

UK Steel – Autumn Statement Submission 2023

About UK Steel

UK Steel, a division of Make UK, is the trade association for the UK steel industry. It represents all the country's steelmakers and a large number of downstream steel processors.

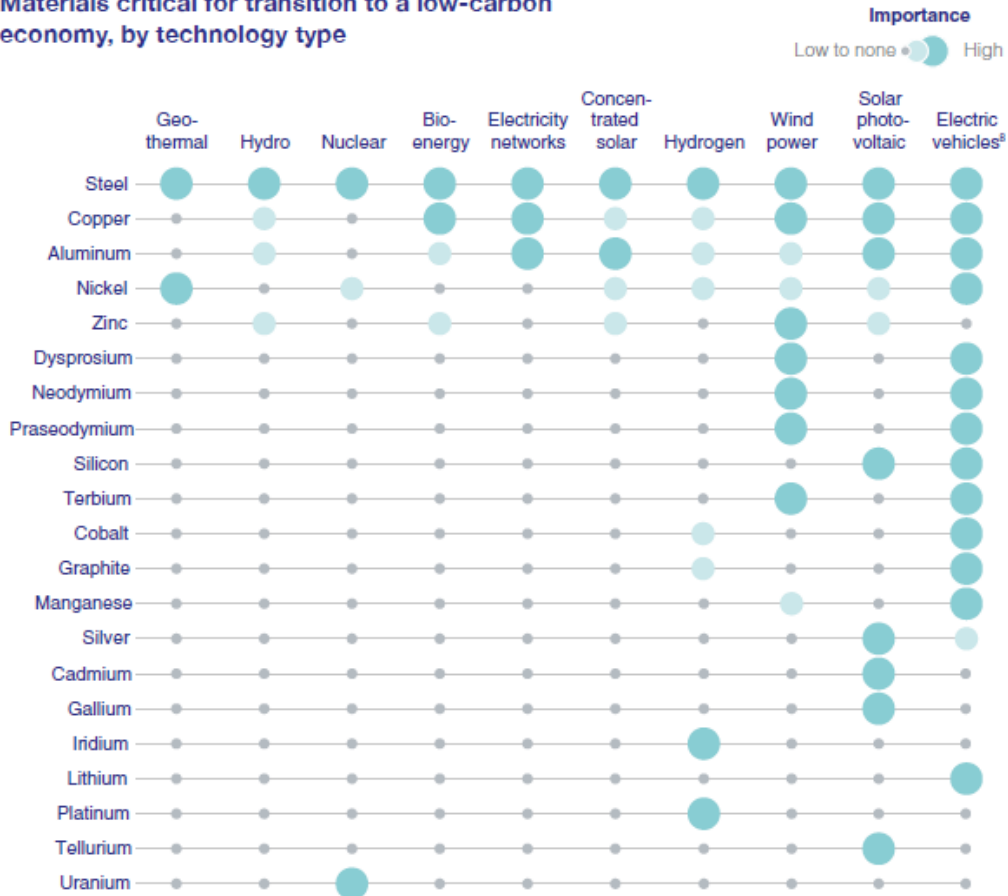
Introduction

- **Steel is a key driver of economic growth and supply chain resilience**
- **Steel is central to the UK's decarbonisation journey**
- **The UK is in a prime position to lead green steelmaking as one of the generators of steel scrap in the world**
- **The sector employs 39,800 people directly in the UK and supports a further 50,000 in supply chains, with a median steel sector salary of £39,637, which is 43% higher than the UK national median and 56% higher than the regional median in Wales, and Yorkshire & Humberside, where its jobs are concentrated**
- **The steel industry directly contributes £2.9 billion to UK GDP and supports a further £3.8 billion while directly contributing £4 billion to the UK's balance of trade.**

Steel is a foundation industry, literally the building block of our society, feeding into everything from construction to transport, critical national infrastructure, defence, energy pipelines, wind turbines, household goods, food packaging, and medical, industrial, and agricultural equipment. Steel is the bedrock of the UK's supply chains and is fundamental to the future of the UK economy, our economic resilience and national security. The industry supports thousands of jobs and communities both directly and indirectly along the supply chain, particularly in Wales and the Northeast of England.

