

United States Steel Corporation

2050 Net Zero Roadmap

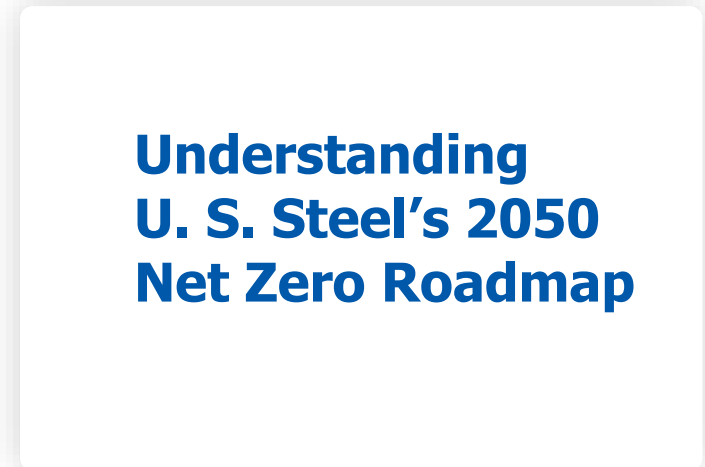
Understanding U. S. Steel, the Company



 **Understanding
U. S. Steel,
the Company**



**Understanding
Steelmaking**



**Understanding
U. S. Steel's 2050
Net Zero Roadmap**

About U. S. Steel

At U. S. Steel we aim to provide our customers with profitable solutions while creating a more sustainable future for all stakeholders. We align our Best for All® vision with our sustainability objectives as we focus on innovative solutions and industry-leading low-carbon process technologies.

2022 by the numbers

\$2.5B

Net earnings

22.4M

Net tons of annual raw steel production capability

22,740

Employees worldwide

24

Locations

Global operations and joint venture locations:



Flat-Rolled Segment

- 1 Gary Works
- 2 Great Lakes Works
- 3 4 Mon Valley Works
- 5 Granite City Works
- 6 Fairfield Sheet
- 7 Minntac
- 7 Keetac
- 7 Hibbing Taconite

- 8 USS-UPI, LLC
- 9 PRO-TEC Coating Company
- 10 Double G Coatings Company
- 11 Worthington Specialty Processing
- 1 Chrome Deposit®
- 2 Automotive Center

Tubular Segment

- 6 Fairfield Tubular
- 15 Lorain Tubular
- 16 Offshore Operations Houston
- 17 Lone Star Tubular
- 12 17 Wheeling Machine Products
- 13 Patriot Premium Threading Services

Administrative and Research

- 3 Corporate Headquarters
- 3 Research and Technology Center
- 16 U. S. Steel Tubular Products Innovation
- 14 USSK Research

