



Department for
Business, Energy
& Industrial Strategy

FUTURE CAPACITIES AND CAPABILITIES OF THE UK STEEL INDUSTRY

BEIS Research Paper Number 26

Executive Summary



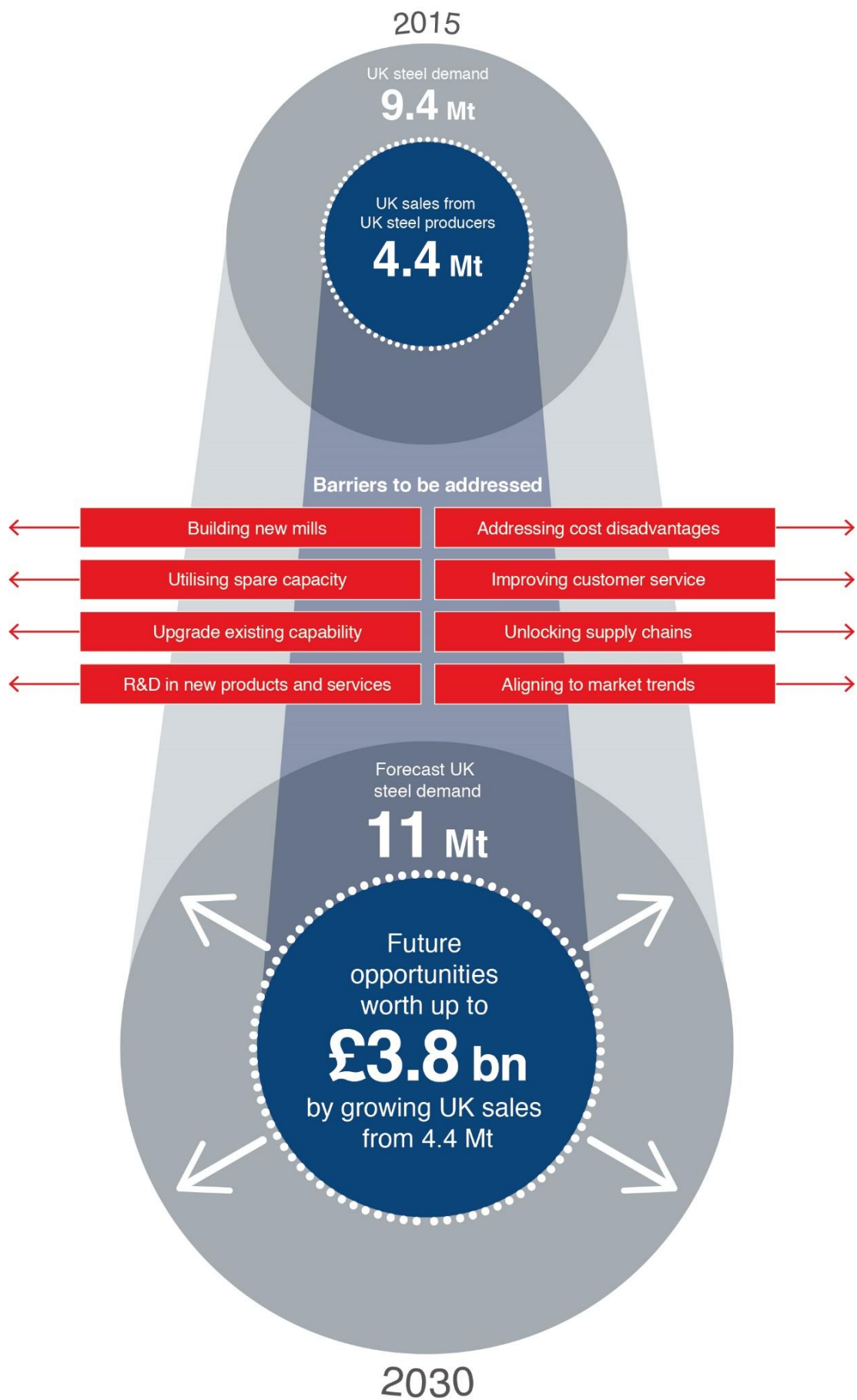
15 December 2017

This study was conducted by a Grant Thornton UK LLP-led consortium including Hatch Consulting and the Materials Processing Institute. The consortium received support from a steering board containing representatives from the UK steel sector, including: British Steel, Celsa Steel UK, Liberty Steel, Tata Steel UK and UK Steel (the trade association for the UK steel industry). The views expressed in this report are those of the organisations interviewed as part of this research and the Grant Thornton UK LLP-led consortium; they are not necessarily the views of BEIS.

