

Aldersgate Group response to Energy Security and Net Zero Committee's inquiry into *Securing the domestic supply chain*

January 2024

Background

The Aldersgate Group represents an alliance of major businesses, academic institutions and civil society organisations, which drives action for a competitive and environmentally sustainable UK economy.¹ Our corporate members represent all major sectors of the economy, such as Associated British Ports, Aviva Investors, BT, CEMEX, the John Lewis Partnership, Johnson Matthey, Michelin, Nestlé, Siemens, SUEZ, Tesco, and Willmott Dixon. They believe that ambitious environmental policies make clear economic sense for the UK, and we work closely with our members when developing our independent policy positions.

The Aldersgate Group has completed a significant body of work on UK industry, the low-carbon energy sector, and supply chains. For more information, please see:

- The Aldersgate Group, 2023, [Keeping Pace in the Global Race to Net Zero – Responding to the Inflation Reduction Act](#)
- The Aldersgate Group, 2023, [A zero-carbon power grid and the electrification of heavy industry: how to deliver on a twin challenge](#)
- The Aldersgate Group, 2022, [The missing link establishing strong UK supply chains for low carbon industrial products](#)

Questions

1) How can UK plc capture its fair share of the economic potential of emerging or less developed energy technologies?

The UK's industrial sectors and wider supply chains already contribute £152 billion in GVA to the UK economy and support over 1.4 million jobs in areas primarily outside of London and the South East.² To meet the Government's goal of decarbonising the UK's energy sector by 2035, it will require access to a range of industrial goods and services, such as green steel for wind turbines, chemicals for battery storage, and glass for solar technology. This presents a significant economic opportunity for the UK manufacturing sector to deliver those low-carbon materials, products and services.

Currently, however, the UK's low-carbon energy sector is import dependent for many raw materials. For example, UK demand for steel far exceeds domestic production, while simultaneously exporting around 45% of its steel output,³ primarily in the form of low value

¹ Individual recommendations cannot be attributed to any single member and the Aldersgate Group takes full responsibility for the views expressed.

² WPI Economics (Aldersgate Group, 2023) [Economic benefits of industrial decarbonisation – A low carbon industrial future for the UK](#)

³ University of Cambridge (2019), [Steel Arising: Opportunities for the UK in a transforming global steel industry](#)

steel products. To meet demand for high value finished steel products, the UK then relies on imports from overseas. This forfeits a significant opportunity for domestic producers. In the offshore wind sector, a single 10MW turbine uses over £880,000 worth of steel⁴, most of which is imported from China. With the UK looking to quadruple its offshore wind capacity to 40GW by 2030 (the equivalent of 4,000 10MW turbines), and the renewable energy sector acting to reduce the embodied emissions of its infrastructure, there is an enormous economic opportunity for low carbon steel making in the UK from power sector demand alone. There is also a huge international opportunity, with the EU alone looking to achieve 240GW of offshore wind capacity by 2030.

Similarly, in the solar power sector, the crystallised silicon panels that dominate solar networks in the UK are largely imported from abroad. However, as an innovator in low carbon technology, the UK is well positioned to displace imports with low carbon alternatives. UK solar panel manufacturer OxfordPV has developed the world's most efficient solar cell, which, unlike traditional panels, can be made into a thin, transparent film and applied to uneven surfaces and windows.⁵ Not only does this reduce the need for vast areas of land for solar farms, but it also unlocks a new portion of the consumer market previously deterred by the appearance of solar panels. These cells use perovskite, the most abundant mineral on Earth, which is "affordable, sustainable and eventually could replace silicon entirely" – for which the UK relies on imports.⁶ With support to scale up, this offers the UK's glass sector an enormous opportunity to tap into a market for more efficient and attractive solar technology to meet domestic and international demand at both a domestic and industrial level.

By establishing strong supply chains in the UK that are resilient and adaptive to both short-term shocks and long-term structural changes, with clear visibility of goods from raw materials to finished products, domestic producers will benefit from greater access to global low-carbon markets while also meeting a greater level of domestic and international demand.

2) What more can the Government do to encourage greater domestic supply chain investment in the energy industry by 2035, including through the Contracts for Difference scheme?

To encourage greater domestic supply chain investment, businesses need a more competitive business environment, with long-term price certainty and mechanisms to create and grow the market for low-carbon materials, products and services.