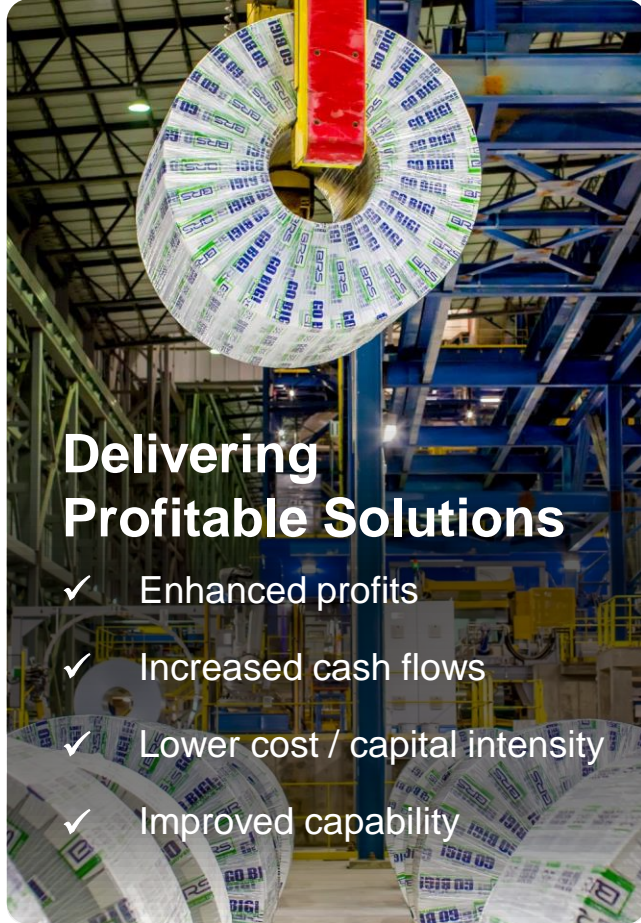
USSK Segment

- 14 U. S. Steel Košice

Mini Mill Segment

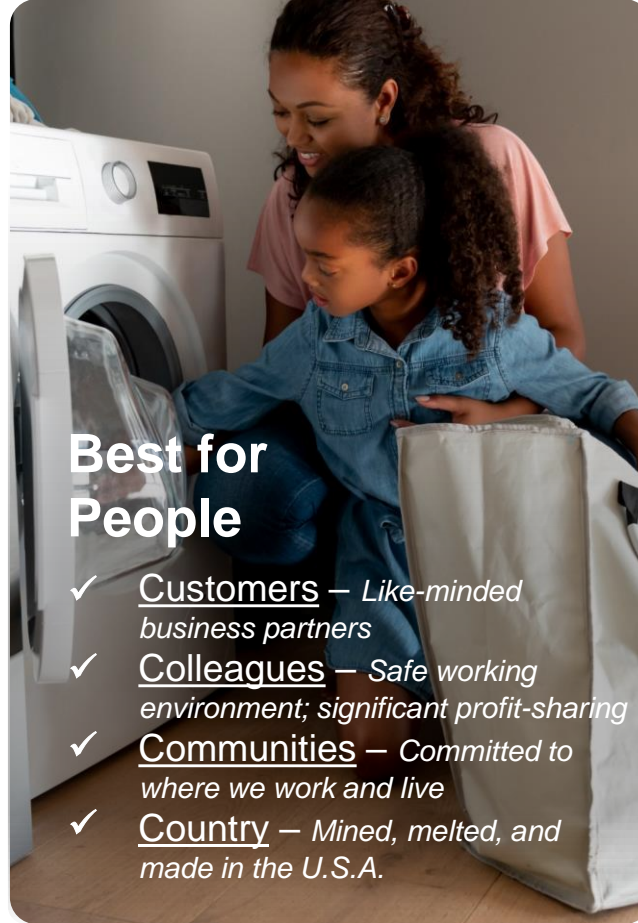
- 18 Big River Steel and a new plant under construction