We would like to thank the UK steel producers and the many people and organisations who contributed to this study. Their invaluable participation and feedback throughout the project helped ensure that this was a comprehensive undertaking and provides a robust assessment of the future capacities and capabilities of the UK steel industry.

There is a significant future UK demand opportunity for the UK steel industry. Based on the current levels of domestic supply achieved by the UK steel industry this represents a £3.8bn p.a. opportunity in revenue terms in 2030, of which construction and automotive are the most important sectors. With further growth in UK content in domestic supply chains, the opportunity is even greater.

The scale of the opportunity has the potential to be transformational for the industry and there are a number of challenges to accessing it. This report therefore helps industry and Government to identify key themes to address in the development of future strategies for the sector.



The future demand opportunity for the UK steel industry

Finished steel demand

The finished steel demand in the UK is currently 9.4 Mt and has contracted by 34% since 1996. This has largely been driven by migration of manufacturing from the UK, a decrease in fixed assets investments across the UK economy, supply-chain consolidation, material substitution and shifts in the use of steel specifications. It must be highlighted that since 2011, demand for all finished steel is showing signs of some stabilisation and the arrest of further long-term decline.

Over the past 20 years, the market share (Mt) of UK producers in the UK steel sector has declined from 70% to 47%. Whilst some other European steel producers have experienced similar trends, in the UK this has largely been driven by changes in material requirements, a relative loss of competitiveness, the deterioration of capabilities from UK producers and a lack of capacity. These factors have been further compounded by global overcapacity, which has exerted greater pressure on the UK market. Throughout this period there has also been a unique and unparalleled level of ownership change and a shift to private ownership from large conglomerates.

Based on the evidence gathered (2015), the steel industry in the UK produced 7.9 Mt of finished steel, of which 3.5 Mt was exported with the remainder (4.4 Mt) used to meet demand within the UK. In addition, the UK imported 5.0 Mt of finished steel.

The UK steel industry is facing greater competition from imports in the domestic market than ever before. To better compete with the 5.0 Mt of steel imports in 2015, there are steps the industry can consider to ensure that domestic plants are well prepared to address the capacity and capability needs of the future.

From the historical trends of demand for individual products, there are two clear groups emerging:

- Group 1 (Rebars, Sections, Rails, Wire Rods [mesh], HRC, Coated): These are products that are dependent on construction and infrastructure spend and have better survived and managed to recover some lost ground in demand.
- Group 2 (Merchant Bars, Wire Rods [drawing], Engineering Steel, Stainless Steel, Seamless Tubes, Plates, CRC, Tinplate): These are products that are dependent on manufacturing and have seen their demand eroded away.

Within these groups, rails, wire rods (drawing quality) and engineering steels have performed and survived better in the export markets, primarily to the EU. These products are specialised for specific applications in automotive, engineering and infrastructure. They are not products which sell on volumes but are more value-added and less sensitive to price competition seen in other steel products. The capabilities of the UK steel industry in these types of products are well positioned to service exports markets.

Finished steel demand forecast

Assuming domestic content in UK supply chains remains unchanged, finished steel demand is forecast to grow from 9.4 Mt in 2015 to 11.0 Mt in 2030 with the biggest boost coming from increasing investments in infrastructure construction. The recovery is likely to be slow and gradual. The demand growth will require the steel industry to respond to numerous evolving changes in customer demands, which are likely to continue unabated.

This represents a future opportunity of 6.6 Mt to the UK steel industry, comprising opportunities from displacing imports and organic growth in demand. Displacement of imports will account for the bulk of the future opportunity.

Compared with the current levels of domestic supply achieved by the UK steel industry, this represents a £3.8bn per annum (p.a.) future opportunity in revenue terms in 2030.¹ With further growth in UK content in domestic supply chains, the opportunity is even greater. The nature of the future opportunity varies significantly by finished steel product and consuming sector.

