Written evidence submitted by British Steel (LS0007)

About British Steel

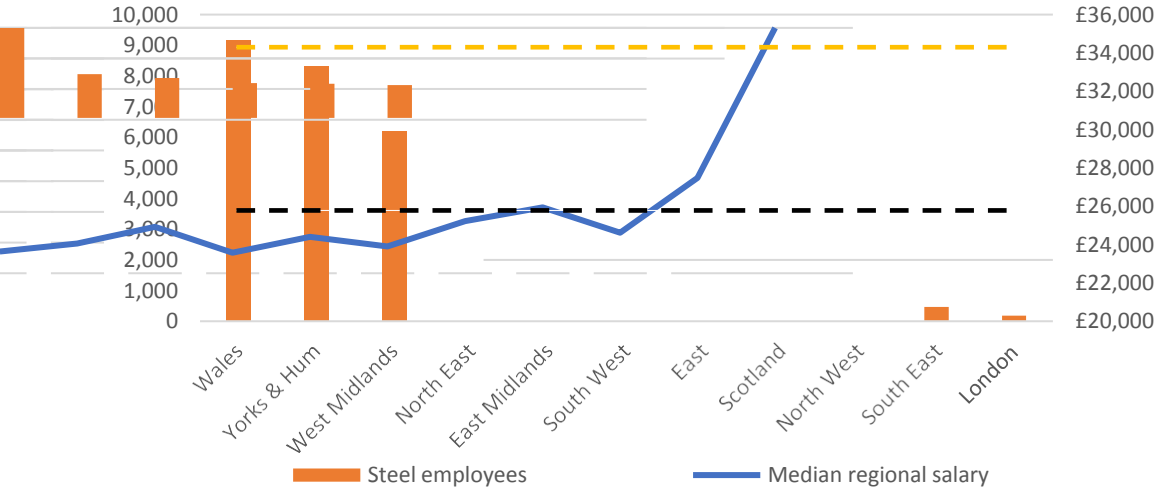
1. British Steel is a UK integrated steel manufacturer, employing 4,000 people, primarily in North Lincolnshire, Teesside and Skinningrove. British Steel manufactures 4 key product groups of Wire Rod, Special Profiles, Structural Sections and Rail
2. Over 20,000 employed indirectly in the supply chain
3. £1.6bn annual turnover
4. British Steel is the only UK manufacturer of Structural Sections and Rail which are critical for future construction and infrastructure programmes
5. British Steel was acquired by Chinese steel manufacturer Jingye Group on 9th March 2020, following a period of liquidation
6. British Steel is passionate to ensure that the value when procuring steel for public procurement is retained as far as possible in the UK economy, this is also critical to support future investment programmes and the decarbonisation agenda.

The importance of the UK steel industry:

Levelling-up the United Kingdom, powering an infrastructure revolution, and achieving ambitious net zero targets are three of the core objectives this Government set out in its recent manifesto and ambitious March Budget. Though the COVID-19 pandemic has put much on hold, it has also raised important questions around domestic resilience and the ability of the UK economy and businesses to bounce back from lockdown. A successful restart and long-term recovery can be met by ensuring those three objectives form the basis of the Government's approach to the recovery, and at the same time ensure maximum value to the taxpayer from multi-billion-pound public investments. The steel industry will play its part in meeting these Government objectives:

- The steel industry is predominantly based in the regions of the country it is seeking to level-up. We directly employ tens of thousands of skilled workers in Teesside, Yorkshire and Humberside, the West Midlands and Wales. The median wage of our workers is 33% higher than the UK median and 45% higher than the regional median in Wales and Yorkshire & Humberside.

Chart 1 – UK Steel Sector Employment and Wages



Source: ONS Various and UK Steel Analysis

- The UK steel sector trains hundreds of skilled individuals every year, providing the United Kingdom with the engineers of the future. Approximately 65% of the technical workforce is educated to degree level, and around 40% possess a postgraduate qualification. By working together, Government and industry can ensure that we go on providing high-quality employment and opportunities.

- The sector provides the high-quality materials vital to an array of challenges. From delivering the Government's infrastructure revolution to creating a low carbon economy, steel is an essential ingredient. The UK directly consumes 10 million tonnes of steel each and every year – in infrastructure, construction, and a vast array of manufactured products. The increasing need for steel in high speed rail, energy efficient buildings, low-carbon and electric vehicles, wind-turbines and much more besides means this demand will grow 10% this decade creating a huge £6 billion annual market.

- The world will not meet net zero targets without decarbonising the steel industry. The UK will continue to consume millions of tonnes of steel and the most effective way of tackling the emissions related to it is to show leadership at home and decarbonise our own production. A responsible UK decarbonisation policy must take ownership not just for the emissions we produce within our borders but also those related to the huge volumes of goods we import each year. Government and industry can work in partnership to make the UK industry the world leaders in carbon free steel production. Just as the British steelmakers of the nineteenth century powered the first industrial revolution, the steelmakers of the twenty-first century can lead the charge for the green industrial revolution.

- The importance of strong, resilient local manufacturing supply chains has never been more evident. Steel is a critical ingredient in promoting and strengthening a diverse industrial economy. Manufacturing sectors do not sit in isolation but instead within a complex ecosystem of interdependent and overlapping supply chains. The steel sector links with many downstream manufacturing sectors such as automotive, construction, aerospace and fabricated metals, and critically with elements right through those supply chains. As such it plays a vital role in creating connected value chains, pushing innovation, skills and productivity.

British Steel's submission:

The Committee asked respondents to consider a variety of questions. British Steel has commented on the questions as fully as possible but is more than happy to follow up further questions, hold a discussion or submit evidence as required to assist with the inquiry.

