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Tech Outlook Report For Steel Industry

Navigating Divergence, Decarbonization, and a New Era of Growth

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The Steel Industry is at a Strategic Inflection Point

Slowing Global Growth: The global market is maturing, with growth slowing to ~0.7% CAGR as China's demand wanes.

India is the New Engine: India provides the primary engine for global demand, targeting 300 MT capacity by 2030.

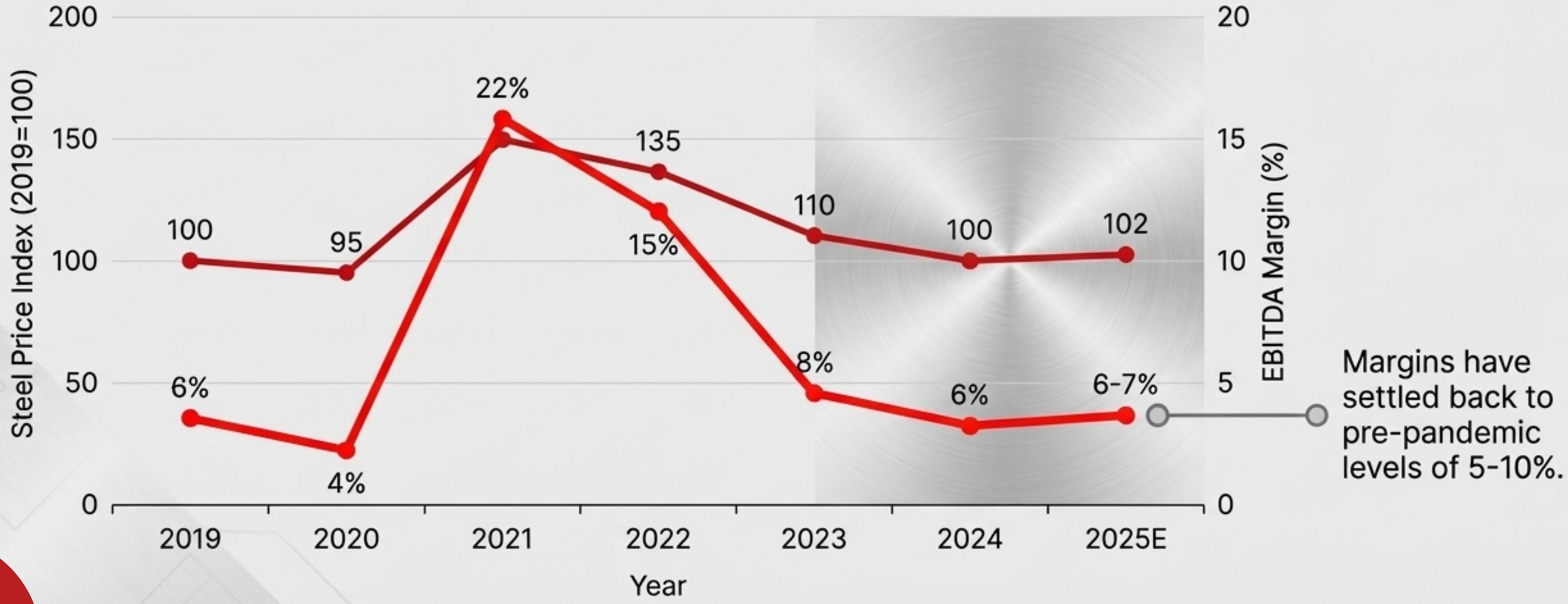
Decarbonization is Decisive: Sustainability is now a core competitive driver, mandating a shift to cleaner technologies like Electric Arc Furnaces (EAFs).

Discipline Amidst Risk: Success requires navigating oversupply and volatility through efficiency, technology, and strategic focus on value.

Profitability Has Normalized After the Post-Pandemic Boom

The super-cycle of 2021-22 is over. The industry has returned to its structurally low-margin (5-10% EBITDA), capital-intensive state.

Steel Price vs. EBITDA Margin (2019–2025E)



Global Oversupply and Stagnant Mature Markets Define the Landscape

New capacity is outpacing sluggish demand in developed economies, pressuring prices and utilization rates.

1.

~165 MT

of new capacity expected by 2027, mostly in Asia

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2.

From ~80% to 70%

Global utilization has fallen since 2021, indicating a growing supply-demand gap.

3.

China’s demand is fading due to a real estate slump; Western markets are mostly flat.

