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The Net Zero-Trade Nexus: Opportunities and risks for the UK

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Contents

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Executive summary

Two-thirds of the world's largest companies have committed to ending their contributions to climate change within the next few decades and the vast majority of the global economy now sits under some form of commitment to reaching net zero emissions. The drive toward decarbonisation is transforming global supply chains and trade relationships, fuelled in part by the growing adoption of net zero-compatible policies, regulations, and international standards.

Already, countries' exports are being shaped by the resultant shifting demand in destination markets, towards clean technologies and away from fossil fuels. Those that fail to make the transition at home risk losing share in those changing export markets.

To examine how these changes could affect the UK, the world's fourth largest exporter, we have developed a dataset comparing 2023 UK trade data with details of national- and company-level net zero targets from the Net Zero Tracker. For the first time, the UK's exports can be analysed based on trading partners' net zero commitments, whether these are bound by law, and the percentage of companies in those countries aiming to reduce full value chain emissions (scope 3) to net zero.

The findings highlight several risks and opportunities associated with the UK's largest trading relationships. Our analysis shows:

- The future is clean: **94%** of the UK's exports by value go to jurisdictions that have net zero targets. These exports, to 146 nations, are worth **£796bn** to the UK economy. **91%** of UK exports by value go to jurisdictions that have net zero targets enshrined in law or outlined in official policy documents.
- **54%** of UK exports go to the **26** trade partners (including the EU) that have enshrined net zero in law — the strongest level of climate commitment.
- Representing **$13.3tn (£10.3tn)** in annual revenues, 412 (of 951) companies headquartered in the UK's 10 largest trading partners — the EU27, the US, China, Switzerland, Canada, India, Singapore, Australia, U.A.E., and Japan — aim to drive their full value chain emissions (including scope 3) to net zero by mid-century.
- Amid growing concerns about a potential squeeze on UK exports to the US under a protectionist Trump administration, Net Zero Tracker data shows notable climate ambition among US states. When weighted by GDP, **half (49.6%) of US states have net zero targets**. Additionally, two-thirds (66.2%) have either net zero or emission reduction targets of at least 80% by 2050. US firms with net zero commitments collectively generate over **$10.2 trillion (£7.9tn)** in annual revenues.
- **135** EU companies with net zero targets fully cover scope 3 (full value chain) emissions, **53** of which are headquartered in France and Germany.
- In the **manufacturing** sector, 53 (of 114) companies headquartered in the UK's 10 largest export partners aim to drive their full value chain emissions (including scope 3) to net zero by mid-century, representing **$1.7tn (£1.3tn)** in annual revenues.
- These net zero and scope 3 commitments will reshape global trade dynamics and relationships. As the world's fourth largest exporter, the UK's economic success will depend on how it navigates these shifting dynamics and leverages its green comparative advantage across a range of low-carbon goods and services.

By decarbonising its own economy, reducing its own carbon footprint, and thereby lowering the carbon footprint of its products, the UK can position itself as a more attractive, lower-carbon supplier for companies committed to driving down their supply chain, or scope 3, emissions.

Despite being a services-oriented export economy, the UK possesses expertise across a diverse range of green manufacturing sectors. The British export mix of tomorrow will have to look radically different from those of today, as demand for high-carbon commodities is progressively constrained, and demand for low-carbon products rises.

- Analysis of export partner policy commitments point to growing export opportunities in the **power sector, green steel**, **heat pump** and **electric vehicle** industries as well as more nascent areas such as **low-carbon fertiliser** production and **transition-as-a-service (TaaS)**.

Alongside exports, the UK seeks to attract foreign direct investment (FDI) to help grow its net zero industries. Its own array of policies and incentives, helping to stimulate its own domestic market, will determine how successful it is in this venture, as well as underpinning its future export potential.

The UK's ambitious new nationally determined contribution (NDC) aims to cut emissions by 81% by 2035, sending a strong signal to the world that it is 'open for green business.' By reaffirming its commitment to multilateral climate leadership and committing to fair, reciprocal trade relationships, the UK can strengthen this message.

Although the above trends are likely to shift when US President-elect Donald Trump assumes office in 2025, many individual states maintain independent climate policies. In addition, current clean energy legislation is driving job growth, particularly in Republican-leaning states, which makes dismantling such policies politically challenging.

1. Introduction

Under the terms of the Paris Agreement, nations commit to progressively upgrade their ambitions to reduce greenhouse gas emissions. Translated to policy, these commitments will reconfigure global trade, as carbon pricing mechanisms make high-emitting goods and activities less competitive, while energy security and geopolitical competition will become less contingent on commodities such as oil and gas, and more contingent on technology supply chains. In this context, the UK government has recognised the growing demand for low-carbon products as a 'global market opportunity of £1 trillion for British businesses in the period to 2030'.[1]

To establish a picture of where those opportunities lie, we compared the Net Zero Tracker's unique, global dataset of climate commitments at the national and company levels with UK trade data. Incorporating recent research from the field of transition economics, the report identifies existing and emergent British manufacturing and services strengths that, given appropriate support, will enable the UK to plug into green supply chains and develop a competitive edge in the global low-carbon economy. The report reveals that, through the deployment of targeted policy to strengthen investor confidence, the UK stands to benefit from a virtuous circle of enhanced green trade, improved domestic economic growth, and lower emissions.

With a Trump election win signalling once again a US retreat from global and domestic climate initiatives, the UK has an opportunity to show bold leadership on green policy and trade, in turn attracting fresh investment and further consolidating the nation's status as a net zero pioneer.

1 Department for Business & Trade, Invest 2035: the UK's modern industrial strategy, 2024

2. Summary of data and methods

The findings outlined in this report were based on a dataset comprising UK Office for National Statistics (ONS) trade data for 2023, overlaid with country-level data from the Net Zero Tracker database.[2]

A total of 241 trading partners were listed, comprising 239 individual nations and territories, plus an all-world total, in addition to a group comprising all EU27 nations, to enable quick national comparisons with whole-of-EU policy conditions. The UK's top export and import partners were ranked, from 1-10, by total value in GBP. ONS data for export and import totals by value were used, plus the percentage of overall trade represented by each jurisdiction.

Net Zero Tracker data on each trading partner's net zero end date (the year that country has stipulated it will achieve net zero emissions) were added, along with whether the country had stipulated its net zero goal according to law, or whether the pledge was made in another, less binding form, such as in a policy document or in a public declaration. In some cases, countries have declared that they have already achieved net zero; in others, no such commitment has been made or is available.

Once compiled, the database enabled trading partners to be filtered according to the value of their trade relationships with the UK, and by current net zero ambition. To avoid double counting in calculations involving the EU, aggregate figures for the EU27 were used, with individual EU member nations excluded.

The Net Zero Tracker defines the following end target commitments as equivalent to 'net zero' end targets. See the Net Zero Tracker's Methodology and Codebook for more details.

- Carbon negative
- Carbon neutral(ity)
- Climate neutral
- Climate positive
- Net negative
- Net zero
- Science-based target
- Zero carbon
- Zero emissions
- 1.5˚C target

Countries and companies using the following end target commitment terms were defined as not having net zero targets, as these terms reflect only partial mitigation commitments or no commitment whatsoever:

- Emissions reduction target
- Absolute emissions target
- Emissions intensity target
- Reduction vs BAU
- Other target

2 Department for Business & Trade, Trade and investment core statistics book, 2024

- No target

Where applicable, currency conversions were carried out using xe.com platform using the reference date November 1, 2024.

Not all targets are created equal

It should be noted that within each of our net zero status categories, from states that have enshrined net zero in law to those that have yet to specify a target date at all, there is broad divergence. Perhaps the broadest range of divergence exists between nations that fall into the category 'In policy document'. Such nations include China, which, while it has an in-policy commitment to achieving carbon neutral status by 2060, is rolling out renewable energy and electrification infrastructure at a faster rate than any other nation.[3] It should be noted that, while China lacks a formal net zero law, the climate and energy indicators of its 14th Five Year Plan are binding.[4]

The same net zero classification, however, also applies to Saudi Arabia, which is doing little to decarbonise its economy, while at the same time planning to increase oil production and sales. Saudi Arabia's climate ambition is rated as 'critically insufficient' by Climate Action Tracker (CAT).[5] Similarly, Russia is on paper committed to net zero in policy, with a goal of carbon neutrality set for 2060, but as CAT notes, the country's current policies 'indicate no real commitment to curb emissions'.[6] This category, then, encompasses a very wide range of action and ambition.

Export partner net zero-related policy analysis

We conducted desk-based research to review the economic transition policies of the UK's largest trading partners. A variety of resources were used, including Climate Action Tracker country analyses, UK export data from the Department for Business & Trade, data from the World Bank's World Integrated Trade System, and country reports from the International Energy Agency.

It should be noted that both national- and company-level targets are subject to change.

3 Carbon Brief, China's emissions set to fall in 2024 after record growth in clean energy, 2023

4 Carbon Brief, What does China's 14th 'five year plan' mean for climate change?, 2021

5 Climate Action Tracker, Saudi Arabia policies & action, last updated 2023

6 Climate Action Tracker, Russian Federation policies & action, last updated 2022

3. UK exports and net zero commitments

3.1. Overall trade with net zero countries

Using UK Office for National Statistics (ONS) trade statistics and data from the Net Zero Tracker database, we cross-referenced a total of 241 jurisdictions and trade blocs' net zero commitments with their trade relationships.

The vast majority of the UK's exports by value — 94% — go to 146 jurisdictions (including the EU) with net zero targets. Worth £796.3bn, these exports represent the core of British value creation. 91% of UK exports by value go to jurisdictions that have net zero targets enshrined in law or outlined in official policy documents. Significantly, 26 of Britain's trade partners (including the EU) have enacted a legally binding net zero law. These jurisdictions accounted for the largest share of UK trade in 2023, buying 53.5% of British goods and services with a value of £454.1bn.

The EU's 27 states are bound by law to achieve climate neutrality collectively by 2050. The UK sends 42% of its exported goods and services to EU member states, with four countries — Germany, Ireland, the Netherlands and France — comprising 25% of the UK's export market.

The US, which has its net zero target in a policy document, is the UK's most significant single trading partner nation, being the destination for 22% of British exports with a value of £191.5bn, and the origin of 13% of imports, valued at £119bn. British exports to the US grew almost 4% in the five years to 2023.

Net Zero Tracker data shows that 19 individual US states have a net zero commitment. Collectively, these states control a combined GDP (PPP) of $10.02 trillion, comprising 49.6% of the US total.[7]

China, the UK's third most significant trade partner after the US, with a net zero emissions target of 2060, is the destination for 3.6% of British exports by value (£31.5bn). ONS data indicate that, over five years, UK exports to China shrank by 1.4%, while imports grew by 3.9%.

£17.4bn of British exports — 2% of the total — go to the 55 countries that have only 'proposed' to set net zero targets.

The largest increases in UK exports to G20 countries over a five-year period between 2019 and 2023 were recorded for India (+6.4%), Brazil (+5.6%), Saudi Arabia (+5.3%), the US (+3.8%) and Turkey (+3.4%) — states that have not yet committed net zero into law, but which have a net zero date in policy. ONS data indicate modest export growth with Canada (+2.6%) and Australia (+1.2%), two major states with net zero commitments in law.

The steepest declines in exports to G20 countries were with Russia (-22.8%), South Korea (-3.6%), Argentina (-3.4%), Japan (-3.2%) and South Africa (-3%).