What are the current challenges facing the UK steel industry and its long-term viability?

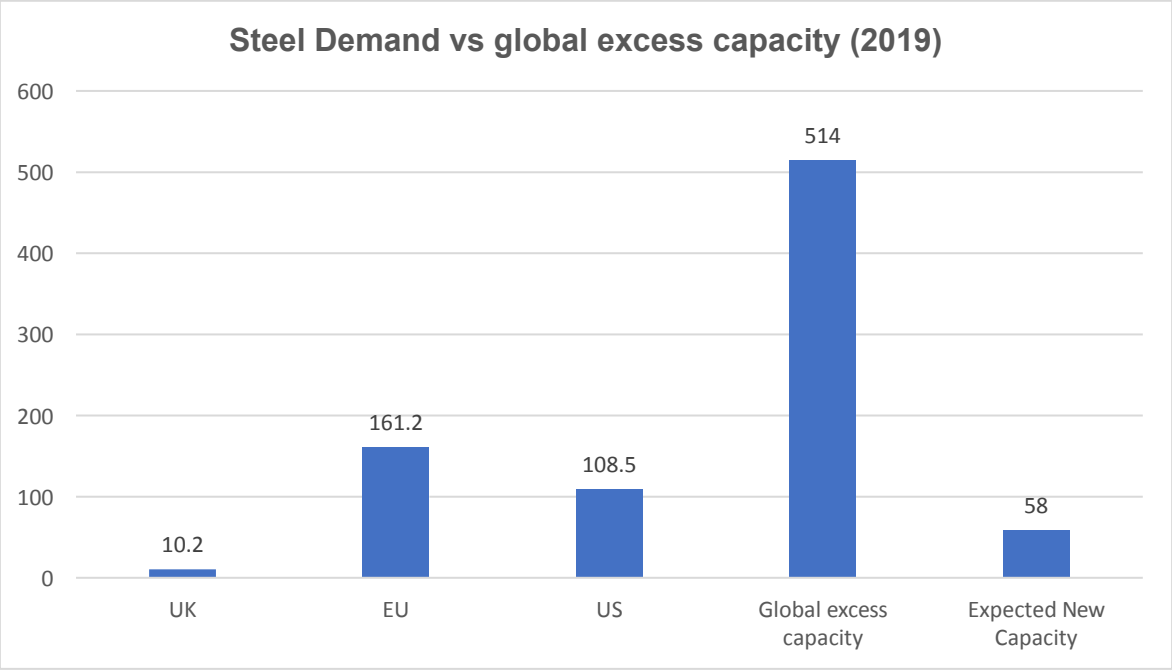
The UK's steel sector faces several challenges that threaten the long-term viability. In addition to the challenges meeting our national Net Zero Carbon targets, elaborated on in a later answer, there are five core challenges the sector currently faces:

1. Trade and global market conditions
2. Covid-19 recovery
3. Electricity costs
4. Public Procurement of Steel
5. Research and Innovation

i) Trade and global market conditions

Global trading conditions for the steel sector have been tough for a number of years with steel markets (both in the UK and EU) in recession for 2019 and 2020. Welcome signs of a post-Covid recovery are now being seen, with strong demand and increases in prices, but the full recovery to 2019 levels is still not expected until 2022 and there remain some major underlying concerns and difficulties.

Global Overcapacity of Steel: Global overcapacity of steel production remains a major issue for the steel sector and is underpinned in large part by the Chinese state's control and subsidisation of its steel sector that now accounts for 50% of global steel production. Global overcapacity in 2019 was estimated to be 514 million tonnes, dwarfing the 10 million tonne UK market. Just 2% of that excess production would be enough to meet the entirety of UK demand. As a small market, the UK is even more exposed than markets like the US and EU.



Source: Worldsteel Association, OECD

Post-Brexit Trade and EU Safeguards:

The EU is and will remain the UK steel industry's largest export market. It accounts for approximately 70% of the UK sector's total exports, dwarfing our exports to the next largest markets of the US and Turkey –which make up around 8% each. As such, the Trade and Cooperation Agreement was of key significance for the health of the UK steel sector, however it has not delivered tariff and quota-free trade for steel. Exports of steel between the UK and EU, remain subject to safeguard measures, a complex system of quotas and 25% tariffs. Whilst the deal has ensured there are no standard customs tariffs and quotas, trade remedies measures are considered, so UK exports of steel have now become subject to these measures. The EU measures are due to expire on 30 June, but the Commission has now initiated a review for their extension.

The special status of NI complicates matters further, as steel exports from GB to NI are considered "at risk" of moving into the EU/ROI. As a result, most steel exported from GB to NI is effectively treated as an export to the EU. As there was no formal process for registering any steel imports into NI against tariff free quotas, the UK Government has delivered a temporary solution for GB origin steel to avoid 25% tariffs as long as there is EU quota capacity. The intention is for these volumes to be added in future to an expanded UK quota within EU safeguards. However, this is still subject to negotiation with the EU and it is unclear how exactly and when this would come into effect. It is extremely difficult for industry to operate in the presence of so many unknowns. A long-term solution has been promised but is yet to be delivered.

All the new administrative processes have added cost and time to trading with the EU and have impacted the UK's exports. Based on the quota utilisation data from the first quarter of this year, UK steel exports fell by 34% compared to their historical 2015-17 average levels, using up only 59% of their total quota allocation within EU safeguards.