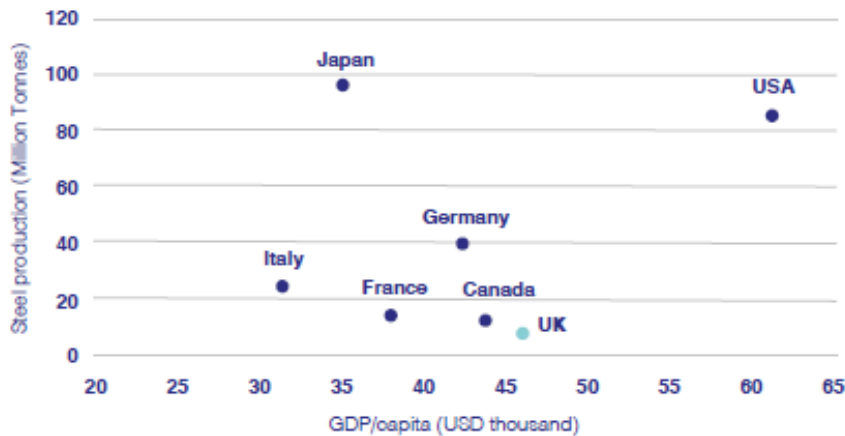
The role of steel in a low-carbon economy goes beyond being an infinitely recyclable Net Zero material. Steel is also critical to all low-emission energy generation and every single technology required for a Net Zero future. Around 80% of a wind turbine is made of steel, from the foundation to the tower, gears, and casings. Steel is used as a base for solar panels and in heat pumps, tanks, and heat exchangers. It is also used to reinforce concrete dams for hydroelectric power, is the main component of a turbine in tidal energy systems and is used to fabricate wave energy devices. Steel is important for hydrogen infrastructure, nuclear small modular reactors, as well as the production and distribution of electricity. This includes power plants, generators, transformers, power distribution pylons and cables. Steel also plays a key role in green modes of transport, such as electric vehicles and rail.

Materials critical for transition to a low-carbon economy, by technology type



Despite the clear advantages of a strong steel sector, an uncompetitive UK business environment has been marked by persistently high electricity prices. Combined with the unprecedented growth in steel produced in developing economies, fuelled by state subsidies, it has become increasingly difficult to compete in a global market for steel riddled with distortions and excess steelmaking capacity. The landscape remains challenging for the UK steel sector amid a weak economic climate and lack of a clear operating framework that will ensure a competitive business landscape and a level playing field with our competitors.

G7 steel production vs GDP/capita 2021



The UK remains the ninth largest manufacturing nation in the world, with an annual output of £183 billion. And yet it is only the 24th largest steel-producing country, dropping in its ranking from 18th over the last decade. The UK is an outlier in terms of its steel production relative to the size of its economy and relative to the size of its manufacturing base, which creates significant risks for its economic resilience. France, which is comparable to the UK in terms of GDP, population, and size of its manufacturing sector, produces around double the amount of steel. The UK's steel production has contracted at one of the fastest rates in the world over the last 50 years, second only to Venezuela. If the steel industry in the UK were to continue to contract, the UK would be unique in being by far the largest economy and steel consumer to be almost completely reliant on imports.

In this submission, we call for the Autumn Statement to include policies which support the UK steel industry not only to survive but actually thrive in an increasingly competitive international environment, continuing its key contribution to levelling up our regions and nations, providing security of supply for a strategically important product, and decarbonising in line with our domestic and international responsibilities.

UK Steel Autumn Statement Priorities

Summary of Priorities:

1. **Speedy implementation of an industry-focused UK Carbon Border Adjustment Mechanism**
2. **Establish competitive electricity prices for the steel sector**
3. **Abolishment of the Carbon Price Support Mechanism**
4. **Continued investment in modernisation and decarbonisation of the industry**

Priority 1: Speedy Implementation of an industry-focused UK Carbon Border Adjustment Mechanism

The UK Steel industry is at great risk of carbon leakage, as it is both carbon-intensive, energy-intensive, and trade-intensive. While 25% of all steel produced is traded internationally, this climbs to 43% in markets outside of China, and the UK exports 40% of its steel production and imports over 60% of its direct requirements. There is, therefore, intense competition, which keeps steel prices and margins low. Carbon price differentials are a key risk factor contributing to carbon leakage.

