



Lighthouse

Info Systems Pvt. Ltd.

The Future of **Aluminium Extrusion** Forging a Path Through Growth, Pressure & Innovation



The Industry is Poised for Growth, but Success Hinges on a Strategic Pivot



The Opportunity (Situation)

Steady global growth is driven by powerful secular trends in EVs, renewable energy, and green construction. India is a key high-growth engine. Global market to reach **40+ Mt by 2030**. India's market to hit **~US\$4.6 bn**.



The Pressure (Complication)

The industry is fragmented, suffers from chronic under-utilization (**~40% in India**), and faces moderate margins (**12-15% EBITDA**) due to volatile costs and import competition.

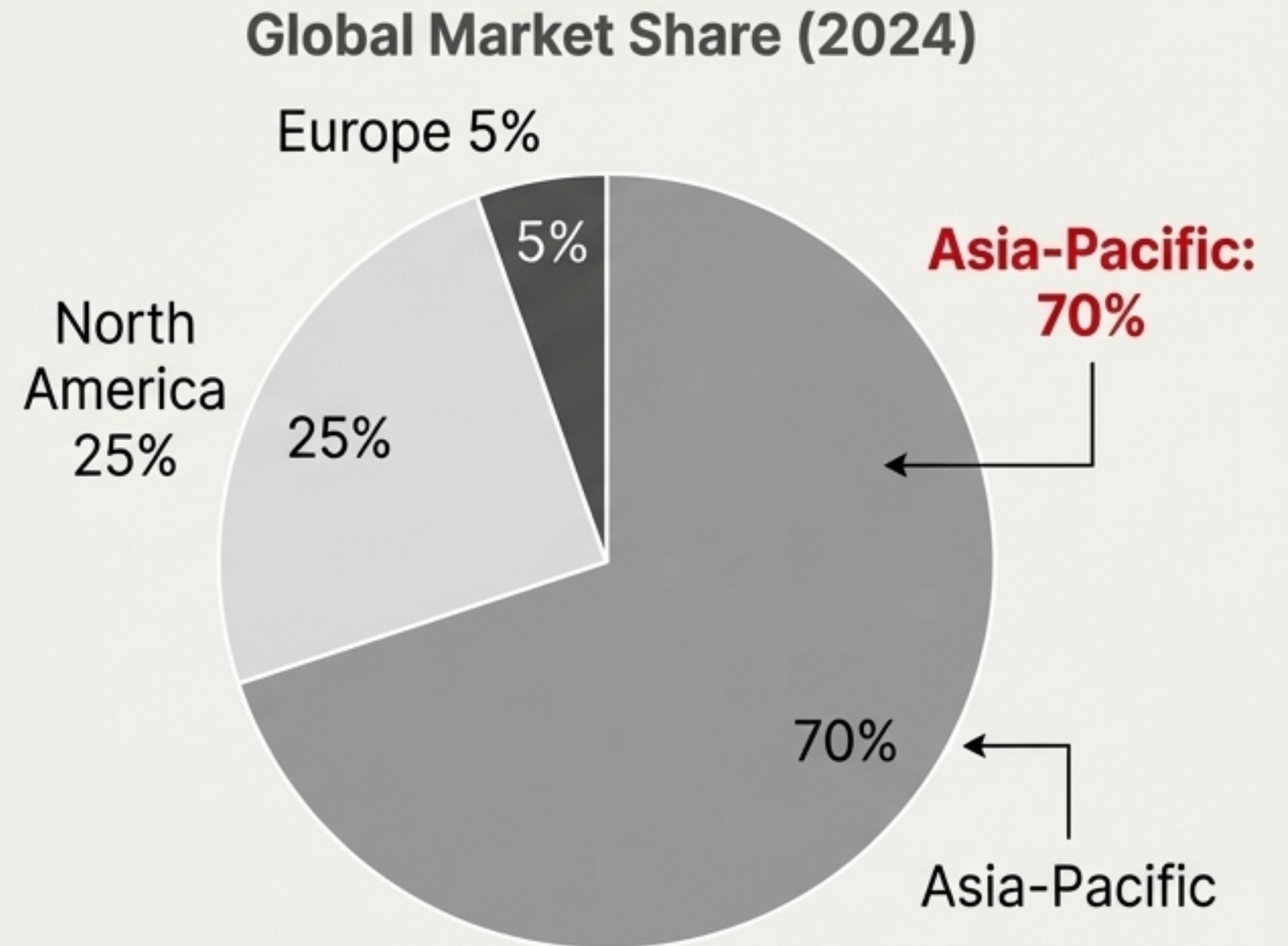


The Path Forward (Resolution)

Long-term winners will be those who master **Sustainability & Circularity**, embrace **Digitalization (Industry 4.0)**, and focus on **High-Value Applications** to secure margins and market leadership.