US Section 232:

The introduction of trade defence measures by the United States in 2018 caused the EU to adopt safeguard measures of their own owing to the resultant trade diversion. With strong support from all major member states, it is looking increasingly likely that the EU will maintain its safeguards[1]. Likewise, the Biden administration looks set to continue with its Section 232 tariffs, with the new Commerce Secretary and Trade Representative both having recently spoken out in support of these measures[2][3] and a review planned for later this year. As such, only two[4] out of the top ten steel markets in the world currently no have tariffs and/or quotas in place, massively increasing the likelihood of trade diversion towards the UK if it was to unilaterally remove its measures. In this context, it is essential that the UK maintains its own measures, providing a level trading environment for the UK industry whilst multilateral efforts continue to tackle the underlying problems within the global steel market.

UK Steel Safeguards:

Before the introduction of the EU steel safeguards, UK imports of steel increased by 25% between 2013 and 2017. Given the continued problems of global overcapacity, and the increased use of import restrictions around the world at this time, the threat of import surges remains high. Beyond the concerns related to increases in imports there is an important consideration of reciprocity. As noted above, the EU and US are almost certain to continue to place controls on UK steel exports for the foreseeable future. It would be unbelievable if the UK were to provide completely open access to our steel market in advance of being provided with the same from both the EU and US. It should also be noted that the UK Government has tried to seek a mutual exemption on safeguards with the EU but to no avail. To remove these UK safeguards would be favouring foreign steel producers over UK ones.

The steel safeguard measures already provide for a careful balance of interests between steel producers and consumers. Tariff rate quotas currently allow for 111% of historical volumes of steel to enter the UK tariff-free. This at a time when overall demand, as a result of the pandemic, is expected to be 10% below historical levels, and there is ample additional capacity within the UK steel sector to meet demand. The framework is designed not to restrict supply other than when imports surge above typical levels that would be damaging to the UK steel sector, therefore balancing the needs and interests of both the producing and consuming sectors.

In the first quarter of this year, over 40% of quotas remained unused with only one in 20 of the different product-specific quotas being exhausted. All of this unused quota is carried over into the next quarter. UK Steel analysis shows that even in a highly unlikely scenario of a 10% increase in steel demand above historic levels (requiring a 30% recovery this year), just 3% of steel purchased would be levied with a tariff, resulting in less than a 1% increase in steel prices. This should be compared to the doubling in steel prices seen in global markets since mid-2020.

ii) Procurement

[1] https://ec.europa.eu/commission/presscorner/detail/en/ip_21_816
[2] Section 232 Tariffs Saved Steel Jobs in US - Ms Gina Raimondo (steelguru.com)
[3] USTR nominee says Section 232 tariffs only part of remedy for metals | S&P Global Platts
[4] Japan and Korea, which both have extremely low import penetration levels

The public sector is the single largest purchaser of steel in the UK, estimated at around one million tonnes a year or 10% of total consumption.[5] In this, the Government has an enormously powerful tool at its disposal to support UK jobs, manufacturing & construction supply chains, and economic growth. Since 2015, British Steel has worked with UK Steel, BEIS, the Cabinet Office, and other departments, to improve the approach taken to public procurement of steel with an aim to maximise the opportunities for UK steel producers in this important market, and to have the wider social value[6] that the use of UK produced steel provides considered in procurement decisions.

Important progress has been made since this time, with the publication of a PPN on steel procurement, an annual steel pipeline, and data published on the proportion of UK produced steel used in central government projects. While these are important and valued steps, it is felt that collectively they have failed to have the impact hoped for and have not truly yet addressed the barriers experienced by UK steel companies in attempting to supply into public projects.

Concurrent with these government aims, the PM continues to express a desire to improvement public-procurement of steel, noting recently in Parliament that "*We will do everything we can…to ensure we can continue [to support] British jobs producing British steel with infrastructure investments…and directing that procurement at British jobs…"*[7] and *"It would be crazy if we were not to use this post-Brexit moment, to not to use the flexibility we have, to buy British steel. So that's what we want to do*."[8]

Unfortunately we continue to see a business as usual approach, in which contracts for the supply of steel are let without UK companies being aware such opportunities existed, and worryingly the Government's data on how much steel was sourced from the UK[9] only includes 160,000 of steel – somewhat lower than the estimated 800,000 to 900,000 tonnes of steel the forward looking pipeline indicates is used by central government each year.

Supply chain and policy barriers remain in place impeding government ambitions. The key issues are:

- The complexity of the steel supply chain means an open tender process is very rarely used for the supply of steel into public projects.
- A lack of an open tender process is a barrier to transparency in terms of steel companies having visibility of supply opportunities, but also in preventing public projects knowing where they steel is supplied from.
- The lack of an open tender process for the purchase of steel means that in the absence of more explicit direction on wider 'social value' objectives from above, sub-contractors will not take them into account.
- The more 'informal' approach taken to steel procurement often means establish supply chains/routes are used which reduces opportunities for UK steel producers.
- A general lack of transparency in the origin of steel often prevents assessments on 'social value' considerations in relation to steel procurement.
- The preference for contracting authorities and tier ones to not directly purchase steel acts as a barrier to transparency and opportunities for wider 'social value' objectives to be achieved are missed.

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[5] The BEIS Steel pipeline details an average of 600,000 tonnes of steel (including CfD projects) over the course 2020 to 2025. This is not a complete figure for central government and also doesn't include any steel used by local authorities, devolved administrations, and regulated utilities.

[6] Social value should eb read to refer to social, economic and environmental value – as stated in the Green Paper on Public Procurement.

[7] Parliamentlive.tv - House of Commons

[8] https://www.reuters.com/article/uk-britain-greensill-liberty-idUSKBN2BO4IL

[9] BEIS (2020) Steel Public Procurement 2020 – Compliance with the steel procurement guidance (PPN 16/20)

- The complexity of the steel supply chain also plays a role in the lack of transparency with steel companies often unaware of what their products are ultimately used for. Steel companies as the experts in this have a strong role to play in addressing this.

