

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.

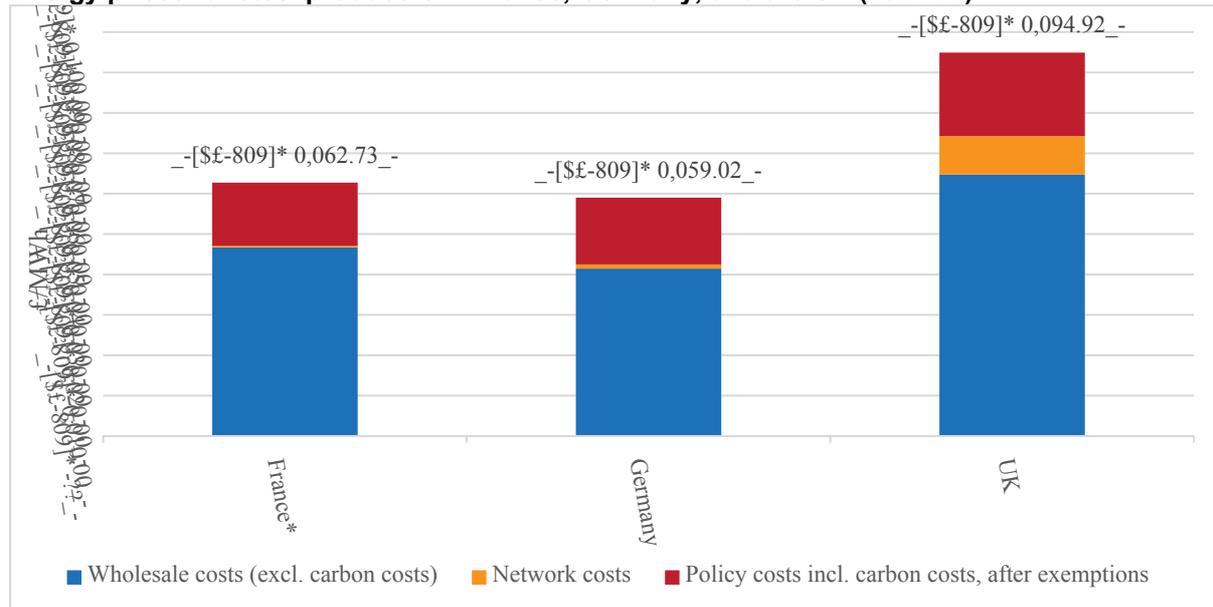
Submission to the Call for Evidence on Energy pricing and the future of the Energy Market

The comparison of UK wholesale prices and additional costs with the wholesale prices and additional costs across Europe.

Steel production is an energy-intensive process, and the production of millions of tonnes of steel each year consume vast amounts of energy. For the most energy-intensive producers, electricity represents approximately 20% of converting globally priced raw materials into finished steel products for consumers and can be a higher cost than labour for some. This, combined with being an intensively traded product (30-40% of the 1.9 billion tonnes of steel produced globally each year travelling across national borders), means that the steel sector operates on relatively thin margins. The high electricity prices in the UK lead to smaller profits and thus to less reinvestment for the industry.

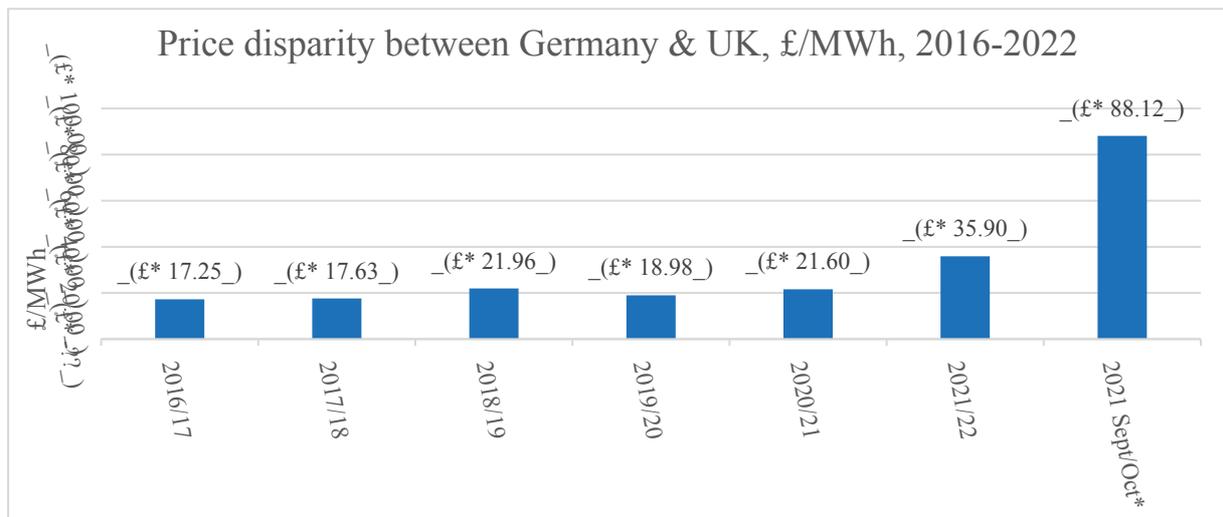
The electricity prices UK steel producers typically face in 2021/22 had reached £95 per megawatt-hour (MWh) compared to the estimated German price of £59/MWh and French price of £63/MWh. Therefore, UK production sites pay 61% and 51% more, respectively, than their main competitors. However, this price disparity increased to over £88/MWh in September and October, a significant increase compared to the average price gap of £20/MWh over the past five years.