Using country-level findings on the UK's key trade relationships, we added a further layer of granularity by looking at the net zero commitments of the world's largest[8] companies headquartered in the UK's top 10 export destinations: the EU27, the US, China, Switzerland, Canada, India, Singapore, Australia, United Arab Emirates, and Japan. In 2023, these 10 partners imported more than £700bn in British goods and services, equivalent to 81% of UK export value. Our data reveals that 951 (out of 1,642) major companies headquartered in these 10 export partners have net zero commitments.[9]

I. Green comparative advantage: the UK's 'net zero' export sectors

The UK has made substantial progress in decarbonising its economy and decoupling emissions from economic growth. Thanks in large part to the Climate Change Act (2008), the country has a strong framework and 'legal metronome' for reaching

7 The 19 US states with net zero targets are California, Colorado, Delaware, Hawaii, Illinois, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Montana, Nevada, New York State, North Carolina, North Dakota, Rhode Island, Virginia and Washington State. We used Purchasing Power Parity (PPP) GDP figures from 2020, the latest available consistent data across all 50 US states.

8 The Net Zero Tracker assesses the world's largest 2,000 publicly listed companies and the world's largest 100 private companies.

9 See the Methodology section for details on Net Zero Tracker scope.

net zero emissions by 2050. Government figures show that between 1990 and 2022 the UK cut territorial emissions by 50%, making it the first major economy to halve its emissions, while the economy grew by nearly 80%. The UK has been recognised as a decarbonisation pioneer, not only in the sphere of infrastructure where it led an early push for large-scale offshore wind energy deployment, but also in terms of policy and legislation, being one of the first nations to adopt a net zero target in law.

UK business interest group the CBI finds that, collectively, these conditions have better enabled the UK to 'capture the economic opportunities associated with the transition'.[10] Chief among those opportunities is the potential for green trade, with research indicating that, by 2050, 'UK low-carbon goods exports could be worth more than the UK's entire exports in 2015'.[11]

In manufacturing, according to research group IPPR, the UK has a current competitive edge in making 49 — about one third — of 143 'green' products identified as being critical to delivering net zero. The UK's green manufacturing potential is particularly strong in wind energy, green transport, heat pumps, industrial and environmental monitoring tech, and the monitoring equipment needed for electrical grids.[12]

The UK is the world's second largest exporter of services after the US, with particularly strong offerings in financial services, insurance and IT. The UK's share of services as a proportion of exports is about twice that of the OECD average, and 1.8 times the global average, with services comprising a record 56% of total exports in Q3 2023.[13] This being the case, the CBI notes that rising demand for both green finance and digitisation expertise could make the UK 'the world's top destination of choice' for the services needed to achieve net zero — a view echoed in the government's recent 'Invest 2035' green paper.

Green finance is widely regarded as a crucial lever for the net zero transition. The UK's lead is due in no small part to the UK's 2022 adoption of mandatory climate-related disclosures for the biggest companies — the first G20 nation to install such rules.[14] This move, along with a suite of policy choices and private initiatives, has helped London to consistently place first on the Global Green Finance Index. The Resolution Foundation think tank notes that the UK government's proactive measures to stay ahead of the curve have 'created the basis for the UK to continue leveraging its specialisation in financial services and potential for financial innovation in the transition to net zero'.[15]

Recognising this in its recently released 'Invest 2035' industrial strategy, the government has pledged to 'partner with the financial services sector to pivot to export to new and growing markets' and to 'make the UK the location of choice for green business to finance the net zero transition'. Export partners in middle- and low-income countries hoping to boost investment in green infrastructure could benefit from UK green finance leadership, as highlighted in a recent speech by Foreign Secretary David Lammy.[16]

Professional and business services — a miscellaneous category that incorporates such activities as legal services, accounting, management consultancy, architecture, engineering and more — denotes another category of service in which the UK is a leader. Dubbed PBS, the broad nature of this category means that it generates the largest share of UK export income, with government figures indicating 'business services' exports amounted to £172 billion in the four quarters to June 2024, compared with £96.6 billion for financial services exports. PBS has been singled out as one of eight key 'growth driving sectors' prioritised in the government's Invest 2035 industrial strategy; the next phase of the strategy will entail an assessment of each sector's contribution to net zero and economic security.[17] According to McKinsey, the UK's competitive advantage in green PBS could see it capture up to 3% of the $4.5 trillion (£3.5 trillion) in capital investment the company forecasts will be needed for the net zero transition.[18]

10 CBI, Going for Green: The UK's net zero growth opportunity, 2023
11 ECIU, Net zero: economy and jobs, updated 2022
12 IPPR, Manufacturing matters: The cornerstone of a competitive green economy, 2024
13 Resolution Foundation, Services account for a record share of Britain's exports – but they are increasingly concentrated in London, 2024
14 Department for Business, Energy & Industrial Strategy, UK to enshrine mandatory climate disclosures for largest companies in law, 2021
15 Resolution Foundation, Growing clean: Identifying and investing in sustainable growth opportunities across the UK, 2022
16 Foreign, Commonwealth & Development Office, The Kew Lecture: Foreign Secretary's speech on the climate crisis, 2024
17 Department for Business & Trade, Invest 2035: the UK's modern industrial strategy, 2024
18 Chartered Institute of Export & International Trade, Green services exports and a cohesive industrial strategy vital to net zero success, say experts, 2024

As economists Amr Saber Algarhi and Konstantinos Lagos noted in an appraisal of unexpectedly positive UK trade figures for 2022: 'Long-term policies that add value to the UK economy and increase the range of goods and services the country exports will determine if 2022's figures marked an anomaly — or reinstate the UK as a global powerhouse.'[19]

II. The UK's current goods exports

A look at the products and commodities currently exported by the UK reveals the centrality of high-emitting activities to the country's income from trade. The adoption of sweeping pro-decarbonisation policies by almost all of the UK's export partners therefore implies significant changes to the country's export and manufacturing base are needed, as demand for goods used in high-emitting activities diminishes and the need for low-carbon products grows.

For example, the UK's #1 export, comprising 9.6% of the top 30 exports by value, is mechanical power generators, which include diesel generators and gas turbines, while the fourth most valuable export by value is crude oil. Demand for these exports will be increasingly constrained as emissions reduction policies in export partner nations take hold. Meanwhile, with cars being the UK's #2 export, the adoption of zero-emission vehicle mandates in all of the UK's 12 top export partners implies a rise in future demand for battery electric vehicles, and a fall in demand for cars with conventional petrol and diesel engines.[20]

19 The Conversation, The UK has surged to become one of the biggest exporters in the world – but this isn't all good news, 2024

20 ECIU, Electrifying growth: Exploring what electrification could mean for the UK's car industry, 2024

Rank, 12 months to August 2024	Commodity	Exports (£m) 12 months to August 2024	% of totalgoods exports, 12 months to August 2024
1	Mechanical power generators (intermediate)*	36,074	9.60%
2	Cars	34,395	9.10%
3	Medicinal & pharmaceutical products	24,751	6.60%
4	Crude oil	17,592	4.70%
5	Aircraft	12,619	3.40%
6	Refined oil	12,481	3.30%
7	Scientific instruments (capital)	11,720	3.10%
8	Unspecified goods	11,584	3.10%
9	Non-ferrous metals	11,177	3.00%
10	General industrial machinery (capital)	10,267	2.70%
11	Beverages & tobacco	10,119	2.70%
12	Miscellaneous electrical goods (intermediate)	9,896	2.60%
13	General industrial machinery (intermediate)	8,725	2.30%
14	Miscellaneous metal manufactures	8,516	2.30%
15	Specialised machinery (capital)	8,112	2.20%
16	Other manufactures (consumer)	8,111	2.20%
17	Telecoms & sound equipment (capital)	6,913	1.80%
18	Organic chemicals	6,852	1.80%
19	Metal ores & scrap	6,098	1.60%
20	Toilet & cleansing preparations	5,718	1.50%
21	Miscellaneous electrical goods (capital)	5,710	1.50%
22	Other chemicals	5,664	1.50%
23	Road vehicles other than cars (intermediate)	5,003	1.30%
24	Iron & steel	4,961	1.30%
25	Gas	4,247	1.10%
26	Office machinery (capital)	4,239	1.10%
27	Road vehicles other than cars (capital)	4,094	1.10%
28	Works of art	3,723	1.00%
29	Inorganic chemicals	3,597	1.00%
30	Clothing	3,477	0.90%

Table 1: *Top 30 UK goods exports, non-seasonally adjusted, at current prices (£ million). Source:* ONS[21]

*In this context, 'Intermediate' refers to products that are components of a larger, more complex system, rather than a standalone, finished product.

21 gov.uk, UK trade in numbers, 2024

3.2. Examining the UK's top ten export partners

As well as overlapping net zero and trade data across the UK's largest export markets, we examined the enabling and regulatory environments in these markets, including across three net zero domains: electricity, industrial policy and battery electric vehicles (BEVs).

Net zero-related policies and regulations provide clues regarding the direction of travel of these markets, including which growth sectors the UK could be targeting strategically.

Country (including EU27)	% of UK exports (2022)	Net zero target?	Climate Action Tracker rating	Climate Framework Law?	Electricity policy targets	Industrial policy targets	Battery electric vehicle (BEV) policy targets
EU27	42.1%	In law	Insufficient	Yes	42.5% of electricity generation from renewable sources by 2030	Ensuring that by 2030, EU manufacturing can meet 40% of EU demand for solar and wind power, batteries, heat pumps, electrolysers, fuel cells, biogas and CCUS	All new cars and vans sold in Europe to be zero-emission from 2035
US	22.2%	In policy document	Insufficient	No	By executive order: 100% carbon pollution-free electricity by 2030	Measures to decarbonise industry via tax credits, plus financial assistance for decarbonisation of emissions-intensive activities, eg. steel and concrete	By executive order: national goal of 50% of new vehicle sales to be BEV, plug-in hybrid or fuel cell electric by 2030
Germany	7.0%	In law	Insufficient	Yes	At least 80% of electricity from renewable sources by 2030	Decarbonise industry via electrification, energy efficiency and CCUS congruent with national target of 65%emissions reduction by 2030	15 million electric vehicles on the road by 2030
Ireland	6.6%	In law	Insufficient (EU)	Yes	At least 80% of electricity from renewable sources by 2030	Funding to reduce industrial emissions in manufacturing 20% by 2025; by 35% by 2030	936,000 BEVs on Irish roads by 2030
Netherlands	6.2%	In law	Insufficient (EU)	Yes	70% of electricity from renewable sources by 2030	Industrial decarbonisation in line with emissions reductions of 55% by 2030, via carbon pricing and low-carbon technologies	Zero-emissions for passenger vehicles by 2030
France	5.2%	In law	Insufficient (EU)	Yes	41.3% of renewables in final energy consumption by 2030	Emissions reductions by 2030 of 26%for the chemical sector; 24% for cement; 31% for mining and metallurgy	Short-term target of 800,000 BEV sales annually by 2027
China	3.6%	In policy document	Highly insufficient	No	Non-fossil fuels in primary energy consumption to around 25%; installed capacity of wind and solar power to 1,200 GW by 2030	Reaching peak CO_2 emissions by 2030 in polluting industries	BEVs to make up 40% of passenger vehicle sales by 2030
Switzerland	3.6%	In law	Insufficient	Yes	5,400 gigawatt-hours (GWh) of electricity from renewable source by 2030	Reduce industrial sector emissions 50% by 2040; 90% by 2050.	BEV market share of 50% plug-in vehicles and 20,000 charging stations by 2025
Belgium	3.0%	In policy document	Insufficient (EU)	No	Reduce energy sector emissions 35% from 2005 levels by 2030	Reduce non-ETS industrial emissions -76% to -83% by 2050	Phase out new ICE car sales by 2035
Spain	2.3%	In law	Insufficient (EU)	Yes	81% of electricity generation from renewables by 2030	Reduce industrial sector emissions 90% by 2050	5.5 million BEVs by 2030
Italy	2.1%	In policy document	Insufficient (EU)	No	65% of electricity generation from renewables by 2030	38% of electricity used in industry to be from renewable sources by 2030	4.3m BEVs and 2.3m PHEVs by 2030
Canada	1.9%	In law	Insufficient	Yes	90% of electricity from renewable sources by 2030	Efficiency, electrification, CCUS; output-based pricing system in pursuit of national emissions reductions target	100% ZEV sales by 2035
India	1.8%	In policy document	Highly insufficient	No	500 GW of renewable energy installed capacity by 2031-2032	Intention to reduce industrial emissions through, among others, carbon trading, energy efficiency, green hydrogen development	By 2030, BEVs to comprise 30% of private car sales; 70% of commercial vehicle sales; 40% of buses; 80% of 2 to 3 wheelers