Global Demand is on a Strong Growth Trajectory, Fueled by Green Megatrends

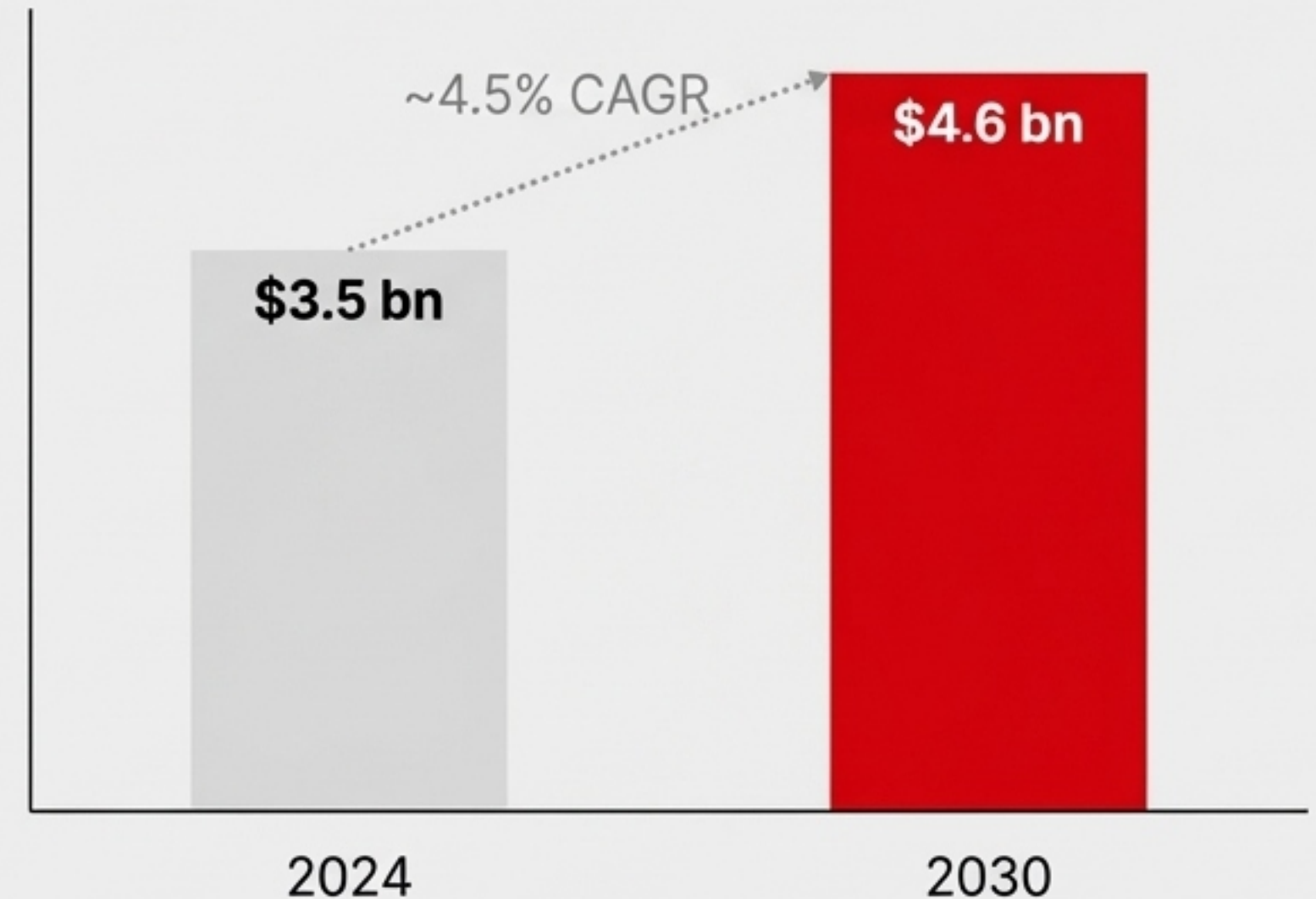
- The global market is expanding steadily post-pandemic, valued at **~US\$91 billion in 2024**.
- Projected to reach **~US\$140–150 billion by 2030**, with volumes growing from **~34.3 Mt to 40+ Mt**.
- Growth is fundamentally driven by **lightweighting in EVs & transportation**, infrastructure for **renewable energy**, and demand for **green construction**.
- Asia-Pacific, led by China and India, is the dominant market and primary growth engine.