- The policy measures in place largely fail to address these barriers:

    - There is no explicit guidance or direction to ensure social value considerations are taken into account by those purchasing steel for public projects

    - There is insufficient guidance on how social value considerations should or could be made in relation to steel purchases.

    - There is insufficient guidance or direction given on how direct purchases of steel or greater involvement in steel procurement could improve outcomes.

    - There is no requirement for public projects to know and record the origin of steel used in their projects

iii) Electricity Prices

The UK's energy intensive industries face the highest industrial electricity prices in Europe and have done so for most of the last decade. As an electricity and trade intensive sector, with no ability to pass on higher input costs, this has a profoundly negative impact on the sector's competitiveness in domestic and export markets. This naturally reduces profit margins and the availability of internal capital available for investment. Moreover, the sector is dominated by large-multinational organisations, with a multitude of plants in different countries to invest in; the persistently high cost of electricity in the UK is acting as a long-term deterrent to inward investment. The chronic cycle of low margins and barriers to sufficient investment is placing the UK sector's long-term sustainability in jeopardy. The electricity price disparity also has major ramifications for meeting the UK's Net Zero target. All options for decarbonising steel production lead to the increased electricity consumption and therefore disproportionately high electricity prices act as a barrier to sustainable transformation and investment.

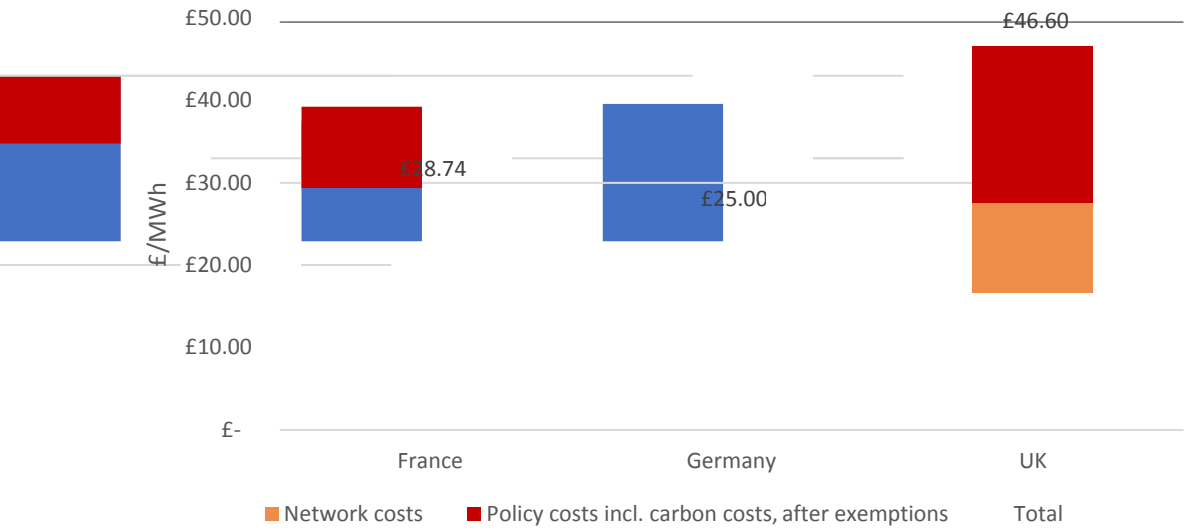
A range of government interventions are implemented in various EU countries to ensure electricity prices for their industrial consumers remain globally competitive. These include: maximising the exemptions available for renewables costs, compensation for the indirect costs of carbon prices, network cost compensation/exemptions, demand side response schemes designed with specific industrial technical capability in mind, and potential capacity market levy exemptions. Some of these exist in the UK, but are not always as extensive as those in place in key competitor countries such as France or Germany. Moreover, the UK Government has exacerbated the problem by preserving a Carbon Price Support that currently increases the UK cost of carbon.

UK Steel's 2020/21 analysis shows that the average electricity price disparity between the UK and Germany stood at £22/MWh and £18/MWh for the disparity between the UK and France. This means UK steel plants were paying 86% and 62% more, respectively, than their German and French counterparts. The price disparities equate to a total additional cost to UK steel producers of £54 million per year compared to those in Germany.UK Steel figures shows that UK steel producers today pay 86% more for electricity than their competitors in Germany and 62% more than in France. Despite wholesale prices dropping over the past year, there remains a persistent gap between UK industrial power prices and those elsewhere, with German and French steelmakers paying £22/MWh and £19/MWh less respectively than those in the UK.

The price gap between German and UK electricity prices places a £54 million a year additional cost on the UK sector, the equivalent of 25% of the annual capital investment across the sector. Steel production is a highly electricity intensive process – with power accounting for up to 20% of the cost of processing raw materials into steel and for

some is a higher input cost even than labour. Now the UK has left the European Union, the Government has the additional flexibility to create the best possible business environment for the steel sector to compete and prosper. For steel companies, this means finally tackling the uncompetitive electricity prices.

Electricity prices for steel producers in France, Germany, and the UK (2020/21)



Source: UK Steel (2021)

This persistent price gap has cost the sector over £250 million since 2016/17 when UK Steel first started its annual analysis of the problem. This equates to more than an entire years' worth of capital investment in the sector. Our member companies have committed to Government on several occasions, including as part of Sector Deal discussions with BEIS, to re-invest all of this money back into the UK sector should action to level our costs with those of competitors.

This means that action now on electricity prices will unlock a minimum of £500 million of UK investment from the steel sector between 2021 and 2030. Coupled with the Industrial Energy Transformation Fund and the Clean Steel Fund already announced by Government, this could lead to at least £750 million of low-carbon, clean-steel, and investment over the next decade. To be clear, this is merely a starting point – significantly more investment will be required to decarbonise the sector fully over the coming decades, but it is an ambitious and realistic starting point.