A Tale of Two Worlds: Global Stagnation vs. India’s Ascent

Global Slowdown

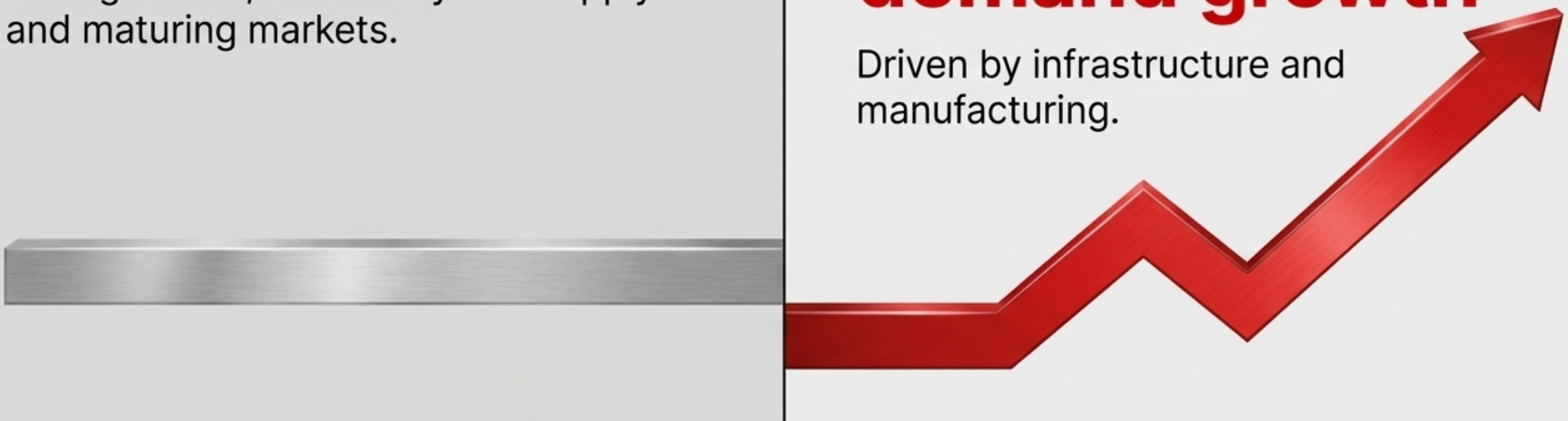
~0.7% CAGR

through 2030, defined by oversupply and maturing markets.

India’s Surge

6–9% annual demand growth

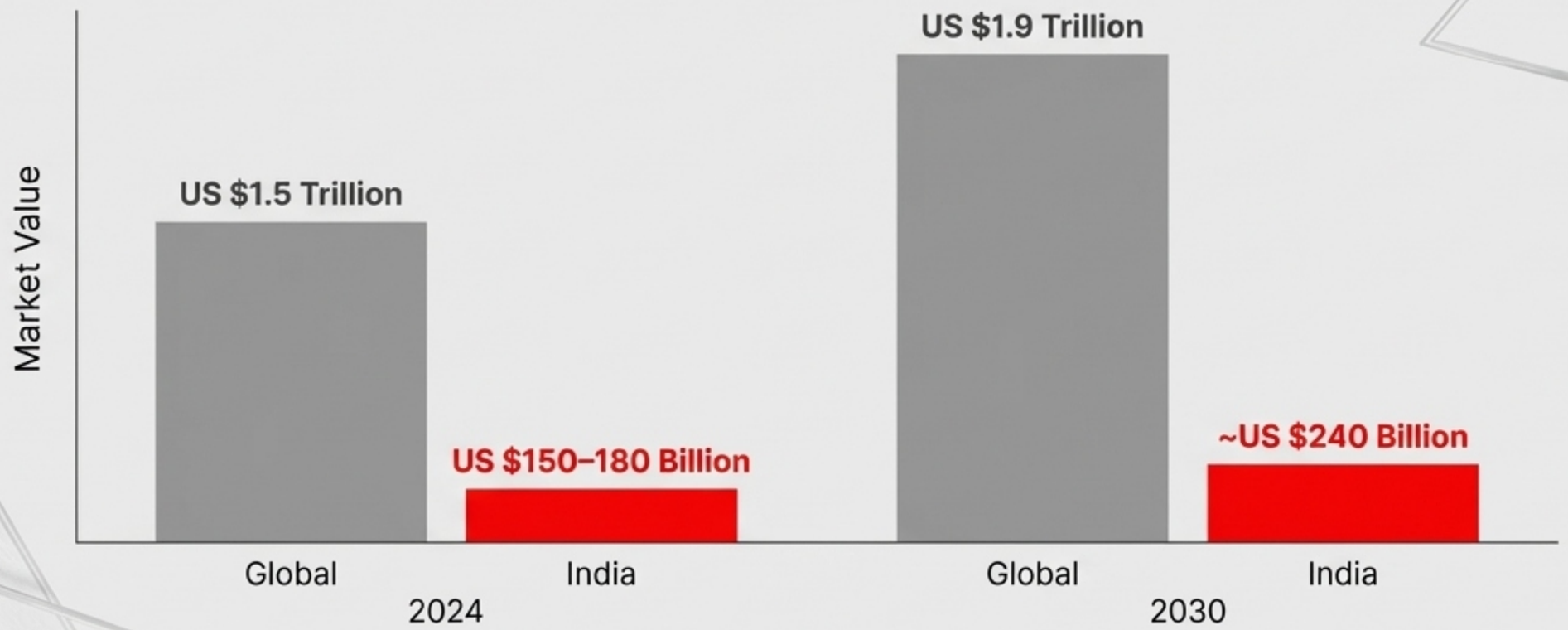
Driven by infrastructure and manufacturing.