U. S. Steel's Best for All[®] Strategy



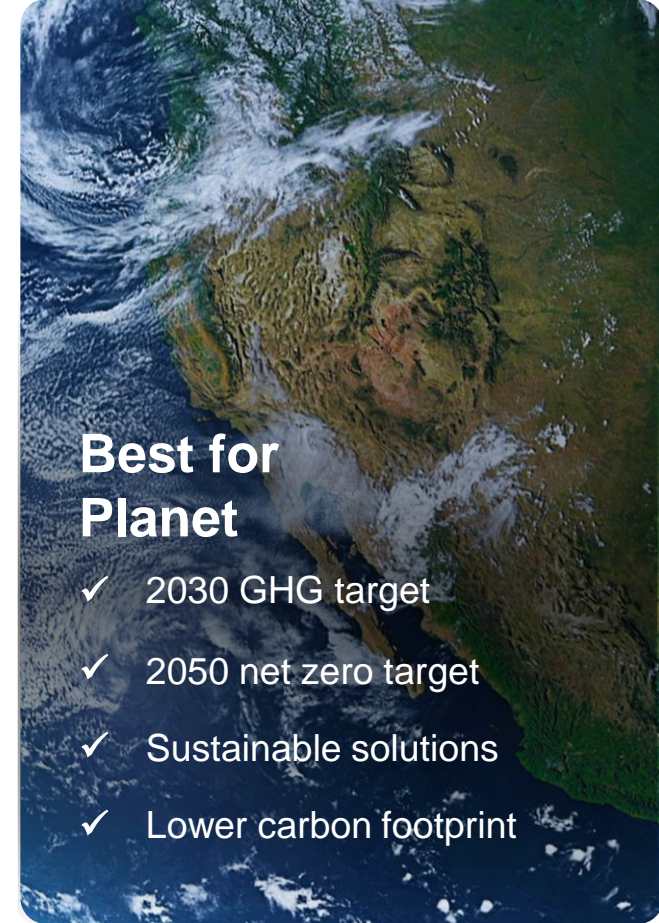
Delivering Profitable Solutions

- ✓ Enhanced profits
- ✓ Increased cash flows
- ✓ Lower cost / capital intensity
- ✓ Improved capability



Best for People

- ✓ Customers — Like-minded business partners
- ✓ Colleagues — Safe working environment; significant profit-sharing
- ✓ Communities — Committed to where we work and live
- ✓ Country — Mined, melted, and made in the U.S.A.



Best for Planet

- ✓ 2030 GHG target
- ✓ 2050 net zero target
- ✓ Sustainable solutions
- ✓ Lower carbon footprint

We are innovating to be a part of the climate solution



Manufacturing

Acquired **Big River Steel**, a LEED® certified, low GHG-emission steelmaking facility

Constructing a **New Mini Mill** with 2 EAFs and finishing lines to be completed by 2024



Products

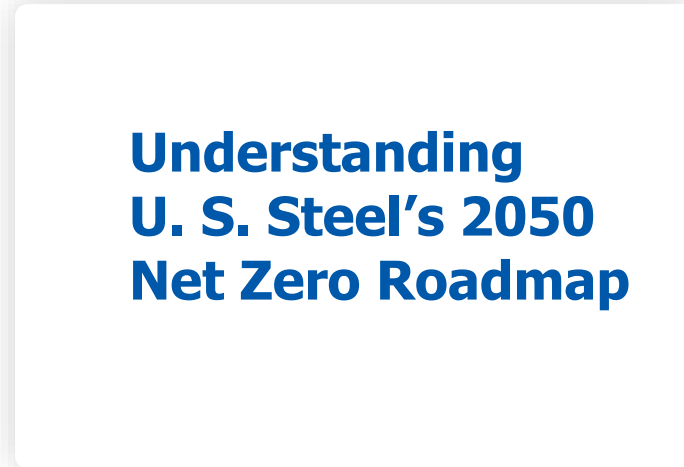
Launched the **verdeX™** brand of Sustainable steels, to help customers meet their own decarbonization goals



Markets

New electrical steel product, **InduX™**, will soon begin production with commissioning underway for a **Non-Grain Oriented (NGO) Electrical Steel** finishing line to meet the growing electric vehicle demand