Contracts for Difference regime

The Contracts for Difference (CfD) regime has helped the UK to become a world leader in offshore wind while delivering cost reductions that would have seemed unimaginable 20

⁴ BVG Associates (The Crown Estate and the Offshore Renewable Energy Catapult, 2019), [Guide to an offshore wind farm: Updated and extended](#)

⁵ Aldersgate Group (2022), [The Missing Link: Establishing Strong UK supply chains for low carbon industrial products](#)

⁶ Oxford PV (2023), [Oxford PV sets new solar cell world record](#)

years ago. However, as the power market changes and other countries seek to attract renewable developers, the CfD regime must be amended to ensure it remains an effective mechanism for attracting new investment in renewables and the domestic supply chain.

The importance of long-term policy and price certainty was evident in the Government's CfD Auction Round 5, which attracted no bids for new offshore wind farms. Whilst the Government has now raised the administrative strike price for offshore wind by 66% for the next CfD round, there is more the Government can do to maintain its effectiveness.

Early action to attract developers to voluntarily switch to a CfD is particularly vital, as developers often hedge for several years, meaning it will take a while to realise the benefits of voluntary CfDs (vCfDs). The budget for the latest round of CfDs is also significantly smaller than needed to stimulate the scale of investment in renewables required to decarbonise power, and must be increased. Moreover, while annual auctions are a welcome change, clarity on pot structures, administrative strike prices and delivery years for future allocation rounds is needed to create certainty and confidence in CfDs.

The Government could also look to expand the scope of the CfD regime. The UK's CfD regime is a model that is being replicated across the world, including in Canada and Germany, where Carbon CfDs (CCfDs) are being implemented. The UK CfD regime must evolve to remain an effective mechanism for attracting new investment.

Evolution must make hydrogen, CCUS and SAF scalable in a competitive domestic market. The scheme could look to mirror the US's Inflation Reduction Act by including conditionality that incorporates non-price factors. This could include stipulations that supply chains and jobs are based in the UK, for example by introducing local content requirements or requiring employers to invest in skills training.

Carbon Border Adjustment Mechanism (CBAM)

The Government's recent announcement that it will implement a UK CBAM by 2027 on some of the most emissions intensive industrial goods imported to the UK including aluminium, cement, ceramics, fertiliser, glass, hydrogen, iron and steel sectors, will help boost investment in the domestic supply chain.

A CBAM will help to prevent low cost, high carbon imports from gaining a growing market share at the expense of low carbon goods produced by UK firms. This will create a level playing field for low carbon domestic firms, by placing a fair price on carbon for both domestic and international producers. Importantly, a CBAM can ensure that the UK is still able to harness and benefit from the best available global technologies for cost-effective decarbonisation, without sacrificing the opportunities for domestic growth.

As border adjustments are complex policy mechanisms that may take time to be implemented, the UK should collaborate with industry in the interim to review and restore tariffs on imports of industrial products that were lost upon the UK's departure from the

European Union, as has been done with quotas on steel imports. It is also unclear how the Government plans to phase out free allowances under the UK's Emission Trading Scheme as the CBAM is introduced. This is essential to ensure the overall system incentivises decarbonisation while protecting industry.

Mandatory product standards

The UK Government has announced its intention to work with industry to establish a set of voluntary product standards as well as a framework which measures the carbon content of goods. To maximise the positive impact of this measure, though, it is vital that the Government looks at making the proposed voluntary product standards mandatory.

As we know from extensive discussions with industry, voluntary standards are unlikely to produce the change needed to establish markets for low carbon industrial products.

Mandatory product standards will help to support the competitiveness of UK industry, by preventing cheap, high carbon imports from undermining goods produced in the UK. This will also mean that companies pushing further to reduce emissions are not put at a competitive disadvantage.⁷

A 2022 Aldersgate Group report, developed with extensive engagement with industry, has detailed steps that the Government should take for successful implementation of mandatory product standards.

3) Does the UK have the supply chain capacity to deliver the required energy infrastructure by 2035, including an expanded electricity network?

To deliver a decarbonised power system by 2035, the UK needs to install 200GW of low carbon generation and storage infrastructure in the next 12 years.⁸ That level of deployment is unprecedented; decisive government policy is needed to further accelerate investment in generation, networks and storage, and to incentivise industrial electrification by the government's target date of 2035.

Major and rapid network investment will be needed to accommodate this dramatic increase in generation capacity and to deal with sizeable net power flows across the country due to the location of variable renewables such as onshore and offshore wind. The increased delivery rate for this infrastructure is many times the recent trend and ramping up will severely test the global supply chain. This is a challenge but also an opportunity for greater local content, which will require a national endeavour, with industry and Government working collaboratively to make the best use of scarce resources.