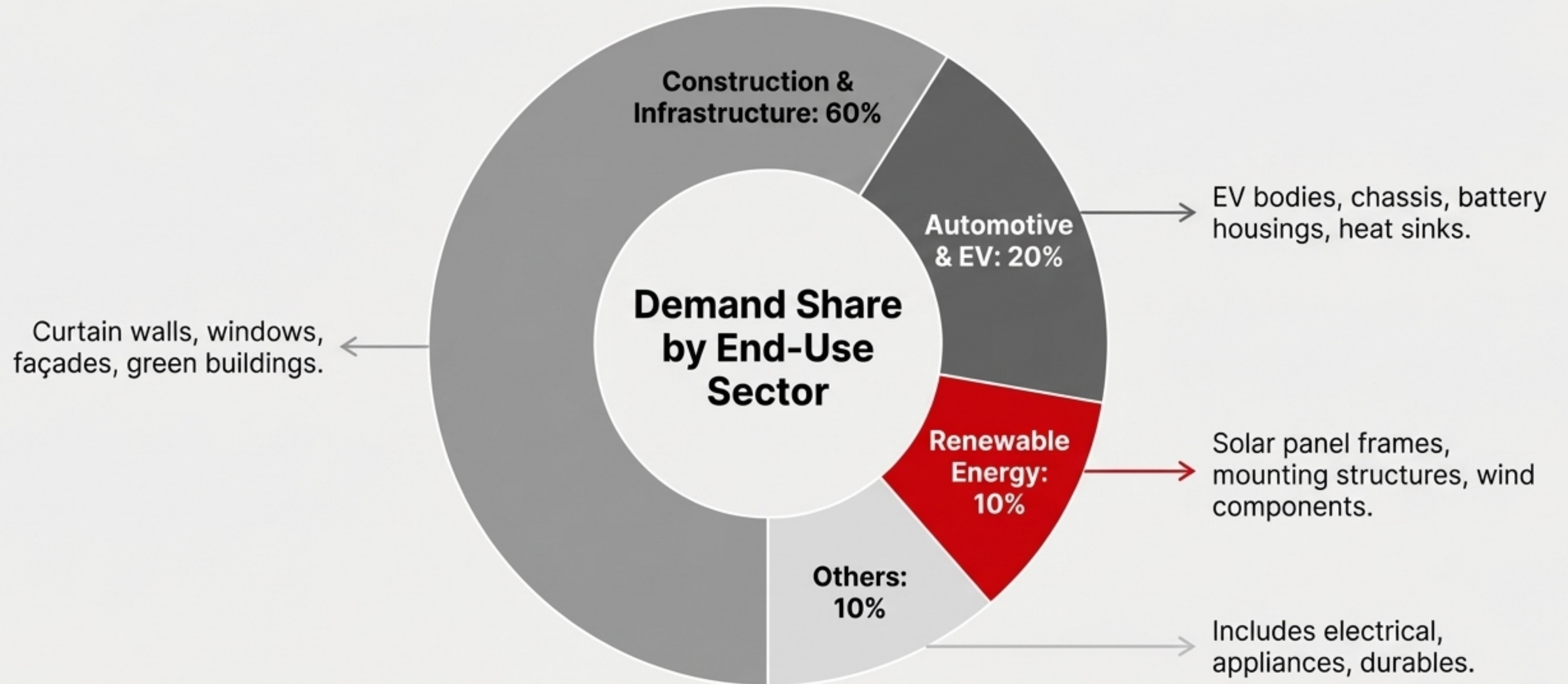
India is a Key Growth Engine, with Significant Room for Domestic Expansion

- India's market is set to expand at a **~4.5% CAGR**, supported by major national initiatives.
- Key domestic drivers include housing projects, metro & rail expansion, rapid EV adoption, and a push for domestic solar manufacturing.
- A heavy reliance on imports, particularly for solar frames, creates a strong opportunity for localization and import substitution.