It is critical that Government recognises that internationally competitive electricity prices are not merely a competitive issue for current methods of steel production, but perhaps the key determinant in the viability of low-carbon steel production. Every option available to us for decarbonisation requires significantly more electricity consumption. CCS steel production would increase energy requirement significantly, where moving from the traditional blast furnace route to electric arc furnaces could require 2-3 times more electricity, and hydrogen-steel production (a still unproven technology) could require 6-7 times more electricity. If clean-steel production is highly-electricity intensive, then investment will go to those countries where electricity prices are internationally competitive. At present this is clearly not the UK.

Significant actions were taken by the Coalition Government to address this issue between 2013 and 2015 but since this time the remaining price gap has persisted and even grown. It is vital that the Government now works with the sector to put in place immediate measures to reduce electricity costs for steel companies, in line with EU competitors.

Below are several proposals that must now be seriously considered and brought forward to finally tackle the issue and put the UK steel sector on the path to net-zero carbon.

- **Eliminate or reduce the Carbon Price Support:** As noted above, the UK's Carbon Price Support mechanism is currently increasing the UK's carbon price unnecessarily compared to the EU, at a time when the UK is finding its feet as an independent trading nation. Although compensation is provided in the UK for pass through costs from power generators to certain industrial consumers, because of redundant EU state aid rules, steel companies currently only receive around 60% compensation. This results in companies in receipt of relief still facing a significantly higher carbon cost in the price of their electricity supplies than EU competitors. This will remain a problem until either the UK removes the CPS, or uses the freedoms of leaving the EU to deviate from EU State Aid, allowing a higher compensation rate for the indirect cost of carbon.
- **Introduce exemptions to lower industrial power prices:** We urge the Government to introduce vital new exemptions to bring UK prices in line with those of key European competitors.
    - Increase the level of renewable levy exemptions: Previously, EU state aid guidelines on relief to industry from the costs of renewables allowed for exemption up to the level of 0.5% of a company's GVA. The UK chose instead only to provide relief at 85% aid intensity. However, in Germany, companies achieving the necessary electro-intensity thresholds can access the higher level of relief – paying a maximum of 0.5% of their GVA (average over three years). As a newly independent country, defining its own path, the UK leave its previous EU derived rules and adopt a more suitable policy. Moving to a higher level of relief in the UK could be done through a small 'top-up' compensation scheme and would cost HMT around £6 million a year. Alternatively, with our new freedom on state-aid regulations, the Government could increase the level of state-aid intensity to 95% or even 100% (with no need for a GVA measurement). This could be done through compensation, costing in the region of £10 million/year in relation the steel sector.
    - Provide an exemption from Capacity Market costs: The Capacity Market is fundamentally another policy cost arising from decarbonisation and one that places the international competitiveness of industry at threat. As such, the Government should, in the same vein as it has done in relation to renewable levies, provide a compensation/exemption from its costs. This is planned for implementation in Poland, where an 85% exemption will be provided, and the UK should introduce a similar policy. A compensation/exemption from the Capacity Market at this level of aid-intensity would cost HMT some £2.5million a year in relation to the steel sector.
    - Implement German/French style network cost reductions: The Government should introduce a network cost exemption/compensation similar to that available to German industry where up to a 90% reduction in costs is available to certain eligible companies. A similar mechanism here would reduce steel sector costs by an estimated £25m per year.

  This recommendation should also be seen in the light of the upcoming 'Targeted Charging Reforms (TCR), spearheaded by Ofgem. Based on the available data, when implemented the TCR reform will at least more than double network charges and could in the worst case, almost triple charges. This would lead to a situation where steel producers in the UK face network charges 24 - 60 times higher than their main competitors in Germany and France, respectively, making network charges the single largest electricity price element. All other things being equal, the TCR reform could increase the price disparity from £22/MWh between the UK and Germany to £39/MWh, leaving UK steel producers to pay 156% more. It is therefore essential that the Government now recognises the unintended impact of poorly planned network reforms and quickly enacts exemptions for the most trade-exposed and electro-intensive sectors.

  Together with the above proposals to reduce the impact of the CPS, introducing these exemptions would lower the industrial electricity price disparity by up to £21/MWh; the entire price disparity between Germany and the UK. As stated above, this would unlock upwards of £750 million investment in the steel

sector during the 2020s and ensure the UK is able to deliver a truly clean-steel sector for the UK in line with the Government's economy wide 2050 targets.

iv) Covid-19

In the context of structural, global issues facing the steel industry, the recovery from the pandemic is not the most glaring issue, those are dealt with above. But the immediate and medium-term picture for the sector must include a recognition of the decline in demand for steel compared to 2019 levels. 2020 saw steel demand in the UK plummet by 16%. While activity is recovering and prices are rising, we still expect 2021 demand to be down by around 10% on 2019 levels, not fully recovering until 2022. The market remains fragile, and the UK sector needs a period of stability in order to recover and adjust more fully to the new trading environment.

This is one of the issues where, were the sector to receive help on the other three areas, it would be in a better position to withstand a short, sharp shock.

v) Research and Innovation

The EU Research Fund for Coal and Steel (RFCS) is an EU Commission administered fund, exclusively for the purposes of funding innovation in the steel and coal industries. It is funded by the interest receipts (circa €40 million/year) from the significant financial reserves (circa €1.6 billion) that were accumulated by the former European Coal and Steel Community (ECSC) prior to its expiry in 2002 and added to subsequently by new members of the EU.