India’s Market is Built on a Foundation of Real Demand

India’s market is not just growing; it’s structurally sound, with consumption keeping pace with production. The domestic market could exceed US $240 billion by 2030.

Steel Market Revenue Growth: Global vs. India (2024–2030)



India’s share of global revenue is rising faster, reflecting its growing demand base and capacity expansion.

Mandate #1: Decarbonization is Now a Strategic Necessity

With steel accounting for 7–8% of global CO_2 emissions, pressure from regulators, customers, and investors is making decarbonization a requirement for market access and survival.

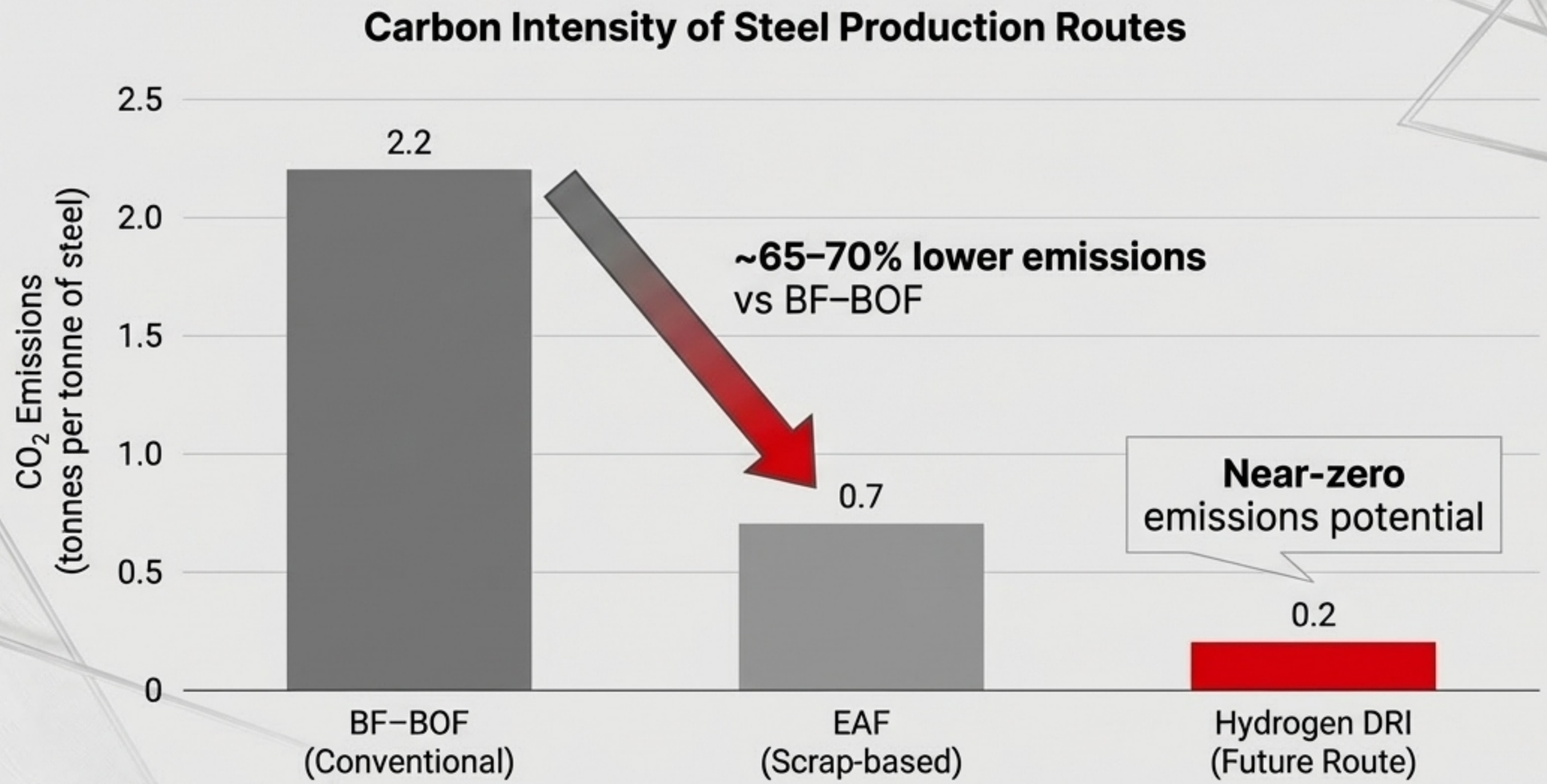
7–8%

of global CO_2 emissions

Conventional steelmaking emits ~2.2 tonnes of CO_2 per tonne of steel.

The Path to Cleaner Steel is Through Technological Transformation

The transition from coal-based Blast Furnaces (BF–BOF) to Electric Arc Furnaces (EAF) and future hydrogen-based routes is the central strategy for decarbonization.



Mandate #2: Technology is Reshaping Competitiveness

Beyond clean tech, digitalization and a shift to high-value products are key differentiators for achieving superior efficiency and profitability.

Process Innovation

Shift to EAFs (lower emissions, flexible), exploring alternative routes like biomass and Hydrogen-based DRI.

Digital Transformation

Leveraging AI, IoT, and ERP systems for real-time production control, energy optimization, and cost visibility.

