

Turkey Steel Research and Industrial Policy: EAF Dominance and Regional Export Hub Strategy

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Abstract

This document examines Turkey's steel research and industrial policy as a major regional producer with distinctive characteristics shaped by geography, energy economics, and export orientation. With 36.9 million tonnes of annual crude steel production and the world's highest share of electric arc furnace (EAF) steelmaking at 65% of capacity, Turkey demonstrates an alternative development model emphasizing scrap-based production, cost competitiveness, and strategic positioning between European, Middle Eastern, and Asian markets. This analysis explores Turkey's steel industry structure dominated by privately-owned companies, the advantages and constraints of overwhelming EAF reliance, energy policy challenges in a country dependent on imported fossil fuels, trade relationships balancing EU Customs Union membership with emerging market diversification, and the pragmatic approach to environmental regulation prioritizing economic growth while gradually tightening standards. The document highlights how Turkish steel exemplifies emerging market industrialization navigating between developed country environmental expectations and developing country competitive realities.

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1 Strategic Context and Industry Structure

1.1 Production Capacity and Global Position

Turkey ranks as the world's eighth-largest steel producer:

2024 Production: 36.9 million tonnes crude steel

- Global rank: 8th
- Regional position: Largest producer in Middle East/North Africa region
- Per capita production: ~430 kg (relatively high)
- Export orientation: 55% of production exported

2 Conclusions

Turkey's steel industry demonstrates how emerging market producers can achieve significant scale and export competitiveness through distinctive technology choices and strategic positioning. The dominance of EAF technology provides both competitive advantages (lower carbon intensity, flexibility) and challenges (energy cost sensitivity, scrap supply dependency).

Key strengths:

- EAF-dominant technology aligned with decarbonization trends
- Strategic geographic location for regional trade
- Entrepreneurial, competitive industry structure
- Export orientation and market diversification

Critical challenges:

- Energy security and cost competitiveness
- Value-added and quality upgrading needs
- Macroeconomic volatility and policy uncertainty
- Balancing economic development with environmental objectives

Turkey's trajectory will depend significantly on energy policy success, export market development, and navigation of EU-Turkey relations. The steel sector's future reflects broader questions about Turkey's economic model and international positioning.

References

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