Table 2: *Major net zero-related policies in the UK's largest exporting markets, across electricity, industry, and electric vehicles. For each country, we provide information on the existence of net zero targets, the most recent assessment of decarbonisation progress by Climate Action Tracker, and whether there is evidence of a climate framework law to guide long-term decarbonisation efforts. For sources on policy targets, see* ***Appendix I****.*

I. Net zero commitments

A net zero pledge is not a plan, and a net zero plan is not a set of policies. By looking under the hood of the UK's main export partners, we see a diverse range of policy and regulatory environments. Table 1, covering Britain's 12 most significant trading partner nations and the EU, shows a broad range of net zero commitments, alongside a diverse set of policies to help deliver them. Focusing on key three categories — electricity decarbonisation, industry and BEVs — all of the UK's top trading partner nations have adopted policies intended to drive sectoral transformation.

II. Policy analysis of largest UK export partners

The UK's largest export partners — namely the EU, US, Canada and China, along with major developing economy India — have formulated policy-based strategies to help them build the expertise, investment and supply lines required for the paradigm-shifting potential of the green transition.

The following sections examine the UK's largest export partners, highlighting the net zero-related sectors that the UK could be capitalising on. Drawing on existing methodologies for analysing green competitiveness, such as the Green Transition Navigator's Product Complexity Index, and analysis of the 'green relatedness' of manufacturing sectors undertaken by IPPR, inferences can be drawn about the trajectory of the UK's green exports.[22][23]

1. EUROPEAN UNION, EU

Net zero target status and year	**Percentage and value of UK exports**	**Trending** (% of UK exports change, 2019-23)	**Top five UK goods exported to the EU in 2023**
In law, 2050	42%, £357.2bn	- 0.4%	1. Mineral Fuels and mineral oils: £33.4bn 2. Nuclear reactors, machinery and mechanical appliances: £23.3bn 3. Vehicles: £18.3bn 4. Electrical machinery and equipment: £7.8bn 5. Pharmaceutical products: £7.6bn

Current UK exports

As the UK's most significant trading partner by far, in 2023 the EU accounted for more than 42% of the UK's total exports, breaking down into 49% of UK goods exports and 36% of services exports. In services exports, financial services were the largest discrete category, with the bulk of services exports classified as a miscellaneous 'other business services' category.[24]

The 'vehicles' category is of critical importance here. With 33% of all UK car exports going to the EU in 2023, and the automotive sector being Britain's largest exporter of manufactured products, the significance of the transition to BEV manufacturing cannot be overstated.[25]

22 Green Transition Navigator, 2024

23 IPPR, Manufacturing matters: The cornerstone of a competitive green economy, 2024

24 House of Commons Library, Statistics on UK trade with the EU, 2024

25 ECIU, Electrifying growth: Exploring what electrification could mean for the UK's car industry, 2024

High-level trade relationship

The key high-level document governing UK-EU trade is the EU-UK Trade and Cooperation Agreement, which incorporates a free trade agreement that prevents tariffs or quotas from being imposed on clean technologies, and includes commitments to promote trade policies that contribute to lowering greenhouse gas emissions.[26] On the ground, the reality of the UK now being subject to 'third country' status means all goods must now pass through customs borders, with VAT and other duties being imposed on imports and exports. In services exports, sectors such as financial services have been hit by the expiry of previous mutual arrangements such as 'passporting'. Given the high economic and strategic value of UK-EU cross-border trade and an incoming protectionist administration in the US, trade experts have urged both parties to seek closer relations.[27][28]

Policy analysis

The EU has an overarching net zero emissions target of 2050, with a new 2040 target of a net 90% reduction in emissions below 1990 levels having been proposed by the European Commission (EC).[29] The recent UNEP Emissions Gap report assesses the bloc's chances of achieving this target as 'likely'.[30] In the power sector, the EC's Renewable Energy Directive has set an EU-wide target of 42.5% of electricity to come from renewable sources by 2030, while member states must increase the share of renewable energy used in heating and cooling by at least 1.1% every year as an average calculated for the period 2026-2030.

In response to the United States' Inflation Reduction Act (IRA), the EC announced the Net-Zero Industry Act as part of a broader Green Deal Industrial Plan. The act focused on providing a regulatory framework to fast-track deployment of renewables and green industrial projects. The broader plan comprised measures to simplify Europe's regulatory environment, improve access to finance, boost green skills training programmes, and to both diversify trade in green resources with non-EU states whilst also protecting the Single Market by sourcing 'at least 40%' of the relevant products and services as it can from within the EU.[31]

Despite this latter requirement, with EU-wide green legislation creating new markets for low-carbon products, the bloc will remain Britain's most significant green trade partner. With the Net-Zero Industry Act forecasting a four-fold increase in deployment of renewables, six-fold increase in heat pumps, and 15-fold increase in electric vehicles, demand for green imports from outside the EU will continue to rise. With a ban on new internal combustion engine cars coming into force in 2035, the EU export market for UK-produced BEVs could be worth £12.1 billion by that year, according to new research from the CBI and ECIU.[32] On the EU's clean heat targets, the European Heat Pump Association has warned that demand for the heat pumps could outstrip supply by 15 million units in 2030, implying additional export opportunities for UK manufacturers.[33]

Germany

As the UK's largest European trade partner and the destination for 7% of British goods and services in 2023, Germany offers a market with a wealth of potential for net zero-compatible exports. At present, Germany's imports are dominated by fossil fuels — specifically methane gas and petroleum products. But with a target of hitting 80% renewable electricity by 2030 and 100% by 2035, and an overall target of net zero emissions by 2045, demand for electrical machinery and electronics (presently comprising just over 10% of German imports) as well as offshore wind energy components is anticipated to rise. At present, Germany is highly dependent on China for materials and products critical to the country's energy transition, or *Energiewende*,

26 European Commission, The EU-UK Trade and Cooperation Agreement, 2021
27 House of Lords Library, UK and Europe: Cultural, diplomatic and security relations, 2024
28 The Independent, UK must reverse Brexit if Donald Trump wins election, Keir Starmer told, 2024
29 European Commission, 2040 climate target: Reducing net emissions by 90% by 2040, 2024
30 UN Environment Programme, Emissions Gap Report 2024, 2024
31 European Commission, Net Zero Industry Act, 2023
32 CBI and ECIU, Electrifying Growth: Exploring what electrification could mean for the UK's automotive industry, 2024
33 European Heat Pump Association, EU could end up 15 million heat pumps short of 2030 ambition, 2024

but political pressure for Berlin to decouple from Beijing could present opportunities for UK green products and services, in particular in offshore wind, hydrogen, grid technologies and solar.[34]

In this context, UK-German industrial collaborations are expected to yield significant economic rewards, with a recent cooperation between the UK's Net Zero Technology Centre (NZTC) and German-based Cruh21 forecasting that Scottish hydrogen exports could potentially meet between '22% to 100% of Germany's hydrogen import demand by 2045'.[35] Coupled with new funding for port infrastructure to support offshore wind deployment as announced in the government's Autumn 2024 budget, the *Energiewende* can rightly be viewed as a prime British export opportunity.[36]

Ireland

As the UK's third largest export market, Ireland offers key opportunities for UK green products and services. UK exports to Ireland are presently dominated by pharmaceutical and food products, but national initiatives to drive investment in offshore wind and requirements to decarbonise domestic and industrial heating point to significant potential demand for green products and services that the UK could be well placed to deliver. Current plans for projected 3.5 gigawatts of offshore wind, with a lifetime spend of some £14bn, offer emerging supply chain and collaboration opportunities for UK industry.[37]

The Netherlands

The Netherlands is the UK's fourth largest export market. While two most valuable current UK exports to the Netherlands are crude and refined oil, worth £6.3bn and £2.8bn respectively in the 12 months to Q2 2024, the Netherlands has been identified as a potentially lucrative market for British offshore wind energy technology and services.[38] Based on the Netherlands' decarbonisation plans, the UK government has identified green opportunities for British exporters in numerous sectors including industry, agriculture, logistics and housing.[39]

France

The UK's fifth largest export market, France is a key consumer of UK-manufactured machinery, appliances and vehicles, suggesting British investments in BEV manufacturing and associated supply chains could yield long-term export opportunities.[40] The previous UK government under Rishi Sunak signed an agreement with France to cooperate more closely in the areas of renewable energy, nuclear power, carbon capture and green hydrogen.[41] Prime Minister Keir Starmer has indicated his administration will further strengthen such arrangements.[42]

34 Department for Business & Trade, Exporting from the UK to Germany: A market guide, 2024
35 Cruh21, NZTC report sets out plan for green hydrogen export between Scotland and Germany, 2024
36 HM Treasury, Autumn Budget 2024: Fixing the foundations to deliver change, 2024
37 Department for Business & Trade, Exporting from the UK to Ireland: A market guide, 2024
38 Office for National Statistics, Trade in goods: country-by-commodity exports, 2024
39 Department for Business & Trade, Exporting from the UK to the Netherlands: A market guide, 2024
40 Office for National Statistics, Trade in goods: country-by-commodity exports, 2024
41 Department for Energy Security and Net Zero, UK-France statements of cooperation on energy, 2023
42 Politico, Keir Starmer is a sensation with the French, 2024

Comparing the EU and UK's Carbon Border Adjustment Mechanisms

Carbon border adjustment mechanisms (CBAMs) are policies designed to 'level the playing field' so that domestic and imported goods pay the same price for their associated carbon emissions. CBAMs help to prevent 'carbon leakage' (where companies move production to less carbon-regulated countries to avoid paying a price on emissions) and typically target upstream goods in trade-exposed sectors of the value chain.

The EU's CBAM, scheduled for full implementation in 2026, will impose charges on particularly carbon-intensive imports into the EU. It will apply to **iron and steel**, **aluminium**, **cement**, **fertiliser**, **hydrogen** and **electricity**, and requires importers to purchase emission allowances as though the goods were produced under the EU's Emissions Trading System (ETS). The EU CBAM is expected to expand to additional sectors over time.

The UK's proposed CBAM, slated to launch in 2027, aims to build investor confidence in heavy industries. Currently under public consultation,[43] the UK CBAM will differ from the EU model by **excluding electricity** while including **glass** and **ceramics**. Similar to the EU CBAM, the UK version is being designed to expand into other sectors over time.

