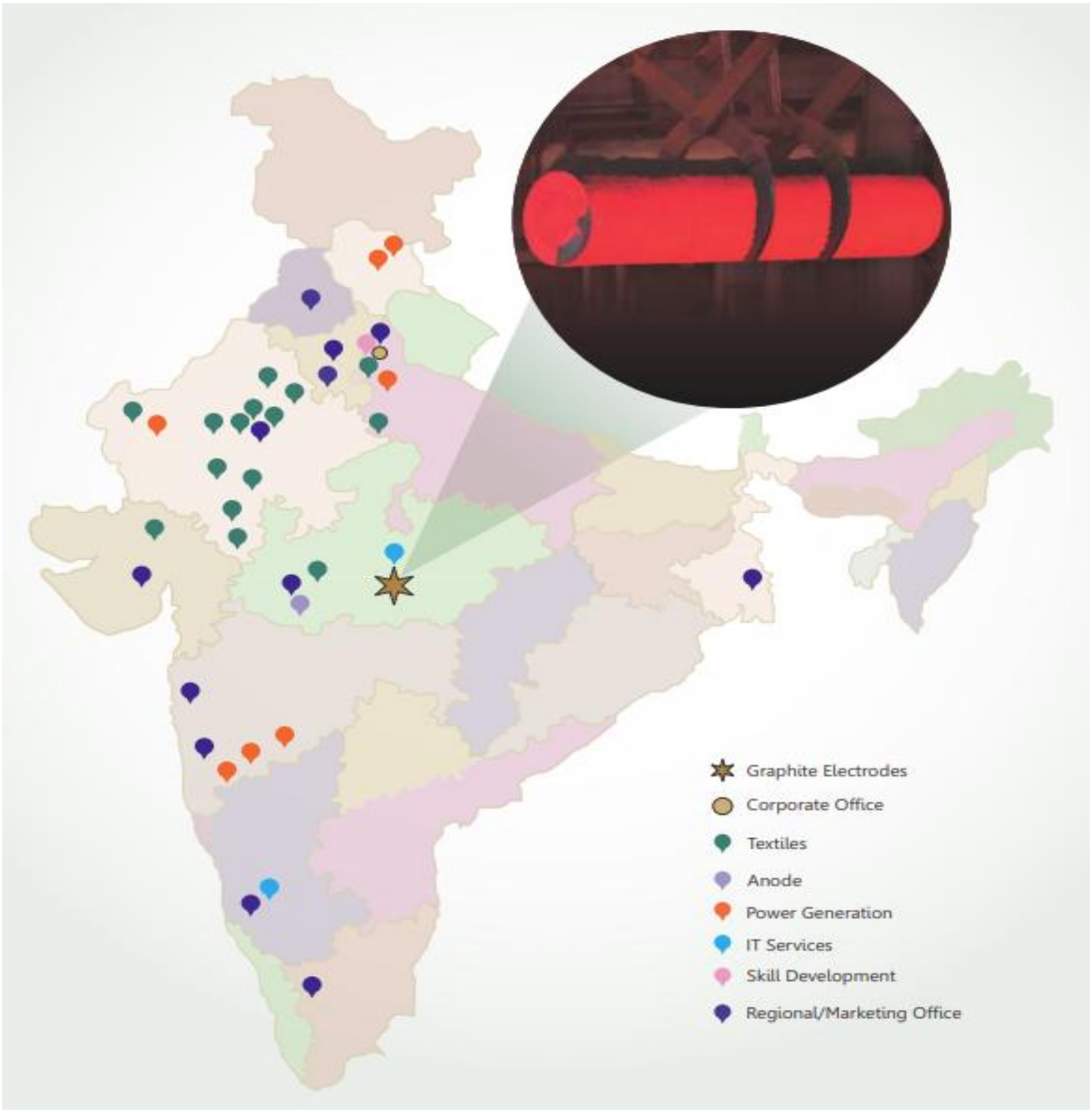
Exhibit 131: HEG's journey through the years



Source: Company, Emkay Research

Map of operations

Exhibit 132: HEG Group – Geographical presence



Source: Company, Emkay Research

Proficient management team with execution focus in place

The Jhunjhunwala family brings a strong track record across industries such as textiles, power, and graphite electrodes. The next generation, Riju Jhunjhunwala, has assumed leadership of the energy transition agenda, positioning the group to benefit from the global pivot toward renewables and electrification. The group's strategic 9.98% stake in GrafTech, one of the world's largest graphite electrode producers, reinforces its long-term conviction in the carbon materials space, while also offering technical insights and potential synergies.

The recent investment in BEL by Singularity, an external investor, adds third-party validation to the group's strategy and underlines confidence in the renewable energy platform being built. From a governance standpoint, the promoters face no pending legal cases, reducing headline risks that could otherwise hamper the demerger's reception in capital markets.