At the end of last year, UK organisations (including steel companies) lost access to this fund, with the UK Government confirming last summer that it will not fund those organisations choosing to participate in projects as 'third country' organisations[10]. According to the terms of the Withdrawal Agreement (Article 145) the approximately £180 million UK share of this fund will be returned in five annual instalments from June 2021. It is imperative that this returned money be ring-fenced for the exclusive use of the steel sector to ensure it can continue vital innovation projects, crucial to the future modernisation and decarbonisation of the sector.

The ECSC's financial resources came almost entirely from a production levy imposed on the coal and steel producers, together with interest earned on its accumulated reserves. The principal uses were the funding of collaborative R&D by the two industries; and support to redundant coal and steel workers. Additionally, as income exceeded expenditure, reserves were built up, which were used to guarantee the ECSC's borrowing and lending activities. The ECSC would use its triple-A rating to borrow funds for on-lending to coal and steel companies to help finance investments. It can therefore be seen that the levy was not a tax as such: rather, it was a mechanism to help the coal and steel industries help themselves in adjusting to market conditions and investing for the future. The levy was wound up in 1998, four years before the ECSC's expiry.

On the ECSC's expiry in 2002 its funds were passed to the EU by the Treaty of Nice (i.e. with the unanimous agreement of the then Member States, including the UK) with the condition that '*shall be used exclusively for research, outside the research framework programme, in the sectors related to the coal and steel industry'*. It was seen as a pragmatic way of ensuring that the original intentions of the ECSC's founding fathers with respect to the levy were honoured, while at the same avoiding the difficult task of calculating how to return the monies to industry.

Any change in the use of the RFCS, or the break-up of the funds would require the unanimous consent of 28 member states of the EU (i.e. requiring a treaty change) and would clearly involve close consultation with the European steel industry. One can argue that unanimous consent has been provided for the partial break-up of the fund by the approval of the Withdrawal Agreement by the remaining 27 EU members states, however as of yet there has been no consultation with UK industry and steel companies are firmly of the view that no decision can be effectively made on how to spend the returned funds without full consultation and approval of those elements of industry remaining that created the fund.

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[10] https://www.gov.uk/government/publications/research-fund-for-coal-and-steel-uk-funding-for-2020-call-for-proposals/research-fund-for-coal-and-steel-uk-funding-for-2020-call-for-proposals

The UK Steel industry continues to propose to Government that the returned RFCS funds should be allocated for the creation of a Steel Innovation Fund, with a view to consult with industry on its precise design, operation and purpose over the course of the next year. Ideally such a fund should have maximum flexibility to allow UK organisations to participate with others at a UK level, via the RFCS (as a third country) or even with organisations further afield if deemed beneficial to the UK steel industry.

With the UK's loss of direct access to the RFCS, the benefits of creating a UK Steel Innovation Fund are clear:

- Most obviously, the RFCS provides upwards of €40 million in innovation funding each year, with UK organisations receiving around €2 million a year on average for steel related projects. UK steel companies and institutions continue to draw down a relatively high level of the fund (6% of the steel fund compared to 5% of EU steel production), but importantly this is likely to increase following recent and planned restructuring in the UK steel sector and the creation of new principally UK based entities. The creation of a UK Steel Innovation Fund would in part replicate this.

- Critically, the RFCS is explicitly and only for the purposes of innovation within the steel and coal industries. The benefits currently delivered to our industry, and replicated by a UK fund, could not be replicated by more generalised funds that exist such as those provided by the Industrial Strategy Challenge Fund.

- The provision of a dedicated fund for steel and coal research has had a profound impact on the competitiveness of the EU steel industry – for example programmes have contributed to the improvement in the efficiency of blast furnace technology through the injection of coal. Pilot scale demonstrations in the '80s and '90's de-risked the implementation of high levels of coal injection to the extent that to date, alternative ironmaking technologies have not been able to compete. International collaborations have developed and implemented environmental measurement, analysis and abatement technologies and uncovered fundamental insights into dephosphorisation in the steel plant. Moreover, analysis of the fund has shown that financial returns from investments made into research in core steel production processes (blast furnaces, steelmaking, and continuous casting and rolling) amounted to 20 times the investments made in research. Again it is crucial steel companies in the UK have access to a fund that can continue to deliver these benefits.

- Because the RFCS is made up of industry contributions and its purpose established by an EU Treaty, the RFCS is a stable and enduring one not subject to the usual budgetary deliberations of governments. This provides the sector with certainty of funding that cannot be offered by alternative means leading to a more long term view on innovation in the sector, vital to remaining at the cutting edge of steel production. It is crucial this approach is replicated at a UK level.

- The RFCS enables and encourages collaboration across the EU, vastly expanding the pool of partners that UK organisations can work with, including access to capital equipment and specialist research institutes. R&D equipment for steel research is extremely capital intensive, no one company or even national sector can realistically afford to have and maintain full capability in all research disciplines. Over the years of ECSC and RFCS institutes and innovation centres across Europe, including Fraunhofer, BFI, Aachen, CRM, CSM, MPIe, together with our own UK technology centres, have focussed on developing specialist areas of capability, to provide a full package of R&D delivery capability across Europe. Creating a UK fund that would allow continued collaboration with EU partners will therefore be essential.

- The RFCS is not subject to the usual state aid restrictions, allowing much higher contributions than provided through traditional funding routes. This significantly improves ROI rates and therefore risk appetite, maximising the range and ambition of projects that industry will undertake. This aspect is further boosted by the collaborative nature of the programme, spreading the costs of any one project over a large number of participants from right across the EU, thereby minimising the costs for any one organisation. There would be a strong legal argument for replicating this approach at a UK level.

What action if any, should the Government take to support Liberty Steel or the UK steel industry more generally, and what lessons could be learnt from how previous crises in the steel industry were managed?