⁷ With extensive industry engagement, the Aldersgate Group has detailed steps that the Government should take for successful implementation of mandatory product standards. See Aldersgate Group (2022), [How product standards can growth the market for low carbon industrial products](#).

⁸ Aldersgate Group (2023), [A zero-carbon power grid and the electrification of heavy industry: how to deliver on a twin challenge](#)

The UK is not alone in requiring additional electricity network infrastructure and extended lead times for critical equipment are already reported. Global capacity will focus on countries where it is easier to do business. Factory capacity can adjust over time, but skilled resources will take longer. Government and Ofgem must work together to improve procurement patterns to make better use of key resources, with greater standardisation, less transactional project procurement, and greater collaboration across the whole industry.

4) To what extent would growing the domestic supply chain bolster UK energy security?

According to a 2023 OECD report, “the development of secure and competitive supply chains in clean energy technologies is critical to ensure a resilient clean energy transition and energy/economic security”.⁹

As mentioned in our response to question 1, the UK’s low-carbon energy sector is import dependent on many raw materials, such as steel, glass, and ceramics. Geographical or market concentrations in clean energy supply chains create bottleneck risks where material shortages, climate change and natural disasters, or policy decisions could disrupt clean energy supply chains – negatively impacting UK energy security.

As the UK looks to scale up its renewable energy generation capacity to strengthen energy security, shorter supply chains and domestic production can support the onshoring of different aspects of manufacturing – thus creating a positive job, and potentially new industry, benefit. However, it is also worth noting that it is not always possible to replace foreign imports with domestic products, especially with critical raw materials that the UK does not have access to. Here, fostering open markets and developing strategic partnerships is key to securing global supply chains.

Boosting domestic supply chain resilience also brings economic benefits. By establishing domestic supply chains for low carbon industrial products in the UK, domestic firms can draw on their historic strengths as technological innovators and successfully pivot to the creation of the next generation of goods and services needed to deliver net zero.

5) What are the key concerns with respect to the availability of raw materials in the supply chain and how might those be addressed?

The retention of critical raw materials is key in mitigating dependence on fluctuating global supply flows and the few countries to whom manufacturers are beholden for precious resources. Similarly, by maximising resource efficiency and circularity, producers can decarbonise their supply chains while pivoting to increased production of low carbon, high value secondary products.

⁹ The Organisation for Economic Co-operation and Development (2023), [Strengthening Clean Energy Supply Chains for Decarbonisation and Economic Security](#)

At present, many waste management and sorting companies are drawn to the export market as it is simpler and cheaper to ship waste to other countries, rather than to sort and resell on the UK market. Such practices have recently come under fire from environmental, humanitarian and civil society organisations, who argue that richer nations are shifting the responsibility of responsible waste management onto poorer nations.¹⁰ In some cases, such as end-of-life tyres and scrap steel, sorting waste materials is not an issue; there are simply insufficient incentives to retain these materials in the UK market. The Government must therefore create a business environment more conducive to investment in waste recovery and sorting practices and develop incentives for the retention of these materials in the UK market on the other.

To stimulate investment in the more efficient sorting of valuable resources that already exist within the UK, the Government should offer tax relief on investments that create cheaper, more efficient materials recovery and sorting practices. Beyond providing incentives to sell to the UK market, the Government can increase circularity and resource efficiency by facilitating technological development in the waste management sector. At present, valuable materials such as scrap steel, precious metals, and rare earth elements (such as cobalt and lithium) are shipped abroad as bundles of waste, due to expensive sorting processes, such as the verification of purity and material integrity. Cheaper, more efficient processes are needed to incentivise waste management and sorting companies to handle and sell recyclable materials to the UK industry, which would benefit from greater availability of recycled materials. To ensure that such investments lead to intra-UK trade across value chains, the Government should utilise its position as an intermediary – or ‘matchmaker’ – to establish collaboration between manufacturers and waste management and sorting companies.

All government departments must also embed circular economy principles in their policy-making to ensure regulations, fiscal incentives and market mechanisms are aligned to support resource efficiency and capture the maximum value of materials in use.¹¹

¹⁰ Aldersgate Group (2022), [The Missing Link: Establishing Strong UK supply chains for low carbon industrial products](#)

¹¹ For more information, see: [Aldersgate Group \(2021\), Closing the loop: Time to crack on with resource efficiency](#)