Under the UK–EU trade agreement, both parties committed to explore linking their ETSs, which is the only way for UK goods to be exempt from the EU's CBAM. Such a linkage would reduce compliance costs for UK businesses and enable the UK government to take a more prominent role in global carbon diplomacy.[44] For technical and World Trade Organization compliance reasons, the UK CBAM is expected to closely resemble the EU's model.

	Iron & steel	Cement	Aluminium	Fertilisers	Electricity	Hydrogen	Glass	Ceramics
EU CBAM	✓	✓	✓	✓	✓	✓	-	-
UK CBAM	✓	✓	✓	✓	-	✓	✓	✓

Table 3: *Comparing the initial sectors covered by the EU CBAM and UK CBAM.*

Since 1986, the UK and Europe have traded electricity through interconnectors, with the UK typically acting as a net importer. The EU CBAM's application to electricity could negatively impact cross-border trade, as it is challenging to precisely determine the carbon content of a unit of traded electricity or verify if a carbon price has been applied.

Despite the UK's power sector having a lower carbon intensity than many EU member states, the EU CBAM levies a carbon charge for its electricity exports based on the emissions intensity of all exporters' fossil fuel-based energy sources, including, in the case of the UK, gas-fired power generation.

43 HM Treasury, Consultation on the introduction of a UK carbon border adjustment mechanism, 2024

44 E3G, Cooperation on carbon border adjustments could help reset UK–EU relations, 2022

2. UNITED STATES

Net zero target status and year	Percentage and value of UK exports	Trending (% of UK exports change, 2019-23)	Top five UK goods exported to US in the four quarters to the end of Q2 2024
In policy document, 2050	22%, £191.5bn	+3.8%	1. Cars, £8.4bn 2. Pharmaceutical products, £8.2bn 3. Mechanical power generators, £5.3bn 4. Scientific instruments, £2.4bn 5. General industrial machinery, £2.3bn

Current UK exports

The United States is the UK's single largest export market, with the latest government figures showing UK exports to the US totaled £188.2 billion in the year up to Q2 2024. At present, the US market for UK services dwarfs the market for products: for instance, in the period cited, the US imported £62.6 billion in miscellaneous business services from the UK, versus £8.4 billion in British cars. The UK was America's largest services trade partner, supplying 21% of the States' services imports in 2023.

Previous ECIU research has suggested that the US car market may offer significant opportunities for UK exporters, with around 5% of UK car exports going to states with some form of zero emission vehicle mandate.[45] It remains to be seen how President-elect Donald Trump, who has pledged to bring in strong protectionist and anti-green measures, will reshape these opportunities.

High-level trade relationship

Since the UK's 2020 departure from the EU, successive British governments have attempted to negotiate a preferential trade agreement with the US. While a limited breakthrough was achieved with the Atlantic Declaration for a Twenty-First Century U.S.-UK Economic Partnership (2023), which covers critical minerals for BEV batteries and new initiatives to collaborate on tech research and development, the Biden administration shelved plans for a broader trade agreement.[46]

From January 2025, with threats to impose sweeping tariffs on all imports, the incoming Trump administration is anticipated to radically reconfigure the UK-US trade relationship. According to preliminary analysis, the incoming Trump administration, which has pledged to roll back national net zero commitments and impose a 20% tariff on all imports, could squeeze UK exports by up to £22 billion, equivalent to 0.8% of GDP.[47] However, given the likely severe negative impacts of universal tariffs on the US economy, many analysts anticipate a more nuanced approach on trade policy.

Policy analysis

Under President Joe Biden's administration, a trio of laws — the CHIPS and Science Act, the Bipartisan Infrastructure Law (BIL), and especially the Inflation Reduction Act (IRA) — have enacted industrial policy to create jobs and accelerate the decarbonisation of the US economy. As of October 2024, the BIL and IRA have leveraged announcements of private sector investment totalling $910bn, including $167bn in clean power, $177bn in EVs and batteries, and $82 billion in clean energy manufacturing and infrastructure.[48] The IRA alone could generate over $3tn in public and private investment in clean

45 ECIU, UK car exports on a cliff edge, 2023
46 Politico EU, Biden quietly shelves trade pact with UK before 2024 elections, 2023
47 CITP, Will Trump impose his tariffs?, 2024
48 The White House, President Biden Commemorates Historic Climate Legacy during Climate Week NYC, 2024

technologies by 2030, according to Goldman Sachs.[49]

While the incoming Trump administration will almost certainly slow the pace of American decarbonisation and transition investment, the longer-term trend towards clean energy and electrification will persist, driven by great power competition and markets.[50][51][52] Despite the speed bumps ahead for the IRA and President Biden's policies on clean energy — and for the multilateral UN climate process more broadly — new market opportunities will continue to arise. Furthermore, to fully repeal or reform the IRA will require congressional action and convincing House Republicans that the Act's demise is in their jurisdictions' interests. In August 2024, 18 House Republicans wrote a letter to House Speaker Mike Johnson defending the IRA's clean energy tax credits, arguing that 80% of investment flows go to Republican states and that 'repealing energy tax credits, particularly those which were used to justify investments that already broke ground, would undermine private investments and stop development that is already ongoing'.[53][54]

Recent scenario analysis by the US Net Zero Industrial Policy Lab indicates that a repeal of the IRA would result in a direct loss of investment in US manufacturing and trade, leading to around £63 billion in investment opportunities for other countries. The report further notes that, should the US reduce clean tech exports, competitors will be in a position to seize market share.[55]

The incoming Trump presidency is also likely to see individual states strengthening relations on a range of mutual interests — not least those related to the environment, energy and climate change. Members of the US Climate Alliance, a coalition of 24 American states that represent almost 60% of the US economy, have pledged to uphold their commitments to the Paris Agreement and to the energy transition at state and other subnational levels.[56]

For this analysis, we found that 19 individual US states with net zero commitments command a combined GDP (PPP) of $10.02 trillion, or 49.6% of the US total. Should a protectionist US administration rule out a preferential trade agreement with the UK, the Labour government may opt to focus on pursuing and establishing state-level trade pacts similar to those signed in 2022 and 2023 by state governors.[57]

On car and EV exports, new electric car sales in the US increased more than 40% in 2023 compared with 2022, reaching a market share of almost 10%.[58] While no federal electric vehicle mandate exists, President-elect Trump is expected to revoke President Biden's executive order targeting 50% of new vehicle sales to be BEV, plug-in hybrid or fuel cell electric by 2030. Meanwhile, 17 states, led by California, have adopted state-level ZEV mandates, requiring automakers to sell a growing percentage of zero-emission vehicles.[59]

At the federal level, any attempt to repeal the Environment Protection Agency's (EPA) clean car programme by, for example, executive order would face legal hurdles, state-level initiatives and broader market trends towards electrification. The implications for vehicle exporters into the US market remains uncertain.

With at least 80 GW of offshore wind capacity already in the US pipeline, projects such as the UK-US Floating Offshore Wind Supply Chain Innovation Bilateral indicate that British green products and expertise could play a pivotal role in America's market-led clean energy transition.[60]

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49 Goldman Sachs, The US is poised for an energy revolution, 2023

50 Carbon Brief, Analysis: Trump election win could add 4bn tonnes to US emissions by 2030, 2024

51 Wood Mackenzie, US November election results could decelerate energy transition, with $1 trillion in energy investment on the line, 2024

52 IEA, World Energy Outlook, 2024

53 Financial Times, Republican districts dominate US clean technology investment boom, 2023

54 Congress of the United States, Letter to Speaker Mike Johnson, 2024

55 Net Zero Industrial Policy Lab, Trump's proposed clean energy retreat: US costs and global rewards, 2024

56 US Climate Alliance, U.S. Climate Alliance Reaffirms America's Commitment to Paris Agreement on Global Stage at COP29, 2024

57 CSIS, An Innovative Trade Strategy- U.S. States Strike Individual MoU's with the U.K. Government, 2023

58 IEA, Trends in electric cars, 2024

59 California Air Resources Board, States that have Adopted California's Vehicle Regulations, 2024

60 Renewable Energy Magazine, UK-US collaboration targets UK support for floating wind in US, 2024

3. CHINA

Net zero target status and year	Percentage and value of UK exports	Trending (% of UK exports change, 2019-23)	Top five UK goods exported to China in the four quarters to the end of Q2 2024
In policy document, 2050	7%, £31.5bn	-1.3%	1. Cars, £4.5bn 2. Unspecified goods, £4.1bn 3. Crude oil, £1.9bn 4. Pharmaceutical products, £1.2bn 5. Mechanical power generators, £0.9bn

Current UK exports

Cars are the UK's most valuable export to China, totaling £4.8 billion in the four quarters to the end of Q2 2024.[61] China is an important market for UK luxury marques such as Jaguar, Range Rover, Bentley and Rolls-Royce, which enjoy significant brand recognition in the country.

In comparison to other countries, China imports less services from the UK as a proportion of total imports, comprising 36%.[62] This is likely a reflection of restrictions on foreign entry into these sectors, creating significant barriers.

High-level trade relationship

Despite significant political tensions, China and the UK maintain a strong economic relationship, and have in the past pledged to work together to address climate change.[63] The UK's Labour government has indicated it intends to reset relations with China, with counterparts from both nations seeking a resumption of high-level trade talks, which would be the first such talks since 2019.[64]

UK automakers have explicitly stated that they would stand to lose out in the event of a tit-for-tat trade war with China.[65] In a tacit acknowledgement of these concerns, the UK's trade minister has stated that, unlike the EU, the Labour government has no plans to impose tariffs on Chinese-made battery electric vehicles.[66]

Policy analysis

By reorienting the direction of its colossal manufacturing base towards renewable technology, China has positioned itself in such a way that it now supplies some 65% of total global demand for renewable energy equipment, at prices 200% lower than competing nations, according to Wood Mackenzie.[67] This would appear to minimise export opportunities for green products related to renewables and electrification. On the other hand, China's extremely rapid national transition to BEVs combined with the country's established appetite for British luxury cars presents a significant opportunity for UK automakers.[68]

61 Department for Business & Trade, China trade and investment factsheet, 2024
62 Department for Business & Trade, China trade and investment factsheet, 2024
63 British Embassy Beijing, UK, China and Switzerland collaborate on climate change project, 2013
64 Reuters, UK finance minister Reeves says 'hard-headed' approach needed to boost China trade, 2024
65 Politico EU, Britain's luxury carmakers fear Chinese trade war, 2024
66 Reuters, Britain has no plans for EU-style tariffs on Chinese EVs, 2024
67 Wood Mackenzie, China's renewable exports grow by 35% between 2019-2023, 2024
68 Reuters, China auto market hits milestone as EVs, hybrids make up half of July sales, 2024

4. CANADA

Net zero target status and year	Percentage and value of UK exports	Trending (% of UK exports change, 2019-23)	Top five UK goods exported to Canada in the four quarters to the end of Q2 2024
In law, 2050	2%, £16.5bn	+2.6%	1. Crude oil, £1.6bn 2. Cars, £0.7bn 3. Mechanical power generators, £0.6bn 4. Aircraft, £0.6bn 5. Pharmaceutical products, £0.4bn

Current UK exports

As government figures show, crude oil is the UK's most valuable current commodity export to Canada. In the long term, net zero commitments by both partners should be expected to constrain crude oil demand; in the short and medium term, pressure will increase on the UK government to revise its Credible Climate Compatibility Checkpoint, which guides the government in making decisions around UK oil and gas production. A revision to the Checkpoint could place limitations on crude oil exports.[69]

High-level trade relationship

In the broader context of the two countries' commitments to net zero, Canada and the UK have initiated a range of collaboration projects and assistance programmes with a particular focus on transportation, as exemplified by the 2017 Canada-United Kingdom Partnership on Clean Growth and Climate Change.[70][71] But in 2024, the Comprehensive Economic and Trade Agreement that gave British car manufacturers preferential access to the Canadian market expired, with other trade negotiations also falling through.[72] With US, EU, Japanese and Korean car manufacturers continuing to enjoy preferential trade deals with Canada, the current impasse presents a clear risk to UK exporters.