Mechanisms, such as emissions trading and carbon pricing, create an uneven playing field when countries exporting to the UK have not faced comparable policies. For example, the UK Emission Trading Scheme (UK ETS) currently prices carbon at £45/tonne of CO₂e, adding roughly £90 to the cost of producing one tonne of steel at integrated sites, increasing production costs by up to 20%. The sector currently faces annual carbon costs of an estimated £75m, but this could increase to £200m or even £500m if Government increases UK ETS prices and reduces ETS free allowances in the UK ETS. As over 90% of the world's steel production occurs in jurisdictions with little or no carbon pricing, UK producers will have higher production costs, reducing their ability to compete in a commoditised market and leading to direct carbon leakage.

The HM Treasury's Net Zero Review¹ analysed the risk of carbon leakage to different industries. It showed that the basic metal sector (dominated by the steel sector) had one of the highest trade openness at 72%, combined with the highest carbon intensity (CO₂ tonne/\$m) and the third-highest proportion of CO₂ from domestic sources. The report showed that the steel sector's gross output was the most reactive to high carbon pricing among all industries.

¹ HM Treasury (2021), Policy paper, Net Zero Review Final Report, <https://www.gov.uk/government/publications/net-zero-review-final-report>

Table 2.B: Carbon intensity for UK manufacturing sectors, and the illustrative cost of carbon pricing

Sector	Overall trade openness ¹⁹	UK-sourced carbon intensity ²⁰ (CO ₂ tonne/\$ million)	Proportion of CO ₂ from domestic sources	Illustrative cost of UK carbon pricing (% of gross output)		
				\$50/tonne	\$75/tonne	\$100/tonne
Computers & electronics	78%	71	41%	0.4%	0.5%	0.7%
Textiles and apparel	76%	125	63%	0.6%	0.9%	1.2%
Mining & energy extraction	75%	381	90%	1.9%	2.9%	3.8%
Basic metals	72%	790	80%	3.9%	5.9%	7.9%
Other transport equipment	72%	76	37%	0.4%	0.6%	0.8%
Chemicals & pharmaceuticals	70%	121	59%	0.6%	0.9%	1.2%
Motor vehicles	69%	96	43%	0.5%	0.7%	1.0%
Electrical equipment	69%	90	36%	0.4%	0.7%	0.9%
Machinery and equipment	67%	118	46%	0.6%	0.9%	1.2%
Other manufacturing	54%	170	69%	0.8%	1.3%	1.7%
Refineries	52%	681	83%	3.4%	5.1%	6.8%
Rubber and plastics	51%	300	76%	1.5%	2.3%	3.0%
Wood products	35%	122	55%	0.6%	0.9%	1.2%
Fabricated metals	34%	112	49%	0.6%	0.8%	1.1%
Mining of non-energy products	32%	176	73%	0.9%	1.3%	1.8%
Non-metallic minerals	30%	417	81%	2.1%	3.1%	4.2%
Paper	28%	157	66%	0.8%	1.2%	1.6%