Government has the opportunity to assist the UK Steel industry to become a long-term sustainable competitor in the global steel sector. The opportunity to decarbonise, the UK steel sector is in relative terms a small player compered to EU and other geographies, the UK steel sector offers the government its single largest opportunity to meet decarbonisation goals. Government need to address a number of critical points to allow this transformation

1. Fair trading environments and green markets
2. Investment for infrastructure and technology changes where required
3. Electricity prices – parity with EU players
4. Scrap supply chains – ensuring the UK steel sector has access to the right scrap for production methods at competitive prices, consideration of taxes for scrap exports

British Steel entered liquidation in 2019, the appointment of the special managers and the backing of government allowed British Steel time to seek new owners. The process was handled very professionally and proof that running a UK steel integrated site is not easy as it took a number of months for processes, knowledge and business as usual to be installed as far as possible under such difficult circumstances. British Steel would be happy to discuss this process in more detail with a wider represented group if required.

What role could the UK's post-Brexit state aid regime play in supporting foundation industries?

The UK's post-Brexit state aid regime can play a central role in supporting foundation industries such as the steel sector, particularly at a time when ambitious targets to decarbonise will require unprecedented levels of investment and transformation for the sector. State aid/subsidy is a particularly pertinent issue for British Steel given the international trade intensity of the sector and the high levels of state intervention and support provided to many steel sectors around the world.

25% of all steel produced is traded internationally - this climbs to 43% in markets outside of China - whilst the UK exports 45% of its steel production and imports over 60% of its direct requirements (i.e., not including steel in products). As such, the UK steel sector is competing with many companies that are heavily subsidised or operate in non-market economies. The most obvious example of this is in China which now produces over half of the world's steel, where the steel sector is dominated by state-owned enterprises, and the Government intervenes heavily in the market on everything from raw material inputs, to energy, to labour, to financing.

But even in G7 economies there is notable interventions made to support industrial sectors like steel, in areas like energy costs, climate change, and public procurement. It is therefore imperative that in designing a new post-Brexit regime the UK Government provides itself with the same subsidy powers as competitor countries, coupled with a desire for targeted industrial intervention, if it wishes to maintain a strong and sustainable steel sector in this country.

The below types of state-aid can yield substantial benefits for the steel sector and the wider economy:

- **Competitiveness Schemes:** The UK already supports the steel sector in a range of ways to reduce electricity prices in recognition of the fact that the UK has some of the highest industrial electricity prices in the world (even with support in place). Schemes such as this that act to provide a level playing field in terms of operational costs are fundamental to the viability of UK industry. If the UK costs are seriously out of kilter with those elsewhere, not only will UK industry fail to compete in today's marketplace but the UK ceases to be an attractive place for inward investment leading to an erosion of its industrial base and manufacturing supply chains. This erosion of investment will clearly have major implications for jobs (particularly in areas outside the south east), economic growth, and the UK's ability to meet its climate change targets (see point below).

- **Deployment Funding:** Capital funding for industry is a hugely important element of industrial strategy and it is becoming increasingly important in light of the huge sums of investment required for decarbonisation of industry and the current market failures that prevent it. In line with the UK's net-zero carbon targets, industry needs to be substantially decarbonised by 2035 and entirely by 2050 – this will not happen without significant subsidy schemes from Government. In the absence of such funding, UK industry would be unable to decarbonise and ultimately would cease production in this country as climate targets become increasingly stringent and the penalties for inaction become stricter. This would have enormous consequences for the Government's Net Zero target, as increased reliance on steel imports could lead to higher emissions if imported steel is produced in a more carbon-intensive steel plant, not to mention the transport related emissions. Global carbon intensity varies from 0.29-3.38 tonnes of CO2 per tonnes of crude steel, depending on plant efficiency and production method, with the weighted average being 1.85tCO2/tCS in 2018. UK steel production sites are less carbon-intensive than the global average and therefore increases in imports will likely lead to an increase in global greenhouse gas emissions and the UK's consumption-based emissions. The UK sector average is around 1.6tCO2/tCS. Additionally, increased imports of finished steel products will also increase transport-related emissions – for example shipping a tonne of product from China will result in an estimated 0.3 tonnes of CO2.

- **Innovation Funding:** The UK steel industry is a major investor in innovation in the UK, but this is enabled, to a significant extent, by the support provided by UK Government. Innovation expenditure by its very nature is high risk, with the many projects not proving successful and not providing a return on investment. Government intervention is therefore fundamental to reduce this risk element and to allow more projects to come forward. Again, our climate change targets only increase the importance of innovation funding. Exploration of technologies to reduce CO2 emissions are even less likely to provide a return on investment in the near term then research on new products; this is because there is not currently a competitive advantage to be had from producing steel in a low-carbon manner. Therefore Government support is essential to ensure that innovation in the field of low-carbon steel production flourishes in the UK.

What opportunities and challenges does the Government's net zero target present for the UK's steel industry?

The UK produces 7 million tonnes of steel each year, giving rise to around 12 million tCO_2. The bulk of emissions (approximately 95%) come from the UK's two blast furnace sites, situated in Scunthorpe and Port Talbot and responsible for 5.6 million tonnes of steel. The remainder of emissions, and steel production, come from four electric arc furnaces situated in the Sheffield region and Cardiff. However, this does not include the emissions related to the steel we import and consume in the UK, e.g., the manufacturing and construction sectors consume 11 million (60% from imports), giving rise to 18-20 million tCO_2. Finally, the UK imports significant volumes of steel containing goods meaning that UK is ultimately responsible for some 17 million tonnes of steel consumption each year and over 30 million tCO_2.