Energy prices for steel producers in France, Germany, and the UK (2021/22)



The price disparity directly impacts competitiveness and equates to a total additional cost to UK steel producers of around £90 million per year compared to Germany. The more insidious impact is on long-term investment. All the major steel producers in the UK are part of multi-national companies with facilities in the EU and four also operating outside the EU. In this context, the cost competitiveness of each particular market is crucial to attracting investment. Persistent cost disadvantages in the UK lead to underinvestment, leading to further erosion of competitiveness. Over the past five years, the industry has paid £345m more for their electricity than their competitors in Germany. This has made it significantly more challenging to attract investment to the UK. Current Government policies do not adequately address this.

Figure 4: Price disparity between Germany & UK, £/MWh, 2016-2022



Note: To calculate the price disparity for September & October 2021, wholesale prices from Nord Pool Group, the UK ETS, and EU ETS prices have been updated to reflect the average prices in those months. Network charges and other policy costs remain constant.

Whilst gas and electricity prices rose over the past eight months across Europe due to increased gas demand in Asia and lower supply from Russia, the increase is considerably higher here in the UK. This is due to the UK using more natural gas for its electricity production than Germany or France, which use more coal and nuclear, respectively. Volatile wholesale prices have increased to record levels, peaking at £2,500/MWh, and the average wholesale prices (i.e. not including policy and network costs) in December reached £245/MWh, which was five times the 2020 average and 32% more than the German average at £185/MWh.

The energy crisis could force significant changes in the steel industry, with smaller or wiped-out profits and subsequent reductions in critical investment. Some producers are now making daily decisions about whether to produce or not based on power prices, which is disruptive, time-consuming, and damaging both in the short-term and the long-term. Consequences could include:

- Plants shutting down for increasingly extended periods
- Damage to the equipment that may take months to recover
- Intermittent production will cause poorer environmental performance with higher emissions
- Less efficient steel production, overall cost increases and subsequent loss of sales and market share.

Finally, it should be noted that the options for decarbonising the integrated steelmaking process (CCS, electrification, and hydrogen-based production) lead to increased electricity consumption. The sector consumed 2.5TWh of grid electricity, and with a sectoral switch to EAFs, the consumption would more than double to 5.5TWh and increase by five times for the affected sites. Hydrogen-based steel production would increase the entire sector's electricity demand to over 8.3TWh (assuming blue hydrogen is produced offsite via natural gas steam reforming), which would more than triple the whole sector's consumption, but increase the demand of the affected sites by almost nine times. Finally, CCS experiences energy losses significantly when capturing emissions, which will also lead to much higher electricity consumption. With the current disparity of £35.90/MWh, it would cost almost £200m more to operate an electrified steel sector in the UK than in Germany or almost £300m more to run a hydrogen-based steel sector. As such, it would be challenging to see investment in decarbonisation in the UK over its key European competitors. Instead, investment would flow towards the most cost-competitive market.

UK Steel has put forward the following recommendations to close the gap in industrial electricity prices:

1. **Implement German/French style network cost reductions:** With a model like Germany's, a 90% exemption is provided to all three elements of network charging (transmission, distribution, and balancing).
2. **Maximise the level of renewable levy exemptions:** The UK has only provided relief at 85% aid intensity, whereas in Germany, electro-intensive companies receive higher relief – paying a maximum of 0.5% of their GVA (average over three years). Outside of the EU, the UK should now provide 100% exemption.
3. **Provide 100% compensation for the indirect costs of carbon:** UK ETS prices have risen significantly, pushing the Total Carbon Price to almost £90/tCO₂, but EU industrial users are

not paying the Carbon Price Support of £18/tCO₂. Either the Carbon Price Support should be removed, or full compensation should be provided. Furthermore, the Government should also consider providing full compensation for the UK ETS aspect.