Source: OECD, HM Treasury calculations

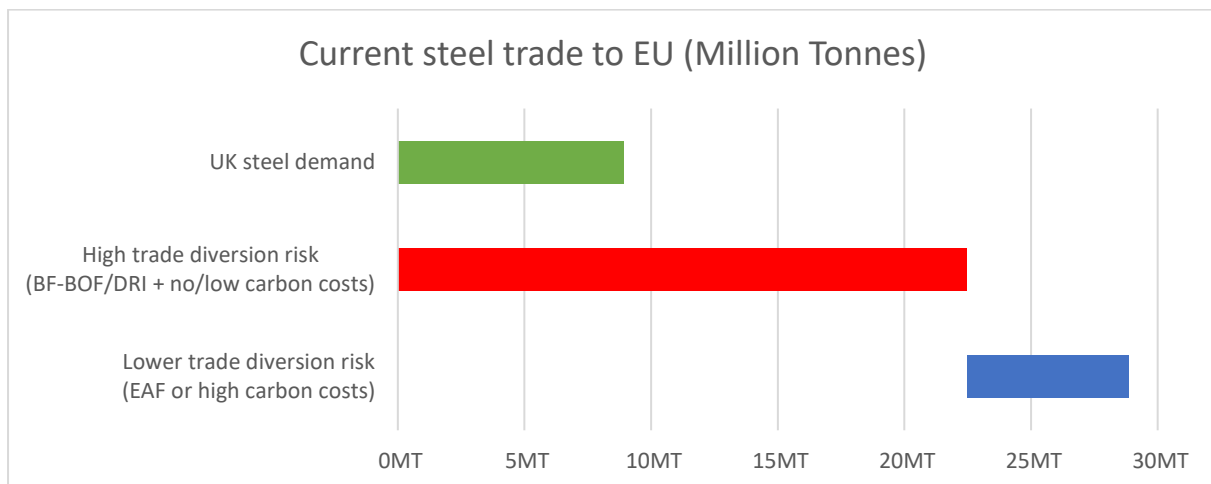
The UK Government has consulted on introducing a Carbon Border Adjustment Mechanism (CBAM) to address the risk of carbon leakage and deindustrialisation. A UK CBAM will create a level playing field on carbon pricing by applying carbon prices at the border equivalent to those faced by domestic producers. As the UK steel industry is transiting to green steel production, it is essential that it is not continually outcompeted by high-emission, imported steel but it is able to compete on a level playing field.

The need for a UK CBAM is becoming urgently necessary, as our biggest and geographically closest trade partner is implementing its own CBAM policy in just a few years. The EU is implementing a CBAM policy, and reporting requirements started in October 2023, with CBAM compliance costs from 2026 onwards. This could have devastating effects on the UK steel market, UK producers, and the industry's ability to compete and decarbonise unless the UK implements its own comparable policy for two reasons:

- Trade diversion: When facing an EU CBAM tariff, high-emission steel currently exported to the EU will be diverted to the UK, flood the market, and depress prices.
- Trade barrier: UK producers may initially be exempt but will eventually need to comply with the CBAM, resulting in a trade barrier to our biggest export market.

On the former, UK Steel estimates that 22.5 million tonnes of steel currently imported into the EU would be at risk of diversion to the UK when the EU's CBAM is put in place without a UK equivalent. This is more than double the entirety of the UK's annual steel demand. Even a fraction of this material would cause serious injury to UK producers and directly undermine any efforts to decarbonise as they would be undercut by high-emission steel imports that are not subject to carbon costs.

As illustrated in the chart below, UK steel demand was 8.9Mt in 2022, which, compared to the steel imported to the EU at risk of trade diversion at 22.5Mt, suggests that this could completely flood the UK market. Such trade inflow would profoundly damage the UK steelmakers and domestic production, causing substantial carbon leakage as UK production would be replaced with production facing no/low carbon cost with high emission intensity.



Source: Trade data: International Steel Statistics Bureau, UK steel demand: WorldSteel. Note: Canada and New Zealand place somewhat comparable carbon costs between £30-40/tCO₂e on their steel producers; South Korea and Japan negligible carbon costs at £10-12/tCO₂e; and South Africa, Chile, Mexico, Kazakhstan, and Colombia almost no carbon costs at £0.7-3/tCO₂e, with the remaining countries placing no carbon costs on emissions from steel producers. 71% of global steel production is via BF-BOF (at an average of 2.32 tonnes CO₂ per tonne of crude steel cast), 7% DRI-EAF (at an average of 1.65tCO₂/tCS), and 22% Scrap-EAF (at an average of 0.67tCO₂/tCS). High trade diversion risk is estimated to be BF-BOF/DRI-EAF production in countries with no/ negligible carbon costs, and lower trade diversion risk is estimated to be Scrap-EAF production in countries with no/negligible carbon costs, and any production in countries with somewhat comparable carbon costs.

On the second risk, the UK Steel industry exports 40% of the steel it produces, of which 75% goes to the EU market. Unless the UK implements its own CBAM, the UK steel industry will face a trade barrier to its biggest export market, which would have a catastrophic impact on the market.