The main future opportunities in products are in coated products and organically coated steels (£958m), stainless steel (£573m), HRC (£440m), rebar (£315m), and heavy sections (£279m). These five sets of steel products account for about two-thirds of the total future opportunity. Each product faces a different set of challenges to access this opportunity and varying levels of import penetration in 2015.

¹ The pending EU exit process presents significant uncertainties both in terms of threats as well as opportunities. In the main report, these forecasts are subject to a range of sensitivities including a low case scenario that takes account of significant market disruption arising out of the EU exit.

Figure 1: Current UK demand, current UK sales, forecast UK demand and future UK opportunity by product for finished steel

Product	Tonnage				Value				
	2015 Current demand (Kt)	2030 Forecast demand (Kt)	2015 Current UK sales (Kt)	2030 Future opportunity (Kt) ¹	2015 Current demand (£m)	2030 Forecast demand (£m)	2015 Value of current UK sales (£m)	2030 Future opportunity (£m) ² and breakdown (%)	
Coated Products/OCS	2,328	2,576	896	1,680	856	1,471	332	958	25.3
Stainless Steel	211	249	0	249	342	573	0	573	15.1
HRC	1,754	1,993	1,040	953	528	921	313	440	11.6
Rebar	843	1,234	402	832	248	468	118	315	8.3
Heavy Sections	762	922	328	594	348	433	150	279	7.4
Plates	511	615	155	460	194	338	59	253	6.7
CRC	676	719	286	433	234	370	99	223	5.9
Medium Sections	348	421	116	305	129	181	43	131	3.5
Seamless Tubes	171	155	0	155	136	128	0	128	3.4
Engineering Steels	318	351	115	236	139	189	50	127	3.4
Wire Rods	612	743	436	307	184	305	131	126	3.3
Tinplate	364	364	207	157	182	264	104	114	3.0
Merchant Bars	227	285	166	119	83	118	61	49	1.3
ODF	38	46	20	26	52	66	27	37	1.0
Light Sections	101	123	74	49	37	51	27	20	0.5
Rails	166	182	159	23	84	94	81	12	0.3
Total	9,430	10,977	4,400	6,577	3,775	5,969	1,594	3,785	100

Source: Hatch

¹2030 forecast demand minus 2015 current UK sales

²2030 forecast demand minus 2015 current UK sales, valued using 2030 prices

One key sector opportunity is in construction (£2.2bn), which accounts for a 57% share of the total £3.8bn. Automotive is also an important contributor (£0.3bn), with significant opportunities to boost finished steel demand through growing domestic supply-chain content. It should also be noted that the automotive sector represents a larger opportunity for the UK steel industry to target. The total demand for steel in UK automotive production is close to 2,015 kt, which is fulfilled by finished steel processed in the UK through imports and local production, as well as imported components and systems manufactured from steel. Estimates suggest that steel processed in the UK is currently only 35% of the steel in automotive production. This is aligned to 40% of local content in UK-manufactured

vehicles as estimated by the UK Automotive Council. This therefore implies a very significant upside to the future opportunity if a comprehensive strategy and policy to re-shore supply chains back to the UK is pursued.

The Others sector² also provide a sizeable opportunity (£0.8bn), although this is somewhat driven by a combination of a large number of smaller sectors, each of them individually small but on an aggregate basis they represent a significant portion of steel consumption. Broadly speaking, there are a number of high-volume opportunities in construction and a range of high-value opportunities in automotive which can provide strong margins.

The demand recovery presents an excellent opportunity for the UK steel industry. However, the industry has to address numerous capability issues and it has to break out of the cycle it finds itself in and make the leap forward to position itself competitively. The demands of the customers cannot be accommodated by incremental improvements or capability enhancements.

Figure 2: Current UK demand, current UK sales, forecast UK demand and future UK opportunity by sector for finished steel

Sector	← Tonnage →				← Value →				
	2015 Current demand (Kt)	2030 Forecast demand (Kt)	2015 Current UK sales (Kt)	2030 Future opportunity (Kt) ¹	2015 Current demand (£m)	2030 Forecast demand (£m)	2015 Value of current UK sales (£m)	2030 Future opportunity (£m) ² and breakdown (%)	
Construction	5,554	6,879	2,539	4,340	2,003	3,352	880	2,170	57.3
Others	1,510	1,760	756	1,004	654	1,122	232	770	20.4
Automotive	711	645	285	360	348	471	120	293	7.7
Machinery & Engineering	538	611	304	307	226	349	116	194	5.1
Packaging	456	462	259	202	213	314	122	136	3.6
Oil & Gas	353	253	57	196	191	163	27	129	3.4
Yellow Goods	142	186	43	143	58	104	17	80	2.1
Rails	166	182	158	24	84	94	80	12	0.3
Total	9,430	10,977	4,400	6,577	3,775	5,969	1,594	3,785	100

