

JUNE 2024 EXECUTIVE SUMMARY: GROWING CLEAN STEEL IN THE UK¹

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The global steel industry is racing to establish clean steel supply. Without a plan, the UK may lose out on primary steel production – with consequences for jobs, the competitiveness of other sectors, and strategic national interests. Avoiding that scenario is within easy reach. A more supportive policy framework and public investment of just £2.1–3.5bn can put the UK on the path to a clean steel future that supports both economy and people.

Steel production is carbon-intensive, making up 2.4% of the UK's territorial emissions,² and demand for steel is expected to rise 26% by the end of the decade.³ Decarbonising steel production is therefore essential to reaching the UK's net zero and climate goals. Moreover, with high emissions steelmaking no longer competitive in the UK – having been in decline since the late 1970's and now causing a loss of £1m a day for producers using the traditional blast furnace method⁴ – transformation of the sector is essential for its future.

The transition to clean steelmaking can be achieved through switching to less carbon-intensive processes to produce primary steel from iron and/or increased recycling of scrap steel to produce secondary steel.

The UK is currently fully focused on the second option, as demonstrated by the recent agreement with Tata Steel to transition to an electric arc furnace (EAF), and discussion of a similar deal with British Steel. Without plans to import green iron, this will leave the UK producing secondary steel alone.

This approach presents two key issues for the UK:

¹ This is a summary of the report of the same name, available from E3G (June 2024) Growing clean steel in the UK

² House of Commons Library (2023) Contribution of the Steel Industry to the UK Economy

³ Green Alliance (2023) A Brighter Future for UK Steel

⁴ BBC (2024) Union Votes for Strike Action over Tata Job Losses



- Risk to primary steel supply. While EAFs can make an increasingly broad range of steel grades by adding iron to the mix, secondary steel is not suitable for all applications. The UK would need to either import iron to produce primary steel, import primary steel to manufacture these products, or import the goods themselves. This import dependence could harm growth opportunities in sectors such as automotive and clean tech, and slow national priorities, such as the expansion of renewables and public transport networks.
- > Job losses. Converting the Tata and British Steel plants will result in thousands of job losses in communities that depend on them, both at the steel production facilities and further downstream. Investing in clean primary steel production – and the value chains that come with it – will retain more jobs in those communities and could also create new jobs elsewhere.

£2.1–3.5bn to secure a brighter future for UK steel

E3G has analysed what investment would be needed to make the UK selfsufficient in low-emissions iron- and steelmaking. Our full report analyses and compares three growth scenarios for future steelmaking to the current trajectory. The common factors in these scenarios are:

- Continuing the current plans to convert the two existing blast furnaces at Port Talbot and Scunthorpe.
- > Additionally building capacity to produce green iron, either at Port Talbot and Scunthorpe or at new sites. Electric arc furnaces can use this iron – alongside imported green iron – to produce clean primary steel.

A £2.1–£3.5bn clean steel fund would cover the public investment requirements of all the scenarios analysed (at a subsidy intensity of 40% of the total cost of new plants). In addition, a fund of this side would stimulate around £3.2–5.5bn of private finance. In a lower capex scenario, such a fund would leave fiscal headroom to support the ongoing costs of low-carbon hydrogen, which is needed to produce green iron.

Each scenario has benefits and drawbacks. The optimal investment will depend on the reality of domestic and international demand and what the UK can produce competitively.



Domestic steel demand and competitiveness would both benefit from a stronger manufacturing base and cheaper low-carbon hydrogen production in the UK. While these can therefore be seen as co-dependencies, support in these areas would deliver co-benefits across the economy.

Investment must be supported by policy

The public investment from the clean steel fund would aim to mobilise additional private investment to secure steelmaking capacity. However, private investors also need the security that demand for green steel will exist, and that it can be produced competitively. High electricity prices – affecting both clean steelmaking and the production of hydrogen for green iron – are a particular barrier. The wider policy framework must address these factors.

Through this combination of targeted funding support and the implementation of supportive policies, the next government can create a much brighter future for UK steel. In the process, the industry, its workers, local communities, the climate, and economy all stand to benefit.

Key policy recommendations

Put the UK on a pathway to clean steel

- > Implement an ambitious green industrial strategy. The strategy should include an explicit vision for the future of domestic steel production and how it will align with the UK's wider strategic and economic aims, from energy security to the growth of new cleantech sectors.
- Establish a clean steel fund with £2.1bn–£3.5bn of funding, to establish up to 3.78 Mt of additional secondary steel capacity, 4.44 Mt of low-emissions primary steel capacity, and 5 Mt of domestic hydrogen DRI capacity.
- > Establish strict conditions on labour standards and corporate responsibility in return for government funding for clean steel.
- > Ringfence funding from the clean steel fund for the development of new technologies for clean iron and steel production.
- > Pursue international trade partnerships to kick-start green iron trade.



Grow demand for clean steel

- > Implement green public procurement criteria that limit the embodied carbon of steel procured for public projects.
- > Establish mandatory life-cycle emissions standards on certain goods sold in the UK, prioritising sectors with low exposure to material costs.

Bring down power prices

- > Increase network charge exemptions provided by the British Industry Supercharger to 90%.
- > Move network and policy costs from industrial electricity bills to general taxation.

Increase scrap retention and sorting

- > Amend regulation and tax treatment of waste materials to remove financial incentives for the export of scrap steel.
- > Introduce eco-design standards to encourage design for disassembly.
- > Provide tax relief on investments in improved scrap recovery and sorting processes.

Establish a robust carbon pricing regime

- > Establish a minimum carbon price that rises over time to ensure the cost of UK ETS emissions allowances remains sufficiently high to incentivise investment in decarbonisation.
- > Phase out free allowances for CBAM sectors as a CBAM is implemented.



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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.

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