It is therefore imperative that the UK Government announces it will implement a UK CBAM by 2026 to 1) minimise the risk of carbon leakage and assist in decarbonising the industry, 2) prevent substantial trade diversion of high emissions steel, which will flood the UK market, and 3) remove a trade barrier to our biggest export market. The UK Government must match the EU timeline for implementation to avoid the last two devastating effects.

Recommendation: Introduce a Carbon Border Adjustment Mechanism (CBAM) to create a level playing field by applying carbon prices at the border equivalent to those faced by domestic producers by 2026 to ensure no trade barrier with our nearest trading partner, assist decarbonisation, and prevent trade diversion of high emission steel flooding the UK market.

Priority 2: Establish competitive electricity prices for the steel sector

As evidenced in the Government's consultation on [renewable exemptions](#) and [network charges compensation](#), the UK has Europe's highest industrial electricity prices and well above other key industrial competitors. For an electro- and trade-intensive sector like steel, this is hugely damaging to both short-term competitiveness as well as long-term viability and ability to attract inward investment. Higher electricity costs naturally increase production costs (electricity costs can represent around 20% of conversion costs²), making UK producers less competitive in home and export markets. More damaging still is the long-term erosion of investment. With nearly all UK producers being part of multi-national companies with facilities elsewhere in the EU and four also operating outside the EU, there is fierce competition for capital investment, and it is clear the UK consistently loses out due to its poorer business environment. Persistent cost disadvantages in the UK lead to underinvestment, which leads to further erosion of competitiveness.

Critically, the disparity between UK electricity prices and those found elsewhere is also a serious impediment to decarbonising the steel sector in the UK. All options for decarbonising the sector (including increased electric arc furnaces, carbon capture and storage and hydrogen-based steel production) substantially increase its use of grid electricity, meaning that national electricity prices will increasingly become an ever more important factor in where steel production is situated, and which existing sites attract investments. Again, with all major UK steel producers owned by multi-national organisations, the UK must urgently address this major competitive disadvantage if we are serious about decarbonising steel production in the UK.

As a result, the Government, therefore, announced the British Industrial Supercharger package, which set out to greatly reduce the disparity between UK and European industrial electricity prices. It contained policies to increase exemption levels from renewable levies, provide exemption for Capacity Market levies, and compensate for prohibitively high network charges by up to 90%. However

However, it has been incredibly disappointing that Government lowered its ambition and the compensation level of network charges from 90%, as consulted upon, to only 60%. The French and German governments exempt their steel industries from 85%-90% of network charges, resulting in network charges at around £0.5-1/MWh, compared to the UK network charges of an estimated £10-£12/MWh after the 60% compensation. UK steelmakers will, therefore, face network costs of over ten times higher than their nearest competitors, resulting in an ongoing competitive disadvantage.

An ongoing electricity price disparity will continue to negatively impact the steel industry in numerous ways:

- The steel sector operates on relatively thin margins. Whilst there are increasingly specialised and high-value steels being produced, market requirements and economies of scale mean that the vast majority of steel made even in developed economies is commoditised and available from a broad range of sources. There is, therefore, intense competition, which keeps steel prices and margins low.
- Negative impact meeting the Net Zero target since all options for decarbonising steel production, from CCS to hydrogen and electric arc production, lead to significantly increased electricity consumption. The sector consumes 2.5TWh of grid electricity each year, the equivalent of 800,000 houses. In the case of switching to hydrogen-based production, for a comparably sized sector, this would cost over £199m more to run in the UK than in Germany just in terms of electricity prices (at a price disparity of £24/MWh). Equally, if all UK production were to convert to electric arc furnaces using scrap steel, the sector would face higher electricity costs of £132m (at a price disparity of £24/MWh).
- The direct impact of the UK's high electricity prices is on the steel manufacturers' international competitiveness. Raw materials such as iron ore and coal are sold in global markets, and there will, therefore, be little difference in the price of iron ore used in, for example, France and the UK. It is where there are national and regional variations in costs that competitiveness issues arise. As steelmakers are competing in an international market, they are unable to pass on any additional costs over and above those faced by their competitors. A consistently higher energy price, therefore, impacts their ability to compete and diminishes their profitability. A price disparity of £24/MWh

² Conversion costs - the costs of converting the basic raw materials into steel.

translates into a total additional cost to UK steel producers compared to those in Germany of around £54 million per year.