Indian Aluminium Extrusion Market Size (US\$ Billion)



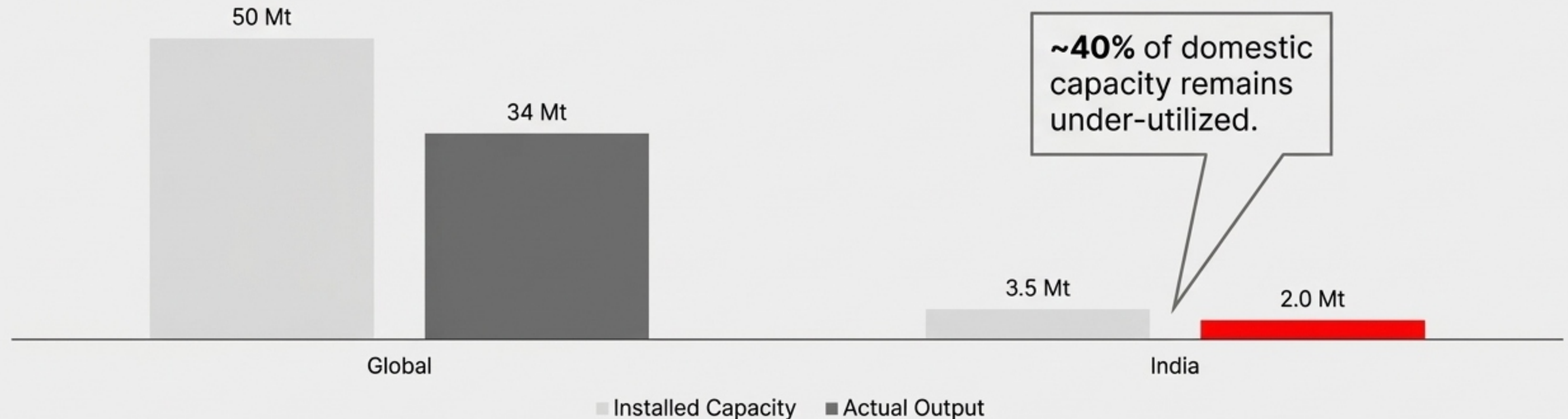
Construction Remains the Bedrock of Demand, While EVs and Renewables Drive New Growth



The Global Industry is Characterized by Overcapacity and Chronic Under-Utilization

The gap between installed capacity and actual output pressures margins and makes operational efficiency paramount. While global utilization is low, India's is particularly acute at **~55-60%**, creating both a challenge and an opportunity for domestic players to capture unmet demand.

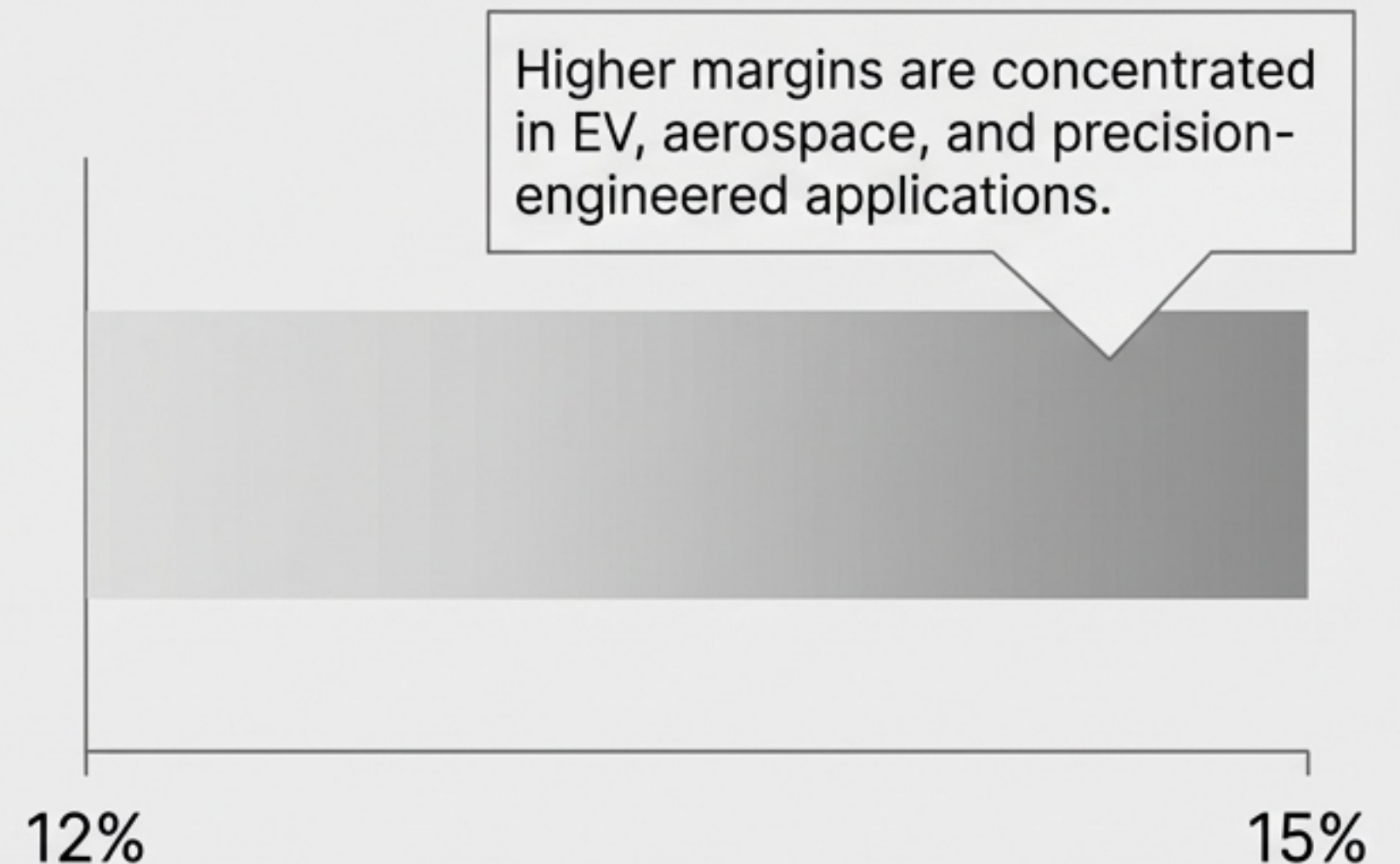
Capacity vs. Actual Output (Million Tonnes)