Understanding Steelmaking



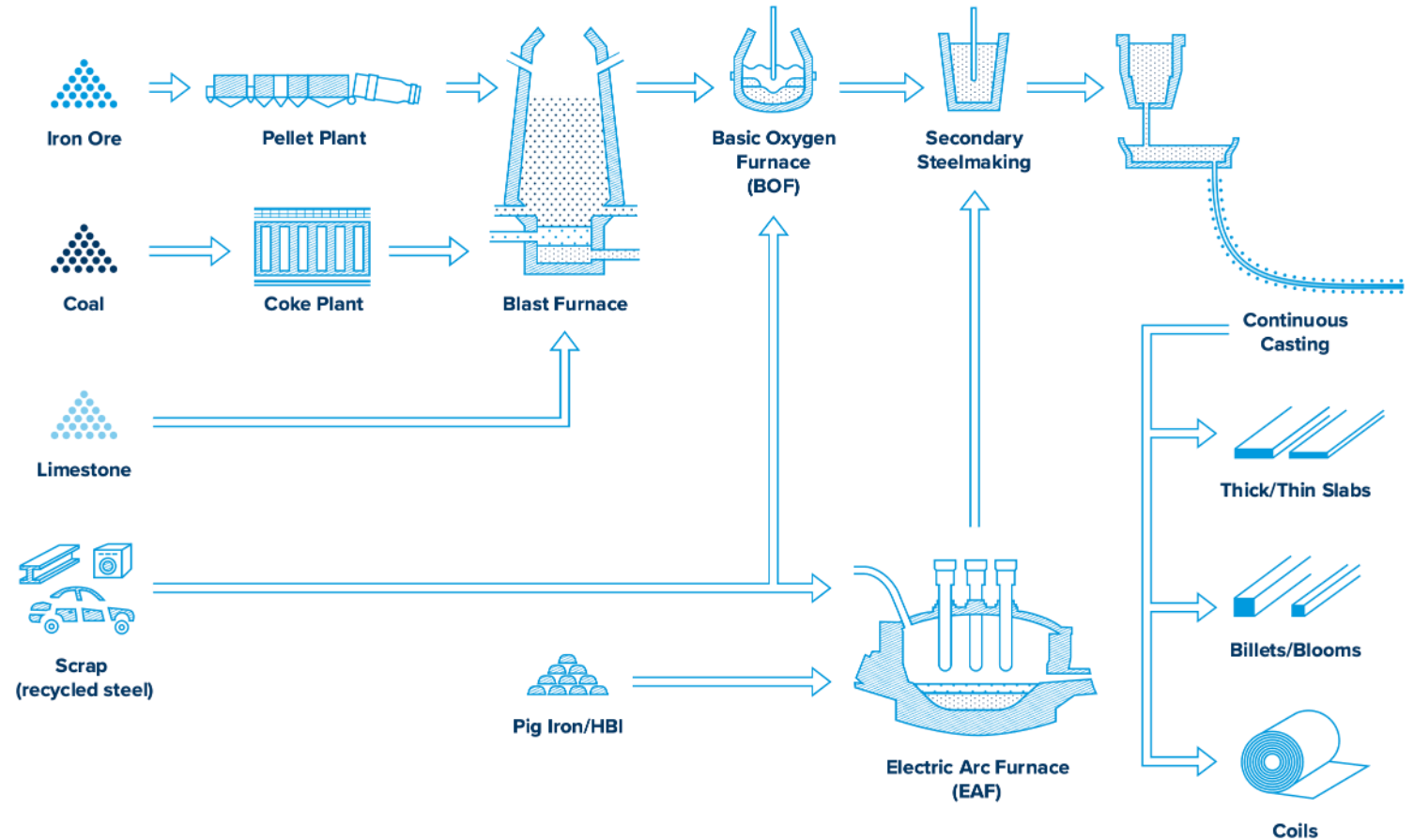
How we make steel

U. S. Steel uses two primary production processes to make steel:

1. **Integrated** route relies on blast furnaces (BF) and basic oxygen furnaces (BOF)
2. **Mini mill** route uses electric arc furnaces (EAFs)

Each route uses different raw materials and energy sources, leading to different levels of greenhouse gas (GHG) emissions.

We are working to develop lower GHG emission steels with all the performance characteristics of existing steel grades while pursuing new grade development for the next generation of steels.



Greenhouse Gas Emissions Intensity

In general terms, today:



Blast Furnace/Basic Oxygen Furnace



Scope 1	1.99 tons CO ₂ /ton RS	98%
Scope 2	0.05 tons CO ₂ /ton RS	2%
Total BF/BOF	2.04 tons CO₂/ton RS	100%

Electric Arc Furnace



Scope 1	0.22 tons CO ₂ /ton RS	 54%
Scope 2	0.19 tons CO ₂ /ton RS	 46%
Total EAF	0.41 tons CO₂/ton RS	100%

RS – Raw Steel

GHG emissions from EAF steel mills are ~70-80% less than those from BF/BOF steel mills