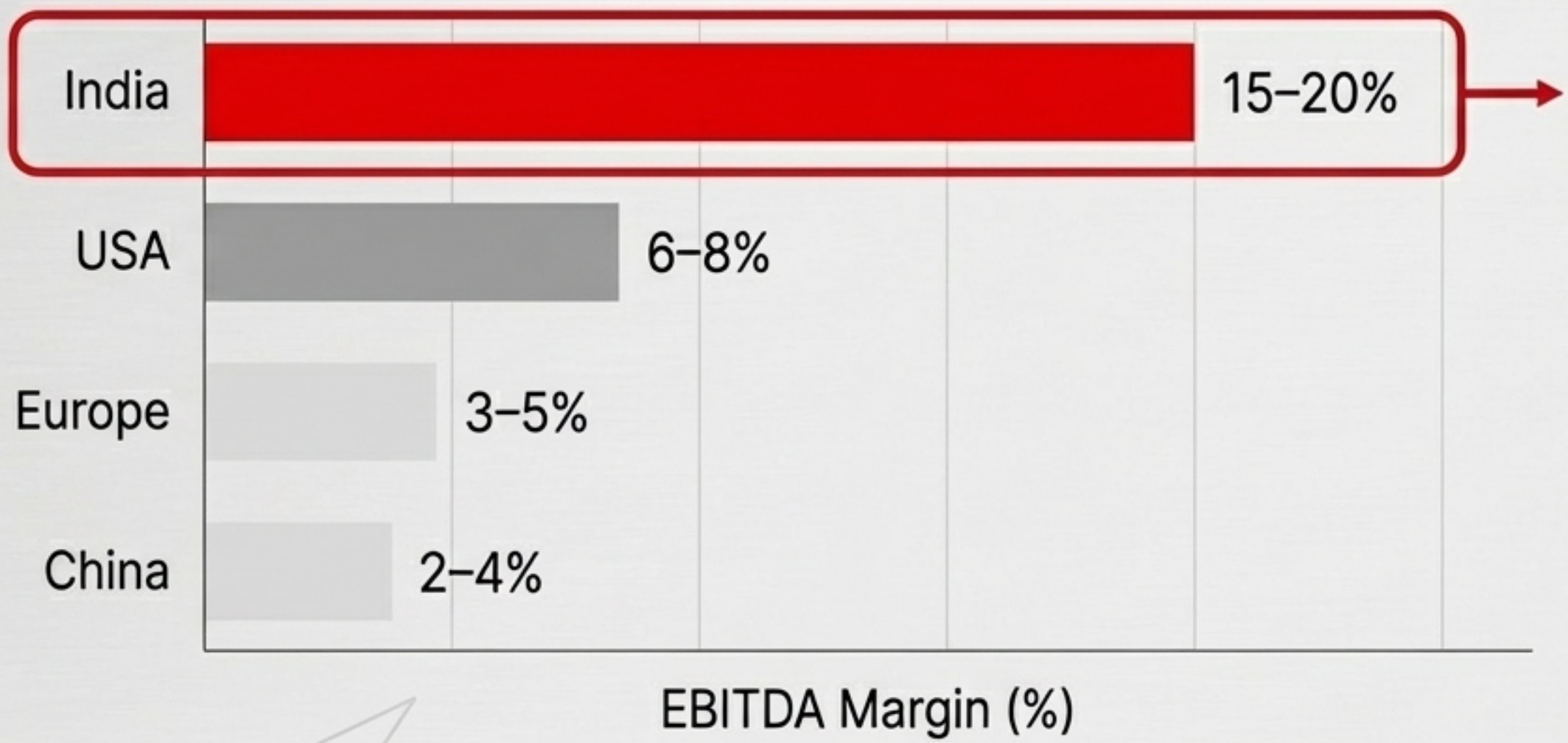
Product Diversification

Focusing R&D on high-value, specialty steels for high-demand sectors like EVs, renewables, and modern infrastructure.

Financial Performance Clearly Reflects This New Reality

India's strong, balanced domestic market allows its producers to maintain superior margins, while other regions face significant compression from oversupply and flat demand.

Regional EBITDA Margin Comparison



India remains the global outlier in profitability due to strong domestic demand.

Future Success Hinges on Strategic Capital Allocation

Investment is shifting from pure capacity expansion to a balanced portfolio of decarbonization, modernization, and raw material security.

Decarbonization Tech: EAFs, Hydrogen Pilots, and emission controls are becoming a major share of capex.

Digital & Industry 4.0: Automation and AI-driven efficiency to protect structurally lower margins.

Raw Material Security: Acquiring captive mines and building scrap recycling chains to manage cost volatility.

Value-Added Steel: R&D and production lines for high-strength, specialty grades with better margins.

Key Risks Require Disciplined Management

Navigating global oversupply, trade protectionism, and price volatility is critical to protecting returns on investment.

Global Oversupply

New capacity in Asia threatens to keep prices and utilization rates low.

Trade & Policy Shifts

Tariffs, anti-dumping duties, and carbon taxes are fragmenting the global market.

Raw Material Volatility

Iron ore, coal, and scrap price swings can quickly erase margins.

ESG & Regulatory Costs