In establishing a vision and strategy for decarbonising the steel sector, the UK must aim to tackle not just emissions produced within our own borders but those produced elsewhere and imported. To do otherwise would be to take a short cut, an emission cut merely on paper. It would run the risk of decarbonising through deindustrialisation instead of through investment and innovation. It would mean a reduction in industrial capability, jobs, and economic activity instead of the creation of a new green industry and the myriad of benefits that would flow from that. Crucially, tackling consumption and production emissions go hand in hand; UK steel producers can only invest and decarbonise if they are confident of a future market for Net Zero steel, a market in which the additional cost of Net Zero steel production can be recovered.

The UK Steel sector has been underinvested for many years when compared to EU competitors, certainly for British Steel anything outside of essential maintenance has not been considered for many years. Decarbonisation is a great opportunity to correct this and to ensure the sector is competitive and sustainable in the long term.

Opportunities in net zero strategy

The UK has consistently been a first mover on climate action, showing global leadership through the ambitious targets it sets and the firm action it takes. The UK was the first to set legally binding emissions reductions targets, the first major economy to set net-zero targets, has decarbonised electricity generation faster than any other country, has the world's largest offshore wind generating fleet, and will be the first in the G7 to ban the sale of combustion vehicles.

To date, no country has set targets for industrial emissions. But with a tightening of national targets and impressive progress achieved on power and transport related emissions, attention must now also turn to the 'harder to treat' sectors like steel. Steel production and consumption is an unavoidable component of any modern low-carbon society. But with it accounting for 8% of global emissions and 3-5%[11] of the UK's emissions, and the long timeframes required for transition, the time has come for the same sense of urgency and action that has been given to sectors like power and automotive.

The UK has already taken some important steps in this regard; establishing the Industrial Decarbonisation Strategy with ambitions for a 66% reduction by 2035 and 90% by 2050 and adopting the Sixth Carbon Budget which includes advice for a near complete decarbonisation of blast-furnace steel production by 2035. But as the UK prepares to host the world's leaders at this year's COP26, it has the opportunity to be in the vanguard of climate action, show global leadership and be the first country in the world to establish explicit targets and policies to deliver both a Net Zero steel sector and, crucially, a Net Zero steel market. The UK steel sector is willing to become the first steel industry in the world to make such a commitment, vastly outpacing even our closest competitors in Europe.

Barriers to Decarbonisation

Meeting these targets will entail tackling several technical, economic, and policy challenges. This will require significant investment and commitment from the industry, but equally new policy development and intervention from Government.

Electricity Prices: Decarbonising steel production is no different to the challenge elsewhere in that to a significant degree it relies on replacing fossil fuels with clean electricity as an energy source. Even where this is not the case, such as CCS fitted blast furnaces, low-carbon steel production will result in significantly electricity consumption. For example, electric arc furnaces require 300% more grid-electricity to produce the same volume of steel as a blast furnace. Power prices for UK steel producers are currently almost 90% higher than those available to their European competitors. Attracting investment from multinational companies in such electricity intensive technologies in these circumstances is unrealistic. Addressing this imbalance must be the first step along the road to decarbonisation.

Technical Challenges: Decarbonising the steel sector will require the development and application of new technologies not yet implemented anywhere in the world at scale. Whilst the precise mix of technologies has not yet be determined it could include:

- Advanced sorting technologies to improve the quality of steel scrap supply
- Improvements in electric arc furnace technologies to increase the production range available
- The application of CCS technologies to a range of steel production processes

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[11] 3% of territorial emissions and 5% of consumption-based emissions

- The introduction of alternative ore-based steel production processes including HIsarna, MIDREX, DRI, and HYL
- The replacement of natural gas in downstream processes with alternative 'green' fuels

The Business Case Challenge: Producing steel without the emissions is again like producing many products in a low-carbon manner – it is (at least to begin with) significantly more expensive than traditional, fossil fuel based, alternatives. The cost of emitting carbon has not yet been even partially internalised for the vast majority of the world's steel production and until this basic market failure is addressed in some form, companies will not invest in decarbonisation because there is no method of receiving a return on the additional CAPEX and OPEX that is required. The most straight forward way of addressing this market failure is a carbon price. But this is only of use if the carbon price applies to all steel producers competing in the market. We remain a very long way off a global carbon price and therefore the UK Government has two alternatives:

- Net Zero steel markets: This is the approach taken for the automotive sector, where the Government has stepped in and banned fossil fuel vehicles from 2030 onwards.
- Subsidisation of Net Zero steel production: This is effectively the approach taken for the power sector, where renewable energy generators are provided with a guaranteed price via a levy on energy consumers.

Trade Challenges: Underlying the business case challenge is one of international trade. Where domestic producers must compete with imports from other countries, and their exports must compete overseas, the policy solutions are naturally more complex. Theoretically one could place a carbon tax on power production and generators would invest in technologies to avoid that tax knowing there would be no major competition from power producers not subject to the tax, and they did not rely on export sales to any significant degree. The same cannot be said for steel. As mentioned above, steel is one of the most highly traded products in the world, and the UK is no exception to this pattern, importing 60% of its steel requirements and exporting 45% of its production. Therefore, in the absence of other interventions, significant national imbalances in production costs will quickly render producers uncompetitive in both domestic and export markets. Furthermore, the picture of intense international competition in global steel markets is further exacerbated by issues such as global overcapacity of steel production, state intervention, ownership and subsidisation of steel production, and an array of different import tariffs and trade barriers in various markets. A decarbonisation strategy for the sector must recognise this and develop policies that can mitigate these challenges.

British Steel has a proposed decarbonisation roadmap, discussions are ongoing with BEIS and other departments – it is critical businesses and Government work together to meet this ambitious target.

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