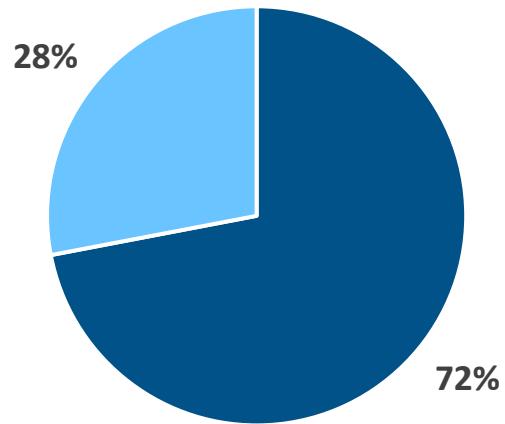
Carbon Sources:

- Coal
- Coke
- Natural Gas
- Injection Carbon
- Electrodes

2022 Crude Steel Production by Process*

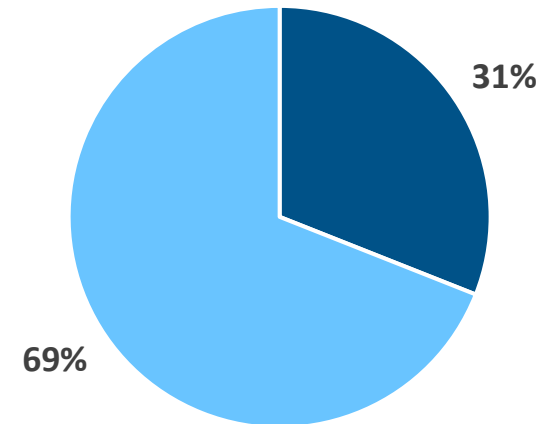
Blast Furnace/Basic Oxygen Furnace vs. Electric Arc Furnace