Policy analysis

Canada is the UK's fourth largest non-EU export destination. It has implemented a 2035 BEV mandate and its share of wind as a proportion of electricity generation is growing rapidly.[73] These conditions imply potential export opportunities for UK manufacturers of green products and services. They may also imply a future lessening of demand for UK crude oil products.

69 Oxford Smith School of Enterprise and the Environment, Paving the way to Net Zero: A New and Credible Climate Compatibility Checkpoint for UK Oil and Gas Production, 2024

70 UKRI, Canada-UK net zero value chains: transportation, 2022

71 Government of Canda, Canada-United Kingdom Partnership on Clean Growth and Climate Change, 2022

72 CBC, U.K. walks away from trade talks with Canada, 2024

73 Transport Canada, Canada's Zero-Emission vehicle sales targets, 2024

5. INDIA

Net zero target status and year	Percentage and value of UK exports	Trending (% of UK exports change, 2019-23)	Top five UK goods exported to India in the four quarters to the end of Q2 2024
In policy document, 2070	1.8%, £16.6bn	+6.4%	1. Non-ferrous metals such as aluminium, £1.7bn 2. Metal ores & scrap metal, £1.1bn 3. Mechanical power generators, £0.6bn 4. General industrial machinery, £0.3bn 5. Miscellaneous electrical goods, £0.2bn

Current UK exports

At present, Indian imports of goods from the UK are dominated by scrap iron, steel and other metals, along with mechanical and electrical machinery, as well as petroleum products.[74] Recent updated figures indicate that in 2023, services comprised 61.5% of UK exports to India, with travel, business and transportation services being the top performers.[75]

High-level trade relationship

With a common language and legal system, and deep-rooted diaspora links, India and the UK maintain good relations, as reflected via a range of mutually beneficial cooperation agreements and high-level fora. India is the second largest country of origin for UK foreign direct investment, contributing 7.7% of FDI projects in 2023.[76] The UK and Indian governments, non-departmental bodies and business confederations such as the UK India Business Council have identified collaboration on green hydrogen as an area with 'huge growth and manufacturing potential' for both countries.[77]

Policy analysis

With an in-policy net zero target of 2070, India is aiming to become a '$5 trillion economy' within three years, and is looking to green investment to power that growth. In its 2023-24 budget, the government allocated $4.3 billion in capital investments to the energy transition, emphasising green growth and the decarbonisation of industry, energy and transport.[78]

A key component of India's strategy is its push to become a green hydrogen superpower. In 2023 the government announced its National Green Hydrogen Mission, with a mandate to 'make India the Global Hub for production, usage and export of Green Hydrogen and its derivatives'. The government will inject $2.1 billion to support a three-year subsidy programme for hydrogen equipment and electrolyser manufacturing. The plan encompasses infrastructure development, the reform of regulations and standards, a public-private R&D fund and training schemes.

With the national government having initiated viability gap funding (VGF) of approximately $893 million for offshore wind energy projects, UK expertise in offshore wind deployment offers the prospect of enduring trade and cooperation agreements. Recognising this potential, in 2015 the UK and India signed a Memorandum of Understanding (MoU) on Cooperation in the Energy Sector with the aim of 'advancing climate resilience and clean energy deployment', citing offshore wind development

74 OEC, India country profile, 2024
75 Department for Business & Trade, India trade and investment factsheet, 2024
76 EY, Foreign Direct Investment: UK's project total grows as Europe's falls, 2024
77 ITES, Indo-UK collaboration in hydrogen: Understanding the innovation opportunity, 2024
78 Bloomberg, India Plans $4.3 Billion Spending for Energy Transition, 2023

as a key priority.[79] UK innovations such as contracts for difference (CfDs) are being considered as a way of enabling India to support renewable and hydrogen investment while mitigating business risk. In 2022, the UK's Offshore Renewable Energy (ORE) Catapult and India's National Institute of Wind Energy (NIWE) signed a joint declaration of interest to support knowledge exchange and supply chain growth in both countries.[80]

Similarly, on BEV uptake, public and private UK institutions have collaborated with the government of India in a series of initiatives to promote electric vehicles, as well as a BEV innovation centre.[81] With Delhi's Centre for Science and Environment advising the government on the efficacy of mandates and a 2023 consultation on BEV mandates by the state government of Kerala, the prospect of a national-level policy is considered more a case of 'when, not if'.[82] Describing India as one of the most attractive BEV markets in the world, with potential sales of 10 million a year by 2030, the UK's Society of Motor Manufacturers and Traders has identified a broad range of investment, partnership and export opportunities for British exporters, encompassing everything from battery chemistry and motors to software development and skills deployment.[83]

79 Department for Business, Energy & Industrial Strategy, UK and India agree ambitious collaboration on clean energy, 2021

80 OffshoreWindBiz, ORE Catapult and NIWE Form UK-India Offshore Wind Partnership, 2022

81 UKRI, UKRI India announces new initiatives during UK PM's visit to India, 2022

82 Centre for Science and Environment, Zero Emission Vehicle (ZEV) Mandate Policy Report, 2023

83 SMMT, Opportunities in the Indian Electric Vehicle Sector, 2022

3.3. Large companies based in top ten export partners

We examined the net zero intentions of a selection of the world's largest publicly listed and privately owned companies headquartered in UK trading partners, focusing on their coverage of scope 3 (value chain) emissions.

Depending on the sector, indirect scope 3 value chain emissions can constitute up to 80-95% of a company's total carbon footprint.[84] For companies, especially manufacturers and producers that have pledged to drive these emissions to net zero, it will become increasingly necessary to consider the embodied carbon of their supply chain and imported components. 'Embodied carbon' includes, for example, emissions generated during the production and transportation of goods, the extraction of the raw materials involved, the manufacturing process, and the final delivery to the consumer.

The lower the carbon intensity of a country's grid, transport network and supply chain, the lower the embodied carbon in the manufactured goods. As the UK accelerates the decarbonisation of its power grid, UK exporters stand to benefit. Companies in the UK's largest trading partners, especially those that seek low-carbon, high quality manufactured components, will look to import from markets — like the UK and France — that are producing goods with comparatively low embodied carbon.

Plugging into international export value chains is not the only opportunity. Attracting investment and infrastructure from those companies, especially those that intend to drive supply chains to net zero, should be at the forefront of UK policymakers' minds.

Companies in the UK's top 10 export partners

The data shows that **412 companies from the UK's top 10 export partners have net zero targets covering full scope 3 emissions**, with a total of 532 companies addressing scope 3 emissions either partially or fully. Among the 412 companies with complete scope 3 coverage, the EU27 accounts for 135, the US for 124, Japan for 82, Canada and Switzerland for 16, and China for 11. These include notable brands such as German tech conglomerate **Siemens**, American sportswear giant **Nike**, and Chinese online retailer **Alibaba**.

In the manufacturing sector alone, 53 companies from these nations have set net zero targets with a commitment to fully address scope 3 emissions, collectively accounting for £1.72tn (£1.35tn) in annual revenues. Companies include German carmaker **BMW**, French electrical equipment producer **Schneider Electric**, American HVAC manufacturer **Carrier Global**, and Chinese equipment producer **Shanghai Electric**.

Of the 951 companies with net zero targets, 56% cover scope 3 emissions either fully or partially, while 43% fully cover scope 3. Among non-EU countries (the US, China, and Switzerland), 52% (366 of 701) of companies with net zero targets cover scope 3 emissions to some extent; 40% (277 of 701) cover their scope 3 emissions in full.

In the power generation sector, twelve major companies from the UK's top 10 trading partners fully cover scope 3 emissions under their net zero targets. These include **Orsted** (Denmark), **E.ON** (Germany), **Iberdrola** (Spain), **EDF Energy** (France), and US-based companies **Duke Energy**, **Entergy**, **CMS Energy**, and **AES**.

84 Department for Energy Security & Net Zero, Scope 3 Emissions in the UK Reporting Landscape, 2023

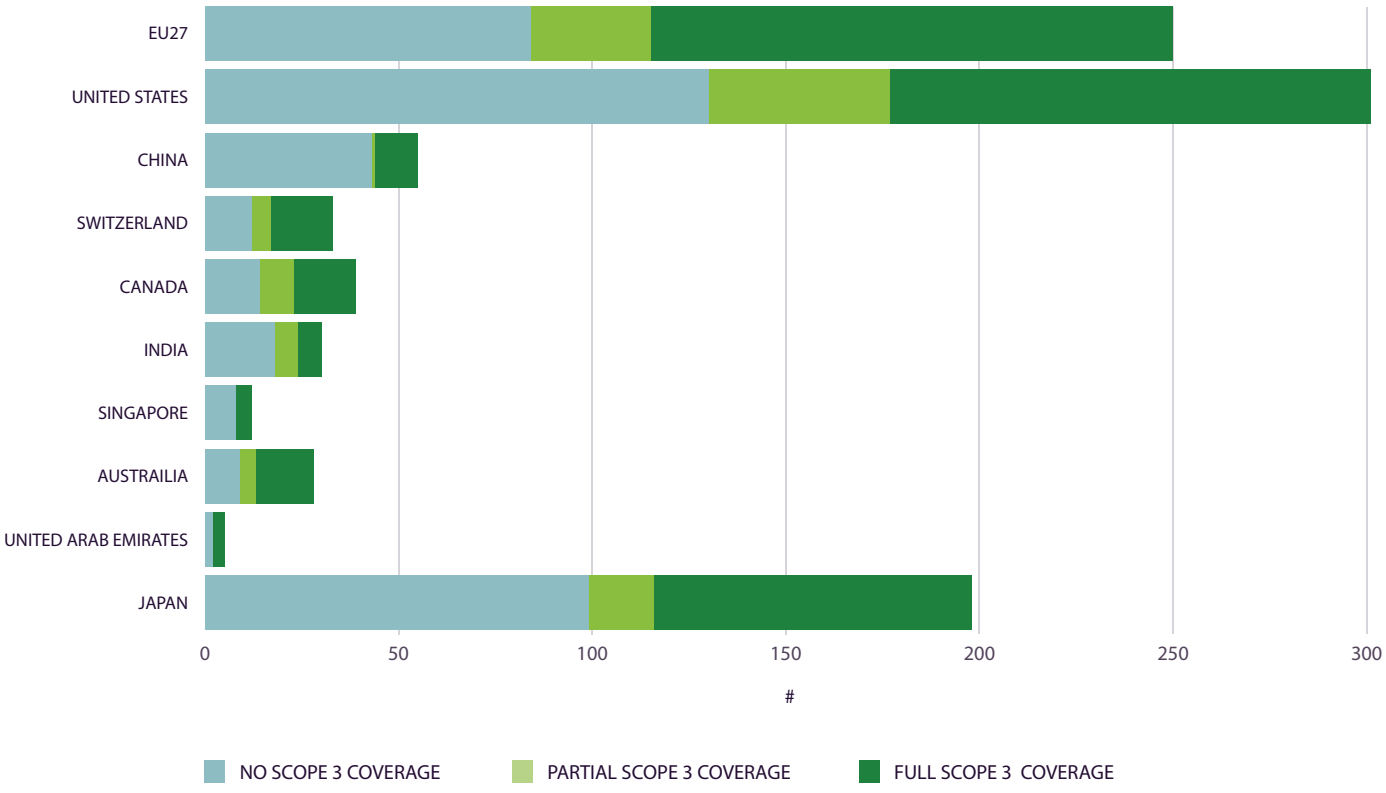

***Figure 1**: Breakdown of the number of net zero targets of companies in the UK's top 10 export partners with (i) no scope 3 coverage; (ii) partial coverage of scope 3; and full coverage of scope 3 in their net zero targets. Companies without net zero targets are excluded.*