The Government should, therefore, increase compensation to similar levels as Germany and France, i.e. 90%, and provide truly competitive electricity prices for the steel industry.

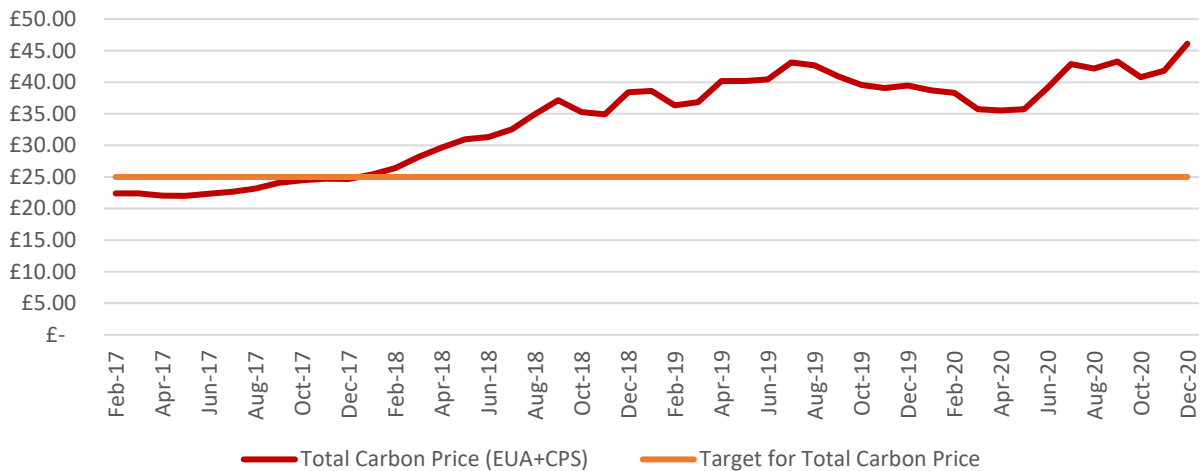
Recommendation: Increase network charging compensation to 90% in line with France and Germany.

Priority 3: Abolishment of the Carbon Price Support Mechanism

The UK's Carbon Price Support mechanism is currently increasing the UK's carbon price unnecessarily compared to the EU. Some UK steel companies today receive near-full compensation for pass-through costs from power generators in industrial electricity prices. However, not all benefit from this, and many Energy Intensive Industries (EII) are not eligible for the ETS/CPS compensation, resulting in higher electricity prices and a price differential with many European countries. This will remain a problem until either the UK removes the CPS or expands the compensation for the indirect cost of carbon in electricity prices to more EIIs.

In the 2022 Budget, it was announced that “The government will freeze the CPS rate at £18/tCO₂ for 2021-22”. In the 2018/19 Budget, the Government committed “to reduce the CPS rate if the Total Carbon Price remains high”. The UK ETS price currently stands at £45 per tonne of CO₂. This results in a total UK carbon price of around £58/tCO₂. Moreover, in the 2017 Budget, it was explicitly stated that “... the Total Carbon Price, currently created by the combination of the EU Emissions Trading System and the Carbon Price Support, is set at the right level, and will continue to target a similar total carbon price until unabated coal is no longer used”. Coal generation was less than 1% in 2022. At the time of the above statement, the total carbon price stood at £25/tCO₂. As the charts below demonstrate, the UK's total carbon price passed this target point in early 2018 and has remained well above since, even after the recent reduction in UK ETS prices.

Chart 1: UK Total Carbon Price Vs UK Target Carbon Price





Source: UK Steel analysis

The original purpose of the Carbon Price Floor mechanism was to provide a stable minimum carbon price in the UK, to drive investment within the power sector and later to drive out coal. With the EU price remaining well below projections in 2013 and 2014, the UK total carbon price quickly became 4-5 times higher than the EU's and contributed significantly to the electricity price disparity between the UK and the continent. In order to minimise this impact on industrial competitiveness, HMT froze the CPS rate at £18/tCO₂ in the 2014 Budget, assuming the EU price would remain low for the remainder of the decade.