4. **Provide an exemption from Capacity Market costs:** Match the current 85% exemption level for the renewable schemes.
5. **Link UK ETS to the EU ETS:** UK ETS prices have diverged from the EU ETS, leaving UK electricity suppliers and their customers paying higher prices than their EU counterparts. Therefore, it must link the UK ETS to the EU ETS to avoid significant price divergence.
6. **Track industrial energy price disparities between countries:** Government should track the gap in industrial energy prices between the UK and other key competitors and the reasons for the differences to enable more informed policymaking. An update should be published every year alongside an Annual Energy Policy Statement giving a unified view for investors from the Government and regulator on the future of energy policy. The Belgian Government currently publishes an annual review of the impact of energy costs for energy-intensive, trade-exposed industries, headed up by the Commission for Electricity and Gas Regulation (CREG) and PwC.
7. **Temporary industrial wholesale cost containment mechanism:** To deal with the rapid rise in wholesale costs over the past year, the Government should introduce a wholesale price cap, ensuring that industry does not face higher wholesale prices than Germany.

Altogether, the above shows that the current energy market and policies for EIs do not work, threaten industrial competitiveness, discourage investment, and act as a fundamental barrier to industrial decarbonisation.

The mandate, role, and performance of Ofgem in setting regulation and supervising regulated entities.

UK Steel has worked closely with Ofgem on critical regulation and network reforms over many years. We have engaged constructively and in detail with reforms such as the Targeted Charging Review, Access and Forward-looking Charges Significant Code Review, and Balancing Services Charges Task Force, and we will continue to engage with the regulator in the future consultations and reforms.

Ofgem's remit is to protect all consumers from high energy costs, but it has previously focused primarily on reducing costs for domestic consumers – at the expense of EIs. UK Steel believes that Ofgem's regulatory framework should be updated to ensure that Ofgem is also required to enable the decarbonisation of UK EIs whilst maintaining their international competitiveness while also protecting the vulnerable and fuel poor.

Both BEIS and Ofgem should be required to assess the cumulative burden of policy costs on EIs. At present, every policy is evaluated in isolation, which ignores the cumulative burden of multiple policy costs. Each policy cost may not appear to impact EIs significantly, but when added together, numerous policy costs are making the UK an uncompetitive place to do business, and this must be recognised for action to be taken to prevent it.

We would also suggest that Ofgem should recognise the benefit of EI baseload demand on networks by reducing network costs, as implemented in countries such as France and Germany (see suggestion one above). Germany and France provide lower network charges to their energy-intensive industries due to their value to the energy system, which is not recognised in the UK to a similar degree. The sector reduces the need for system reinforcement through their flexibility, whilst their significant baseload demand raises average network demand and can increase demand if they receive signals of the grid requirement, supporting efficient network use. The demand management occurs due to the price signals received, whether these are wholesale market-driven, but recent decisions by Ofgem will remove or reduce these price signals, which may disincentivise the use of industrial flexibility and increase overall costs for EIs.

Furthermore, steelmakers have flatter and more predictable demand profiles than domestic users. They also consume relatively more electricity in the most helpful periods to the electricity grid, notably overnights and summer daytime periods. In these periods, excessively low transmission system demand drives record levels of change of frequency and constraint management expenditure by the Electricity Systems Operator (ESO). Baseload steel customers help moderate this expenditure. The network charging regime should recognise the vital contribution baseload steel producers make to moderating constraint and change of frequency costs by the ESO. There is currently no recognition of this contribution in either transmission or balancing charges.

Competing jurisdictions in mainland Europe recognise that baseload electricity users entail reduced system costs than domestic users' higher peaking demand levels. The German Government notes that *"The high predictability of baseload electricity consumption reduce[s] the need for balancing electricity and reserves as well as the need for re-dispatching. In general, the high predictability facilitates network planning and maximises the use of the generation fleet"*ⁱ. The German regulators expressly recognise this system benefit in the form of lower network tariffs for large baseload users than their less predictable, peakier, domestic counterparts. Similar principles should be adopted in the charging regimes in the UK.

As such, we believe that there are grounds to review Ofgem's remit to ensure that it fully takes into account the impact on EIs, recognises their benefits to the grid, and provides adequate protection against uncompetitive energy prices to enable industrial decarbonisation.

January 2022

ⁱ European Commission (2018), Commission Decision Of 28.5.2018 on Aid Scheme, SA.34045 (2013/c) (ex 2012/nn), section 69, https://ec.europa.eu/competition/state_aid/cases/247905/247905_2014230_596_2.pdf