Country (Inc. EU27)	Net zero targets, #	Partial sope 3 coverage, #	Full scope 3 coverage, #	Full or partial coverage, #	Full coverage of scope 3, %	Full coverage revenue ($, bn)
EU27	250	31	135	166	54%	$4,224
US	301	47	124	171	41%	$4,893
China	55	1	11	12	20%	$554
Switzerland	33	5	16	21	48%	$467
Canada	39	9	16	25	41%	$253
India	30	6	6	12	20%	$133
Singapore	12	0	4	4	33%	$55
Australia	28	4	15	19	54%	$229
U.A.E.	5	0	3	3	60%	$22
Japan	198	17	82	99	41%	$2,480
TOTAL	**951**	**120**	**412**	**532**	**43%**	**$13,310bn**

***Table 4**: Companies in the UK's top 10 export partners with either partial or full coverage of scope 3 emissions in their net zero targets, including the aggregated annual revenues of companies **with full coverage of scope 3**. Companies without net zero targets are excluded.*

Sectoral breakdown across the UK's top 10 export partners

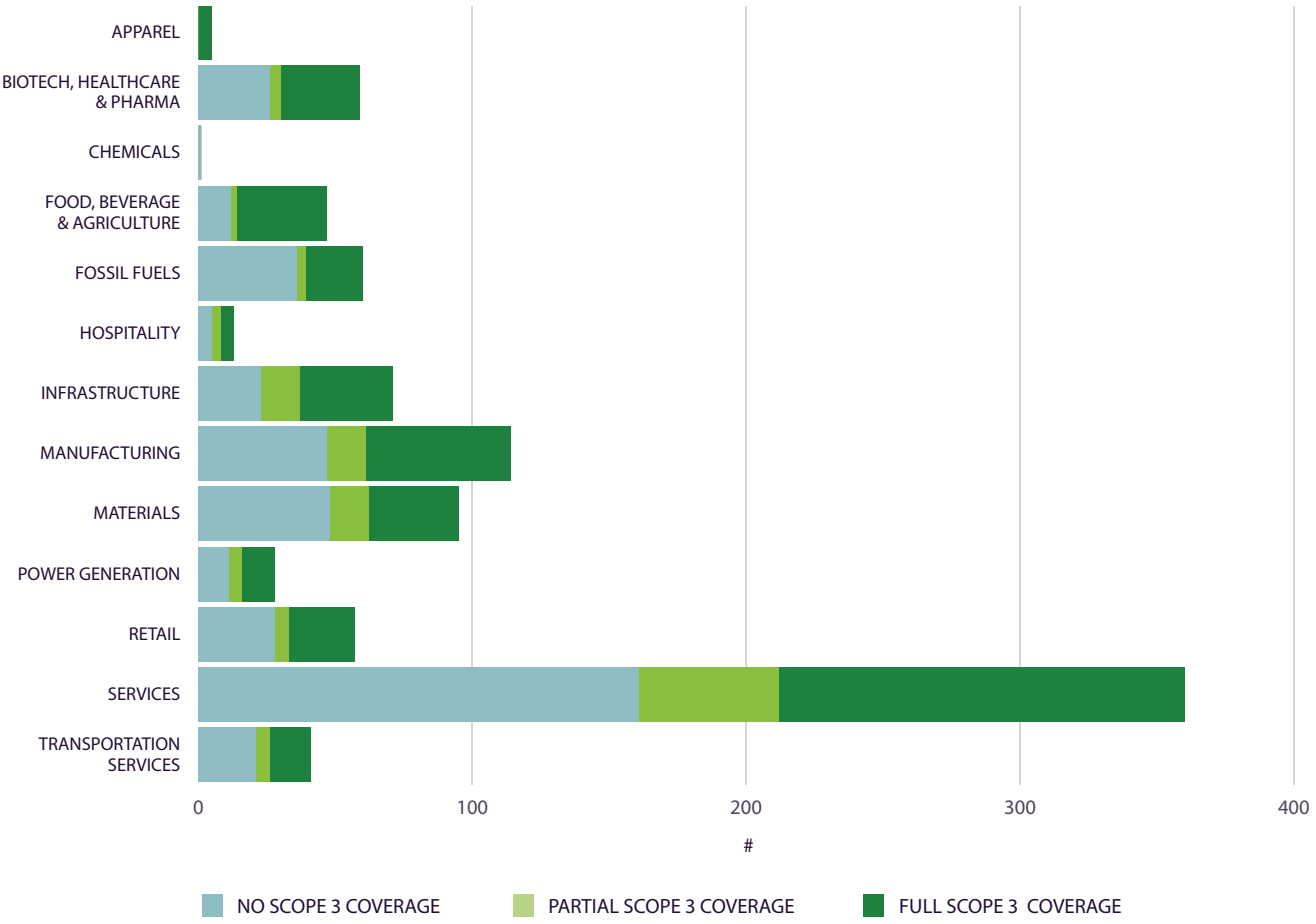

***Figure 2**: Sectoral breakdown of the number of net zero targets of companies headquartered in the UK's top 10 export partners with (i) no scope 3 coverage; (ii) partial coverage of scope 3; and full coverage of scope 3. Companies without net zero targets are excluded.*

Sector	Net zero targets, #	Partial scope 3 coverage, #	Full scope 3 coverage, #	Full or partial coverage, #	Full coverage of scope 3, %	Full coverage revenue ($, bn)
Apparel	5	0	5	5	100%	$80
Biotech, health care & pharma	59	4	29	33	49%	$744
Chemicals	1	0	0	0	0%	$0
Food, beverage & agriculture	47	2	33	35	70%	$879
Fossil Fuels	60	3	21	24	35%	$949
Hospitality	13	3	5	8	38%	$80
Infrastructure	71	14	34	48	48%	$663
Manufacturing	114	14	53	67	46%	$1,724
Materials	95	14	33	47	35%	$839

Power generation	28	5	12	17	43%	$490
Retail	57	5	24	29	42%	$2,018
Services	360	51	148	199	41%	$4,445
Transportation services	41	5	15	20	37%	$399
TOTAL	**951**	**120**	**412**	**532**	**43%**	**$13,310bn**

***Table 5**: Sectoral breakdown of companies headquartered in the UK's top 10 export partners — EU27, US, China, Switzerland, Canada, India, Singapore, Australia, U.A.E., and Japan — with either partial or full coverage of scope 3 emissions in their net zero targets. Companies without net zero targets are excluded.*

Companies in the UK's largest trading partners in the EU

Of companies with net zero targets in *all* EU27 countries, 66% (122 of 185) cover scope 3 in full or partially, and 51% cover scope 3 in full. **France**, the **Netherlands** and **Germany** have the highest share of companies aiming to drive their full value chain emissions down to net zero.

EU countries	Net zero targets, #	Partial scope 3 coverage, #	Full scope 3 coverage, #	Full or partial coverage, #	Full coverage of scope 3, %	Full coverage revenue ($, bn)
Germany	50	9	26	35	52%	$1,192
France	48	7	27	34	56%	$1,178
Spain	20	3	10	13	50%	$236
Ireland	18	0	8	8	44%	$176
Italy	20	2	10	12	50%	$261
Netherlands	22	3	12	15	55%	$388
Belgium	7	3	2	5	29%	$67
TOTAL	**185**	**64**	**27**	**95**	**51%**	**$3,499bn**

***Table 6**: Number of companies with net zero targets in the UK's largest seven EU export partners, broken down by coverage of scope 3 emissions. Companies without net zero targets are excluded.*

4. Net zero export opportunities

The global net zero transition, driven by evolving consumer demands and the introduction of carbon taxes and other regulatory measures, is increasing demand for low-emissions goods and services while reducing demand for high-carbon products. Countries that produce goods with low embodied emissions stand to gain a competitive advantage. With its expertise in clean energy and a manufacturing base that already produces a third of the products required for decarbonisation, the UK is well-positioned to plug into the world's net zero supply chains.

Electrification lies at the heart of this net zero-trade nexus. Compared with the G20 average, the UK already has a high penetration of low-carbon generation in its electricity grid, with about 60% of electricity generated from nuclear and renewable sources. This compares favourably with industrial powerhouses like Australia (36%), China (35%), Germany (54%), Japan (31%), and the US (41%).[85] However, other highly industrialised countries — including Canada (80%), France (92%), and Spain (71%) — generate much higher shares of electricity generated from low-carbon sources. Further, rapid decarbonisation could enable the UK to become a net exporter of low-carbon electricity. A low-carbon grid also provides a vital foundation for UK clean manufacturers looking to drive down embodied emissions in their products — a necessary condition for exporting to the clean global market.

Under a new National Energy System Operator (NESO), the UK now has a plan to 'build, connect and operate a clean power system for Great Britain by 2030, while maintaining security of supply'. Dubbed Clean Power 2030, the plan emphasises the economic and trade benefits of a rapid, system-wide transition to clean power, including an expansion of green jobs, new opportunities for UK industry, and the prospect of the UK becoming a net exporter of electricity as the country reduces imports of methane gas.[86] Furthermore, as jurisdictions move towards pricing the carbon embodied in imports, such as in the case of the EU CBAM, the more competitive British exports, with their lower embodied emissions, could become.[87]

4.1. Opportunities for exporting green goods and commodities

Research from the UK Climate Change Committee has estimated the potential value of global green trade to be worth £1.8 trillion by 2030, and that the UK could be expected to share in £60-170bn of that market.[88] As shown by IPPR and others, the UK already possesses significant strengths in green manufacturing. It is still the eighth largest green product exporter in the world, and possesses comparative advantage in a third of recognised 'green products'.[89] Mealy and Teytelboym's Green Complexity Index (2022), meanwhile, places the UK 10th on a list of 20 of the world's top green exporting nations. The paper identifies a list of green products required for the decarbonisation transition, and then uses an economic complexity approach to reveal which countries are able to competitively export them, suggesting that 'agreements to advantage trade in these products might play an important role'.[90]

Here, we analyse five key manufacturing and industrial sectors that, with appropriate support, could offer significant export opportunities while aligning with the UK's strategic and economic aims.