Exhibit 133: HEG – KMPs profile snapshot

Name	Designation	Profile summary
Ravi Jhunjhunwala	Chairman and MD	Ravi Jhunjhunwala has been the driving force behind HEG's growth into one of the largest graphite electrode producers globally. With decades of leadership experience, he has overseen multiple expansions, diversification into power and carbon products, and international market consolidation. He is also closely associated with group ventures in power and industrial operations, shaping long-term strategic direction.
Riju Jhunjhunwala	Vice Chairman	As Vice Chairman, Riju Jhunjhunwala plays a crucial role in expansion and diversification strategies. He has rich experience across group companies and actively contributes to strategic investments, including the ongoing foray into anode manufacturing. His vision emphasizes operational efficiency, global competitiveness, and a long-term sustainability focus.
Manish Gulati	Executive Director	Manish Gulati has been with HEG since Mar-20 as Executive Director. He has played an important role in expanding the company's global marketing footprint and strengthening its customer engagement with steelmakers worldwide. His operational expertise and understanding of graphite electrode markets position him as a key driver of HEG's business strategy.
Ravi Kant Tripathi	CFO	Ravi Kant Tripathi is the Chief Financial Officer of HEG, appointed in Nov-24, and is a long-tenured finance professional with over 30 years at HEG, having joined the company in 1994. He holds a BCom, is a qualified ICWA, and has an LLB degree. Through his career, he has headed key finance and accounts functions covering taxation, treasury, cost control, budgeting, MIS, statutory compliance, and working-capital management, and has played a pivotal role in implementing ERP system, integrating finance with operations. His deep institutional knowledge and hands-on operational finance experience underpin his current role as CFO.

Source: Company, Emkay Research

HEG: Consolidated Financials and Valuations

Profit & Loss

Y/E Mar (Rs mn)	FY24	FY25	FY26E	FY27E	FY28E
Revenue	**23,949**	**21,597**	**27,664**	**29,771**	**39,734**
Revenue growth (%)	(2.9)	(9.8)	28.1	7.6	33.5
EBITDA	**3,824**	**2,551**	**4,701**	**6,097**	**9,744**
EBITDA growth (%)	(38.2)	(33.3)	84.3	29.7	59.8
Depreciation & Amortization	1,747	2,006	2,033	2,210	3,166
EBIT	**2,078**	**545**	**2,668**	**3,888**	**6,579**
EBIT growth (%)	(59.7)	(73.8)	389.3	45.7	69.2
Other operating income	-	-	-	-	-
Other income	1,417	1,276	2,792	2,000	2,000
Financial expense	357	392	411	591	1,530
PBT	**3,137**	**1,429**	**5,049**	**5,297**	**7,049**
Extraordinary items	0	0	0	0	0
Taxes	837	453	1,227	1,644	2,139
Minority interest	-	-	-	-	-
Income from JV/Associates	817	175	528	574	592
Reported PAT	**3,117**	**1,151**	**4,350**	**4,227**	**5,501**
PAT growth (%)	(41.5)	(63.1)	278.0	(2.8)	30.2
Adjusted PAT	**3,117**	**1,151**	**4,350**	**4,227**	**5,501**
Diluted EPS (Rs)	**16.2**	**6.0**	**22.5**	**21.9**	**28.5**
Diluted EPS growth (%)	(41.5)	(63.1)	277.9	(2.8)	30.2
DPS (Rs)	**8.5**	**4.5**	**6.8**	**6.6**	**8.5**
Dividend payout (%)	**52.5**	**75.8**	**30.0**	**30.0**	**30.0**
EBITDA margin (%)	16.0	11.8	17.0	20.5	24.5
EBIT margin (%)	8.7	2.5	9.6	13.1	16.6
Effective tax rate (%)	26.7	31.7	24.3	31.0	30.4
NOPLAT (pre-IndAS)	**1,523**	**372**	**2,019**	**2,681**	**4,582**
Shares outstanding (mn)	193	193	193	193	193

Source: Company, Emkay Research

Balance Sheet

Y/E Mar (Rs mn)	FY24	FY25	FY26E	FY27E	FY28E
Share capital	386	386	386	386	386
Reserves & Surplus	43,874	44,152	47,197	50,155	54,006
Net worth	**44,260**	**44,538**	**47,583**	**50,541**	**54,392**
Minority interests	-	-	-	-	-
Non-current liab. & prov.	960	949	949	949	949
Total debt	**6,194**	**5,849**	**6,849**	**9,849**	**20,399**
Total liabilities & equity	**51,538**	**51,481**	**55,526**	**61,485**	**75,886**
Net tangible fixed assets	17,691	18,922	20,139	27,979	37,713
Net intangible assets	-	-	-	-	-
Net ROU assets	384	375	375	375	375
Capital WIP	2,123	709	709	709	709
Goodwill	-	-	-	-	-
Investments [JV/Associates]	8,830	10,136	10,136	10,136	10,136
Cash & equivalents	**4,102**	**1,470**	**1,684**	**1,318**	**1,554**
Current assets (ex-cash)	22,196	23,095	26,565	25,269	31,684
Current Liab. & Prov.	5,476	5,000	5,856	6,076	8,059
NWC (ex-cash)	**16,721**	**18,095**	**20,710**	**19,194**	**23,624**
Total assets	**51,538**	**51,481**	**55,526**	**61,485**	**75,886**
Net debt	2,092	4,378	5,165	8,531	18,845
Capital employed	51,538	51,481	55,526	61,485	75,886
Invested capital	**34,424**	**37,043**	**40,874**	**47,199**	**61,364**
BVPS (Rs)	229.4	230.8	246.5	261.8	281.7
Net Debt/Equity (x)	-	0.1	0.1	0.2	0.3
Net Debt/EBITDA (x)	0.5	1.7	1.1	1.4	1.9
Interest coverage (x)	9.8	4.6	13.3	10.0	5.6
RoCE (%)	**6.9**	**3.6**	**10.4**	**10.3**	**12.7**