Source: Hatch

¹2030 forecast demand minus 2015 current UK sales

²2030 forecast demand minus 2015 current UK sales, valued using 2030 prices

² Such as appliances, light and commercial vehicles, ships, rolling stock, process equipment and internal combustion engines.

True steel demand

In addition to the opportunity arising from the demand in finished steel, there is a wider opportunity for the UK steel industry related to true steel demand (which includes steel contained in imported goods).

Between 2000 and 2015, UK true steel demand grew by 4.4%. This highlights the continued UK dependence on steel usage to meet its manufacturing, automotive, capital goods and consumer goods needs. **As of 2015, there was an 11.7 Mt gap between what UK steel producers supplied to the domestic market (4.4 Mt) and true steel consumed by the UK (16.1 Mt). This represents a good opportunity for UK producers. However, with 43% of the gap met by steel imports and 57% met by imported goods containing steel, there are two separate challenges to narrowing it.** The main driver of this trend is the migration of manufacturing and supply chains from the UK, creating a greater reliance on imported goods.

However, for the steel industry to access the full opportunity of 11.7 Mt, the UK will require wider cross-sector collaboration and longer-term strategies to grow domestic content in supply chains and re-shore manufacturing (particularly in automotive). This challenge extends beyond the UK steel industry and cuts across a number of manufacturing sectors and as such an effective solution requires a longer-term multi-sector response.

Export markets

Exports of finished steel are an important part of the production mix for UK producers. In volume terms, exports have tracked the trends of finished steel production. Over the period 1996–2015, both finished steel and exports have contracted by nearly half.

The UK currently exports 43% of its production of finished steel. This share has increased in recent years, particularly after the financial crisis in 2009. Prior to 2009, the share was between 35% and 39%. Of the total exports, the share of flats has increased from approximately 32% to 44% between 1996 and 2015, while the share of longs has decreased from approximately 50% to 38%. In some finished steel such as wire rods and engineering steels, exports are more important to the production mix and the capabilities are better suited to markets overseas as compared with the UK. In the case of other finished steel, exports are pursued to achieve production volumes and spread the fixed costs.

Compared with other EU countries, UK exports (43%) are lower than Germany (57%), Italy (58%) and Spain (62%). Although there is likely to be a geographic component to this, there are also disadvantages from lack of cost competitiveness and gaps in capabilities in the industry in the UK.

Historical trends indicate that exports will in all likelihood continue to play an important part in steel production, and producers in the UK will rely on leveraging the linkages with the markets and customers to support their business.

The risks attached to exports have increased in the medium term following the decision to leave the EU, and the resultant uncertainty that currently exists.

Realising the finished steel future opportunity: Barriers to be addressed

Given the need for an industry and government-wide response in relation to true steel demand, the focus of this report is therefore on finished steel demand **where the demand recovery presents an excellent opportunity for the UK steel industry. There are a number of challenges to the industry accessing the full future opportunity.** Appendix 5 in the Technical Appendices provides an overview of these barriers by product and provides specific interventions that could help to address these challenges.

Capacity

There is potential for the UK steel industry to grow if it is able to increase its capacity. This cuts across both high-volume products (rebar) and high-value products (coated steels). While it is not realistic to expect the UK to be 100% self-sufficient, new mills or addressing mothballed capacity or operational mills with spare capacity could help. Forty percent of UK finished steel production is also exported, which helps producers achieve a cost-effective volume. In addition, sectors such as automotive export large volumes of steel-containing goods, which source 35% of their content from the UK.

Capability

To maximise future opportunity the UK steel industry's capabilities need to be better aligned with future market trends. **To date, the capabilities of the UK steel industry have not kept pace with the market. Therefore, if production capability continues at current levels, the UK's ability to achieve the maximum value of the future opportunity in 2030 is limited.** The impact of light weighting and grade shifting is significant in construction, automotive and packaging. This will further impact on the capability of the UK steel industry. If the UK steel industry wishes to access these opportunities, it will require investment to meet the new capability, either from completely new mills, upgrades to existing facilities, or R&D in products and services.