Profitability is Moderate, Making Efficiency and Specialization Critical for Success

- **Industry profitability is modest, with typical EBITDA margins ranging from 12% to 15%.**
- Margins are highly sensitive to the volatility of raw material (aluminium) and energy prices.
- Commodity profiles offer lower returns; higher margins are found in specialized applications.
- Players with scale, vertical integration, and value-added services (fabrication, coating) consistently outperform.

Typical Industry EBITDA Margin Range



Success Requires Navigating a Landscape of Market, Trade, and Operational Risks



Cost Volatility

Aluminium and power prices are highly volatile, directly impacting margins.

Implication: Cost forecasting and hedging are critical capabilities.



Import & Trade Pressure

Low-cost imports and shifting trade policies (tariffs, FTAs) can disrupt domestic markets.

Implication: Competitiveness depends on efficiency and fair trade safeguards.



Regulatory & ESG Compliance

Stricter environmental norms and carbon regulations increase compliance costs.

Implication: Sustainability is shifting from a 'nice-to-have' to a license to operate.



Technology & Skill Gaps

Lagging in automation and a shortage of skilled talent can constrain productivity and innovation.

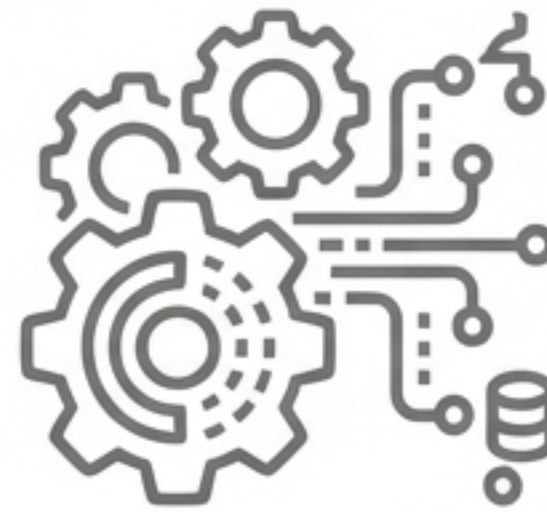
Implication: Continuous investment in technology and upskilling is essential.