The cost of compliance with tougher emission norms is rising and non-negotiable.

Strategic Imperatives: A Blueprint for Leadership

To win in the next decade, steelmakers must execute across five critical domains.

1. **Shift to High-Value, High-Growth Steel:** Focus capacity on infrastructure, renewables, EVs, and specialty grades.
2. **Lead the Decarbonization Transition:** Accelerate adoption of EAF, DRI, and hydrogen-based technologies.
3. **Secure Raw Materials & Energy:** Lock in key inputs to reduce volatility and supply risk.
4. **Drive Cost & Operational Excellence:** Improve efficiency through digitalization, ERP-led integration, and logistics optimization.
5. **Maintain Policy and Market Agility:** Build flexible portfolios and engage with policymakers to manage trade and ESG cycles.

The Future of Steel Will Be Defined by Three Key Trends

The Market

Global growth is slow and structurally limited to <1%. India is the undisputed engine of demand, targeting 300 MT capacity.

The Mandate

Decarbonization and technology are no longer optional. The shift to EAFs, hydrogen, and Industry 4.0 is central to competitiveness.

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The Strategy

Success depends on discipline. Winners will focus on value over volume, secure their supply chains, and maintain capital efficiency.

The New Horizon is Forged Through Discipline and Transformation

The era of uniform global growth is over. Leadership in steel will be defined not by scale alone, but by the ability to master the divergent dynamics of markets, technology, and sustainability through focused, strategic action.

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