For example, from a sector perspective automotive steel is a huge strategic area in which the UK has approximately a third of the market. It has not made the investments in aligning its capabilities with the demands of the industry. The roots of these issues can in part be traced back to the industry struggling to make margins and invest the surpluses to develop the capabilities. The result is an economic response with some capabilities migrating out of the UK.

From a product perspective, the incumbent plate mills do not have steel-making facilities and therefore depend on purchased slabs. It is commercially very challenging to source slabs for more demanding applications as the quality of slabs required for high-quality, high-value plate production are not readily available. This means that UK producers are unable to service the complete requirements of the UK market, which limits the industry's ability to move up the value chain. Given that consumers sometimes have a preference to source from fully integrated producers, the UK steel industry needs to convince these consumers that they can construct effective supply chains using partners.

In other instances, commercial decisions by producers have resulted in capabilities being shifted out of the UK to elsewhere in the EU.

In the context of capability, it is important to acknowledge products such as rails and wire rods, where the UK steel industry has kept pace with the global market development. Demand is largely satisfied by local deliveries and in addition it also contributes to UK exports. For example, the UK's sole rail producer was considered fully capable of meeting the needs of UK customers, and in wire rods the UK steel industry is fundamentally capable to service the downstream mesh and wire-drawing industry.

Competitiveness

While parts of the UK steel industry and associated supply chains suggested the UK steel industry was competitive in some products, the majority suggested **that UK mills faced a competitive disadvantage compared with EU competitors.** Although this study did not involve a full comparison of the cost competitiveness of sites and the drivers of this, a number of producers consulted highlighted **higher energy costs,³ a lack of investment, higher business rates and higher logistics costs as factors influencing competitiveness.⁴** For multinationals, this incentivises leakage of investment and R&D from UK plants to competing plants in the EU. **Taking steps to address these factors includes more capital investment and spend on process R&D alongside policy changes to secure long-term sustainability.** New entrants to the market could also provide further competition, which in turn could allow downstream buyers to buy UK-produced steel.

³ EAFs in particular are more exposed to energy costs differentials with European competitors.

⁴ A large number of the stakeholders consulted as part of this study raised energy prices (in particular) and business rates as issues affecting competitiveness. The producers consulted highlighted that these elements are outside of their control and as such there is a need to work closely with government to address these issues.

Customer service

Consumers also reported a mixed experience in relation to customer service. Some interviewees praised UK producers for their level of engagement and adaptability in meeting customer needs. Others raised challenges for the industry, including long lead times (particularly when compared with stockholders), a lack of willingness to deal with small order sizes and the timeliness of delivery. Many consumers would welcome closer engagement throughout the supply chain to ensure that designers, engineers and fabricators are fully aware of UK products and services. Given that many original equipment manufacturers (OEMs) are multi-national companies that specify the source of steel procurement to the supply chain, this is an opportunity to influence and change the model. Producers could also consider how they might meet smaller order volumes which currently go to stockists.

Unlocking supply chains

Alongside the issues of capacity, capabilities and competitiveness, there is a need for deeper and more responsive engagement with the supply chain, particularly in sectors such as construction and automotive where the scale of the opportunity is large.

In the automotive sector, UK-based OEMs operate sophisticated globally integrated supply chains and, given foreign ownership, many sourcing decisions are made outside the UK. This has two significant implications. First, it means that they source from producers that they have established relationships with and who are capable of meeting their needs cost-effectively across a number of locations not just the UK. Therefore, UK producers often need to be capable of matching the competition to supply key OEMs not just in the UK. Second, it means that steel producers will often seek to supply from the most cost-effective plant, which is often not in the UK, and which has a knock-on effect in relation to investment decisions and engagement with consumers further down the supply chain.

For the construction sector, the fragmentation of the supply chain within the sector has made it difficult for producers to engage throughout the supply chain. The biggest impact of this limited engagement is on the steel industry's ability to influence the construction sector in terms of helping shape design decisions and ensuring that there is a comprehensive understanding of how steel can be used in construction.