Source: Company, Emkay Research

Cash flows

Y/E Mar (Rs mn)	FY24	FY25	FY26E	FY27E	FY28E
PBT (ex-other income)	3,137	1,429	5,577	5,871	7,641
Others (non-cash items)	(661)	351	0	0	0
Taxes paid	(354)	(447)	(1,227)	(1,644)	(2,139)
Change in NWC	2,328	(737)	(2,615)	1,516	(4,431)
Operating cash flow	**6,122**	**2,797**	**4,179**	**8,543**	**5,766**
Capital expenditure	(3,715)	(1,822)	(3,250)	(10,050)	(12,900)
Acquisition of business	-	-	-	-	-
Interest & dividend income	550	301	0	0	0
Investing cash flow	**(1,843)**	**(2,068)**	**(3,250)**	**(10,050)**	**(12,900)**
Equity raised/(repaid)	0	0	0	0	0
Debt raised/(repaid)	(1,220)	(382)	1,000	3,000	10,550
Payment of lease liabilities	0	0	0	0	0
Interest paid	(387)	(338)	(411)	(591)	(1,530)
Dividend paid (incl tax)	(1,635)	(873)	(1,305)	(1,268)	(1,650)
Others	0	0	0	0	0
Financing cash flow	**(3,241)**	**(1,592)**	**(716)**	**1,141**	**7,370**
Net chg in Cash	1,038	(863)	213	(366)	236
OCF	6,122	2,797	4,179	8,543	5,766
Adj. OCF (w/o NWC chg.)	3,794	3,534	6,794	7,028	10,197
FCFF	2,407	975	929	(1,507)	(7,134)
FCFE	2,600	883	518	(2,098)	(8,664)
OCF/EBITDA (%)	160.1	109.6	88.9	140.1	59.2
FCFE/PAT (%)	83.4	76.8	11.9	(49.6)	(157.5)
FCFF/NOPLAT (%)	**158.0**	**261.8**	**46.0**	**(56.2)**	**(155.7)**

Source: Company, Emkay Research

Valuations and key Ratios

Y/E Mar	FY24	FY25	FY26E	FY27E	FY28E
P/E (x)	33.0	89.4	23.7	24.4	18.7
EV/CE(x)	2.1	2.2	2.0	1.8	1.5
P/B (x)	2.3	2.3	2.2	2.0	1.9
EV/Sales (x)	4.5	5.1	4.0	3.7	2.8
EV/EBITDA (x)	28.2	43.1	23.4	18.0	11.3
EV/EBIT(x)	51.8	201.7	41.2	28.3	16.7
EV/IC (x)	3.1	3.0	2.7	2.3	1.8
FCFF yield (%)	2.2	0.9	0.8	(1.4)	(6.5)
FCFE yield (%)	2.5	0.9	0.5	(2.0)	(8.4)
Dividend yield (%)	1.6	0.8	1.3	1.2	1.6
DuPont-RoE split					
Net profit margin (%)	13.0	5.3	15.7	14.2	13.8
Total asset turnover (x)	0.5	0.4	0.5	0.5	0.6
Assets/Equity (x)	1.2	1.2	1.2	1.2	1.3
RoE (%)	**7.2**	**2.6**	**9.4**	**8.6**	**10.5**
DuPont-RoIC					
NOPLAT margin (%)	6.4	1.7	7.3	9.0	11.5
IC turnover (x)	0.8	0.6	0.7	0.7	0.7
RoIC (%)	**4.8**	**1.0**	**5.2**	**6.1**	**8.4**
Operating metrics					
Core NWC days	254.8	305.8	273.2	235.3	217.0
Total NWC days	**254.8**	**305.8**	**273.2**	**235.3**	**217.0**
Fixed asset turnover	0.9	0.7	0.8	0.7	0.7
Opex-to-revenue (%)	38.4	44.0	27.4	25.5	19.1

Source: Company, Emkay Research

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ADD	5-15% upside
REDUCE	5% upside to 15% downside
SELL	>15% downside

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