



Sustainable Steel Manufacturing Opportunities in Indiana

In an effort to overhaul and upgrade its energy and transportation infrastructure, as well as kick off a domestic manufacturing boom for electric vehicles and semiconductors, the United States will continue to rely on primary steel production. As the heart of the U.S. steelmaking industry, Indiana's carbon-intensive blast furnace-basic oxygen furnace (BF-BOF) integrated mills are crucial to supporting this value chain, but their traditional method of steel production from iron ore, coke, and limestone does not align with growing demands for steel produced with very low emissions, especially in the automotive sector.

Global demand for steel could increase 15–30% by 2050.

Major capital expenditures in the coming years will be required to transition these large integrated facilities onto a steelmaking path that relies on electric arc furnaces (EAF) and direct reduced iron (DRI) production. DRI-EAF production combined with sustainably produced hydrogen can achieve close to zero-emission steel production.

Indiana accounts for more than 1/4 of all U.S. steel production.

Opportunities

- Indiana has strengths in steelmaking with established value chains and proximity to raw material inputs and downstream manufacturing.
- Regionally established electric vehicle manufacturers such as GM have already made commitments to purchasing low-carbon steel and can provide guaranteed demand for continued investments in advanced, sustainable steel manufacturing in Indiana.
- Heavy industry and existing logistics networks in northwest Indiana make it well suited to deploy regional clean hydrogen infrastructure, a key fuel for decarbonizing production.



Challenges

- A green electricity and hydrogen economy needs low-cost clean electricity and will require substantial public and private investments for adequate renewable power to be available at scale.
- Huge capital expenditures will be required to transition BF-BOF steelmaking into the necessary infrastructure to support DRI-EAF steelmaking pathways at the scale demanded by downstream value chains.

Paths Forward

- Invest in regional workforce and workforce training pipelines to meet the needs of Indiana's manufacturing economy.
- Identify alignment between community needs and industrial value propositions, especially in decision making around capital investments in infrastructure. Build community support to move away from BF-BOF production and toward DRI-EAF production in Indiana.
- Engage with industry and utility stakeholders to invest in advanced energy technologies, leverage federal industrial decarbonization funds, and set strong commitments to supporting growth in sustainable manufacturing in Indiana.