To compete against the global steel market, the industry must collaborate and innovate through the supply chain to improve the offer. Greater vertical integration might allow producers to capture greater value but may have unintended consequences if competing downstream fabricators switched supply to imports.

Producer engagement with the supply chain is further complicated by UK industry going through structural change and the hollowing out of supply chains. This was seen by respondents as a particularly prominent issue in the automotive sector, renewable energy sector and manufacturing, where domestic steel demand has declined as activities have been offshored.

The fact that producers are often unable to service small volumes has also meant that the role of the stockholder has become increasingly important in the UK steel industry. This has potentially significant implications for the UK steel industry as stockholders become the key target customers of importing mills who require that channel to be able to serve sophisticated or small customers in the UK. This growth in the UK stockholding segment has exacerbated the disconnect between producer and consumer and can inhibit continuous improvement and new product development. The UK steel industry has an opportunity to grow its influence with end users by addressing short-term service requirements and strategic development objectives. In response to this, harmonisation of digital procurement systems was suggested as another aspect where the UK steel industry lagged behind competitors and provided an opportunity to improve supply-chain linkages.

Aligning to market trends

Several sectors will undergo transformative changes in the medium term. It is important that the UK steel industry is aligned to and responsive to these market trends, particularly those where the scale of opportunity is greatest, such as construction and automotive.

In the construction sector there will be movement to higher-grade steels in the future. This is particularly important in the context of a range of different materials (concrete, glass-reinforced plastic and timber) that were seen to provide viable alternatives to steel in the construction process. The standardisation of design alongside R&D and engagement with the supply chain provides a real opportunity to increase the use of steel in construction projects, against the use of steel substitutes.

In the automotive sector, there are two big factors that have influenced and will continue to influence steel usage and particularly substitution to aluminium, composites and plastic: (i) vehicle electrification, and (ii) the emissions agenda which is driving a desire to reduce vehicle weights. This has an impact on the intensity of steel used as OEMs look for efficiency with an increasing move towards the use of higher-strength steels, aluminium, composites and plastics.

In response to this, the UK steel sector needs to ensure that it is influencing material choices in a timely fashion so that it aligns with OEM investment cycles. Alongside this, further investment in R&D would help the UK adapt to such changes and meet new demand. However, it should be noted that the commercialisation of some products is likely

to happen outside the UK if production of higher-value steels remains consolidated outside the UK. There may also be a role for government to think about whole lifecycle emissions of particular material use, rather than just impact on emissions of the vehicle when in use.

Assessing the impact of current barriers in capacity and capability

A headline finding from the study is that there is a £3.8bn p.a. future opportunity in UK steel demand identified in 2030. This is in revenue terms and is over and above the value of domestic market supply achieved by the UK steel sector in 2015.

It is possible to make an illustrative comparison between the capacity and capabilities of UK steelmaking assets in 2015 and this future demand opportunity. This only takes into account sites operating throughout 2015, assumes that UK sites continue to export at the volumes achieved in 2015 and that no investment is made in new or mothballed assets to improve product capacity or capability.⁵

Under this comparison, of the £3.8bn future opportunity in 2030:

- £0.7bn or 18% can be accessed by UK mills operating in 2015 – i.e. this much of the future opportunity could be realised if all spare capacity in UK assets was utilised;
- A further £2.0bn or 52% is outside the capacity of UK mills operating in 2015 – i.e. UK mills make these products, but even if assets were at full capacity, it is estimated that more than half the future opportunity could not be realised (subject to the above assumptions).
- A further £1.1bn or 30% is outside the capability of UK mills operating in 2015 – i.e. UK mills do not currently make these products and could not in the future without new investment in assets.

It is important to note that this is a crude comparison based on a snapshot of the industry in 2015. UK producers may decide to target domestic opportunities over exports if they are more profitable, or invest in restarting mothballed or new steelmaking assets if there are viable commercial opportunities. It is also unrealistic for a country to satisfy its entire steel demand from domestic producers. This comparison highlights some of the choices facing UK steel producers and policymakers in accessing a greater share of the future opportunity, working from the baseline of the position of the industry in 2015.

⁵ Sites not taken into account include sites that closed in 2015 (such as SSI's Redcar plant) and sites that were mothballed in at least part of 2015 (such as Newport, Sheerness, Llanwern HRC line). Spare capacity in UK combi mills has been allocated to higher value products first. The comparison assumes the 2015 product mix achieved in UK strip production is unchanged, due to constraints in operating capacity.