Global – Steel Production



■ Blast Furnace/Basic Oxygen Furnace ■ Electric Arc Furnace

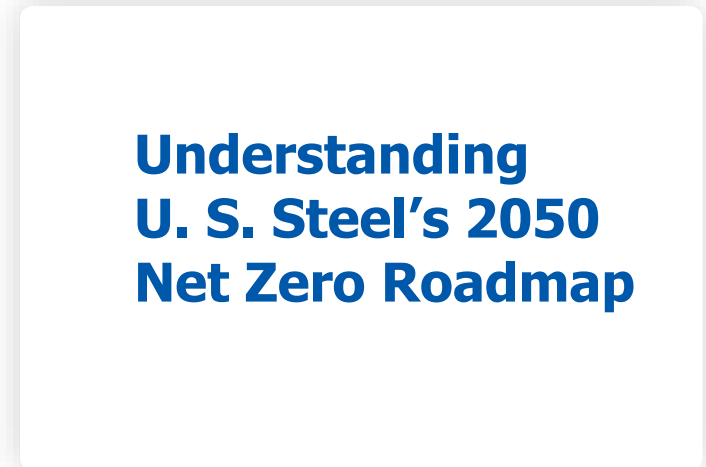
United States – Steel Production



■ Blast Furnace/Basic Oxygen Furnace ■ Electric Arc Furnace

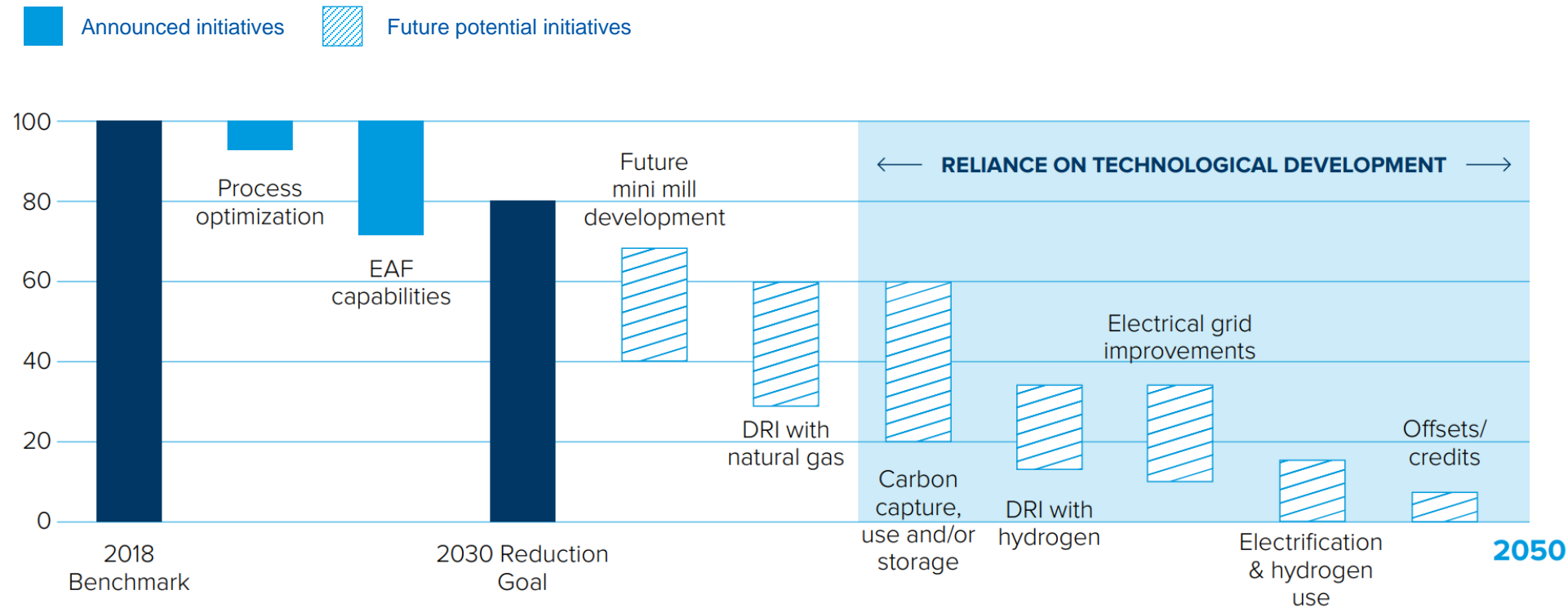
[*World Steel in Figures 2023 - worldsteel.org](https://www.worldsteel.org)

Understanding, U. S. Steel's 2050 Net Zero Roadmap



Advancing towards net zero carbon strategy

Roadmap to Net-zero Greenhouse Gas Emissions, % emissions of 2018 benchmark



14%

Reduction in GHG emissions intensity through 2022 vs. a 2018 baseline



On-track to meet our 2030 interim GHG goal

Future Technologies

Mini Mill Development

Moving more of our footprint to EAF technology, which does not rely on inputs such as iron ore and coal, will reduce our GHG emissions

Direct Reduced Iron

Using natural gas and/or hydrogen as the reductant to convert iron ore into a product that can be used by EAFs

Carbon Capture, Utilization, and/or Storage

Capturing CO₂ from process off-gases can be a challenge due to the varying nature of the gas compositions as well as particulates and other species

Electric Grid Improvements

Moving from an industry primarily based on carbon to one based primarily on carbon-free electricity will require investments in electricity generation, transmission and storage

Resources

Please visit our [ESG Data Hub](https://www.ussteel.com/sustainability/esg-data-hub)* to download the documents below and find additional ESG documents and policies.



[U. S. Steel 2022 ESG Report](#)

Includes GRI and SASB indices and UN SDG mapping



[U. S. Steel Climate Strategy Report](#)



[U. S. Steel 2021 TCFD Report](#)

First report responding to Task Force for Climate-related Financial Disclosures



[U. S. Steel 2023 Diversity, Equity & Inclusion Report](#)



[Steel Stories by U. S. Steel](#)

The Carbon Countdown: Reshaping the Steel Industry for a Greener Future