85 Our World in Data, Share of electricity generated by low-carbon sources, 2024
86 NESO, Clean Power 2030, 2024
87 World Bank Group, Technical Note for the CBAM exposure index, 2023
88 Climate Change Committee, UK business opportunities of moving to a low-carbon economy, 2017
89 IPPR, Manufacturing matters: The cornerstone of a competitive green economy, 2024
90 Research Policy, Economic complexity and the green economy, 2022

I. Electric vehicles

The UK car industry remains a key contributor to the economy, generating £46.8bn in GVA and supporting more than half a million full-time jobs. In 2022, the sector contributed £13.3bn to the economy, representing 0.6% of the country's economic activity. In that year, the UK built 775,000 cars, 80% of which were exported.[91] Recent CBI and ECIU analysis shows that a third of UK-built cars are (33%) sold in the EU, 15% go to the US and 9% to China.[92]

ECIU data shows that, as part of their national net zero commitments, 71% of the markets to which the UK exports vehicles are implementing some form of zero emission vehicle (ZEV) mandate.[93] The EU, representing the largest market for UK cars, is targeting a 55% reduction in average emissions for all new vehicles sold by 2030, compared to 2021 levels.[94] In China, the government has mandated that 40% of vehicles sold will be zero emission by 2030. In the US, 17 states plus Washington, DC, have adopted all or part of California's Advanced Clean Cars programme, with some mandating that all new passenger cars must be zero-emission by a given year — for example by 2035 in New York, and by 2040 in Michigan. However, in recent months there has been a concerted effort, particularly in Republican states, to prevent or repeal zero-emission vehicle laws. The UK has its own ZEV mandate, which requires that 80% of new cars sold in the UK must be zero emission by 2030, increasing to 100% by 2035.

Mandates and other pro-BEV policies imply considerable rewards for the UK if it can accelerate electric vehicle manufacturing, and imply major risks for failing to do so. While the medium-term outlook for US BEV adoption is uncertain, independent market research forecasts that, by 2030, the EU BEV market could be worth in excess of £0.5 trillion, and the Chinese market approximately £1 trillion.[95][96] ECIU has shown that, with a rapid transition to BEV production fostered by government policy, the gross value added contribution of the automotive sector to the wider UK economy could rise from the current £46.8bn to as high as £62.9bn by 2035. Alternatively, should the UK car industry fail to make the transition, auto industry GVA could decrease 73%, or £34.1 billion, with commensurate job losses.[97] An earlier report from ECIU showed that such a failure would result in a £10.9bn reduction in car exports to the EU and a £1.45bn reduction in exports to China by 2030.[98]

UK car industry groups report that the UK already produces almost every component required to produce EVs.[99] But for the country to secure a future for its BEV manufacturing sector, it should invest in battery production, and here the UK has struggled. The Faraday Institution, which advises on electrification policy, says that to keep up with demand, the UK will need to have built 10 battery gigafactories (facilities capable of producing high volumes of batteries) by 2040, each capable of producing 20 GWh of batteries per year.[100] Acknowledging this analysis, the previous government's Business and Trade Committee has warned that failure to invest in battery production risks 160,000 jobs.[101]

Recent developments in critical materials, however, have injected fresh optimism into the prospects for British battery manufacturing. These include news that a mine in the southwest county of Cornwall could produce up to 25,000 tonnes of lithium annually for the UK battery industry by 2030, along with the announcement that UK scale-up Green Lithium is developing a lithium refinery in the northeastern region of Teesside.[102][103] In manufacturing developments, Indian industrial

91 SMMT, UK Automotive Trade Snapshot, 2024
92 CBI and ECIU, Electrifying Growth: Exploring what electrification could mean for the UK's automotive industry, 2024
93 ECIU, UK car exports on a cliff edge, 2023
94 European Commission, Zero emission vehicles: first 'Fit for 55' deal will end the sale of new CO2 emitting cars in Europe by 2035, 2022
95 Mordor Intelligence, Europe Electric Vehicle Market, 2024
96 Mordor Intelligence, China Electric Car Market, 2024
97 CBI and ECIU, Electrifying Growth: Exploring what electrification could mean for the UK's automotive industry, 2024
98 ECIU, UK car exports on a cliff edge, 2023
99 SMMT, Race to Zero: Powering up Britain's EV supply chain, 2023
100 The Faraday Institution, UK Electric Vehicle and Battery Production Potential to 2040 update, 2024
101 Business and Trade Committee, Batteries for electric vehicle manufacturing: Government Response to the Committee's First Report of Session 2023-24, 2024
102 BBC, UK lithium mining announced in Cornwall, 2023
103 BBC, Teesport: Green light given for lithium refinery plant, 2023

giant Tata, which owns Jaguar Land Rover, will build its first UK gigafactory in Somerset, though it is unclear whether, or to what extent, that facility will be capable of catering to other manufacturers.[104] Chinese carmaker Chery has revealed that it is considering building a UK plant, potentially to produce vehicles under its sub-brands, Omoda and Jaecoo.[105]

But to strengthen the UK BEV industry, it's not investors but consumers who need confidence. The body that represents British car manufacturers stresses that to build UK BEV export capacity, the country needs stronger domestic demand, which can be stimulated through incentives such as reducing duties on electric vehicles, tax rebates, and more reliable, more easily accessible charging infrastructure.[106] Such a strategy should take into account existing best-practice policy innovations, in particular those deployed in countries that have seen extremely rapid BEV uptake such as Norway and China, and adopting those that apply to the UK context.

II. Power hardware exports: wind energy and electrification

With a UK government target of achieving 95% 'clean power' by 2030, the rewards for developing manufacturing capacity in the wind energy supply chain are potentially huge, while the risks of not doing so are severe.[107] The case for supporting renewables manufacturing capacity, in particular for the offshore wind industry, is hard to dispute. Recent research estimates that the UK wind industry will employ 90,000 people by 2030, with operations and maintenance alone generating some £1.3 billion annually.[108] Meanwhile, the export market for wind energy components globally will continue to expand, with industry groups forecasting export market potential of £1 trillion up to 2035.[109] The Offshore Wind Industry Council forecasts that strengthening the British supply chain could generate £92 billion GVA by 2040.[110]

Strategies to accelerate the development of the wind energy supply chain are ripe for deployment. A consortium comprising industry bodies and the UK's Crown Estates has developed a specialised roadmap intended to triple the UK's manufacturing capability and double R&D investment. Dubbed the Industrial Growth Plan, this strategy has been designed to work with the government's existing Green Industries Growth Accelerator, with the goal of making the UK a global technology leader in wind.[111] Other focused projects include The Crown Estate's new Supply Chain Accelerator, a £50 million fund to nurture UK offshore wind supply chain capacity, is intended to reduce risk for early stage wind power projects in the Celtic Sea.[112] Eyeing such developments, overseas partners are showing increasing willingness to invest in British wind manufacturing, as evidenced by the news that Danish wind giant Vestas will develop Scotland's first wind turbine blade factory in Edinburgh.[113] Most recently, the Labour government's Department for Business and Trade (DBT) has announced a £1 million market access programme to position the UK's offshore wind supply chain as the supplier of choice for up to 11 countries: Australia, Brazil, India, Japan, New Zealand, the Philippines, South Korea, Sri Lanka, Taiwan, USA and Vietnam.[114]

Tied closely to the UK's capabilities in offshore wind are its existing specialisms in electricity grid components and related tech, in particular in manufacturing specialised equipment for the control, automation and analysis of grid activity, as noted by IPPR.[115] With our data indicating that all of the UK's top trading partners have made policy commitments to electrification, resulting in the deployment of significant public and private investment capital, along with new IEA forecasts showing a faster than expected rise in electricity demand through 2035, international demand for such products can be anticipated to grow.[116]

104 BBC, Tata confirms Somerset will host £4bn battery factory, 2024
105 BBC, Chinese giant Chery could build cars in UK, 2024
106 SMMT, Budget a missed opportunity to help consumers, 2024
107 The Guardian, The man in charge of Labour's green energy dream: 'It's at the limit of what's achievable', 2024
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113 BBC, Plans for Scotland's first turbine blade factory, 2024
114 ORE Catapult, £1m initiative will help UK companies overcome barriers to offshore wind exports, 2024
115 IPPR, Manufacturing matters: The cornerstone of a competitive green economy, 2024
116 IEA, World Energy Outlook,2024

III. Green steel

Steel is a strategically important commodity for net zero, with 68% of future demand expected to come from green products and infrastructure, in particular for use in wind turbines, solar farms and in BEV production.[117] Steel is also an economically significant industry for the UK, directly employing 33,900 people plus a further 42,000 in the broader supply chain. According to government figures, UK steel exports were worth £5.4 billion in 2023 — a fall of £0.7 billion, or 8%, from 2022. The main destination for semi-finished and finished UK steel is the EU, with the Netherlands, Ireland and Spain being the most significant European importers; Turkey and the US are key non-EU buyers.[118]

UK steel production has been falling year on year, dropping to a historic low of 5.6 million tonnes in 2023, while imports — in particular from Asia — have been rising. Barriers such as the high price of electricity are preventing the UK from competing with the likes of France, Germany, Vietnam and India on cost. To protect the domestic industry from cheap imports, the government has put in place safeguards in the form of a 25% tariff on certain steel products.[119] But a longer term strategy is required.

Instead of competing on cost, the UK must target rising global demand for green steel, with Bloomberg NEF (BNEF) showing that national net zero commitments are spurring a rush of green steel procurement. BNEF finds that, at present, green steel costs 40% more than unabated steel, but that significantly more efficient production processes will lead to green steel being 5% cheaper than fossil fuel-based steel by 2050. Acknowledging this trend, the UK's Labour government has committed to investing £3 billion in decarbonising UK steel, principally through the implementation of electric arc furnaces. This is in line with independent research recommendations from E3G.[120]

To further bolster the future of UK steel, however, researchers propose 'circular economy' interventions, beginning with the 'reduce, reuse, recycle' hierarchy to drive efficiency improvements.[121] Other recommendations include vertically integrating UK steel production with other UK industries, including forming offtake agreements with the UK's growing BEV industry, and 'power for steel' agreements with the UK's powerful renewable energy industry. Such innovations offer the potential to drive down the cost of steel while significantly reducing emissions, making UK steel more attractive to the international market.

New risks loom, however. In September 2024, UK Steel, the trade association for the British steel industry, warned that under current plans, the EU CBAM would result in European firms paying duties of €37.50 a tonne on British steel imports which, as a *Financial Times* piece noted, is 'a significant amount for an industry with very tight margins and a global overcapacity problem'.[122]

IV. Heat pumps

Heat pumps are crucial to the UK's domestic decarbonisation ambitions, with research from ECIU and others indicating that they can help enable a pathway to emissions reductions of up to 80% per household by 2030.[123] In Europe, around 50% of all energy consumed is used for heating and cooling. For this reason, the European Commission (EC) has identified the electrification of heating as being of paramount importance to EU-wide climate targets, and it is heat pumps that will enable this. The EC forecasts that an additional 30 million heat pump units will be needed by 2030.[124]

The global and regional shift towards heat pumps presents clear risks and opportunities for British manufacturers. In 2022, the UK exported a total of £85 million in gas-fired central heating boilers and parts, and of these 77% — with a value of £65 million

117 Green Alliance, A brighter future for UK steel, 2023
118 UK Steel, Key Statistics Guide May 2024, 2024
119 House of Commons Library, UK Steel Industry: Statistics and policy, 2024
120 E3G, Growing clean steel in the UK, 2024
121 Global Transitions, The prospects for 'green steel' making in a net-zero economy: A UK perspective, 2021
122 Financial Times, UK steelmakers face dumping risk over EU carbon tax timing, industry warns, 2024
123 ECIU, Household Energy Security in 2030, 2024
124 European Commission, Heat pumps, 2023

— went to countries with near-term phase-out dates for fossil fuel boilers. ECIU notes that UK exports of such boilers halved between 2019 and 2022, while 3 million heat pumps sold in Europe in 2022 — a year-on-year rise of 40%.[125]

