



E3G

FEBRUARY 2024

COUNTRY PROFILE – UNITED STATES¹

2023 STEEL POLICY SCORECARD

**KATINKA WAAGSAETHER, ALEKSANDRA WALISZEWSKA,
& JOHANNA LEHNE**

A steel recycling front-runner without a plan to get out of coal

As a major climate player internationally and a front-runner on steel recycling, the US can pave the way for more concerted international cooperation on steel decarbonisation. However, there is a diminishing window ahead of the 2024 elections in which the US can resolve tensions over Section 232 tariffs and up domestic ambition on industry decarbonisation to ensure more active international engagement. The US Inflation Reduction Act (IRA) has unleashed huge amounts of green investment including in hydrogen, CCS and conversion to EAFs; but specific support for green ironmaking remains lacking and there is no regulatory framework to ensure accelerated decarbonisation of coal-based steelmaking sites.

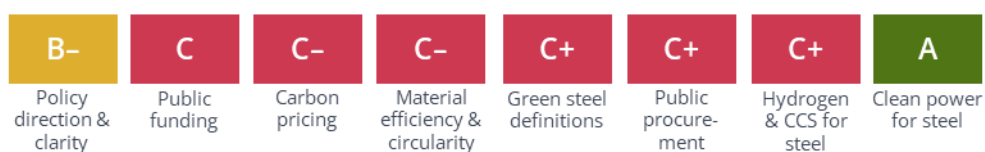
The US has shown progress in some areas such as the introduction of hydrogen production tax credits under the IRA and the development of green steel public procurement requirements. However, the US has continued to perform poorly overall across most policy levers. The government has still not introduced concrete plans for the transformation of remaining coal-based steelmaking facilities.

¹ This document supplements the main **2023 Steel Policy Scorecard report: Raising ambition on steel decarbonisation**.

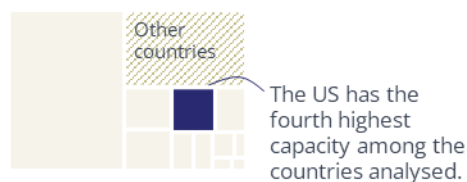


E3G

Country profile: United States



Production capacity



Production methods



Source: Global Energy Monitor, 2023, 2023 Pedal to the metal



Priority recommendations for US steel policy:

- > Ramp up the ambition of the federal BuyClean initiative by setting out a rapid decrease in embodied carbon thresholds in the product requirements.
- > Develop a 1.5 °C aligned net zero roadmap for the US steel sector, with intermediate targets for 2030.
- > Ensure adequate resources are available for decarbonising primary steel and offer dedicated support for plants in transition.

A significant producer, though with relatively low emissions intensity

The US dominated global steel markets in the nineteenth century, together with Germany and the UK. It still is a major producer today – the fourth globally. Unlike most other major steel producers, US production is largely secondary steelmaking. There are 99 EAF plants accounting for around 68% of production,² owned by 51 companies; nine integrated BF-BOF steel mills mainly located on the East Coast are controlled by just three companies.³ This means the average emission **intensity** of US steelmaking is lower than most countries, despite the scale of its coal-based production capacity being on a par with Germany.

² Calculated from Appendix C in Global Energy Monitor, 2023, **Pedal to the Metal 2023**

³ Global Efficiency Intelligence, November 2019, **How Clean is the U.S. Steel Industry?**



E3G

While the US leads on steel recycling globally, concrete private sector and government initiatives to accelerate steel decarbonisation and decarbonise the remaining coal-based primary sites have been lacking. Plans for lifetime extensions on existing coal-based production facilities are under way.⁴ In contrast to European counterparts, there has been a notable lack of investment in green primary steel production sites.

Steel decarbonisation caught in a geopolitical tangle

The EU and US are currently trying to resolve tensions relating to international steel trade, through a Global Arrangement on Sustainable Steel and Aluminium (GSA). Tensions peaked when the US introduced tariffs on steel and aluminium in 2018, under section 232 of the Trade Expansion Act. The tariffs were rooted in wider global, and to a large degree Chinese-influenced, challenges related to steel overcapacity; this spurred the EU into taking rebalancing measures. As outlined in a recent E3G briefing, the parties remain stuck on how to address and balance both overcapacity and decarbonisation.⁵

Domestic policies: some enabling factors, but no overall clear direction and little funding

Steel is an important element in the US 2022 Industrial Decarbonization Roadmap:⁶ it features different modelling scenarios and pathways, but steers away from setting any emissions reduction targets. The roadmap does focus on enabling elements, making both steel electrification and clean electricity provision close to steel production sites a clear priority. The US is also the most ambitious out of the countries assessed when it comes to power system decarbonisation goals by 2030, when compared to current generation shares; it is the only one planning to achieve full neutrality by the end of the decade.

The US also has ambitious targets for scaling up low-emission hydrogen production: 50 Mtpa of green hydrogen and 30 Mtpa of blue hydrogen by 2030. This is backed up by a large production tax credit dependent on emission intensity (worth ca. \$100bn). One of the Roadmap's priorities is the need to replace fossil-based feedstocks in steelmaking. However, there are no clear announcements or policies targeted at transforming coal-based steelmaking

⁴ SteelWatch & SFOC, 2023, **Redline not reline: 4 leading steel companies in OECD set to lock in almost half a billion tonnes of CO2**

⁵ E3G, 2023, **The EU-US global arrangement on sustainable steel and aluminium**

⁶ U.S. Department of Energy (DoE), 2022, **Industrial Decarbonization Roadmap**



E3G

sites. The US's long-term net zero strategy⁷ foresees use of both hydrogen and CCUS in hard-to-abate sectors, and the Bipartisan Infrastructure Law and Energy Policy Act are projected to mobilise close to \$20bn in CCUS investments.⁸

The IRA has mobilised large sums of money for clean technology manufacturing and deployment. Nonetheless, relatively few resources are available or explicitly earmarked for steel decarbonisation, and no federal carbon tax exists. The overall volume of funding for installing and implementing advanced industrial technology at energy-intensive industrial and manufacturing facilities amounts to \$4bn; this would barely be sufficient to transform two average-sized BF-BOF plants into H₂-DRI – the US has 13 operating blast furnaces. No direct grants to transform specific plants have been identified.

Public procurement is an important pull factor for green steel manufacturing. The US is the first country to launch a federal BuyClean Initiative, aimed at scaling up the demand for products such as green steel. However, BuyClean has not yet lived up to the initial ambition set out in the Presidential Announcement in 2022: the initial interim embodied carbon requirements published for steel are far from the IEA proposed thresholds of 50 kgCO₂e/t (for 100% scrap) and 400 kgCO₂e/t (for 0% scrap).⁹

⁷ United States Department of State and the United States Executive Office of the President, November 2011, **The Long-Term Strategy of the United States: Pathways to Net-Zero Greenhouse Gas Emissions by 2050**

⁸ The White House, February 2022, **Fact Sheet: Biden-Harris Administration Advances Cleaner Industrial Sector to Reduce Emissions and Reinvigorate American Manufacturing**

⁹ IEA, 2022, **Achieving Net Zero Heavy Industry Sectors in G7 Members**



E3G

About E3G

E3G is an independent climate change think tank with a global outlook. We work on the frontier of the climate landscape, tackling the barriers and advancing the solutions to a safe climate. Our goal is to translate climate politics, economics and policies into action.

E3G builds broad-based coalitions to deliver a safe climate, working closely with like-minded partners in government, politics, civil society, science, the media, public interest foundations and elsewhere to leverage change.

More information is available at www.e3g.org

Copyright

This work is licensed under the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License. © E3G 2024