Realising the finished steel future opportunities: Cross-cutting enablers

The barriers identified above present a varied set of challenges to the UK steel industry winning a larger share of the future opportunity in UK steel demand. There is no single solution to each of the issues set out. In all cases, strategies for growing domestic market share will be a commercial decision for individual companies. The study does highlight a number of cross-cutting themes. These themes have the potential to better enable the UK industry to access the future opportunity and as such any future strategy for the sector should carefully consider and respond to each of these themes.

Investment capability

There is an urgent need to encourage investment in new capital equipment to close supply-chain gaps and enhance capability as well as create a step change in flexibility, productivity, and cost competitiveness by early adoption of technologies that have the potential for the UK to achieve competitive advantage as a world leader. This requires closer engagement with the customer and end users to better understand their market drivers and demand.

A major barrier for the UK steel industry is that the UK production infrastructure is already built, and a reluctance to uproot and replace 'sunk capital' before its end of life tends to limit advances to incremental development rather than encourage the adoption of the latest technologies being applied to greenfield developments elsewhere. The cycle is perpetual, as 'sunk capital' does not all reach end of life at the same time.

There is evidence that the business case for investment is challenging, due to the relatively low levels of return on capital employed. This barrier could be addressed by considering different business models, asset configurations and new technologies in conjunction with attention to some of the cost factors associated with manufacturing in the UK – all of which should also be underpinned by investment in process innovation.

Supply chain engagement

Greater engagement between producers and the steel supply chain building on strong relationships already in place would improve communication and collaboration between producers and end users on product design and material specification. Producers could consider supply-chain initiatives similar to the highly

successful engagement with architects, procurers and fabricators in the construction supply chain that has resulted in an increase in the steel intensity of commercial buildings.

The lack of flexibility in, or guarantee of, delivery from producers and global procurement policies from OEMs must be overcome if UK market share is to increase. An overcomplicated UK steel supply chain increases the distance between the producers and end users. Collaboration between UK suppliers would help identify opportunities to drive greater value and reduce wastage. This may require process innovation.

Such engagement, coupled with the UK's general business strengths, will also help to improve the attractiveness of the UK offer as a whole, with respect to international competitors, which would increase the likelihood of manufacturing being re-shored back to the UK. Customers have identified the fact that there is a single UK producer of many steel products as a barrier to increasing the overall UK market share, as consumers seek to de-risk their procurement policies. Producers could consider opportunities to increase the range of individual products. This will increase competition within the UK industry, but should allow the UK industry to compete more effectively with imports.

Research & development

The evidence collected identified concerns about whether the innovation performance from UK producers could keep pace with international competitors in the future. This was more relevant for some products than others.

In the short term, solutions will involve working in collaboration with supply chains and end users on product development, cost-reduction technologies, productivity innovation and transformation planning. **In the medium term, it requires large-scale piloting and upscaling facilities, including near net shape, raw material processing and other process compression and efficiency technologies, to de-risk and accelerate commercialisation. This will require enhancement of existing R&D facilities through capital investment. The cross-cutting barrier identified above relating to capability investment must be addressed alongside investment in R&D, or the higher value-added steels developed risk being commercialised outside the UK. Over the longer term, the clear opportunity for a step change in productivity, cost base and value-added product requires sustained investment in technical capability and facilities. In light of this, consideration should be given to whether existing R&D interventions for other sectors (Aerospace Technology Institute/Advanced Propulsion Centre) and other catapult centres (such as the National Composite Centre) could give similar benefits if it is replicated in the steel sector.**

Product development has historically required combined input between businesses that have recently become separated, and in the future some framework to address this deficit will be required.

Skills development

A number of producers, fabricators and consumers mentioned skill shortages in key areas such as metallurgy and engineering as well as the technical skills required to work with different grades and process skills such as production management. In addition, a number of consuming sectors talked about skills shortages in their own industries, with the potential to impact on sector growth. As a number of interviewees did not raise skills in the context of accessing future opportunities, this report cannot draw specific conclusions around the future skills requirements of the sector, although some skills gaps have been highlighted.

Therefore, in response to all these enablers there is a need to consider the role played by skills, and how upskilling could help to close identified gaps, particularly in technology and risk management capability.



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