The British heat pump manufacturing space is currently dominated by Japan's Mitsubishi and Cornwall's Kensa, while boiler manufacturers such as German manufacturer Vaillant are entering the space.[126] The large-and-growing domestic and foreign demand for heat pumps and heat pump components presents a significant opportunity for UK manufacturing. While the British heat pump supply chain has been assessed as comparatively weak, a study carried out for the government estimated that heat pump manufacturing could be worth £5.5 billion to the UK economy by 2035.[127] According to IPPR, Britain's existing industrial clusters already possess the competencies to build a competitive heat pump manufacturing industry, while a failure to support such a manufacturing drive is putting 6,000 jobs at risk.[128] Investing in UK heat pump manufacturing would also have a range of co-benefits, including lowering costs for consumers and spurring design innovation. Capitalising on these advantages, however, will require certainty on the UK's direction of travel, and it is here where policy can offer reassuring signals — a point emphasised by firms such as Vaillant, who have cited government policy as the confidence-building lever behind their investment in heat pump manufacturing.[129]

V. Low-carbon fertilisers

The UK is emerging as a key incubator for innovation in the field of low-carbon fertilisers, with a range of brands, including the country's largest supermarket, Tesco, trialling products with a remarkable range of technological variation. Firms such as Yara, CCm and Bio-F Solutions have developed alternative processes and feedstocks that eliminate the requirement for fossil fuels.[130]

With global conventional fertiliser revenues forecast to rise to around £200bn by 2030, the market for low-carbon fertiliser is expected to reach a value of $6.7 billion by 2032, from $3.5 in 2022.[131][132] Several of the UK's top trade partners, in particular the EU, US and China, import significant volumes of conventional fertilisers which, in the context of tightening emissions rules, will need to be replaced by low-carbon alternatives.[133] At the same time, conventional fertiliser manufacturing is dependent on fossil gas, which has exhibited increased price volatility in recent years — in turn raising food prices, and making new alternatives more competitive.[134] With Russia and Belarus being the dominant suppliers of conventional fertilisers, developing manufacturing capacity in low-carbon fertilisers also carries strategic national security implications.

At present, conventional EU fertiliser tends to have a higher average carbon intensity than its UK equivalent, which would make British exports more competitive in the context of the EU CBAM.[135] With the European Parliament's Agriculture Committee warning that the bloc is too dependent on extra-EU fertiliser imports to ensure food security, UK and EU CBAM alignment could offer a range of economic and security co-benefits for both trade partners.[136]

125 ECIU, UK could lose £65m exports each year if heat pump roll out is slow, 2023
126 SMF, Supply change: Seizing opportunity in the UK heat pump supply chain, 2023
127 Department for Energy Security and Net Zero, Heat pump manufacturing supply chain research project, 2020
128 IPPR, The heatwave: Unlocking the economic potential of UK heat pump manufacturing, 2024
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130 Farmer's Weekly, Tesco to expand its low-carbon fertiliser trial tenfold, 2023
131 Research Dive, Global Fertilizer Market Analysis, 2022
132 Precedence Research, Green Fertilizers Market Size, Share, and Trends 2024 to 2034, 2023
133 Statista, Leading fertilizer importing countries worldwide in 2022, based on value, 2022
134 ECIU, 500% jump in fertiliser company profits likely fuelling food price inflation, 2023
135 Rabobank, Carbon borders on both sides of the channel: Implications of the UK and EU carbon tariffs, 2024
136 Department for Business & Trade, UK trade in numbers, 2024

4.2. Green services

While this report focuses predominantly on goods and manufacturing, as noted on page 9 the UK's exports of services have overtaken those of goods. Government figures indicate that in 2023, the value of UK services exports rose to £470 billion, some 25% higher than the £377 billion from goods. Updated figures suggest this trend may be set to continue: in the 12 months to July 2024, exports saw a 56/44% split in favour of services.[137] Furthermore, nearly a quarter of the value added in UK manufacturing exports can be attributed to services — among the highest contributions of services to exports among all OECD nations.[138]

In the context of the net zero transition, in which goods and services are becoming increasingly indivisible, this constitutes a significant comparative advantage. As noted in the Mission Zero Independent Review of Net Zero, the new generation of green products required for the global transition requires accompanying expertise in their manufacture, deployment and use, along with attendant expertise in environmental law, green financial reporting and sustainable investment.[139] Previous governments have made efforts to market the UK's decarbonisation expertise as a discrete product: founded in 2016 under the then-Department for International Trade established by Prime Minister Theresa May, the Great.gov.uk portal pitched 'Clean Growth' as an export, proposing to 'help countries and businesses around the world achieve cleaner, more sustainable sources of energy and related infrastructures'.[140]

As the UK government manoeuvres to form a Global Clean Power Alliance to boost the rollout of renewable energy, the UK has an opportunity to position itself as the leading 'transition as a service' (TaaS) expert.[141] Such offerings will be of particular relevance to middle-income countries such as India, a country with green economic potential that the World Economic Forum describes as a '$1 trillion opportunity', and which is already engaging UK expertise in such areas as offshore wind, smart grids and energy efficiency.[142][143]

4.3. Attracting investment

The UK net zero economy already supports close to 4% of UK economic activity, or £74 billion in GVA, while green, net zero-compatible jobs pay £10,000 more than the average and are 1.6 times more productive.[144] The UK's net zero businesses received more than £20 billion in investments in 2022/23, comprising £6 billion in public and private sector funding, and £14 billion in FDI.[145] Ernst & Young recently upgraded the UK's clean energy attractiveness ranking to sixth in the world, and second in the world, behind the US, on offshore wind.

In comparison to key trading partners, however, the UK has fallen behind.

Since the 2008 financial crisis, UK productivity — the ability to produce more with the same labour — has languished in the lower half of OECD productivity rankings, beneath the US, Germany and France, and income per person has declined relative to that in many other developed countries.[146] Concurrently, Greenpeace analysis of IEA data indicates that the UK ranks lower than France, Germany, Spain and Italy on 'green spending', and a comparison of Eurostat and UK ONS data suggest that green

137 Department for Business & Trade, UK trade in numbers, 2024
138 OECD, Digital trade and labour markets in the United Kingdom, 2024
139 Rt Hon Chris Skidmore MP, Mission Zero: Independent Reviewof Net Zero, 2023
140 Department for Business & Trade, Energy transition export capability guide, 2023
141 Department for Environment, Food & Rural Affairs,The Government announces new UK Special Representatives on Climate Change and Nature, 2024
142 World Economic Forum, India's Transition to a Green Economy Presents a $1 Trillion Opportunity, 2021
143 British High Commission New Delhi, UK companies to export smart grid innovation technologies to India, 2016
144 ECIU, The UK's net zero economy, 2024
145 CBI and ECIU, The UK's net zero economy: The scale and geography of the net zero economy in the UK, 2024
146 CBI, Can the transition to net zero be the UK's economic hero?, 2024

goods and services contribute less to the UK economy than in comparable European nations.[147] In other words, the UK is neither investing enough in the green transition, nor is it capitalising on the investments it is making.

Key strategic errors have made Britain a less attractive place for clean-energy investment. . These include a failure to develop a coherent transition strategy, a rollback of net zero policies under Rishi Sunak's tenure, and a failure to respond strategically to the US Inflation Reduction Act (IRA). These choices created policy uncertainty which, combined with the impact of the UK leaving the EU Customs Union and Single Market, led to a 23% fall in FDI projects from 2015 to 2022, with the country's share of European inward investment falling from 21% in 2015 to 15.6% in 2022.[148][149] Figures from the Department for Business & Trade indicate the number of new FDI-backed projects fell 6% from 2023 to 2024, amounting to a total decline of 16% since the UK's departure from the EU in 2020.[150] This ought to be of particular concern in view of estimates that £1 of investment in R&D generates an average of £7 net value for the wider economy, which is why innovation trade association Tech UK describes R&D investment as 'a key driver for long-term economic growth'.[151]

This being the case, recent developments offer grounds for optimism. Ernst & Young report that total UK FDI projects are rising overall, with the UK coming second in the firm's ranking of European nations by attractiveness to foreign investors, and the UK netting 27% of all European tech projects in 2023.[152] News that France's Schneider Electric is investing £42m in a facility in northern England's Scarborough to produce equipment for electricity networks and data centres has provided a further boost for UK manufacturing.[153] To consolidate and build upon these gains, the government should provide policy certainty, which is regarded by investors as a crucial component in decision-making.[154] By deploying such signals, the UK will have an opportunity to position itself as 'open for green business'.[155]

147 IPPR, Revealed: UK is lagging behind in the race for green growth, due to lack of industrial strategy, 2023
148 Bloomberg, UK Loses Competitiveness and Faces £560 Billion Investment Gap, 2023
149 EY, Foreign Direct Investment: UK remains second in Europe despite a fall in project numbers, 2023
150 Department for Business & Trade, DBT inward investment results 2023 to 2024, 2024
151 UKRI, The UK's research and innovation infrastructure: opportunities to grow our capability, 2023
152 EY, Foreign Direct Investment: UK's project total grows as Europe's falls, 2024
153 The Manufacturer, Schneider Electric to invest £42m in new manufacturing site in North Yorkshire, 2024
154 NBER, Policy Uncertainty Reduces Green Investment, 2023
155 Corporate Leaders Group, Unleashing the green economy: The role of UK business in fast-tracking climate action, 2024

5. Conclusion

With 94% of the UK's trade partners committing to net zero, the low carbon transition is now baked into global trade. At the enterprise level, corporations committing to net zero now oversee combined revenues of £10.3tn. As this report shows, nations and firms are focusing on the areas in which decarbonisation, risk reduction and economic rewards converge. This worldwide megatrend presents myriad current and potential export opportunities for UK businesses in the multi-trillion-pound market for green goods and services.

But these opportunities will not simply fall into the UK's lap. Public and private sector actors should accelerate the work of retooling British brands and British skills for the net zero market. At the government level, this means delivering policies that boost investor confidence, driving demand for lower-carbon products and fostering a domestic market that reduces risk, while rewarding green, proactive business decisions. At the firm level, it means decarbonising value chains and developing the innovative goods and services that the global market needs.

In products, the UK should capitalise on its lead in offshore wind, regaining its first-mover initiative by matching its skillset with a world-class manufacturing base for the turbine components that the global market desperately needs. In parallel, strengthening existing British manufacturing capabilities in the components required for modern, flexible electrical grids will enable the UK to punch above its weight as a renewables and electrification powerhouse. Britain already possesses the skills and produces the hardware it needs to plug into global demand for battery electric vehicles, but promising progress must be strengthened and accelerated through domestic demand, which in turn will create export capacity. Similarly, in answer to the booming global market for heat pumps, a more ambitious programme to drive consumer uptake will send the demand signals needed to encourage industry to deploy investment into new production lines. In agriculture, UK firms are pioneering the low-carbon fertilisers that will enable food producers to feed generations to come without imperilling planetary boundaries.

The UK's powerful services sector, meanwhile, can further support the country's green leadership ambitions, offering the capacity to absorb and deploy both foreign and domestic investment efficiently, thus fostering a dynamic, green economic growth model. UK services will also fulfil growing demand for net zero expertise overseas, driving recognition of the UK as the world's first transition-as-a-service provider.

On the basis of its first-mover advantage in climate policy, its status as a world leader in business and finance, and its existing green comparative advantage, the UK can rightly lay claim to global leadership in transition expertise. In doing so, the UK can not only foster a green industrial ecosystem domestically, creating high-skilled, well-paid jobs, but also position itself at the forefront of the global economic net zero transition. Crucially, this will require international collaboration: the UK should lead efforts to ensure open, reciprocal trade relations that support green industries and access to vital global supply chains and markets.

Through sustained leadership, the UK can set the stage for economic growth, technological innovation, and enhanced global influence in the green economy.

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Appendix I

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