The Path to Leadership is Built on Three Interlocking Strategic Pillars



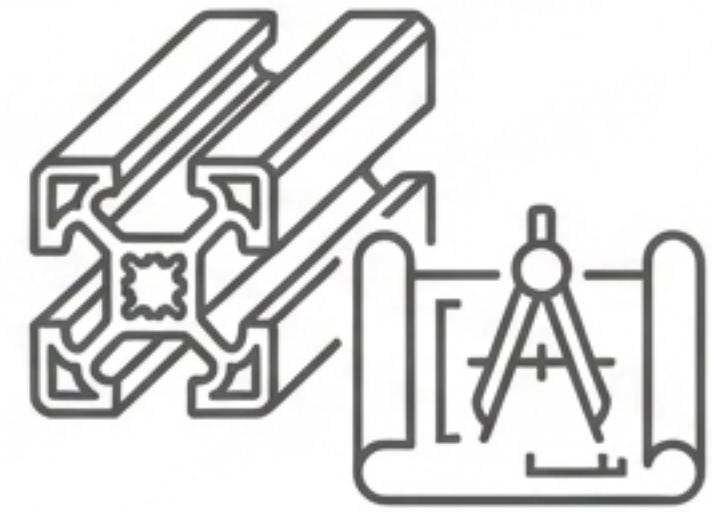
1. Sustainability & Circularity

Leveraging aluminium's recyclability and low-carbon processes to meet customer demand and create a competitive advantage.



2. Digital Transformation

Deploying Industry 4.0, AI, and analytics to drive step-changes in productivity, quality, and efficiency.

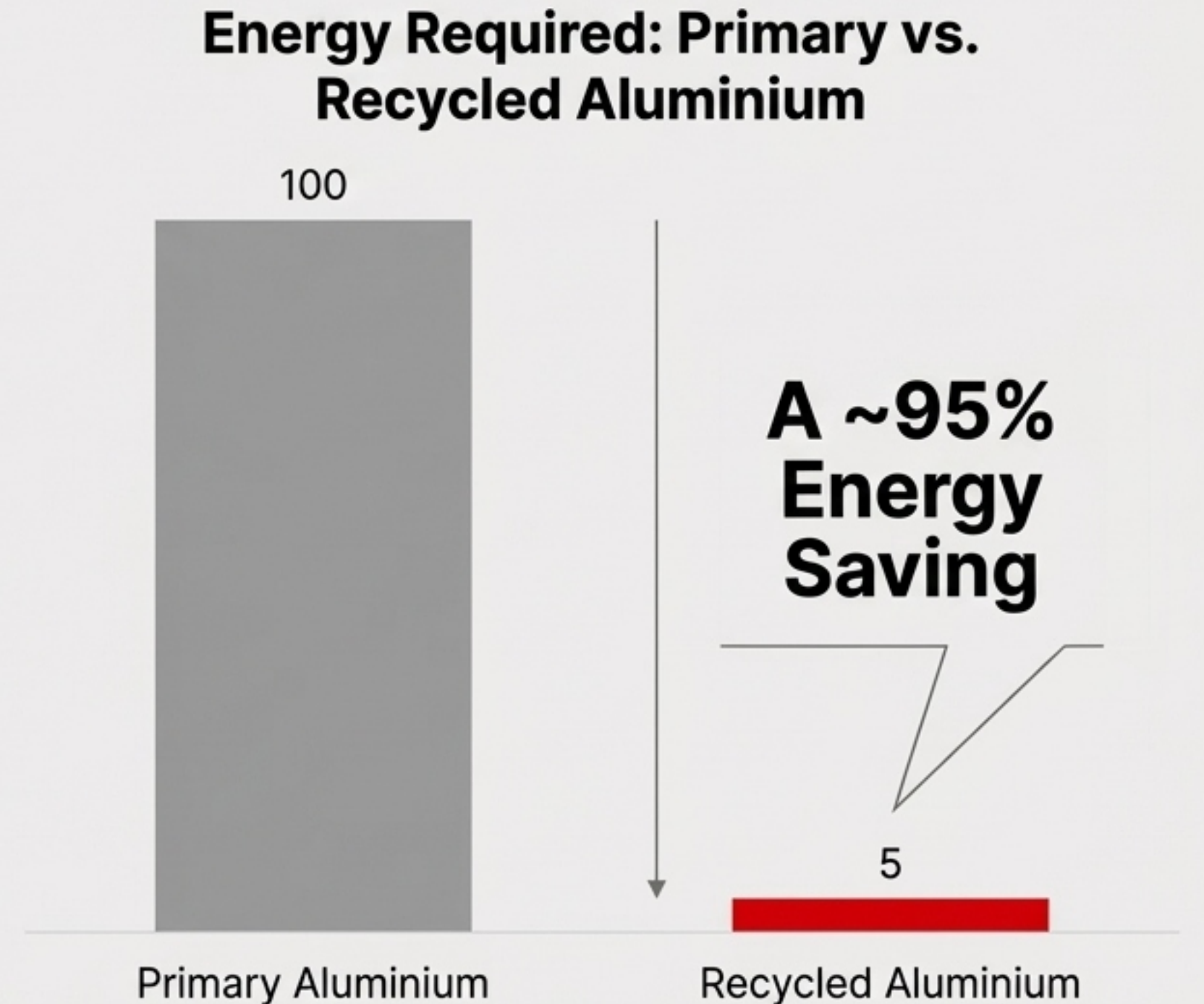


3. Value-Added Specialization

Moving beyond commodity extrusions into fabricated, engineered solutions for high-growth, high-margin sectors.