However, the UK has now introduced its own ETS with a cap consistent with Net Zero and minimum auction price, making a separate top-up tax unnecessary, and the UK ETS prices have remained much higher than the intended total carbon price. The Government should take action as an independent trading nation and remove a tax aimed at topping up an EU scheme and, thereby, reducing the impact on energy-intensive industry.

Recommendation: Remove the CPS completely: Having left the EU Emission Trading System to create our own ETS, now is the obvious time for the UK Government to remove the CPS completely. The UK has complete autonomy over our carbon pricing policy and should choose the simplest way of achieving its aims. With the auction reserve price, the Government has ensured both the benefits of emissions trading and the certainty of a bankable carbon price. There is no logical argument for retaining both an ETS and a top-up carbon price for power outside of the UK ETS.

Priority 4: Continued investment in modernisation and decarbonisation of the industry

Capital Investment

Decarbonisation is a necessity for the steel sector's viability, and governments around the world are partnering with industry to achieve this. UK Steel has published a roadmap³ for how the industry could substantially lower emissions by 2035, in line with the Climate Change Committee's recommendations. It is so far the only steel industry globally where all domestic steelmakers have come together to publish a joint vision for how to decarbonise its production. It proposed an industry-government partnership akin to the North Sea Transition Deal, clearly demonstrating its commitment to investing and reducing its emissions substantially by 2035 and achieving Net Zero steel production by 2050 if Government is willing to match this investment.

Given the scale of funding that governments in the EU, the US, and elsewhere are providing, the UK steel industry warmly welcomed the recent announcement of £500 million to support Tata Steel UK to

³ UK Steel (2022), Net Zero Steel: A Vision for the Future of UK Steel Production, <https://www.makeuk.org/about/uk-steel/net-zero-steel---a-vision-for-the-future-of-uk-steel-production>

decarbonise its Port Talbot facilities. This is an excellent model for the Government to apply to support the wider sector on its decarbonisation journey. Furthermore, a broader industrial strategy must be pursued, considering the required infrastructure, grid connections, scrap availability, hydrogen infrastructure, energy efficiency funding, CBAM, Mandatory Product Standards, support for decarbonising heat, and R&D funding.

Recommendation: Use the model agreed with Tata Steel UK to agree match-investment funding with other UK steel producers to supercharge their journeys towards decarbonisation, protecting jobs and investment in our regions and nations.

Research and Innovation

The funding currently available to the steel sector for energy efficiency and R&D is limited and spread very thinly across a number of sectors. The recent extension of the Industrial Energy Transformation Fund (IETF) has been welcome but is not ambitious enough, while the long-promised “Clean Steel Fund” never materialised. Meanwhile, in 2021, UK steel companies lost access to the EU Research Fund for Coal and Steel, with the UK Government confirming that it will not fund those organisations choosing to participate in projects as ‘third country’ organisations. According to the terms of the EU Withdrawal Agreement (Article 145), the approximately £180m UK share of this fund will be returned in five annual instalments from June 2021. This money was provided by a levy on UK steel and coal companies over the course of our membership of the European Coal and Steel Community and can provide up to 100% funding in the field of steel, as it is industrial funds. As this was industry-funded, it should be returned to the steel industry for R&D purposes.

This is a key funding gap as, essentially, there is no funding currently available that is specific to the steel industry, and this is hampering actual progress with the development and adoption of new technologies. A “Clean Steel Innovation Fund” is urgently needed. Carbon capture and hydrogen steelmaking are both at very early stages of commercial deployment, and there is a huge amount of opportunity in new technologies to improve efficiency and productivity. The UK boasts some of the best research and innovation expertise, which we must capitalise upon and grasp the opportunity to become global leaders in green steelmaking. Already, UK steelmakers support over £214m in active UKRI research programs, tangibly demonstrating their strong and ongoing commitment to R&D. A more ambitious and targeted funding programme would drive results at the required pace and ensure that technologies are commercially available for the Net Zero transition.

Recommendation: Establish a ringfenced Clean Steel Innovation Fund to support R&D in green steelmaking.

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