Sustainability is Now a Core Competitive Requirement, Not Just a Responsibility

- Aluminium is infinitely recyclable, positioning it as a cornerstone of the **circular economy**.
- Using recycled (secondary) aluminium drastically reduces CO₂ emissions, costs, and supply chain risk.
- Green end-use sectors like **EVs, solar, and green buildings** are increasingly demanding low-carbon materials, creating premium market opportunities.
- **~75% of all aluminium ever produced is still in use today**, a testament to its circular properties.



Digitalization (Industry 4.0) is Redefining Operational Excellence and Efficiency

Smart Manufacturing: Sensor-driven, automated extrusion lines with real-time monitoring and robotics are reducing defects, scrap, and downtime.

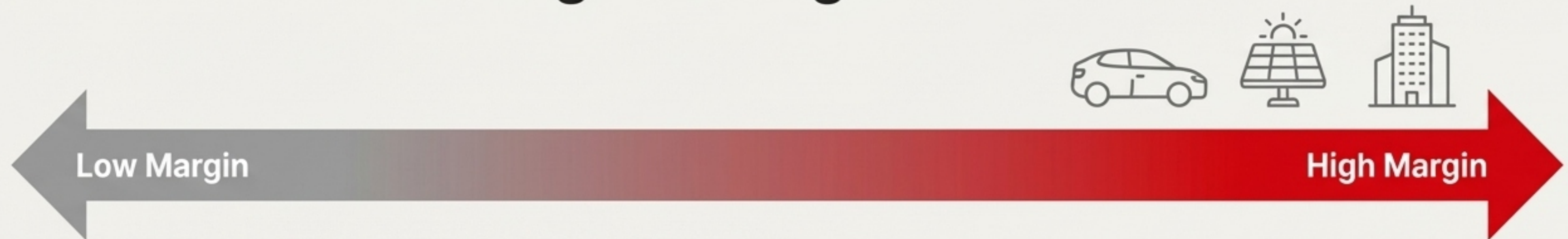
Data, AI & Digital Twins: AI-based analytics and simulations enable faster setup, tighter tolerances, and predictive maintenance, shifting operations from reactive to proactive.

Materials & Process Innovation: Adoption of high-strength alloys (6000/7000 series) and 3D-printed dies is expanding capabilities for complex profiles in demanding sectors like EVs and aerospace.



The industry is moving from traditional manufacturing toward data-driven, intelligent operations.

Shifting to Value-Added Products and High-Growth Sectors Unlocks Higher Margins



1. Prioritize High-Growth Applications

Focus R&D and capital investment on developing custom extrusions for the most promising sectors.

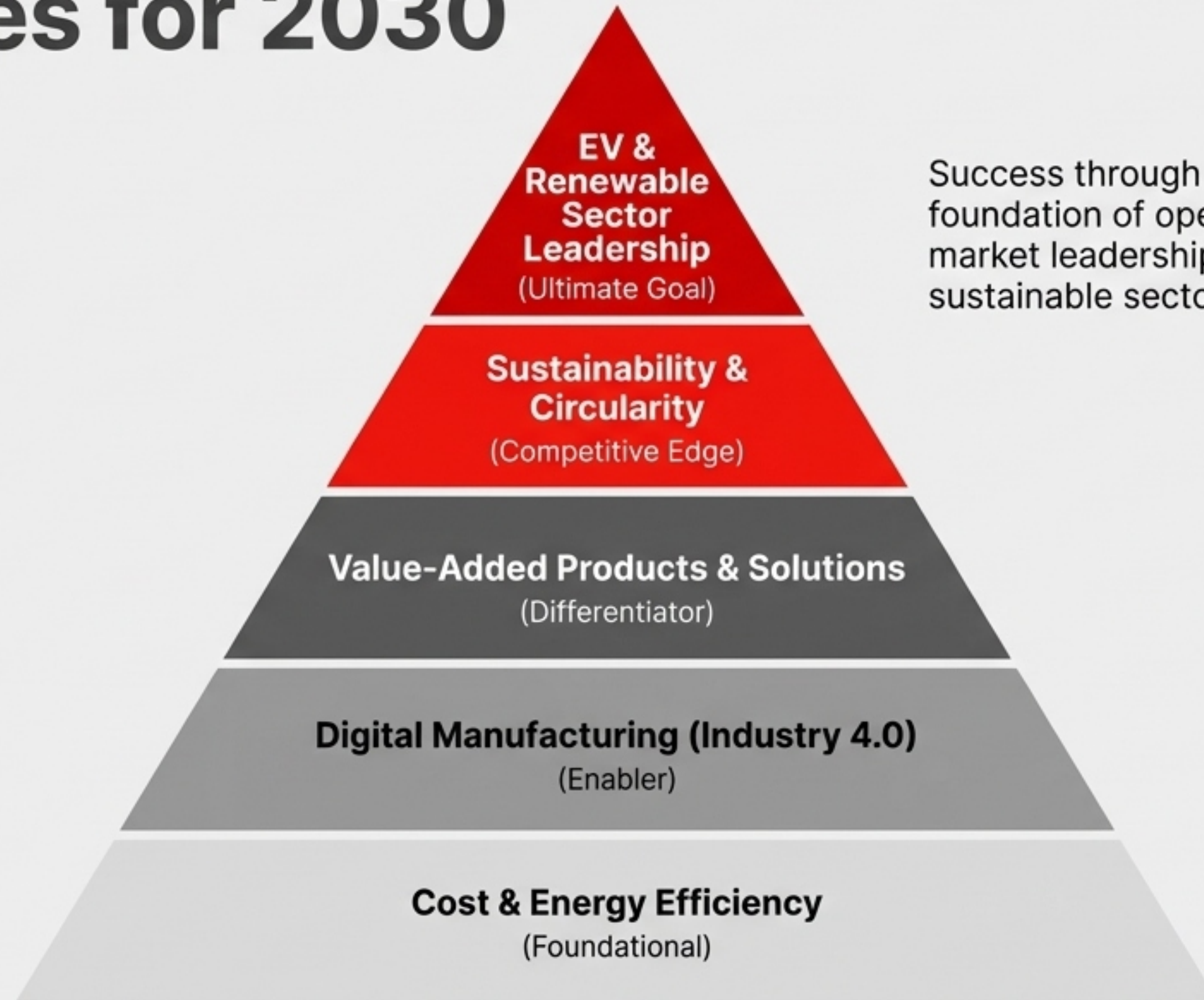
- **Target Sectors:** **Electric Vehicles** (battery enclosures, structural components), **Solar** (custom frames, mounting systems), and **Green Construction** (energy-efficient façades).

2. Integrate Along the Value Chain

Move beyond selling simple profiles. Offer end-to-end solutions to improve margins and customer stickiness.

- **Value-Added Services:** Downstream fabrication, precision machining, advanced coating, and pre-assembly.

Building a Market Leader: The Strategic Imperatives for 2030



Success through 2030 requires building from a foundation of operational efficiency towards market leadership in the highest-growth, most sustainable sectors.

Key Takeaways for the Road to 2030

The Market Reality

- **Steady Growth:** Global demand to hit **40+ Mt**; India's market reaches **~US\$4.6 bn**.
- **Key Drivers:** Growth is powered by **EVs, renewables, and green construction**.
- **Financial Reality:** Margins are moderate (**12-15% EBITDA**) and under pressure from cost volatility and imports.

The Strategic Response

- **Sustainability Advantage:** Recyclability and low-carbon processes are now key differentiators.
- **Technology Shift:** **Industry 4.0** is essential for improving efficiency and quality.
- **Winning Formula:** Success depends on the trifecta of **efficiency, sustainability, and a focus on value-added products**.

PAN INDIA & GLOBAL PRESENCE



8R, Sector 18, Mihan, SEZ



14/4 I.T. Park ,Opp. VNIT

Regd Office & DTA Unit
14/4, IT Park, Gayatri
Nagar, Nagpur-440022 (India)

SEZ EoU Unit
Plot 8R, Mihan SEZ, Khapri,
Nagpur - 441108, India

☎ PBX : +91 8600004931, 8600004932
☎ +91 9890168703, 8600068765

✉ mktg@lighthouseindia.com

🌐 www.lighthouseindia.com

🌐 www.lighthouseerp.com

🌐 www.lighthousecrm.com

🌐 www.lighthousehrm.com

🌐 www.b2bsangam.com



Lighthouse

Info Systems Pvt. Ltd.